FEPSAC 2022

Padova, Italy, 11-16 JULY

16th EUROPEAN CONGRESS of SPORT & EXERCISE PSYCHOLOGY

Sport, exercise and performance psychology:
challenges and opportunities in a changing world

ABSTRACT BOOK

FEPSAC
European Federation of Sport Psychology

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WELCOME ADDRESS

FEPSAC

European Federation of Sport Psychology

Dear Colleagues and Friends,

It is a real pleasure to have you here in Padua at the 16th FEPSAC European Congress of Sport and Exercise Psychology held by the University of Padua, in collaboration with the Italian Association of Sport and Exercise Psychology (AIPS – Associazione Italiana di Psicologia dello Sport) and Symposia srl, under the patronage of Padua's City Council.

The overall topic of the Congress is Sport, exercise and performance psychology: challenges and opportunities in a changing world, and the Scientific and the Organizing Committees have worked hard to provide all attendees with a rich and interesting program. During the Congress' 5 days there are scheduled a wide range of scientific events, such as pre-congress workshops and symposia, several important keynote speakers' contributions, round tables, oral and poster presentations and a science slam – as well as a multitude of social activities!

We are excited about the outstanding collaborations with FEPSAC, the University of Padua, the City of Padua and its Mayor, the many supporters and sponsors, the AIPS, the Regional Order of Psychologists and the Italian National Olympic and Paralympics Committees and, last but not least, the President of the Veneto Region.

We believe that the FEPSAC 2022 Congress represents an excellent opportunity of networking that will bring together professionals and members of the Sport Psychology's international academic community.
Seven hundred researchers and professionals from 52 countries by 5 continents are attending the congress, presenting 10 pre-congresses, 251 oral presentations, 4 roundtables, 32 workshops and 40 symposia.
A word about the venue: Padua is a historical town situated in the Veneto Region in the North of Italy. It hosts one of the most ancient Universities in the world, established in 1222. Therefore, in 2022 the University is celebrating its 800th founding anniversary. Padua has many historical monuments and artistic sites such as the Scrovegni Chapel (a masterpiece in the history of painting in Italy and Europe in the 14th century, which is considered to be the most complete series of frescoes executed by Giotto) and the Orto Botanico (UNESCO World Heritage Site), the world's first botanical garden, created in Padua in 1545. Our keynote speakers are presenting in the wonderful Palazzo della Ragione, another UNESCO World Heritage Site.
Furthermore, Italy is a pioneering country in the field of Sport Psychology; as a matter of fact, in 1965, the International Society of Sport Psychology was founded in Rome, which shared with Padua the institution of the first Faculty of Psychology in Italy.

We are confident that you will not only take benefit from the extremely ambitious Conference and its high-level panel and participants, but will also be delighted by the exceptional opportunities of the venue and the surrounding environment. After the COVID-19 pandemic this is a great moment for the entire sport psychology community to gather and share our thoughts.

Enjoy!

Prof. Maurizio Bertollo

FEPSAC Chairman
Professor of Motor Behavior at the "G. d'Annunzio" University of Chieti-Pescara

Dr. Marcella Bounous

FEPSAC Co-Chair
Past-President of the Italian Association of Sport and Exercise Psychology (AIPS)

Antonio Paoli

FEPSAC Co-Chair
University of Padua

Marta Ghisi

FEPSAC Co-Chair
University of Padua

CHAIRS

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European Federation of Sport Psychology

Maurizio Bertollo

University of Chieti
Chairman

Maurizio Bertollo is Professor of Motor Behavior at “G. d’Annunzio” University of Chieti-Pescara, Italy where he is the Rector’s delegate for international cooperation and partnership. Moreover, he is also visiting professor of Human Performance at the University of Suffolk, UK.
He received his Bachelors’ degree in Physical Education and Human Movement Science in Padova and Chieti (Italy), a Master degree in Education (Pedagogy) in Padova (Italy), a Master degree in Psychology in Ljubljana (Slovenija) and a Doctoral degree in Sport Sciences in Vila Real (Portugal).
He also holds specializations in psychotherapy, developmental and learning disabilities, and sports psychology. Currently, He is chartered psychologist and psychotherapist within the “Ordine Nazionale Psicologi”, and Vice-President of FEPSAC.
He worked as a scientific consultant, psychologist, and coach for many Italian sports clubs, federations (e.g., Modern Pentathlon, Triathlon, Swimming, Rink Hockey, Soccer, Cycling, Track and Field, and Shooting), and for the National Olympic Committee. Currently, he is scientific consultant of the Romanian Olympic Committee. Before starting an academic career, he was also PE teacher, School Psychologist and Headmaster.
His research activity focuses on the processes and mechanisms underlying the development, maintenance and improvement of human motor behaviour and performance. Current research interests include Bio-psycho-physiological state underpinning performance, Individual Zones of Optimal Functioning, Stress recovery-balance in sport, Psychophysiological monitoring and intervention in sport.
He has been involved in international and EU projects and he has published over 200 papers including national and international articles in peer-reviewed journals, books and book chapters. He has been involved as a reviewer for almost 30 scientific journals. Currently, He is associate editor of International Journal of Sport and Exercise Psychology, Frontiers in Psychology and PeerJ Journals. Moreover, he is part of the Editorial Board of the Journal of Sports Sciences, Psychology of Sport & Exercise, The Open Sports Science Journal, and Sports journal.

Antonio Paoli

University of Padova
Chairman

Antonio Paoli graduated in physical education (ISEF) in 1989, then in 2004 in Medicine (Padova University) and in 2008 he earned the specialization in Sports Medicine (University of Pavia). He became an assistant professor of Sport Sciences in 2011 at the Department of Human Anatomy and Physiology, University of Padova (Italy). In 2013 he became associate professor and in 2018 full professor and chair of Exercise and Sport Sciences at the Department of Biomedical Sciences, University of Padova. He is Director and Professor of Strength Training and Sport Nutrition at the University UCAM (Murcia, Spain) and Head of Human Health Laboratory Lobachevsky University – Niznij Novgorod – Russia. He is President of the Italian Society of Sport and Exercise Science (SISMES) and the European Sport Nutrition Society (ESNS). Since October 2015, Antonio Paoli is Rector’s Delegate for Sport and Wellness of the University of Padova, being in charge of managing sport and wellness-health related activities for students, faculties and employees
He is currently Director of the Nutrition & Exercise Physiology Laboratory of the Department of Biomedical Sciences, University of Padova, Italy, Dean of the Bachelor Degree in Human Movement Science and Dean of the Master Degree in Preventive and Adapted Physical Activity. His laboratory research interests include ketogenic diet and fasting, the interaction of exercise and diet on skeletal muscle metabolism, the molecular bases of exercise training adaptation and the effects of the different methodology of resistance training on health parameters and body composition in young and adults.

Marta Ghisi

University of Padova
Co-Chair

Marta Ghisi is Associate Professor of Clinical Psychology at the Department of General Psychology, University of Padova. She has a Ph. D. in Social and Personality Psychology and a certification in Behavioural and Cognitive Therapy. She currently serves as Advisor to the Vice-Rector and Rector’s Delegate for Sport and Wellness. She is also co-founder and co-sport administrator of volleyball university teams made up of only university students: an initiative that is part of the double career student-athlete project developed and supported by the University of Padova. At the University of Padova, she teaches *Clinical Psychodiagnostics* and *Sport and Health Psychology* at master degrees courses and *Sport and Exercise Psychology* at a School of Specialization in Sport and Physical Exercise Medicine. Current research interests include the development of self-report measures assessing the psychological features associated with sports performance and the investigation of the association between sport and healthy habits.
Prof. Ghisi is an ad-hoc reviewer for several national and international journals and member of a number of professional societies: Italian Association of Psychology- Clinical and Dynamic Section (AIP); Italian Association of Sport and Exercise Psychology (AIPS); European Association for Behavioural and Cognitive Therapy (EABCT).

Marcella Bounous

AIPS / IUSVE
Co-Chair

Marcella Bounous is the current President of the Italian Association of Sport and Exercise Psychology (AIPS). She run her own private professional practice in the north east of Italy. She has been working with many individual athletes and sport federations, such as fencing, tennis, winter sports and rugby. She graduated in Sport psychology at the Salesian University of Rome and in Pedagogy at the University of Turin. After following many courses in bio-neurofeedback obtained her certification from Biofeedback Foundation of Europe (BFE).
She is Lecturer of Sport and exercise Psychology and new technologies psychophysiological processes in performance at IUSVE (Università Pontificia Salesiana Venezia-Mestre), where she leads the Sport Psychology and Biofeedback Lab. She taught sport psychology also at University of Verona.
Her Fields of Specialization are applied psychophysiology and biofeedback, voluntary self-regulation, optimizing health and performance. Her main research interest is the understanding of the physiological and psychological mechanisms underlying performance and well-being in athletes.

KEYNOTE SPEAKERS

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Kensa Gunter

AASP President, US

Dr. Kensa Gunter is a licensed psychologist and a Certified Mental Performance Consultant (CMPC). She provides mental health and mental performance services to individual athletes, serves as the team clinician for various professional sport organizations, and provides consultation services for different sport leagues.

Dr. Gunter is committed to elevating conversations about mental health and performance. She is also passionate about decreasing the stigma associated with mental health, particularly for those in high performance & African-American communities. Dr. Gunter is currently the AASP President and at the 2018 APA Convention, she served as Division 47's invited speaker for the Steven R. Heyman Memorial Keynote Lecture which is focused on diversity in sport. Dr. Gunter is listed on the United States Olympic & Paralympic Committee (USOPC) Sport Psychology Registry and is a member of the USOPC External Mental Health Taskforce.

The Person of the Athlete: Navigating the intersection between cultural identity, performance and mental health in sport.

Topics: Cultural sport psychology

In recent years, conversations about the intersection between mental health and sport have been more dominant in the general public discourse and within the field of applied sport psychology (Gorczynski, Currie, Gibson, Gouttebarge, Hainline, Castaldelli-Maia, Mountjoy, Purcell, Reardon, Rice & Swartz, 2021). Additionally, there has also been an increased focus on attending to the role of culture in sport and sport psychology (Egli & Fisher, 2017; Gill, 2017; Schinke, Stambulova, Si, & Moore, 2017). In terms of applied practice, these conversations have resulted in the need for practitioners to be more intentional about understanding the person of the athlete, their cultural identities and experiences, and how these intersect with the larger cultural realities of their sport and society (McGannon, Schinke, & Busanich, 2014). As sport psychology professionals, it is our responsibility to engage in culturally competent and responsive practice (Quartiroli, Vosloo, Fisher & Schinke, 2020) and to also reflect on the importance of cultural humility in our work (Hook, Davis, Owen, Worthington Jr., & Utsey, 2013). In this keynote, conference attendees will be led through a discussion integrating these topics and the presenter will also briefly explore the role of the sport psychology professional in creating culturally inclusive spaces in sport. Attendees will also be challenged to consider the importance of maintaining and continuing to expand cultural competence across one's professional lifespan.

Camilla Knight

Swansea University, UK

Dr Camilla Knight is an Associate Professor in Sport Sciences, specialising in Sport Psychology at Swansea University. She is also the Youth Sport lead for the Welsh Institute of Performance Science and a member of the Welsh Safeguarding in Sport Strategy group. Camilla's research interests are concerned with understanding and enhancing the psychosocial experiences of children in sport, with a particular focus upon the influence of parents. Camilla is co-author of "Parenting in youth sport: From Research to Practice" (Routledge, 2014) and co-editor of "Sport Psychology for Young Athletes" (Routledge, 2017). She has published over 25 book chapters on topics related to parental involvement in sport, as well as 50 peer reviewed journal articles. She also consults widely with a range of national and international sports organisations on parental involvement and youth sport participation more broadly.

Parents and Youth Sport: Silence or Support?

Topics: Youth

It is broadly accepted that parents have a substantial and sustained influence on the youth sport experience (Knight, 2019). Consequently, over the years, and increasingly within the last decade, researchers have committed to examining parental involvement in youth sport (Dorsch et al., 2021). Particularly, consideration has been given to how parents are involved in youth sport, what influence they have on the experience of various stakeholders (i.e., parents, coaches, other parents), and the factors that may impact on parents' involvement and subsequent influence (Knight et al., 2017). Most recently, drawing together the evidence regarding parental involvement, studies have increasingly focused upon examining different approaches to educating or supporting parents (e.g., Lisinskiene & Lochbaum, 2019; Tamminen et al., 2020; Thrower et al., 2019). Together, this research provides substantial insights into the topic of parents and youth sport, and this presentation will provide a brief and critical review of this substantial body of literature. However, despite this research and the ongoing recognition that parents may benefit from support, it is my experience that many working within youth sport still push for parents to be silenced, with a suggestion that "good parents" do not interfere or question coaches or organisations. The consequences of such approaches can be devastating, as evidenced by parents feeling that they cannot speak up when witnessing abusive practice. Thus, the purpose of this presentation is not to simply present and critique what we already know but to reflect on where we need to go to finally move from silencing to supporting parents in practice. Particularly, based on the current youth sport context and over a decade of experience working directly with organisations to enact change, consideration will be given to the research and applied gaps that exist, the need for nuance in communicating complex ideas and messages, how to consider multiple (sometimes seemingly competing) agendas, and what is required to genuinely, positively, impact on the experiences of youth athletes and parents themselves.

Tadhg MacIntyre

Maynooth University, Co. Kildare, IR

Dr. Tadhg E. MacIntyre is an Assistant Professor of Environmental Psychology at Maynooth University, Ireland. He is course director of a new graduate program in environmental psychology and coordinates the H2020 project GOGREEN ROUTES (2020-2024) which promotes urban health across six European cities. He studied psychology at University College Dublin, graduating from a BA in 1993, and subsequently, with a Masters' degree (first class honors) in 1996. Supervised by the late Professor Aidan Moran, he subsequently graduated with a PhD on the topic of motor cognition. A consultant for over 15 years, most recently he was the sport psychologist for Munster rugby (2014-2016). Currently, he is chairperson for the Sport Ireland Institute professional accreditation process. He supervises research on resilience in sport and organizational settings, mental health stigma in sport, and most notably, transdisciplinary research activity on nature-based interventions. He recently co-edited Physical Activity in Natural Settings: Green Exercise and Blue Mind which includes scientific analyses, to case studies in green and blue exercise. He is national lead for the Be Like an Athlete Erasmus + Sport project (2019-2022). He is an Associate Editor of the top ranked review journal in sport psychology (International Review of Sport and Exercise Psychology). In 2016 he edited a special issue on mental health challenges in sport and he is now co-editing a cross-hosted topic for the journal Frontiers on the topic The Effects of the Covid-19 Pandemic on Sport: Mental Health Implications on Athletes, Coaches and Support Staff.

Environmental Factors in Sport and Exercise Psychology: An Emerging Nature-Based Paradigm

Topics: Well-being and quality of life

The nature of sport is competition but there is nature in sport that merits further consideration. That is the nature present in the environmental settings in which sport occurs. Since the Mexico Olympics in 1968, the environmental setting of sport had been viewed from the perspective of mitigation of environmental hazards including altitude, heat (Tokyo 2020), air (e.g. LA 1984, Beijing 2008) and water pollution (e.g. Rio 2016). Novel initiatives were taken to address these challenges, for example, in Beijing vehicles with odd numbered plates could only circulate on odd days, while even numbered plates were only allowed to circulate on even days. This combined with other strategies reduced resulted in a significant decrease in the particles and gases associated with air pollution for a period immediately before and during the Olympic games, estimated to have been a 30% reduction in major pollutants. More recently, in Tokyo 2021, to reduce the impact of heat on endurance events (e.g. marathon running) the venues were moved from the megapolis of Tokyo to Sapporo, 800km north where cooler climatic conditions were expected. In recent years, despite these challenges an increasing focus beyond the potential toxicity of the environment, towards the idea that the natural environment can be both salutogenic (health promoting) and ergogenic (performance enhancing) has emerged. In this keynote address, I will highlight that changing role of the natural environment in sport and exercise contexts. Firstly, it has been acknowledged that nature and health are not entirely unrelated. Time in green and blue space is associated with positive health and mental health benefits. This evidence underpins what are termed nature-based interventions. Firstly, engaging with authentic nature or its digital analogue can promote psychological recovery with potential application among athletic samples for recovery from injury or burnout. This could take the form of micro-breaks (short duration scheduled rest breaks taken to prevent the onset or progression of stress) or using a natural backdrop to physical therapy interventions. Green and blue exercise (physical activity in or adjacent to green space or water) provide a range of additional benefits beyond indoor based exercise, where they can promote recovery, adherence and social interactions. Nature savouring (recalling an episode of recent nature contact) can enable the time cessation effect on mood and cognition to be amplified further. Secondly, from a practitioner perspective walking therapies in natural settings offer another means of nature contact providing a more informal setting for discourse which can open up a window for co-created solutions by the athlete and psychologist. Notably, in 2020, the British Psychological Society (BPS) published guidance to promote safety and effectiveness in outdoor sessions. Thirdly, performance routines offer the potential for nature to be incorporated as a stress regulation strategy in the competition environment. Indeed evidence tentatively suggests that athletic performance may be more readily optimised in environments, not simply without environmental hazards, but in those where the quality of the nature (e.g. biodiversity, natural soundscape) is high. Together these nature-based approaches provide, not simply benefits for health and well-being, but co-benefits in terms of sustainability (e.g. reduced carbon footprint), and potential additional benefits with pro-environmental behaviour and sustainable actions. Athletes have long been advocates for sustainability with sport organisations (e.g. IOC, FIA) following this lead with eco-codes for hosting events. The benefits, co-benefits and additional benefits of nature-based approaches provide synergies between sport and exercise psychology which have yet to be fully realised.

Catherine M. Sabiston
University of Toronto, CA

Dr. Catherine Sabiston is a professor in the Faculty of Kinesiology and Physical Education at the University of Toronto and the Director of the Mental Health and Physical Activity Research Centre. Catherine holds a Canada Research Chair in physical activity and mental health and has been awarded numerous career distinctions. Dr. Sabiston has over 250 peer-reviewed publications, has delivered over 400 presentations, and she has held over $20 million dollars in funding for her research broadly focused on psychosocial determinants and outcomes of physical activity. Dr. Sabiston's research has been extensively featured in the media, has been used to inform evidence-based practice, and has advanced theory and methods in sport and exercise psychology. Catherine is Past-President of the North American Society for the Psychology of Sport and Physical Activity (NASPSPA), and is an editorial board member for Psychology of Sport and Exercise, Sport, Exercise, and Performance Psychology, and the Journal of Sport & Exercise Psychology.

Physical activity and mental health: the predominance of body image

Topics: Emotion

The symbiotic and bi-directional interaction between physical activity and mental health is well-documented. Research has also shown body image to be a critical facet of mental health in the context of sport and exercise. Within a systematic program of work comprising prospective longitudinal, experimental, and mixed methods studies among clinical and at-risk people across the lifespan, my research team has found that body image is a factor motivating, limiting, and/or preventing sport and exercise behaviors. Here, our work has shown that body image also impacts experiences in sport and exercise, and is an outcome emanating from participation. Body image factors - including surveillance and a range of self-conscious emotions – may also impede learning, competence, and performance. Across these various studies, our findings highlight the importance of body image within physical activity and mental health theory and practice.

Miquel Torregrossa
Universitat Autònoma de Barcelona, SP

Presentation title: Rethinking and Spreading Career Transition Research
Day of presentation: TBD

Miquel Torregrossa, PhD, is Professor and the Coordinator of the Research Group in Sport and Exercise Psychology at the Universitat Autònoma de Barcelona, Spain. He coordinates the PhD program in Health and Sport Psychology at UAB, and he is member of the Ethics Committee. His research focuses on sport Psychology, athletes' career, and cognitive processes. It has been published in leading journals and books. In addition to over 100 publications, Miquel has given over 30 invited talks in numerous countries including Brazil, Uruguay, France, Italy, and UK.

Rethinking and Spreading Career Transition Research

Topics: Transitions in and out of sport/ dual career

Career Transition research started in the early sixties focusing on sports retirement (Mihovilovic, 1964) and expanded later approaching other transitions such as the Junior To Senior transition (JTS; Pummell et al., 2004). Sport psychology research borrowed the term transitions from Nancy Schlossberg (1981) and Wylleman et al. (2004) expanded the term to include a distinction between normative and nonnormative transitions, recently updated with the inclusion of quasi-normative transitions (Stambulova et al., 2020). While this classification has been a guiding principle for research in career transitions during decades, contributing enormously to the development of knowledge on the field, it drags a conceptual imprecision. It is perfect to retrospectively analyse transitions, but from a prospective standpoint, before facing the process, can be perceived as limiting. During this keynote we will revisit the classification of career transitions identifying them based on their dimensions of specificity and predictability. We will present: (a) specific and predictable transitions such as retirement, JTS, secondary education to university or paternity and parenthood; (b) predictable and global transitions such as migration, transnationalism, club loan or pregnancy; (c) specific and unpredictable such as acute injuries or the disruption of the Olympic cycle; and (d) unpredictable and global such as a pandemic or a war outbreak. Based on this classification we will reflect on the psychological implications of defining transitions as 'successful' or 'unsuccessful' from a retrospective perspective proposing a more rational approach to defining them as either 'adaptative' or 'nonadaptative' both from prospective and retrospective views

Karen Zentgraf

Goethe University Frankfurt, DE

Karen Zentgraf is Professor of Movement and Exercise Science at Goethe University Frankfurt, where she directs the Neuromotor Performance Laboratory. She serves as Deputy Dean of Studies Sport Sciences and as Chairperson of the Board of the GRADE Center for Sports Sciences at Goethe University Frankfurt, and is a member of both the Interdisciplinary Center for Neuroscience Frankfurt (ICNF) and the PotAS Commission for Competitive Sports of the Federal Ministry of the Interior (BMI, Germany). Prof. Zentgraf studied Biology at Indiana University (USA), Medicine and Sports Science at the University of Tübingen, and obtained her PhD from the University of Giessen in 2005, with a dissertation on the intersection of sport psychology and movement science. After postdoctoral positions in Gießen and Bern, she was called for a professorship in Human Performance and Training in Sports at the University of Münster, before returning to Hessen in 2017, when she began her current position at Goethe University Frankfurt. The research in Prof. Zentgraf's lab focuses on expert human performance in sports and neuromotor behavior.

Creating a better understanding of the elite player's mind-body for optimal health and performance

Topics: Elite sports and expertise

In most cases, top athletes are backed by a team of experts tasked with keeping the athlete physically and mentally healthy and, based on this, with driving them to new heights of performance. My research emerges from being a member of such teams in different team-sports settings to provide scientific input to achieve high performance. In my talk, I will highlight different examples for individualized training structuring, aiming at rendering elite sport a safe and salubrious environment for each athlete. The underlying framework is a multifactorial gene-environment interaction model of expertise (Ullén et al., 2016), asserting that domain-specific competence depends on genes, environment, practice, and traits as well as their interactions. Therefore, I will address different aspects for individualization strategies, such as need analyses, load monitoring, VR- and dual-task training, cycle monitoring and cycle-based training, talent development, motor laterality, and preventive, brain-protecting training in basketball, volleyball, soccer, and ice hockey players.

In sport games, understanding the game structure helps to select adequate diagnostics for athletes and to target desired adaptations when athletes show a mismatch, especially when new sport disciplines are developed. Wearable sensors measure game and training load with an individual reference to arrive at a tailored training regimen. Fostering perceptual- cognitive skills for optimal game performance has received increased attention in the last decade. In this vein, new technology-based methods such as virtual-reality training have emerged, but not all athletes seem to benefit from it. High-load dual-task training might also help to increase game performance, aiming to reduce motor costs induced by cognitive- motor interference. Here, athletes with low cognitive capacity seem to profit the most. Improving women's performance requires to consider cyclic physiology. For example, some female athletes encounter cycle-induced symptoms impacting on practice and they seem to benefit from phase-related training contents. Also, especially for athletes with small neck size and low muscle strength, often girls and women, preventive training input should include brain protecting policies such as neck and core strength training.

I will sum up with a model of expertise that values each athlete and stresses the ever- expanding role of individualization in team sports, which needs to adopt a bio-systemic perspective to tap the full performance potential.

Program at a glance

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	JULY 11th	JULY 12th	JULY 13th	JULY 14th	JULY 15th	JULY 16th
08:30 – 09:00	REGISTRATIONS	KEYNOTE	KEYNOTE	KEYNOTE	KEYNOTE	DEPARTURES
09:00 – 09:30	PARALLEL PRE-CONGRESS WORKSHOPS AND SYMPOSIA					
09:30 – 10:00		POSTER SESSIONS/ COFFEE BREAK	POSTER SESSIONS/ COFFEE BREAK	POSTER SESSIONS/ COFFEE BREAK	POSTER SESSIONS/ COFFEE BREAK	
10:00 – 10:30						
10:30 – 11:00		PARALLEL SESSIONS	PARALLEL SESSIONS	PARALLEL SESSIONS	PARALLEL SESSIONS	
11:00 – 11:30						
11:30 – 12:00						
12:00 – 12:30						
12:30 – 13:00	BREAK	BREAK (Committee Meetings)	BREAK (Committee Meetings)	BREAK (Committee Meetings)	BREAK (Committee Meetings)	
13:30 – 14:00	PRE-CONGRESS PARALLEL SESSIONS					
14:00 – 14:30		PARALLEL SESSIONS	PARALLEL SESSIONS	PARALLEL SESSIONS	PARALLEL SESSIONS	
14:30 – 15:00						
15:00 – 15:30						
15:30 – 16:00		ROUND TABLE ATHLETES	COFFEE BREAK	SOCIAL PROGRAM	COFFEE BREAK	
16:00 – 16:30			PARALLEL SESSIONS / YOUNG RESEARCHER AWARD		KEYNOTE	
16:30 – 17:00		BREAK				
17:00 – 17:30	OFFICIAL START	GENERAL ASSEMBLY			CLOSING CEREMONY	
17:30 – 18:00	KEYNOTE		BREAK			
18:00 – 18:30			SCIENCE SLAM			
18:30 – 19:00	OPENING CEREMONY AND WELCOME COCKTAIL					
19:00 – 19:30						
19:30 – 20:00						
20:00 – 20:30						
20:30 – 21:00					CONFERENCE DINNER	

ABSTRACTS

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PRE-CONGRESSES

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Pre-Congress workshop and seminar (4 hours slot)
Topics: Professional development and mentoring

Preparing manuscripts for publication in peer-reviewed journals: Strategies and writing skills

Xavier Sanchez[1,2,3]
[1]Université d'Orléans, France; [2]Université Paris Saclay, France; [3]Halmstad University, Sweden

Purpose: The present workshop provides to early–career researchers and postgraduates with an overview of the publication process, and tips on how best to prepare research to be submitted for publication. To that end, throughout the workshop we (a) discuss some of the typical problems early–career researchers and postgraduate students face when preparing manuscripts for publication, and (b) practice thoroughly how to submit the best possible abstract as an example of how to submit best manuscripts for publication.

Background: Publishing internationally is not a luxury activity of just a few but a must-do for all those who aim to disseminate their research findings and share knowledge. Whether one seeks to further knowledge in their field, scholarly recognition, a pay-rise or external funding, such a time–consuming activity must be done as efficiently and successfully as possible, with a view to maximise effort and possibility of publication. Success when submitting a manuscript for publication depends, ultimately, upon the originality, the quality and the strength of the work submitted. Nevertheless, people can improve their chances by targeting appropriate journals, following journal guidelines carefully, taking great care with presentation, and responding appropriately and in detail to the comments made by the reviewers, and the suggestions/demands of the editors.

Approach and Methods: Delegates will have the opportunity to engage in a series of hands-on case-examples (abstracts) that support the session's theoretical components. The workshop encourages active participation amongst delegates throughout. All workshop material is provided to delegates on-site.

Pre-Congress workshop and seminar (4 hours slot)
Topics: Exercise psychology

From "I should because it's good for me" to "I want to because it's fun": Preparing a new paradigm of physical activity promotion

Emmanouil Georgiadis[1], **Panteleimon Ekkekakis**[2]
[1]University of Suffolk, United Kingdom; [2]Iowa State University, U.S.A.

For more than a half century, physical activity has been promoted on the basis of the argument that it will reduce the long-term risk of premature death, disease, and disability. This social-marketing message, however, has not led to population-level increases in physical activity participation. A 2021 editorial in The Lancet noted that "there has been no improvement in global levels of physical activity" and experts recognize that "more of the same (in terms of research and practice) will not be enough" (Hallal et al., 2012, p. 191). Mounting evidence indicates that better results may be achieved by focusing on short-term valued outcomes, such as pleasure, enjoyment, energy, pride, fulfillment, stress relief, sense of well-being, and meaningful interpersonal connections. This approach requires a significant reorientation in how physical activity is promoted across settings and population groups, away from the traditional approach of providing individuals with data-laden arguments focusing on risk reduction and toward messages that can establish connections between the stimulus-concept of physical activity and varieties of positive affect.

The proposed workshop will begin with two presentations that will introduce fundamental concepts. The first presentation (Ekkekakis) will introduce the notion of "bounded rationality," the idea of the "affect heuristic," and dual-process models of behavior. The second presentation (Georgiadis) will explain the need for empathic appreciation, movement education, and breathing for exercise promotion, as well as introduce the concept of "design thinking" and an associated step-by-step methodology for problem solving.

Pre-Congress workshop and seminar (4 hours slot)
Topics: Best practice

#SportPsychMapping: A professional solution for applied practice

Alexander T Latinjak[1], Dorottya Molnár[2]
[1]University of Suffolk, United Kingdom; [2]Independent practitioner, Hungary

The aim of this workshop is to offer participants the opportunity to get to know the exploratory interview framework #SportPsychMapping. This includes the presentation of the essential theory on which the selection of the interview questions is based, the description of the main identifying components of #SportPsychMapping, as well as an interactive #SportPsychMapping simulation exercise. #SportPsychMapping is based on the Knowledge Map of Sport and Exercise Psychology (Latinjak & Hatzigeorgiadis, 2021), a global synthesis of research topics that have appeared in 650 theoretical and review articles in this field. The development phase of #SportPsychMapping comprised around 200 applications of the framework with athletes, coaches, and parents (Latinjak et al., 2021). In addition, #SportPsychMapping is continuously tested and developed with the active help of an international and multicultural group of applied psychologists. Participants will learn that #SportPsychMapping is an interview exercise that is characterized by a series of question cards and the creation of a summary map that clients take away from the session. In the workshop, the participants learn through a short introduction to the essential theoretical basics of #SportPsychMapping, the practical examination of various materials and the interactive experience of creating their own maps that show performance-related variables in their work as sport and exercise psychologists. Participants will have the opportunity to interact with a variety of materials, including the current #SportPsychMapping user guide, printed and plasticized question cards, various summary maps, and the #PsychMapping website. The workshop includes ample time for questions from the participants.

Pre-Congress workshop and seminar (4 hours slot)
Topics: Research methods (qualitative & quantitative)

Once upon a time: Creative nonfiction as a way to communicate research

Francesca Cavallerio
Anglia Ruskin University, United Kingdom

Creative nonfiction (CNF) is type of creative analytical practice that presents research findings through a story, drawing on literary techniques. As a literary genre, CNF offers scholars the opportunity to share research in a way that captivates the reader, evoking emotional responses and potentially reaching audiences beyond academia.

This quality makes CNF a powerful 'tool' for researchers and practitioners in the field of sport and exercise psychology, as it allows to disseminate and use research findings with audiences like coaches, athletes, and sport parents.

While the use of CNF is increasing in our field, many scholars are often discouraged to engage with such a different writing style. In this workshop, we will review the history of CNF, to better understand how and when to use it effectively, and then we will focus on the 'how' of CNF, exploring various techniques to accompany participants through the process of writing a CNF.

Pre-Congress workshop and seminar (4 hours slot)
Topics: Prevention and rehabilitation

Sport Injury: Assessing and Facilitating Psychological Adjustment

Leslie Podlog[1], John Heil[2]
[1]University of Utah, United States of America; [2]Psychological Health*Roanoke

Injury is a debilitating experience for many high-performance athletes. Despite a wealth of evidence highlighting the deleterious ramifications of injury, few practitioners are sufficiently skilled to assess athletes' psychological adjustment to injury or to effectively intervene in this ubiquitous event. This workshop is comprised of three components. First, we discuss and implement (i.e., score, interpret, use) user-friendly assessments for gauging athletes' psychological adjustment to injury. Second, we articulate key psychological skills athletes require to effectively manage rehabilitation demands and challenges. Here, we emphasize the transfer-ability of sport-specific skills to the rehabilitation environment. We outline 7 evidenced-based skills shown to positively influence the quality and effectiveness of athlete's injury rehabilitation and return to play. Third, we practice implementing injury-specific strategies designed to cultivate several of the 7 essential rehabilitation skills outlined in the workshop.

Pre-Congress workshop and seminar (4 hours slot)
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Biofeedback training for performance enhancement and sport

Elisabetta Patron[1], Penny Werthner[2]
[1]University of Padova, Italy; [2]University of Calgary, AB, Canada

Biofeedback is a process through which the individual can learn to control a bodily function usually outside voluntary control (e.g., brain activity, heart rate). During biofeedback training, the presence of external information (i.e., the feedback) directly linked to a visceral or central function enhance bodily awareness and facilitate the process of learning to control that specific function (Schwartz and Andrasik, 2016). Research shows that biofeedback can facilitate self-regulation, allowing the individual to gain control over bodily responses that could be detrimental to well-being and performance, such as reducing anxiety, physical arousal, and improving concentration (Levy and Baldwin, 2019). In the last few decades, biofeedback of heart rate variability gained particular interest in various clinical and non-clinical applications (Lehrer et al., 2020). Specifically, heart rate variability biofeedback aims at improving autonomic nervous system regulation, by increasing cardiac vagal tone and baroreflex gain (Lehrer, 2013). In athletic settings, heart rate variability biofeedback has been reported to be effective in reducing anxiety, and perceived stress, improving concentration, improving fine and gross motor function, and athletic performance in different athletes such as professional dancers, basketball, golf players, and long-distance runners (Jimenez Morgan and Molina Mora, 2017; Pagaduan et al., 2020). Therefore, through biofeedback, athletes can learn to develop a deeper level of self-awareness and improve autonomic nervous system regulation, which in turn could facilitate the use of self-regulation strategies intended for improving health, well-being, and optimal performance.

PRE-CONGRESSES

FEPSAC

European Federation of Sport Psychology

Pre - Congress workshop and seminar (2 hours slot)
Topics: Any other topic

Co-production: What is it, why do it, and how might it be done?

Brett Smith
Durham University, United Kingdom

There is growing interest in co-production in sport and exercise psychology. This has arisen partly as a means to advance a participatory and cultural turn. Despite the interest in co-production, details on the co-production of research and how to take it forward are lacking. The objective of this workshop is to enhance knowledge of co-production and provide opportunities for how we might advance co-produced research in order to make a genuine difference with people in (in)active communities, sporting contexts, and different cultures. To meet this objective, we will first discuss what is meant by co-production. An original typology is offered to think about different ways co-production is defined and put to use. These are: Citizens' Contributions to Public Services; Integrated Knowledge Translation; and Equitable and Experientially-informed Research (Smith et al., in-press). The workshop will then attend to why sport and exercise psychologists might turn to co-producing research along with various challenges involved with doing it. We will also discuss practical options for how to co-produce research and various criteria for judging the quality of it. No knowledge of co-production is needed for the workshop. But a curious mind and an interest in wanting to make a difference beyond just publishing would be beneficial.

Reference

Smith, B., Williams, O., Bone, L., & the Moving Social Work Co-production Collective. (in-press). Co-producing research: A resource to guide co-production in the sport, exercise and health sciences. Qualitative Research in Sport, Exercise and Health.

Pre - Congress workshop and seminar (2 hours slot)
Topics: Best practice

Self-care as the bedrock of ethical and competent service delivery

Alessandro Quartiroli[1,2]
[1]UW - La Crosse, United States of America; [2]University of Portsmouth, United Kingdom

Scholars from psychology professions have identified self-care as the bedrock of ethical and competent service delivery (Barnett et al., 2007). Scholars have evidenced the importance of self-care for the promotion of personal and professional well-being (Dorociak et al., 2017) as well as for practitioners to provide ethical and effective service delivery, while striving to reach their fullest potential (Barnett et al., 2007; Norcross & VandenBos, 2018). Nevertheless, the value of self-care for sport psychology practitioners (SPPs) has only received limited scholarly attention (Quartiroli et al., 2019; 2021). SPPs around the world encounter various challenges and stressors working in applied practice and their own self-care may be vital to their work, helping to promote healthy functioning and enhance wellbeing. While, anecdotally, self-care has begun to receive some attention among SPPs and sport organizations, the journey towards self-care appears to be still unclear to trainees and young professionals (Martin et al., 2022) and to only be the results of situational experience for advanced practitioners (Quartiroli al., 2019). This workshop aims to contribute to the SPPs' individual journey toward an effective conceptualization, implementation, and commitment to self-care in their lives; integrating theoretical knowledge and applied experiences. SPPs will be exposed to the recent self-care scholarship and will be invited to engage in a series of individual and group reflective activities aimed to contribute to their individual journey toward self-care. Recommended to trainees and early career professionals, the workshop may be helpful to SPPs throughout the entire professional career span.

Pre - Congress workshop and seminar (2 hours slot)
Topics: Clinical issues in sport and physical activity

Mental Health and Performance: Considerations for Sport Psychology Practitioners

Nicole Terese Gabana[1], Kensa Gunter[2]
[1]University of Massachusetts, United States of America; [2]Private Practice, Atlanta, GA, United States of America

Mental health stigma tends to be exacerbated in athletic culture, where misinformed, stigmatizing messages about what it means to be "mentally tough" may leave athletes feeling hesitant or fearful of seeking mental health care when needed. In this workshop, presenters will review the scientific literature on mental health and performance, including topics of competency, education/training, cultural factors (individual/organisational), assessment, and treatment. Empirically supported approaches to enhance mental health literacy and improve help-seeking attitudes and behaviors in sport will be discussed. Presenters will facilitate discussion regarding attendees' experiences, best practices, and future needs. Attendees will leave with a better knowledge of the current science and practice of the integration of mental health and performance, as well as tangible approaches which can be incorporated into new or existing programming in sport contexts.

Pre - Congress workshop and seminar (2 hours slot)
Topics: Elite sports and expertise

Developing Resilience in Elite Sport: The Role of the Environment and Psychological Safety

Mustafa Sarkar
Nottingham Trent University, United Kingdom

Resilience and its development has arguably become one of the most talked about topics in elite sport over the last few years. Although practitioners have tended to focus on individuals' ability to withstand pressure, there is a growing recognition that more attention needs to be paid on creating environments that athletes can thrive in as both a person and a performer. Of fundamental importance to creating an environment that develops resilience is the provision of high challenge and high support (Sarkar, 2018). A crucial feature of this high challenge-high support (facilitative) environment is psychological safety. Psychological safety has been defined as a belief that a team is safe for interpersonal risk-taking (Edmondson, 1999). Although the concept of psychological safety has been studied extensively in business (Newman et al., 2017), it has only recently been investigated in a sporting context (Fransen et al., 2020) and there is limited information on applying this research in practice. Therefore, the learning objectives of this pre-congress workshop are threefold: to collectively discuss the role of a facilitative environment in developing resilience and what it might 'look like' in elite sport, to critically review the concept of psychological safety and, utilizing this knowledge, to subsequently work collaboratively with workshop attendees to generate some practical ideas for creating psychological safety in practice. The workshop will encompass a series of interactive activities, whereby small groups of attendees will discuss, contextualize, and offer feedback on the role of the environment and psychological safety in developing resilience in elite sport.

GIMME FIVE

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Gimme 5 Presentation
Topics: Coaching

The effects of attentional focus instructions on performance of a persistent form-based skill in gymnastics

Bianca Maria Gorgovan
Charles University, Prague, Czech Republic

The purpose of this study was to examine the effects of attentional focus instructions on motor performance of a persistent form-based element in children and adults. Participants (six children & six adults), who had previous experience in aerobic gymnastics were asked to perform an L-support task for a duration of 4 seconds in three attentional focus conditions: internal focus, external focus, and control. Two pieces of yellow tape (2×9 cm) were attached to the gymnasts' feet, on internal side of the navicular bones. As such, two pieces of red tape (2×9 cm) were wrapped around the distal phalanx of the big toes of the right and left foot. All participants performed four trials in the external focus (focus on keeping red tapes below yellow tapes), internal focus (focus on pointing your toes), and control (no instructions) conditions. The results showed that execution faults were smaller in an external focus compared to an internal focus and control conditions, regardless of participants' age group. However, no difference was found between an internal focus and control conditions. Additionally, adults had smaller execution faults than children. The findings of this study indicated that an external focus is more beneficial than an internal focus for enhancing motor performance of a persistent movement form-based element, in both children and adults.

Gimme 5 Presentation
Topics: Coaching

Achievement goal orientations, sport motivation and competitive performance in beach volleyball players

Michaela Sedláčková Knoblochová
Charles University, Prague, Czech Republic

Background: From the perspective of achievement goal orientation theory, athletes may evaluate their performance by comparing current achievements with previous achievements (task orientation) or with those of other athletes (ego orientation); these two orientations may affect their sport motivation and performance outcomes in different ways.

Objective: Based on a sample of competitive Czech beach volleyball players, this study aimed to assess the relationships among achievement goal orientations (task/ego), sport motivation (represented by intrinsic motivation, extrinsic regulation, and amotivation), and athletes' competitive performance.

Methods: A total of 128 beach volleyball players from the highest Czech national competition participated in the questionnaire survey. We used multiple linear regression models to assess the relationships among achievement goal orientations, different types of sports motivation, and athletes' performance in sports competition measured by their point averages at the end of the season.

Results: In regression models, we observed different effects of task and ego orientations on dependent variables, including intrinsic motivation, external regulation and athletes' competitive performance. Specifically, we found a highly significant effect of task orientation in the model of intrinsic motivation and a highly significant effect of ego orientation in the model of external regulation. Furthermore, we found a significant effect of ego orientation in the model of athletes' competitive performance.

Conclusions: Task orientation may affect intrinsic motivation through the satisfaction of the basic needs of autonomy, relatedness and competence. Ego orientation may support less self-determined motivation but may also represent an advantage in the highly competitive environment of elite sports.

Gimme 5 Presentation
Topics: Talent identification/ development

The Diverse Developmental Patterns of Dutch Senior Professional Football Players

Jan Verbeek[1], Ruud Den Hartigh[1], Steffie Van Der Steen[2], Nico Van Yperen[1]
[1]Department of Psychology, Faculty of Behavioural and Social Sciences, University of Groningen; [2]Department of Orthopedagogy & Clinical Educational Science, Faculty of Behavioural and Social Sciences, University of Groningen

Developmental trajectories of elite athletes are diverse and often non-linear, with career patterns showing multiple transitions across competitive levels and talent development programmes (Gulbin et al., 2010; Gullich et al., 2014). From a dynamic-interactionist perspective, interactions between personal and environmental factors explain the shape of development for individual athletes across time (Zibung & Conzelmann, 2013; Den Hartigh et al., 2018). As such, an important avenue is therefore to improve our understanding of the different shapes of talent development trajectories and their complex origins. In line with this avenue, this study aimed to assess the intra-individual variability in career patterns of Dutch professional football players.

We examined the career patterns of a cohort of players who played in the Dutch first and second division between 2010 and 2020. First, individual careers were constructed as a categorical time series consisting of developmental transitions across seasons (e.g., entry into a football academy, playing-up an age category). Second, we used measures of intraindividual variability (IIV) such as the dispersion of developmental transitions to summarise each individual time series (Koffer et al., 2018). Third, a cluster analysis was performed on these categorical IIV metrics to classify trajectories with similar shapes into meaningful groups.

Results show that the career pathways of Dutch senior elite football players are idiosyncratic and consist of variable developmental events over time. As such, these findings advocate for a more individualised approach to talent development in football, to support the individual needs of players at specific moments in time.

Gimme 5 Presentation
Topics: Physical activity

Blended care interventions to promote physical activity - A systematic review of randomized controlled trials

Vivien Hohberg[1], Reinhard Fuchs[2], Markus Gerber[1], David Künzler[2], Sarah Paganini[2], Oliver Faude[1]
[1]University of Basel, Switzerland; [2]University of Freiburg, Germany

Introduction: Current research results show the promising role of the blended care approach (therapeutic guidance with digital care) in clinical care (Erbe et al., 2017). This way of delivering health care could have the potential to effectively promote physical activity. But how are blended care interventions structured? On what basis are the blended care interventions designed? What are the effect of the interventions in increasing physical activity?

Methods: This systematic review is registered in PROSPERO (CRD42020188556). The search was conducted in MEDLINE, SportDiscus, PsycInfo, CINAHL, Web of Science, and Cochrane CENTRAL. The search term included “Physical Activity” AND (“eHealth” AND “face-to-face”) OR “blended intervention” AND “randomized controlled trial”.

Results: The combinations of therapist-guided interventions and digital interventions allowed the identification of specific subgroups, but they varied in length, intensity, and the combination of the components. The most used combination of the blended care interventions was the combination of one-on-one meetings via telephone and web-based interventions. Motivational models of behavior change were used most frequently as underlying theoretical foundations. Certain behavior change techniques were used consistently across the individual components, e.g. problem solving in the therapist-guided component and feedback on behavior in the digital component. Most blended care interventions showed a small effect compared with control groups.

Conclusion: In conclusion blended care interventions have potential to promote physical activity. The findings of this review not only provide conclusions for existing blended care interventions to promote physical activity, but can also offer guidance for the design of future blended care interventions.

Gimme 5 Presentation
Topics: Cognition

Reaching for the ceiling: Influence of cardiovascular fitness on working memory performance in young healthy adults

Vera Nina Looser, Sebastian Ludyga, Uwe Pühse, Markus Gerber
University of Basel, Switzerland

Aerobic exercise and cardiovascular fitness have been found to be beneficial to working memory, but evidence mainly stems from children, adolescents and older adults. As individuals generally reach peak memory performance in young adulthood, the lack of evidence in this age group may be due to the expectation of ceiling effects. The present study addresses this research gap by assessing the relation between cardiovascular fitness and working memory performance at increasing difficulty in young adults.

Effects of cardiovascular fitness on visual working memory performance were examined in a cross-sectional study in N = 50 (71% female) healthy adults aged 18 to 35 years (M = 24.1, SD = 3.8). To assess cardiovascular fitness, relative maximal oxygen consumption (VO2max) was estimated from the Åstrand submaximal bicycle ergometer test (Nordgren et al., 2014). Working memory performance was assessed at different set-sizes (3 and 6) using the modified Sternberg task (Ludyga et al., 2018). Mean reaction time and accuracy on both low and high memory load trials were extracted and put into relation with cardiovascular fitness using linear regression.

The results showed no significant relation between VO2max and working memory performance. In conclusion, young adulthood may be a period, during which changes in cardiovascular fitness do not translate into increased working memory performance.

Gimme 5 Presentation
Topics: Coaching

Does relatedness support buffer or exaggerate the detrimental effects of controlling coaching? The explanatory role of coping.

Elisa Lefever[1], Nele Flamant[1], Sofie Morbée[1], Bart Soenens[1], Maarten Vansteenkiste[1], Nikos Ntoumanis[2], Kimberley Bartholomew[3], Katrien De Cocker[1], Leen Haerens[1]

[1]University Gent, Belgium; [2]University of Southern Denmark, Denmark; [3]University of East Anglia, United Kingdom

Although the detrimental effects of a controlling coaching style have been widely examined, many coaches still rely on a strict and pressuring style, hereby hoping to push athletes towards exceptional performances. When interacting with coaches, many are indeed convinced that their controlling practices will not yield detrimental effects, especially if they simultaneously adopt a warm and relatedness-supportive approach. Relying on Self-Determination Theory and Skinners coping framework, this study examined whether these coaches' convictions hold truth. To do so, 203 volleyball players (67% female; age = 21.20 ± 4.67 years) filled out a set of validated questionnaires measuring perceived controlling and relatedness-supportive coaching styles, athletes' coping strategies, and their self-reported engagement, performance, competitive anxiety and burnout. Results of the moderated mediation models showed that athletes who perceived their coach as more controlling, reported more competitive anxiety, higher levels of burn-out, and reduced performance. These mechanisms were exaggerated when the coach was also perceived as highly relatedness-supportive. These findings show that the downsides of a controlling approach get exaggerated instead of diminished when combined with a high relatedness-supportive style. The reason for such an opposite effect is that athletes of a controlling-relatedness-supportive coach are more likely to feel internally conflicted by their coaches' contradicting behavior and thus use a more maladaptive coping strategy through compulsively complying with their coaches' requests. This relates to more competitive anxiety, higher levels of burn-out and poorer performances. These results are expected to have far-reaching implications for the professional development of sport coaches.

Gimme 5 Presentation
Topics: Any other topic

Navigating Athlete Mental Health within Elite Sport: Perspectives from Performance Directors and Senior Sport Psychologists

Erin Elizabeth Prior, Anthony Papathomas, Daniel Rhind
Loughborough University, United Kingdom

Performance Directors and Senior Sport Psychologists play an important role in establishing preventative efforts, organisational culture, and support strategies relating to athlete mental health within high-performance programmes. The demands of these roles are complex, with often challenging situations unfolding within high-pressure environments. This study aims to explore the experiences of these key stakeholders.

Semi-structured interviews were conducted with 23 participants, Performance Directors (n = 11, with a mean of 10 years' experience), and Senior Sport Psychologists (n = 12, with a mean of 14 years' experience). 37 hours of data were collected, with interviews lasting an average of 90 minutes. The data were analysed using reflexive thematic analysis.

3 themes emerged: mental health as athlete responsibility, challenges due to lack of disclosure, and applicability of recommendations within applied settings. Both practitioners and Performance Directors considered athlete reluctance to disclose impeded their capacity to support. When disclosures did occur, some Performance Directors emphasised athletes' personal responsibility to recover ahead of their own role, or that of the performance programme. Some also spoke of the importance of athletes engaging with support and recovery in ways suggested by the performance programme, which raised questions surrounding ownership of athlete mental illness recovery. Overarching these tensions, published mental health guidelines were seldom used.

In conclusion, this study highlights the complex challenges faced by Performance Directors and Senior Sport Psychologists in managing athlete mental health and suggests that current recommendations and guidelines may at times be insufficient in supporting the complexities of real-world practice.

Gimme 5 Presentation
Topics: Prevention and rehabilitation

Are Off-Field Activities a Risky Business for Hamstring Injuries in Dutch Male Amateur Soccer Players? An Explorative Analysis

Jur J. Brauers[1,2], Peter Alexander van de Hoef[2], Maarten van Smeden[3], Frank J.G. Backx[2], Michel S. Brink[1,2]

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Amateur soccer players generally deal with an occupation or study besides their soccer career. These off-field activities could play an important role in the development of hamstring injuries through higher stress levels and poor recovery (Brink et al., 2010; Kenttä & Hassmén, 1998). The purpose of this study was to explore the extent to which male amateur soccer players participate in off-field activities and whether the associated perceptions of stress and recovery of these activities are associated with the development of hamstring injuries. In total, 399 amateur soccer players from 32 first-class selection teams filled out a baseline screening questionnaire concerning off-field activities (i.e., work/study type and hours, traveling time, perceived sleep, perceived energy costs, and time spent on other activities) and their history of hamstring injury as a part of a cluster-randomized controlled trial. Throughout one season, the players reported hamstring injury occurrence weekly, which the medical/technical staff verified. Multivariable Firth corrected logistic regression models were used to explore associations between off-field activities and hamstring injuries. Sixty-five hamstring injuries were recorded. Previous injury was significantly associated with hamstring injuries (OR between 1.94 [95% CI 1.45–2.61] and 2.02 [95% CI 1.49–2.73]), but off-field activities were not. This means that, although amateur soccer players spent relatively large amounts of time on off-field activities, these activities do not appear to be associated with hamstring injuries in the competitive soccer season. Future studies should use continuous monitoring to determine if stress inflicted by off-field activities contributes to a higher injury risk.

Gimme 5 Presentation
Topics: Research methods (qualitative & quantitative)

The Ergodicity Problem in Sports: Group Results of Load and Recovery Are Not Applicable to Individual Athletes

Niklas D. Neumann[1], Nico W. Van Yperen[1], Jur J. Brauers[2], Wouter G.P. Frencken[2,3], Michel S. Brink[2], Koen A.M.P. Lemmink[2], Laurentius A. Meerhoff[1,4], Ruud J.R. Den Hartigh[1]

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The process of load and recovery is a key concept to optimize sports performance and well-being. To date, studies are typically conducted at the group level, which can pose limits on applying research findings to individual athletes (Davids et al., 2003; Glazier & Mehdizadeh, 2019; Hill et al., 2020). Indeed, group-level statistics in psychology are often not generalizable to processes at the individual level, which is called the “ergodicity problem” (Fisher et al., 2018; Molenaar & Campbell, 2009). The aim of the present research was to investigate this ergodicity problem in the study of load and recovery in football. We collected internal training load (RPE*training duration) and recovery (TQR) data on a daily basis across two seasons among 82 youth male players of a professional football club. Next, we calculated the univariate distributions and bivariate correlations on both the group and the individual level. Group- and individual-level analysis resulted in different statistical outcomes, particularly with regard to load. Standard deviations of individuals were up to 7.63 times larger than standard deviations of the group. In addition, at either level, we observed different correlations between the two variables. The results suggest that the process of load and recovery in athletes is nonergodic. Recommendations for training programs of individual athletes may be suboptimal, or even erroneous, when guided by group-level outcomes. Researchers should therefore consider shifting their focus to the analysis of processes on the individual level.

Gimme 5 Presentation
Topics: Cultural sport psychology

Stories of acceptance and resistance: Exploring the illness identity of athletes diagnosed with a personality disorder

Maria Luisa Pereira Vargas[1], Anthony Papathomas[1], Florence Kinnafick[1], Paul Rhodes[2]
[1]Loughborough University, United Kingdom; [2]The University of Sydney, Australia

Illness identity has been defined as the attitudes that a person has developed in relation to having a mental illness (Yanos et al., 2010). Mental illness identities are personally and socially constructed and impact psychological wellbeing (Thoits,2016). This study explored how athletes with borderline personality disorder construct their illness identity and the various ways this impacts the experience of living with mental illness. Guided by an interpretivist paradigm, the study employed a life history interviewing method. Samantha (25-year-old female powerlifter) and Alex (34-year-old non-binary powerlifter) each participated in several interviews whereby over 10 hours of data were collected. Analysis was conducted using dialogical narrative analysis. The diagnosis of BPD had a major influence on both athletes. Samantha accepted the BPD diagnosis —using it to construct an understanding of herself and rationalise her “abnormal” thoughts and actions. The acceptance of the BPD diagnosis was aided by her participation in powerlifting; she perceived mental illness was accepted within sport due to many athletes also having experience of it. In contrast, Alex’s narrative was characterised by activism and resistance of the diagnosis as they took active steps to remove it from their medical records and sought an alternate diagnosis. After spending years feeling invalidated by the mental health system which failed to acknowledge their neurodiversity, Alex perceived sport allowed them to feel accepted which enhanced their wellbeing and the development of an empowered identity. To conclude, this study offers insights into the power of diagnoses and how these impact athletes' illness identity construction.

Gimme 5 Presentation
Topics: Physical activity

An umbrella review on the association between physical activity, heart rate variability and major depressive disorders

Jan-Niklas Kreppke, Gavin Brupbacher, Kerstin Rupf, Robyn Cody, Markus Gerber, Oliver Faude
Department of Sports, Exercise and Health, University of Basel, Switzerland

Depression has wide-reaching consequences for health and can have negative impacts on autonomic function. Autonomic function, frequently assessed by means of heart rate variability, as well as symptoms of depression can be positively affected by physical activity (Sgoifo et al., 2015; Stubbs et al., 2016) which raises the question of how these three parameters interact. Therefore, this umbrella review examines the following three questions: How does physical activity affect depression symptoms in patients with major depressive disorders? Are there differences in heart rate variability between healthy people and people with major depression disorders? How does physical activity affect heart rate variability in healthy people?

This umbrella review is conducted according to the PRISMA-Guidelines and includes systematic reviews and meta-analyses. It has been registered a priori in PROSPERO (CRD42021278665). The search for eligible studies was realized in MEDLINE, EMBASE, PsycINFO, SportDiscus, PsycInfo and Epistemonikos until September 1, 2021. The search terms included a combination of the relevant terms “Physical Activity”, “Depression” and “Heart Rate Variability” and synonyms thereof. Included studies contain two out of three parameters to answer the three research questions individually.

After deduplication, 4815 articles remained for title/abstract screening. Currently 468 full-texts are being screened afterafter a final selection will be determined. Data regarding objectives, characteristics, outcomes, effect sizes and conclusions of the studies will be extracted

An analysis of the results to address all research questions is outstanding. Results will be available at the time of the congress and will highlight the relationship between the three above-mentioned parameters.

Gimme 5 Presentation
Topics: Personality

Appraising frustration: personality as a moderator between basic psychological needs and stress appraisals

Marianna Bottiglieri, Martin Roderick, Emily J. Oliver
Durham University, United Kingdom

Though the study of individual stress responses when performing has been addressed by multiple theories (e.g., Lazarus & Folkman, 1984, Jones et al., 2009), there is limited understanding of the interaction between contextual and individual factors. As such, we formulated a transtheoretical model integrating basic psychological needs theory (BPNT, Deci & Ryan, 2002) and the biopsychosocial model of challenge and threat (Blascovich, 2008). We hypothesized that in presence of autonomy, competence, and relatedness thwarting, personality exacerbates or attenuates sensitivity to stress, and subsequent formation of challenge and threat-based appraisals. To test the model, a sample of students (N=56) was recruited to deliver an academic presentation in a laboratory setting in a need-thwarting environment, elicited via experimenter behaviour (e.g., personal detachment, negative feedback). Cardiovascular reactivity was measured at baseline and during the task, alongside standard measures of perceived needs thwarting and personality. Results demonstrated that only extraversion significantly moderated the stress reaction. Specifically, competence ($t(55)=2.80$, $p<.01$) and relatedness thwarting ($t(55)= 2.20$, $p< .05$) were related to challenging appraisals when extraversion was high, but not when extraversion was low. In conclusion, the validity of this model was supported only for extraversion, suggesting that other personality factors may have a greater influence on other stages of the appraisal process (e.g., environmental perception, Thomas et al.,2020). Findings reinforce the importance of developing understanding of individualised stress responses if we are to appropriately support athletes in performance contexts.

Gimme 5 Presentation
Topics: Decision making and judgement

The Effect of Psychological Momentum on Affordances in Tennis

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While performing, athletes need to perceive and act upon affordances (i.e., possibilities for action in the environment, Fajen et al., 2008). Recent research has shown that psychological momentum (PM) affects how athletes judge their affordances (Den Hartigh et al., 2018). In a golf putting experiment, participants judged their maximum 'puttable distance' further from the hole in a positive PM and closer in a negative PM. The aim of the current study is to replicate this finding for judged affordances in another sports context, and to further investigate whether PM also impacts actualized affordances. In a baseline session, 36 Dutch regionally competing tennis players (Mage = 26.42, 19 females) were asked to either judge the returnability of tennis balls that were sharply placed in the corners by a ball machine (judged affordances), or to actually return them (actualized affordances). Next, participants played a match in which they had to return balls from the ball machine crosscourt, as accurately as possible. Here, feedback on their performance was manipulated to induce a positive or negative PM experience. Finally, (judged) returnability was measured again by launching the same balls as in their baseline measure. Our results showed an interaction effect of PM (Positive PM versus negative PM) and Time (before versus after the PM manipulation). Specifically, more balls were (judged as) returnable after the positive PM manipulation, whereas less balls were (judged as) returnable after the negative PM manipulation. These results invite to further investigate the link between PM and affordances in different sports.

Gimme 5 Presentation
Topics: Well-being and quality of life

Concept analysis of well-being in elite youth academy football players

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The consensus statement on improving the mental health of high-performance athletes (Henriksen et al., 2019) asserts that mental health in sport should be defined more clearly. Informed by the notion of contextual well-being (Alexandrova, 2017) and the multi-process theory of concepts (Machery, 2009), the present study aims to clarify the concept of well-being in elite youth academy football players, a population that endures lengthy, demanding, and uncertain development pathways with several problematic transitions. An electronic database search of empirical studies published between 1997 and 2021 was conducted. Eleven studies met the inclusion criteria (8 quantitative, 2 qualitative and 1 mixed methods). Data extracted from the studies were synthesized using a method of concept analysis based on the approach developed by Wilson (1963). The defining attributes of well-being in elite youth academy football players are satisfaction with life as an academy footballer, quality of emotional experiences, successful coping, awareness of strengths and acceptance of weaknesses, meaning and purpose in academy football, and subjective vitality. The antecedents of well-being in academy players are mastery approach goals, challenge appraisals, harmonious passion, coach autonomy support, peer motivational climate, and parental motivational climate. Insufficient empirical data exist to be clear about the consequences of well-being in academy players. It is speculated that, although well-being may not be required for performance, it helps to initiate, sustain, and improve it. Further work is required to ascertain the full meaning of well-being for elite youth academy football players and clarify its relationship to current and future performance.

Gimme 5 Presentation
Topics: Cultural sport psychology

Exploring Self-Determination Theory related to Physical Education lessons and social skills among high school students in China.

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Following the Self-Determination theory (Ryan & Deci, 2017) students' Physical Education (PE) motivation could be associated with perceived support (PS; parents, teachers, and peers) and with basic needs satisfaction (BNS). In addition, PE lessons could be a great opportunity to develop not only physiologically, but also psychosocially (Mischenko et al., 2020).

The aim of this study was to examine how are the relationships between students' social skills and i) PS, ii) BNS, and iii) PE motivation, within a sample of underprivileged students from high schools in China.

Ninety-one students (16.3±1.7 age; 23.1% male and 76.9% female) enrolled in a summer camp organized by an NGO in Chengdu Province, completed the Chinese versions of the LCQ, AFS, PLOC and MESSY scales (Chou, 1996; Yang et al., 2019; Zhou et al., 2017; Zhou et al., 2019).

We found a significant direct correlation between all variables studied ($p<.01$). The overall regression model for predicting social skills based on PS, BNS, and PE motivation, was significant ($F(3,91)=17.2$; $p<.001$; $R2=.36$; Cohen's $f2=0.57$). PS and PE motivation were positively associated with social skills. Further analyzes that included sociodemographic variables indicated that sex, city size, educational level of parents, academic expectations, and the amount of PE per week were significantly related to positive social skills. In order to promote positive social skills, PE should be considered an important subject in the high school curriculum.

Funding

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Gimme 5 Presentation
Topics: Motor control and learning

Effect of Attentional Focus on Soccer Kicking Accuracy: A Meta-Analysis

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Background: Performers' focus of attention, designed to promote either an external or internal focus, has a clear influence on motor performance (for a review, see Wulf, 2013). The benefit of an external focus (EF; concentrating on the intended movement effect) relative to an internal focus (IF; concentrating on the body movement) to soccer kicking performance has been previously identified in the available research (e.g., Abdollahipour et al., 2020; Makaruk et al., 2019). However, the overall effectiveness of an EF in kicking accuracy is still unknown. Objective: The meta-analysis aimed to systematically evaluate the efficacy of attentional focus in soccer kicking accuracy. Method: APA PsycINFO, PubMed, SPORTDiscus, and Web of Science were searched for relevant literature. Included peer-reviewed research was required to evaluate the effect of an EF on soccer kicking accuracy compared to an IF. A random-effects model was used to calculate Hedge's g with 95% confidence intervals. Results: Five studies yielding 6 effect sizes with 138 participants were finally included in the meta-analysis, which showed that EF had a small-sized positive effect on soccer kicking accuracy ($g = 0.470$, 95% CI [0.186, 0.755], $p = 0.001$) in contrast to the IF. Conclusions: The meta-analysis provides support for the constrained action hypothesis (Wulf et al., 2001), suggesting that soccer kick performance is more accurate when employing an EF rather than an IF. Coaches and athletes should be aware of the utility and advantage of EF in kicking performance, which plays a key role in the final outcome of soccer matches.

Gimme 5 Presentation
Topics: Perception & attention

Using the Ebbinghaus illusion to investigate visual size perception in concussion.

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Introduction: Contextual processing is known to be impaired following a concussion. However, it is unclear whether visual size perception, a modality that depends heavily on low-level contextual processing, is affected. To address this question, we administered a task based on the Ebbinghaus illusion to assess the effect of surrounding context on visual size perception in concussed individuals and healthy controls.

Method: Fifty-two university students with a history of concussion(s) and sixty-one healthy controls completed a computerized task that required them to compare the size of two target circles that were either the same size or different sizes. Target circles appeared by themselves (no-context condition), or were surrounded by smaller or larger circles (context condition).

Results: Both groups of participants exhibited similar levels of accuracy in the no-context condition. However, concussed participants exhibited significantly more accurate size judgments in the context condition, suggesting that they were less susceptible to the Ebbinghaus illusion.

Discussion: Concussed individuals are less influenced by context during visual size perception tasks, which allows them to perceive absolute characteristics of individual features (e.g., size) more accurately.

Gimme 5 Presentation
Topics: Motor control and learning

Effect of Attentional Focus on Sprint Performance: A Meta-Analysis

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Sprinting is one of the most crucial motor skills in sports. Focusing one's attention externally rather than internally before sprinting has been demonstrated to boost sprint performance (e.g., Ille et al., 2013; Porter et al., 2015). The present study aimed to systematically review previous findings on the impact of external focus (EF) versus internal focus (IF) on sprint performance. Following a search through four electronic databases, eight studies with 15 effect sizes and 208 participants were found to meet the inclusion criteria. A random-effects model was performed to pool Hedge's g with 95% confidence intervals. Subgroup analysis was performed to compare the attentional focus effect between low- and high-skilled sprinters. Results showed an EF condition outperformed an IF condition in sprint performance ($g = 0.397$, 95% CI [0.201, 0.593], $p < .001$); the separate meta-analyses showed that an EF had a moderate effect on start reaction time ($g = 0.640$, 95% CI [0.315, 0.965], $p < .001$) and a small effect on total sprint time ($g = 0.261$, 95% CI [0.047, 0.475], $p = .017$). The subgroup analysis suggested the benefits of EF might be slightly weaker in high-skilled sprinters ($g = 0.262$, 95%CI [-0.016, 0.540], $p = .065$) than that in low-skilled sprinters ($g = 0.580$, 95%CI [0.274, 0.886], $p < .001$). The reported gain in sprint performance due to attentional focus has practical implications for coaches and athletes as a simple adjustment in verbal instructions can lead to a significant behavioral effect, which matters a lot in competitive sports.

Gimme 5 Presentation
Topics: Talent identification/ development

"Not Getting Too High, Not Getting Too Low": Exploring Mental Toughness Development in International Youth Football

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Mental toughness (MT) is defined as a personal capacity to produce consistently high performance levels despite the experience of everyday stressors and significant adversities (see Gucciardi et al., 2015). To understand how being mentally tough is manifested and how it links to consistent performance under pressure, researchers have advocated the need to identify context-specific mentally tough behaviours (MTbs; Anthony et al., 2020). The current study sought to identify key MTbs within the context of a UEFA associated international football organisation. Specifically, international coaches (n = 6), players (n = 7), support staff (n = 7), and parents (n = 6) were interviewed to establish the key MTbs required in different situations in international youth football for player progression and performance, and understand how stakeholders help develop players' MTbs.

Using thematic analysis, a range of MTbs were identified relating to players' abilities to perform consistently under pressure during competition (e.g., staying composed) and in training (e.g., asking questions). A range of MTbs were also identified relating to players' abilities to continually learn (e.g., post-match reflection) to maximise their chances of consistent competitive performance. Further, while MT is defined as a personal capacity, its development was suggested to be contingent on key relationships (e.g., coach-athlete) and MT development strategies (e.g., challenge-support environments). These findings are being used to make a significant contribution to the football organisation's approach to elite player development by creating a MTb framework designed to adapt the behaviours of international coaches to better facilitate the development of players' MTbs.

Gimme 5 Presentation
Topics: Consulting/ counseling

Integrating Existential and Mindfulness Approaches for Sport Psychology Practice: Preliminary Thoughts on Conceptual Overlaps

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Within sport psychology, existential psychology and Acceptance and Commitment Therapy (ACT) have recently gained momentum (Henriksen et al., 2020; Nesti & Ronkainen, 2020). These approaches provide an alternative to the mainstream perspectives in sport psychology curricula in Western contexts by not following a control agenda aimed at the regulation of thoughts, emotions, and physiological states. Conversely, existential psychology and ACT intend to promote athletes' awareness and acceptance that unpleasant experiences are inevitably part of life. These approaches might therefore be interesting to practitioners seeking to engage athletes in deeper conversations about their involvement in sport and life in general. The presentation aims to identify potential for the theoretical integration of these two approaches in sport psychology. Interestingly, central existential assumptions, including the recognition that anxiety is a normal response to engaging in challenging situations such as competitions, where an athlete's identity and personal values are threatened by uncertain outcomes, are shared by ACT. Existential notions of authenticity, meaning, choice, and boundary situations have demonstrated to be helpful in raising athletes' self-awareness and self-understanding (Nesti & Littlewood, 2011). However, these themes can be challenging to address for practitioners working in the performance-oriented culture of elite sport. Among applied sport psychology practitioners, ACT is popular for its wealth of experiential tools, which assist athletes to live a more meaningful life aligned with personal values. The presentation will demonstrate how these tools can help athletes when facing existential questions relating to their authentic self and personal meaning by clarifying their values.

Gimme 5 Presentation
Topics: Best practice

Playing the Long Game: Reflections on a Five-year Rebranding Process of the Swedish Sport Psychology Association

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Sport psychology associations play central roles in bridging the gaps between research, applied work, and education. This presentation is the story of how the Swedish Sport Psychology Association (SIPF) reinvented itself in the face of bankruptcy. The process of creating a new brand platform and visual identity started with a distribution of an online survey that was completed by 64 individuals who either were, had been, or potentially could be members of SIPF. The responders identified themselves as working in a wide range of roles such as: sport psychology practitioners, researchers, and students. Furthermore, qualitative interviews were conducted with participants identified as being representatives from the association's key target groups. Questions in the survey and the interviews were centered around what the organization was doing well and not so well. The data collected were used to develop and model a new brand platform. Several iterations of the brand model resulted through further feedback from important figures in the Swedish sport psychology field. Research suggests that organizations that do not continually invest in development and growth seem to deteriorate. Looking at SIPF's current membership numbers and financial viability, the self-rebranding process seems to have contributed to placing the SIPF organization in a better position today. Keeping a positive developmental process going in an organization where board members are constantly changing can be challenging. Also, it is important for sport psychology association stakeholders, going through major change processes, to consider how to deal with conflicts that can arise when traditions meet innovation.

Gimme 5 Presentation
Topics: Well-being and quality of life

Meaning in Life among Rhythmic Gymnasts

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A life that is coherent, significant, connected, and focused in a certain direction is considered meaningful (Schnell, 2010). This is usually the case in the professional careers of elite athletes. Physical activity not only benefits mental health (Lubans et al., 2016) but also contributes to the fulfillment of meaning in life (Steger, 2015). Still, according to current research, elite athletes show an increased prevalence of mental disorders compared to the general population (Rice et. al., 2016). Negative influences projected into personal life may include poor preparation for future careers, burnout syndrome, self-concept disturbances (Safar, 2007), or development of depression (Nixdorf, Frank, & Beckmann, 2016). It can be assumed that the reduced quality of life may also be related to the emergence of an existential crisis. The International Olympic Committee has encouraged further research in this area. Therefore, the present study is aimed to describe the sources of meaning and meaning in life among professional athletes. ´SoMe´ questionnaire was used. A total of 73 Czech rhythmic gymnasts, took part in the cross-sectional study. The main findings are that 82% of gymnasts experienced a meaningful life. A crisis of meaning was identified in 11% of them and existential indifference was found in 6%. Based on the linear regression, the meaningfulness was most saturated with development (.597**), generativity (546**), harmony (477**), health (.391**), self-knowledge (.368**) (Janeckova, 2018). Our results provide more understanding of the sources of meaning of the athletes that can be implemented into the development of prevention programs and Dual Careers.

Gimme 5 Presentation
Topics: Research methods (qualitative & quantitative)

Co-production of semi-professional athletes' life histories: The transition to labour market after retirement

José Tomás Mejías[1,2], Juan Muñoz[2,3], Susana Pallarés[2,3], Miquel Torregrossa[1,2], Yago Ramis[1,2]
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One of the most studied transitions in sport psychology is athletic retirement (Stambulova et al., 2021). When not addressed properly, this transition can imply dramatic social and psychological changes, with potential complications such as abuse of substances or mental health problems (Cavallerio et al., 2017; Torregrossa et al., 2015). From this standpoint, the Healthy Dual Careers project has decided to delve into the employability competencies that semi-professional athletes develop during their athletic careers. These competencies can be protective resources for a successful post-sport career employment and adaptation to life after sport (B-WISER, 2018). To that end, we have created a co-production group, where academics work together with non-academic individuals to produce research and outcomes not possible in isolation (Liddiard et al., 2019). Two senior researchers, two junior researchers, two active semi-professional athletes, a sporting director, and an expert in athletic employability policies from the Sports Council of Spain form this group. The co-production group selected eight profiles of active and former athletes who participated in three semi-structured interviews to dig deeper into their life history and the competences they have developed during their athletic careers. The main benefits of co-production have been; having access to athlete profiles that enrich the investigation with their different trajectories and experiences; being able to utilise with the perspective of different agents involved in the employability process of athletes when interpreting and analysing the interviews; and discussing key theoretical concepts and themes of the study before raising them in the interviews.

Gimme 5 Presentation
Topics: Psycho-physiology

Investigating the effects of slow-paced breathing on heartbeat-evoked potential and its relationship with heart rate variability

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A variety of research has demonstrated the positive effects of slow-paced breathing (SPB) on health and self-regulation processes, from physiological processes to cognition and emotional regulation (Gerritsen & Band, 2018; Laborde et al. 2017; Laborde et al. 2019). This makes SPB a feasible and very useful technique in sport psychology, helping athletes to efficiently manage stress and arousal levels to perform better. The effects of SPB on self-regulation are hypothesized to be mediated via the vagus nerve, the main nerve of the parasympathetic nervous system (Gerritsen & Band, 2018; Thayer et al. 2009). Although SPB has been already shown to influence heart activity via the efferent fibers of the vagus nerve by means of increased vagally-mediated heart rate variability (vmHRV) (Gerritsen & Band, 2018; Laborde et al. 2019), SPB effects on the brain via vagal afferents are yet to clarify. We aim to address this research gap, by investigating the effects of SPB on the heartbeat-evoked potential (HEP) signal (Coll et al. 2021; Park & Blanke 2019), clarifying HEP role as a potential non-invasive marker of afferent vagal activity (Huang et al. 2018; Park & Blanke 2019) and also investigating SPB effects on vagal afferents. Given the relevance of SPB in sport psychology, clarifying further SPB effects and mechanisms would be of great importance. To achieve this goal, we will analyze HEP signal during SPB and immediately after having performed an SPB task (Experiment 1). This will also allow us to investigate the relationship between vmHRV and HEP, considering all vmHRV variables.

Gimme 5 Presentation
Topics: Motor control and learning

Effects of Clicker-Training on Dart-Throwing Performance: A Pilot Study

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The main objective of this study was to investigate the effects of clicker training on reinforcement of dart-throwing performance after a teaching intervention. Performance and kinematic measurements were taken for three participants in either control (CO), teaching (TE), or teaching+clicker-training (TE+CT) condition. Each participant had no prior training in dart throwing. Participants were asked to throw 15 magnetic darts at a magnetized board. Participants were then randomly assigned into one of three groups: 1) enter a 10-minute rest period (CO), 2) receive a short training video on dart mechanics (TE), or 3) receive a short training video on dart mechanics, as well as receive audible reinforcement via a clicker for correctly performing the learned steps (TE+CT). Participants were asked to throw 15 darts immediately after their intervention conditions. Lastly, participants were asked to throw 15 darts one last time after a 10-minute hiatus without intervention. A positive correlation of more precise kinematic measurements (dart being released at ~90°) and higher performance (hitting closer to bullseye) was observed in conditions TE and TE+CT, as well as a positive curve observed across all 3 dart-throwing bouts in attempts of all 3 participants. The participant assigned to TE+CT scored highest during the intervention phase when compared to the intervention phase of participants assigned to CO and TE, suggesting that a combination of teaching+dart-throwing produced the highest efficacy on dart performance. The full study will include 24 participants, and the researchers will also collect demographic info and survey data and assess heart rate variability.

Gimme 5 Presentation
Topics: Elite sports and expertise

Mental health in a result oriented context

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Elite sport is demanding. In order to be able to compete at the highest international level, athletes must push themselves physically and psychologically. Mental health is critical for the long-term sporting development of talents and elite athletes (Henriksen et al, 2019). In light of this, it is concerning that recent studies have demonstrated that competitive pressure and increasingly high training loads in international sport pose a significant threat to athletes' mental health (Fletcher & Hanton, 2013; Gorczynski et al, 2017; Rice et al, 2016). This project is based on the assumption that organization and environments (i.e. structure and agents) can nourish or malnourish athletes' mental health (Henriksen et al, 2019). In recent years a number of successful sport organizations have publicly acknowledged their responsibility in allowing cultures to arise that have compromised athletes' mental health (e.g. Danish swimming, British cycling and USA Gymnastics). These examples bear witness to the fact that the uncompromising elite sport culture that emphasize winning "medals at all cost" involves a potential threat the athletes' mental health. The purpose of this project is to discuss the nature of elite sport and its impact on athletes' mental wellbeing with the ultimate aim to help elite sports environments to prevent and reduce athletes' failure to thrive.

Gimme 5 Presentation
Topics: Well-being and quality of life

An Examination of Team Gratitude Journal in Endurance Athletes

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This study aims to examine the effects of daily team gratitude journaling on individual athletes and their respective teams. Research supports the positive influence gratitude has on subjective well-being, positive emotions, and life satisfaction (Jans-Beken et al., 2020). Research on gratitude interventions in sport have exclusively assessed intrapersonal benefits and found that gratitude journaling increased gratitude, sport satisfaction, and perceived available support (Gabana et al., 2019). The current study integrates interpersonal gratitude by administering a gratitude intervention at the team level. The present study uses a randomized experimental design with two conditions, an intervention condition, and a waitlist condition. All participants completed an online demographic questionnaire, Perceived Available Support in Sport Questionnaire, Gratitude Questionnaire, Coping Self-Efficacy Scale, and Psychological Well Being Scale for all dependent variables as a pretest. Teams were then randomly assigned to one of the two conditions. The gratitude intervention for this study included a virtual Gratitude Workshop to provide information on gratitude, gratitude journaling, and directions for the electronic gratitude journal. Researchers instructed participants to practice gratitude by journaling three electronic entries per day, one public and two private, for two weeks. It was hypothesized that social support, coping self-efficacy, psychological well-being, and life satisfaction would improve after participating in the team gratitude intervention. Preliminary data on eight participants showed a significant improvement in participants' coping self-efficacy, perceived emotional support, perceived esteem support, autonomy, environmental mastery, purpose in life and self-acceptance, $p<.05$.

Gimme 5 Presentation
Topics: Research methods (qualitative & quantitative)

Investigating the global picture of athletes' recovery behaviours and attitudes

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To optimise performance, athletes often engage in strategies to accelerate recovery and overcome physical deficits acquired after training and competition (Peake, 2019). While recovery interventions have often been examined from a physical perspective (i.e., intervention efficacy), little research has examined psychological factors which influence recovery behaviours in athletes. Existing literature suggests that a lack of awareness of the value of recovery, and low levels of motivation to engage with recovery, could lead to dysfunctional outcomes such as under-recovery, overtraining syndrome, and burnout (Pelka & Kellmann, 2017). This study aimed to examine the coach and athlete perceptions of recovery importance, their motivation and engagement to complete recovery interventions, and their understanding of best ways to overcome psychophysiological fatigue. A purposive sampling of athletes (n = 6) and coaches (n = 5) from individual sports participated in semi-structured interviews. All participants either coach or compete at an elite level (national/international). Thematic analysis identified three themes, namely, maximising performance, recovery prioritization, and recovery barriers. Athletes and coaches highlighted various physiological recovery strategies used, however, although the importance of psychological recovery was equally recognised, limited psychological recovery strategies were described. Furthermore, results demonstrated that various sports had limited education when it came to recovery and further guidance would provide a valuable resource for both athletes and coaches. From a practical perspective, our results suggest high-performance athletes and coaches need support from relevant sport science practitioners to educate, implement and support suitable recovery strategies to ensure consistent engagement and benefits.

SCIENCE SLAM

FEPSAC

European Federation of Sport Psychology

Science Slam
Topics: Performance enhancement (doping, neuro-enhancement etc.)

The role of sport supplement beliefs in the relationship between sport supplement use and doping likelihood

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To help international and national organisation develop effective anti-doping prevention programmes, researchers have examined what may increase the likelihood of an athlete doping. The use of sport supplements (e.g., caffeine, creatine, nitrate) has consistently been reported to increase the likelihood of doping (i.e., the use of prohibited performance enhancing substances). However, a paucity of research has examined the mechanisms underpinning this relationship. One mechanism that could be pertinent is an athlete's belief that sport supplements are effective for improving performance. That is, sport supplement use may lead athletes to develop beliefs about their effectiveness, which in turn, may lead to the development of beliefs about doping. The aim of this study is to examine whether beliefs about sport supplements mediate the relationship between sport supplement use and doping. Six datasets were compiled that included self-report measures from competitive athletes about their use and beliefs about sport supplements, and their likelihood to dope (N = 2,375, 33% female, age = 22.3 ± 8.1 years). Mediation analysis revealed that sport supplement use had no direct effect on doping likelihood (b = 0.11, 95% CI = 0.-0.2 to 0.23). Instead, sport supplement beliefs mediated the relationship between sport supplement use and doping likelihood (b = 0.42, 95% CI = 0.35 to 0.51). Results suggests that users of sport supplements, who strongly believe that they are effective, may be more likely to dope. Anti-doping organisations should target athletes' beliefs about sport supplements to reduce the likelihood of an athlete doping.

Science Slam
Topics: Group dynamics

Harnessing the Power of 'Us': Two experiments Testing the Effectiveness of the 5R Shared Leadership Program in Basketball Teams

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Leadership has been identified as a key factor for sport teams to gain competitive advantage. Besides the role of the coach, recent research has emphasized the importance of leadership provided by athletes within a team (i.e., athlete leaders). Yet to unlock the benefits of shared leadership, it is essential to increase the quality of those athlete leaders. The 5R Shared Leadership Program (5RS) was designed to identify and appoint the best athlete leaders in different athlete leadership roles and then further develop their identity leadership skills. To test the effectiveness of 5RS, we conducted two experimental field studies. Study 1 recruited eight national-level Belgian male basketball teams (N = 96), of which four teams received 5RS and four teams served as a control group. Study 2 used an improved methodological design that recruited 16 basketball teams (N = 170), of which eight teams (four male and four female teams) participated in the experimental condition (i.e., received 5RS in the first half of the season) and the other eight teams participated in a wait-list control group (i.e., received 5RS in the second half of the season). Noteworthy is that Study 2 provided 5RS using a train-the-trainer approach, whereas in Study 1 an expert delivered the program. Our findings highlight the capacity of 5RS to improve athlete leaders' ability to create a shared sense of 'us'. In turn, this strengthened their teammates' sense of 'us', as well as their team identification, perceived social support, motivation, confidence in their team's abilities, and well-being.

Science Slam
Topics: Psycho-physiology

Enhancing cardiac vagal activity in sport psychology: theoretical rationale and guidelines for implementation in applied settings

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Cardiac vagal activity (CVA) represents the activity of the vagus nerve regulating cardiac functioning (Berntson et al., 1997). Its interest within the field of sport psychology has recently grown, given its accessibility. Indeed, cardiac vagal activity can be indexed non-invasively and in a cost-effective way via heart rate variability measurement. According to the neurovisceral integration model (Thayer, Hansen, Saus-Rose, & Johnsen, 2009), cardiac vagal activity reflects a range of processes relevant to sport psychology related to self-regulation, such as executive functioning and emotion regulation. Specifically, a higher resting CVA, and a more functional CVA reactivity have been shown to be related to better outcomes related to sport performance, such as decision making (e.g., Laborde, Raab, & Kinrade, 2014), coping processes (e.g., Laborde, Lautenbach, & Allen, 2015; Mosley, Laborde, & Kavanagh, 2018b), and in some circumstances to sport performance itself, like with prone rifle shooting performance (Mosley, Laborde, & Kavanagh, 2018a). The aim of this presentation is to provide an overview of the techniques available to athletes to enhance their cardiac vagal activity (Laborde, Mosley, & Ueberholz, 2018), implementing the 3Rs framework introduced by the vagal tank theory: resting, reactivity, and recovery (Laborde, Mosley, & Mertgen, 2018; Laborde, Mosley, & Thayer, 2017). Techniques encompass for example slow-paced breathing (Laborde et al., 2021) and the diving reflex (Choate, Denton, Evans, & Hodgson, 2014), which have been shown to trigger robust increases in CVA. Finally, guidelines for their use in applied settings are proposed.

Science Slam
Topics: Motor control and learning

Motor Learning and Memory – Perspectives for Mental Training and New Technologies

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Mental representation and memory structures play a central role in the control and organization of motor learning and perception in sport. For improving performance in practice it was our interest to measure such structures in memory and use the results for developing new tools in mental training and technology. For evaluating memory representations in long term memory we developed experimental methods (Schack, 2012). By using expert-beginner paradigm, differences in the mental representation structure in various kinds of sport, like soccer, volleyball, tennis, climbing were evaluated. Furthermore to understand the relationship between memory and motor learning we designed different learning and mental training studies in golf. Gaze behavior was measured using a mobile eye-tracking system. Results show functional changes in the experimental group's gaze behavior and in mental representation of the putt. Based on such results we developed new tools in mental training (Schack & Frank, 2020). Research results on motor memory cannot only help to understand the cognitive background of motor learning, they also provide a basis for building new technologies in sport. Hence we developed a mobile adaptive assistance system in the form of intelligent glasses and a virtual sport coaching device that provide unobtrusive, anticipative and intuitive support in sport. Knowledge about memory and motor learning enables a coach or a technical system (intelligent glasses) to address athletes concerning their current level of learning, and to shape instructions to optimize learning processes and maximize performance.

Science Slam
Topics: Group dynamics

"Thinking as a Team": Development and Initial Validation of the Team Mental Models Instrument (TMMI)

Edson Filho
Boston University, United States of America

Extant previous research supports the notion that team mental models is paramount to team performance across domains (Filho & Tenenbaum, 2020; Mohammed et al., 2010). However, most team cognition measures are not designed for sport settings (McNeese et al., 2017; Raue et al., 2021). Accordingly, we aimed to develop and validate a new psychometric tool to measure Shared Mental Models (SMM) and Complementary Mental Models (CMM) in sport settings, namely the Team Mental Models Instrument (TMMI). Six-hundred and twenty-seven college athletes competing in the 2018 European Universities Games participated in the study. Data from 320 athletes was used to conduct a hierarchical confirmatory factor analysis (H-CFA) to examine the construct validity of the TMMI. Data from 307 athletes was used to examine the discriminant, convergent, and nomological validity of the TMMI through structural equation modelling (SEM), with respect to social and task cohesion and team performance. Findings from the H-CFA confirmed the construct validity of an 11-item instrument, i.e., 4 items for the SMM dimension and 7 items for the CMM dimension. Findings from the SEM analysis confirmed the discriminant, convergent, and nomological validity of the TMMI. Collectively, these findings support the theorization that the concept of team mental models is represented by two dimensions, namely SMM and CMM. Noteworthy, the TMMI can be used as an applied tool to inform interventions aimed at developing team cognition in particular and team dynamics at large.

Science Slam
Topics: Health

What does your sport mean to you? The effects of an online intervention on athletes experiencing burnout.

Matteo Luzzeri
Florida State University, Italy

Collegiate athletes face requirements and obligations that can have a toll on their athletic and academic experience. Burnout is among the adverse consequences that these demands can cause, potentially leading to decreases in performance, motivation, and even dropout (Eklund & DeFreese, 2015; Gustafsson et al., 2011). Although research efforts on athlete burnout have been prolific, there is a dearth of studies on potential interventions to prevent or treat this syndrome. The aim of this study was to evaluate the efficacy of an online writing intervention in treating burnout in collegiate athletes through a randomized control trial. Specifically, it was hypothesized that increases in presence of meaning in sport through writing would lead to decreases in burnout symptoms. Screening involved 425 NCAA collegiate athletes from a variety of sports, with 157 qualified participants, 86 agreeing to participate, for a total of 65 participants completing the intervention. Results from a series of repeated-measure ANCOVAs showed marginal improvements in constrained commitment and presence of meaning in sport for the intervention group, with no other changes in burnout or related constructs. Manipulation check results using the LIWC software suggest the writing intervention elicited the content they were they were designed for. Findings are discussed in light of new research on meaning in sport, theoretical approaches of athlete burnout, and future research directions in both domains.

ROUNDTABLES

FEPSAC

European Federation of Sport Psychology

Special Sessions - Roundtable

Intervision Sessions: A European initiative reflecting international voices

Emmanouil Georgiadis[1], Cristiana Conti[2], Sara Biondi[3], Berit Kauffeldt[4], Maurizio Bertollo[5], Efrosyni Mitsiou[6], Helen Davis[7], Quentin Rouault[8], Evie Serventi[9]

[1]University of Suffolk, United Kingdom; [2]Sport Psychologist and Psychotherapist, Private Practice, Italy; [3]Sport Psychologist and Psychotherapist, Private Practice, Italy; [4]Sport Psychologist, Germany; [5]Università degli Studi "G. d'Annunzio" Chieti - Pescara, Italy; [6]Psychologist and Mental Trainer, frosomitsiou.gr, Greece; [7]Sport Psychologist, think.believe.perform, United Kingdom; [8]Sport Psychologist, France; [9]Sport and Exercise Psychologist, Australia

Effective practice in sport and exercise psychology entails personal philosophies, evaluating personal needs, appreciating system influences, and other factors contributing to performance improvements and resilience to contextual adversities (Anderson, Knowles, & Gilbourne, 2004).

Adding to all those, several authors have argued about the need of the sport and performance psychology practitioners to reflect and realise own standpoints, appreciating unique demands of individuals and avoiding techniques and theories of practice which are irrelevant to the wider context, and the unique set of experiences challenging the individual in need (Chandler, Eubank, Nesti, et al., 2016; Sly, Mellalieu, & Wagstaff, 2020).

Reflective supervision sessions that support learning processes on effective ways to approach individuals in need, have been proposed as one of the best professional practices for Sport and Performance Psychologist and Counsellors (Anderson et al., 2004). European and International accreditation procedures rely on a variety of intervision requirements creating a diverse depiction of professional skills. With accreditation procedures being very distinct, some European Countries still lacking concrete supervision procedures. Such observation has led scholars to argue about the need for continuous development even after accreditation has been ratified (Andersen, 2004; Wylleman, Harwood, Elbe, et al. 2009).

Via this ongoing international Intervision collaboration participating scholars have reached shared viewpoints and approaches that serve an ongoing exchange of ideas on current daily practices. The session will discuss lessons learnt on required actions, structure and process for the International Intervision sessions to take place, aiming to inspire and incite similar initiatives in the future.

Special Sessions - Roundtable

The Sport Psychologist: A sustainable profession or a threatened species?

Chris Harwood[1], Michala Bednarikova[5], Kristoffer Henriksen[2], Anastasia Khomutova[3], Karl Steptoe[1], Paul Wylleman[4]

[1]Loughborough University, United Kingdom; [2]Team Denmark; [3]University of Brighton, United Kingdom; [4]Vrije Universiteit Brussel, Belgium; [5]Pro Performance, Slovakia

With the increasing professionalisation of sports at all levels and much publicised attention and value towards protecting mental health, there has never been a greater number of practitioners offering services related to psychological functioning within sport in some way, shape or form. Regulated accreditation and certification routes in sport psychology exist across the globe to not only provide the public with safe and ethical practices, but also to provide [young] practitioners with credentials for employment that sustain the economic health and viability of the profession. Yet, do sport organisations really know what a sport psychologist does? Why are less regulated and qualified practitioners appointed to roles that lie within a sport psychologist's scope of practice? Are our education and training pathways outdated in developing the diverse, 'real world' competencies required by the marketplace? Have we established a good grasp of what the marketplace expects from sport psychologists? Six prominent European sport psychologists working across national, professional, and Olympic sport organisations and within higher education will debate a series of contentious and pressing issues that represent opportunities and threats to the profession. From their vantage points as experienced professionals, high performance managers and employers, matters related to competency, title, consumer education, marketing, and training pathways will be appraised in a round-table format. This expert panel will uncover and critically debate emergent trends and concerns in applied sport psychology, with a view to helping the profession to position itself more clearly for a healthier and sustainable future.

Special Sessions - Roundtable

Transnational work and international collaboration: sport psychology from the lenses of AASP and FEPSAC supporters

Alessandro Quartiroli[1,2], Stiliani "Ani" Chroni[3], Shameema Yousuf[4], Brückner Sebastian[5], Anne-Marie Elbe[6], Kensa Gunter[7]

[1]UW - La Crosse, United States of America; [2]University of Portsmouth, United Kingdom; [3]Inland Norway University of Applied Sciences, Norway; [4]Empower2Perform, United Kingdom/Zimbabwe; [5]Private practice, Germany; [6]Faculty of Sport Science, Leipzig University, Germany; [7]Gunter Psychological Services

AASP and FEPSAC are currently two of the larger sport psychology organisations around the world, being the predominant professional organisations in North America and Europe. Due to the large membership and vibrant initiatives, these organisations have great potential to influence and mould the sport psychology applied and scholarly practice. Therefore, it seems important to explore from the lenses of professionals involved in both organisations, how they have interacted with each other so far and how they could move forward in the future to effectively contribute to the growth of the sport psychology discipline and profession. Three AASP and FEPSAC supporters will share their transnational training and professional experience in reference to their interactions (or lack thereof) with the two organisations. Then they will share their insight about the benefits of their engagement with these organisations and will also share their reflections about the challenges and limitations they experienced while navigating the two organisations. Finally, the past presidents of the two organisations will address and expand upon these thoughts. The two past presidents will offer their views of how to move forward with effective and productive international collaboration aimed to reciprocally contribute to the applied and scholarly profiles of the two organisations while also engaging with other sport psychology (and not only) organisations around the world. The conversation will be then shifted to the audience to offer the opportunity to respond to questions and gather insight about the future trajectory that these professional organisations could take.

Special Sessions - Roundtable

Exploring reasons and needs for the creation of a Special Interest Group on psycho-pedagogy in physical education

Attilio Carraro[1], Nikolas Digelidis[2], Anne-Marie Elbe[3], Athanasios Papaioannou[4], Claude Sheuer[5]
[1]Free University of Bozen-Bolzano, Italy and AIESEP; [2]University of Thessaly, Greece, Spectrum Institute for Teaching and Learning; [3]University of Leipzig, Germany; [4]University of Thessaly, Greece and FEPSAC; [5]University of Luxembourg, Luxembourg and EUPEA

Many studies around the world focus on psycho-pedagogical issues of physical education (PE). These embrace a variety of themes, from teaching styles to motivation to physical activity practice, from life skills and values-education to teachers' code of ethics, from students' responses to assessment up to students and teachers wellbeing. The purpose of the round-table is to liven up a discussion aimed at exploring the reasons and the need for the creation of a multi-associations Special Interest Group (SIG), i.e. a network of researchers and academics, well connected with schools and PE teachers, who have an interest in coming together, sharing their knowledge/experience and perhaps initiate new collaborations in the field of psycho-pedagogy in PE.

The presenters will try to outline four potential frameworks:

(a) PE and Health-Enhancing Physical Activity (HEPA). HEPA is central in most contemporary PE curricula and in teachers education. The presentation will focus on HEPA concepts, models, research and interventions that can represent core topics of the SIG;

(b) connections between pedagogy and psychology. Research related to the Spectrum of teaching styles and the connections with some of the theories that are used in psychology;

(c) students and teachers' responses to values-based education programme. PE can offer an ideal setting to develop significant values-based experiences, the frameworks surrounding the improvement of values and life skills education within PE and school sport programs will be addressed here;

(d) interests and role of an international PE teachers Association, the EUPEA, in the SIG. The theme of psycho-pedagogy in PE can be of high relevance for EUPEA (that in the past years was engaged in different initiatives and projects related to the topic, e.g. EUPEA Code of ethics for physical education teachers, IMPACT project) and for other Associations.

Participants will be invited to propose and discuss other "trajectories" and interests.

WORKSHOPS

FEPSAC

European Federation of Sport Psychology

Workshop
Topics: Research methods (qualitative & quantitative)

Using Consensual Qualitative Research (CQR) in Sport, Exercise, and Performance Psychology

Megan Hut[1], Thomas O. Minkler[1], Carol R. Glass[2]
[1]West Virginia University, United States of America; [2]The Catholic University of America, United States of America

Analysis of qualitative data allows researchers to interpret participants' experiences and learn how they assign meaning (Merriam & Tisdell, 2015), providing insights into how individuals experience mental training. We recently interviewed athletes after a mindfulness-based intervention and analyzed their responses using the Consensual Qualitative Research (CQR; Hill, 1997; Hill & Knox, 2021) approach, an inductive method emphasizing research team consensus. CQR facilitates triangulation, coherence, and accountability, contributing to the trustworthiness of findings. Despite its use in psychotherapy research for years, CQR has yet to benefit the sport, exercise, and performance psychology field.

This workshop (ideally capped at 28 participants) will present the specific methodology of CQR, from developing the interview protocol and collecting data to analysis both within and across cases. Similarities and differences between CQR and other approaches to qualitative analysis will be shared. Participants will then be provided with sample data and practice conducting CQR in small groups, to experience the process of creating domains, generating core ideas, and producing a cross-analysis, utilizing discussion in each phase to reach consensus. We will conclude with an exchange of thoughts and experiences with this exercise and respond to any questions. Handouts will include an extensive reference list with abstracts from previous studies and a step-by-step summary of implementing CQR.

Our goal is to enhance participants' competence in conducting qualitative analysis, using this empirically supported approach. This workshop will help attendees learn to (1) discuss benefits of qualitative research, (2) describe the CQR protocol, and (3) apply CQR with a dataset.

Workshop
Topics: Consulting/ counseling

Coaching as collaborative practice

Reinhard Stelter
Department of Nutrition, Exercise and Sports, University of Copenhagen, Denmark

Elite athletes and all other participants (of all ages) in sport, exercise and different educational contexts are members of societies in radical change. The intention of this workshop is to invite participants to rethink dialogue as a central phenomenon in coaching - a thought provoking approach that is evidence-based through a number of research projects.

Traditionally coaches and educators put too much focus on goals in their work with their clientele (athletes, exercises, youth, children, and elderly). However, goals change and develop during conversation and over time (Ordóñez et al., 2009). The intention of this workshop is to invite participants towards developing an attitude, where they manage to engage with their coaching partner(s) in transformative and fruitful dialogues with an emphasis on values and meaning making – a so-called third generation coaching (Stelter, 2014; 2019). The approach can adapted to elite sport, lifestyle change and different educational contexts.

The workshop participants will learn something about:

1. societal changes as the basis to understand human interaction in sport and leisure

2. experiential, existential, relational and narrative theories as a possible theoretical foundation of fruitful coaching dialogues

3. the central methodological elements for a trustful and collaborative relationship

The workshop leader has a strong intention to create a lively interaction between participants and between participants and himself. The objective is to create a learning environment for reflective practitioners. All participants will receive a handout that unfolds some of the central aspects of the content and guidelines for concrete exercises conducted during the workshop.

Workshop
Topics: Any other topic

Mobile sport, exercise and performance psychology: Using the SOMA-NPT app

Christopher Ring[1], **Grant Hayes**[2]
[1]Birmingham, United Kingdom; [2]Luzern, Switzerland

Background. Smartphones and wearables open up exciting new opportunities for researchers and practitioners in sport and exercise to measure the thoughts, feelings and actions of athletes in anywhere, anytime, and anyplace.

Software and Hardware. The SOMA-NPT app for iPhone/iPad offers researchers access to a an extensive battery of cognitive tests for measuring executive function (e.g., response inhibition, memory updating, task switching), processing speed (e.g., reaction time), and vigilance. The app can also connect wearables to the smartphone/tablet to capture physiological and kinematic measures. For instance, a Polar H10 sensor can measure beat-to-beat cardiac activity during a task or rest. Ratings (e.g., perceived exertion), behavior (e.g., sleep/training habits), symptoms (e.g., tiredness) and questionnaires (e.g., wellbeing) can also be collected. Finally, the SOMA-Analytics software allows researchers/practitioners to program plans (study protocols), monitor athletes, and assess progress over time.

Applications. The potential research applications include: brain endurance training, transfer from computerized tests to field-based sport skills, multi-site/multi-country replications, concussion battery and symptom diary, states of stress and relaxation, and cardiac interoception.

Learning Objectives. By the end of the workshop, attendees should understand: the types of cognitive tests in the SOMA battery, how to parameterize SOMA cognitive tests, SOMA test modes, and how to link a Polar H10 sensor to SOMA to measure cardiac activity.

Workshop Materials. Attendees will be given the following: a 12-month license to use the SOMA-NPT app, 12-month access to SOMA Analytics software, exemplar plans (e.g., Brain Endurance Training), and tips for running mobile sport and exercise psychology studies.

Workshop
Topics: Exercise psychology

You can call it ExerPsych: Integrating Exercise Prescriptions in the Practice of Mental Health

Hila Sharon-David[1], Gershon Tenenbaum[2]
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Exercise is a well-established evidence-based intervention for a range of mental health disorders. However, mental health practitioners only rarely prescribe exercise within the therapeutic process (Way et al., 2018). Several barriers were identified in prescribing exercise for mental health with practitioners' lack of knowledge and training being the most reported barrier (Burton, Pakenham, & Brown, 2010). Implementing evidence-based mental techniques in mental health practitioners' arsenal may improve their capacity to prescribe sustainable exercise plans (Phongsavan et al., 2007). The purpose of the current workshop is to introduce an applied exercise-psychology training framework, "ExerPsych," targeted to help mental health practitioners integrate exercise prescriptions within their therapeutic toolkit. ExerPsych was developed to improve mental health practitioners' capability to support their patients through the process of exercise adoption using motivational evidence-based techniques. The learning objectives of this experiential workshop are threefold: (1) to briefly review the literature related to the accelerating mental-health impact of exercise, (2) to uncover the importance of prescribing personalized workout plans through attendees' participation in brief structured physical activities adopted to their mental states, and (3) to mutually perform and develop an integrative exercise prescription plan to target mental health patients' barriers and needs. The workshop is designed to actively engage participants in the process of designing personalized exercise prescriptions and incorporate them into the mental health practice. Following the workshop, participants will be shared with the ExerPsych training program manual comprised of evidence-based exercise prescription guidelines and interventions to support mental health practitioners in designing sustainable exercise plans.

Workshop
Topics: Prevention and rehabilitation

Psychological interventions to optimise post-injury recovery

Yara van Gendt, Afke van de Wouw
WOUW Performance Coaching, Netherlands, The

Abstract Applied workshop: Psychological interventions to optimise post-injury recovery

Sport injuries are common among athletes, especially during the COVID pandemic. While the physical impact of injury is often easy to recognise, the psychological impact is not always understood. In this applied workshop, we will examine psychological interventions that facilitate recovery following sport injuries (post-injury). We will offer ways to help athletes cope better with sports-related injuries.

Implementing psychosocial interventions during post-injury recovery can:

- improve therapy adherence, dealing with pain and healing process
- facilitate a positive mindset
- enhance motivation
- decrease stress, fear and depression
- help return to play faster

In this workshop we will focus on two psychological interventions: visualisation and relaxation. We will provide evidence-based information and show you how to put them into practise. You will develop a more holistic understanding of sports injury that will aid your interactions with injured athletes.

Learning objectives:

- Adopting a more holistic approach on sport injury rehabilitation
- Recognising the factors which play a role in dealing with a sports injury
- Recognising the role psychosocial interventions play in post-injury recovery
- Putting visualisation- and relaxation techniques into injury rehabilitation practise

Teaching methods and techniques:

- Power Point presentation with evidence-based information
- Active participation through interactive discussions
- Experiential learning by performing the visualisation and relaxation interventions
- Practitioners sharing their professional strategies.

Materials we will be sharing:

- Injury SWOT analysis, goal setting and affirmation worksheets
- Visualisation and relaxation scripts
- Visualisation and relaxation audio exercises
- Related online videos

Workshop
Topics: Prevention and rehabilitation

Psychological factors as predictors of injuries

Afke van de Wouw, Yara van Gendt
WOUW Performance Coaching, Netherlands, The

Abstract Applied workshop: Psychological factors as predictors of injuries

Unfortunately, sport injuries are relatively common among athletes, especially during the COVID pandemic. While the physical impact of injury is often easy to recognise, the psychological impact is not always understood. In this applied workshop, we will examine the relationship between injury prevalence and psychological factors. Subjects as: stress and (dis)balance between workload and capacity, the supercompensation theory and the importance of recovery will also be explained by focussing on stress, big life events and other circumstances interfering with recovery, personal characteristics and external circumstances that might increase the injury risk will be discussed. All to give a broader and more holistic perspective on the development of sports injuries. In the workshop you will be provided with interventions and tips & tricks on how to lower the prevalence of (re)injury .

Learning objectives:

- Adopting a more holistic approach on injury prevention
- Recognising factors that play a role in recovery
- Identifying psychological factors that may lead to a sports injury
- Recognising the role sports psychology interventions can play in the prevention of injury
- Putting the sport psychology interventions into practise

Teaching methods and techniques:

- Power Point presentation with evidence-based information
- Active participation through interactive discussions
- Experiential learning by doing some of the psychological interventions
- Practitioners sharing their professional strategies

Materials we will be sharing:

- Inventories for athletes (‘Energy-takers’-, ‘Belief’- and ‘Big life event’-inventory)
- Factsheet about sleep
- ‘Out of our comfort zone’, visualisation and relaxation audio exercises
- Related online videos

Workshop
Topics: Performance enhancement (doping, neuro-enhancement etc.)

The influence of breathing techniques on sport performance

Nina Zammit, Maša Iskra, Sylvain Laborde
German Sport University Cologne, Germany

The practice of modifying breathing parameters originates in ancient Eastern traditions and has historically been used in practises such as yoga and meditation (Gerritsen & Band, 2018; Jerath, Edry, Barnes, & Jerath, 2006; Russo et al., 2017). However, the control of breathing can be isolated from other practises, to achieve desirable psychological and physiological effects. A diverse range of breathing techniques exists, such as slow-breathing techniques, usually aiming to induce relaxation (Gerritsen & Band, 2018; Russo et al., 2017), or voluntary hyperventilation, generally performed to achieve psychophysiological activation and delay fatigue (Kox et al., 2014). Due to the proposed benefits and inexpensive equipment required for the implementation of these techniques, an introduction and practical guide on using these techniques may increase comfort levels and interest in using them to achieve desired sport performance.

Learning objectives (for participants):

- Learning key information about the main breathing techniques found in the literature and the associated effects. The techniques will comprise slow-paced breathing, fast-paced breathing, breath-holding, voluntary hyperventilation, alternate- and uni-nostril breathing.

- Practising each technique using video animation as a pacer as well as receiving instructions and constructive feedback on the parameters of their use.

- Being provided with practical recommendations for applying breathing techniques in everyday life and in the sports context.

- Volunteers will have the opportunity to receive biofeedback training.

Workshop
Topics: Talent identification/ development

Supporting Parents in Developing an Optimal Parenting Support during Crucial Stages of Talent Development

Hila Sharon-David Sharon-David[1], Malgorzata Siekanska[2], Asaf Blatt[3], Gershon Tenenbaum[4]
[1]Ono Academic College, Israel; [2]Unversity of Physical Eductaion in Krakow, Poland; [3]The College of Management Academic Studies, Israel; [4]Reichman University, Israel

Strong parental support predicts athletes' success (Cote, 1999). While the importance of supportive parenting is emphasized in youth sports, it is of particular importance throughout specific talent-development stages (Harwood & Knight, 2015). As athletes transition from childhood towards adolescence, the effort investment, pressure, and ambivalent feelings may increase (Frederics & Eccles, 2004). During these times, structured parental guidance from sport psychology practitioners can greatly benefit parents and their athlete children in coping with such feelings and mental barriers. The current workshop introduces a unique parental-support guiding program for sport psychology practitioners by adopting a developmental approach to supportive parenting. Participants will be introduced to a structured-collaborative- and empathetic- guiding program adapted to the parent-children relationship based on the Motivational Interviewing (MI; Rolnick & Miller, 2003) spirit. Specifically, core features of the MI technique will be introduced as a main guiding approach to support parents and their athlete children in coping with challenges involved in crucial talent-development stages. Learning objectives include: (1) briefly reviewing core evidence-based frameworks of optimal parenting support (i.e., Eccles, Wigfield, & Shiefele, 1998; Frederics & Eccles, 2004).; (2) practicing the use of the MI spirit and skills to help parents and their athlete children in overcoming challenges involved in crucial talent-development stages. New perspectives on the use of the MI technique when working with parents of youth athletes will be introduced and exercised using on-site activities. Sport psychology practitioners will gain an important parental support guiding toolkit to expand their working arsenal and potential impact.

Workshop
Topics: Coaching

Shared Leadership Mapping: An Evidence-Based Tool to Identify the Best Athlete Leaders in Sport Teams

Niels Mertens, Filip Boen, Katrien Fransen
KU Leuven, Belgium

Background. Recent research highlighted how shared leadership constitutes a better predictor of team effectiveness than vertical leadership. Given that teams are always looking to gain competitive advantage, implementing shared leadership has become increasingly popular. However, while the benefits of shared leadership are well documented in research, knowledge on how to implement shared leadership in practice is sparse. In sport teams, this leaves coaches who aim to implement shared leadership with three key challenges: (1) identifying the 'right' team members as leaders; (2) defining which roles those leaders should fulfill; and (3) developing the leadership skills of the appointed leaders. Our Shared Leadership Mapping tool addresses these challenges by identifying the best leaders within the team (through social network analysis) on four crucial roles: task, motivational, social, and external leadership. Furthermore, this tool is part of the 5RS Shared Leadership Program (5RS), which aims to strengthen the identity leadership skills of the appointed leaders. These skills are developed by teaching them how to build a shared sense of 'us' in the team over the course of five phases (Readying, Reflecting, Representing, Realizing, and Reporting).

Learning objectives. Participants will receive hand-on experience on how to use our Shared Leadership Mapping tool to identify athlete leaders, how to apply the gained insights in practice, and which additional information is contained in this assessment. Furthermore, this workshop will expand upon how we practically implement the different phases of 5RS in separate workshops. We will include interactive and hands-on learning methods in this workshop.

Workshop
Topics: Mental skills training

Self-Compassion in Competitive Sport: The «Why», «How», «When» and «For Whom»

Philipp Röthlin[1], Amber Mosewich[2], Leah Ferguson[3], Tara-Leigh McHugh[2], Stephan Horvath[1], Göran Kenttä[4], Kent Kowalski[3]
[1]Swiss Federal Institute of Sport Magglingen, Switzerland; [2]University of Alberta, Canada; [3]University of Saskatchewan, Canada; [4]The Swedish School of Sport and Health Sciences, Sweden

The integration of self-compassion is becoming more common in sport; however, there are many considerations for how to effectively integrate self-compassion in differing sport contexts. The goals for participants in this applied workshop are to 1) to learn about self-compassion (Neff, 2003; Gilbert, 2009) and key research findings relevant to competitive sport (Mosewich et al., 2019), 2) experience a range of self-compassion exercises applicable in sport, and 3) reflect and critically discuss how to effectively deliver self-compassion exercises and embed self-compassion strategies in applied sport psychology settings. In doing so, we place a strong focus on considering important factors such as context and population. To achieve these goals, an international collaboration of experts will lead and demonstrate a variety of evidence-based self-compassion exercises with participants (e.g., imagery exercises, cognitive behavioral exercises, psychoeducation; e.g., Germer & Neff, 2019; Van den Brink & Koster, 2015). Participants will then (a) discuss in small groups how to best integrate the exercises into their specific sport context, (b) share the results of the group discussion within a plenary session, and (c) provide and receive feedback on the presented ideas from the other participants and the international experts. Overall, the workshop will emphasize how to integrate self-compassion into diverse sport contexts with a range of sport participants (e.g., athletes, coaches, officials). Throughout, reference will be made to current research findings as well as exemplary cases from the experience of the international experts. Participants will receive a compilation of all exercises and worksheets.

Workshop
Topics: Psycho-physiology

Heart rate variability in sport psychology: Applications of the Vagal Tank Theory

Sylvain Laborde
German Sport University Cologne, Germany

Heart rate variability (HRV) has recently gained a lot of attention in sport psychology. The reason for this is that it allows for non-invasive and cost-effective measurement of the activity within the parasympathetic nervous system regulating cardiac functioning, cardiac vagal activity. Based on a recent theoretical development with the vagal tank theory (Laborde, Mosley, & Mertgen, 2018b), this workshop will introduce how cardiac vagal activity can be used as an indicator for health, stress management, emotion regulation, and executive function, considering the 3Rs of cardiac vagal activity functioning: resting, reactivity, and recovery. Further, practical methodological recommendations will be presented (Laborde, Mosley, & Thayer, 2017), in order to get the most of HRV measurements in sports settings, taking into account the many factors that can influence HRV (Laborde, Mosley, & Mertgen, 2018a).

Learning objectives: Participants will get first-hand experience of learning how to measure HRV with smartphone apps and ECG devices in different situations such as morning measurements, night measurements, preperformance routines, physical activity, post-training or post-competition recovery, psychosocial stress and relaxation methods. Further, they will also discover how to analyze and interpret the HRV data in Kubios software.

All participants will be provided with the slides of the presentation, and those who volunteer to have their HRV measured will be provided with their HRV files at the end of the workshop.

Workshop
Topics: Mental skills training

Sport-Specific Mindfulness for Performance & Wellbeing

Katherine Victoria Sparks
University of Birmingham, United Kingdom

Mindfulness is a new concept in the sporting context. It has predominantly demonstrated to enhance mental wellbeing (Grossman et al., 2004; Gross et al., 2016) but several potential benefits have been presented within sport such as a tool for encompassing flow-state, increasing self-efficacy, reducing competitive anxiety, and preventing the breakdown of performance under pressure (Bühlmayer et al., 2017). Sport-specific mindful activities are important for athletes as they have demonstrated to have a greater impact on the athlete than regular mindfulness (Scott-Hamilton et al., 2016). Furthermore sport-specific mindfulness enables athletes to better understand and implement the principles/skills learnt from mindfulness into performance (Worthen & Luiselli, 2016).

Objectives:

1) Introduction to Mindfulness in Sport

2) Understand the use and benefits of Mindfulness for Sport Performance

3) Implementations of sport-specific mindfulness strategies

Participants will be introduced to mindfulness through a brief mindful meditation before discussing what mindfulness is. Following this everyone will be taken through the basics of understanding mindfulness's core principles and how these can be applied into the sporting context for performance-specific benefits. This will be achieved through the demonstration of academic research, walking through my own development of the rowing-specific mindfulness interventions and from athlete's experiences. The mindfulness approach will be based around self-compassion and the mindfulness sport performance enhancement program (Baltzell & Summers, 2018). Participants will also be taken through several sport-specific mindful practices and how these can be adapted to different sports, before opening the floor for a Q&A. All attendees will then have access to online practices.

Workshop
Topics: Youth

Towards shared understanding of positive psychological functioning: Embedding psycho-social development programmes in youth sport

Karl Steptoe, Chris Harwood
Loughborough University, United Kingdom

There continues to be a growing appreciation of the importance of psychology in sport and exercise domains and of the need for competent practitioners to deliver services for positive performance and wellbeing outcomes. Despite broad consensus regarding the utility of the discipline, both contemporary research and applied practice experiences suggest multiple factors associated with psychosocial development (e.g., Gledhill et al., 2017) and a lack of shared understanding regarding the assessment, evaluation, and communication of psychological progress across key stakeholders (Steptoe et al., 2018). There is a call for future intervention programmes to consider transdisciplinary dialogue (Figueiredo et al., 2014); and the 5Cs of Commitment, Communication, Concentration, Control and Confidence (Harwood, 2008) are posited as a framework of psychosocial development with the flexibility to incorporate diverse sporting/organisational cultures and practitioner philosophies.

The purpose of this workshop is to provide practitioners with detailed insights into the key processes underpinning an embedded programme of psychological training and support and to provide attendees with practical strategies that can enable stakeholders (i.e., athletes, coaches, parents) to be on the same page in terms of highlighting psycho-social strengths and opportunities for development. Educational techniques and field-based processes across two decades of work in youth sport will be shared with attendees and centred around engagement in an observational task to identify adaptive and maladaptive behaviours and responses in athletes.

In conclusion, participants will gain a greater professional awareness of the processes and methods that they can apply when attempting to systematically develop psychosocial competencies in athletes.

Workshop
Topics: Clinical issues in sport and physical activity

Developing a Protocol for Return to Sport: Mental Health Edition

Taryn Brandt, Emily Clark
United States Olympic and Paralympic Committee

Return to Sport (RTS) decisions post physical injury are the result of an informed process of evaluation, treatment, and rehabilitation (Best & Brolinson, 2005). Given the absence of literature, much less attention is given to RTS decisions related to mental health challenges. Mental health challenges such as (but not limited to) suicidality, eating disorder diagnoses, and substance use may require that an athlete temporarily step away from participation in their sport to receive appropriate treatment and support. Creighton et al. (2010) highlight the importance of having a model to clarify, structure, and provide rationale for the processes that clinicians use when making RTS decisions. This workshop will outline the process used to develop a mental health return to sport protocol for the US Olympic & Paralympic Committee and associated National Governing Bodies (NGB). The presenter will describe the experience of gathering athlete feedback, making revisions, and sharing the protocol with NGB staff. Key elements of the RTS protocol such as types of leave, steps to return to full participation in sport, and identification of individuals involved in the decision-making process will be highlighted. In small groups, attendees will be provided with athlete case examples, a copy of the USOPC RTS protocol, and asked to identify important steps and potential challenges to effective RTS. Finally, space will be provided for interactive discussion surrounding application of RTS protocols in various settings and opportunities for participants to share best practices and challenges when developing and implementing similar protocols within their organizations.

Workshop
Topics: Youth

Acting on professional boundaries: How parents and coaches can team up in youth sport

Valeria C. Eckardt
German Sport University Cologne, Germany

A successful and satisfying youth sport experience is guided by the joint engagement of parents and coaches for the success and well-being of the athletic child (Jowett & Timson-Katchis, 2005). Interactions between parents and coaches, however, have the potential to be characterized by destructive interferences and coaches perceiving parents to be negatively involved (Gould et al., 2006). As such, parents and coaches alike identify each other as stressors for their participation in youth sport (Eckardt et al., 2021; Knight & Harwood, 2009). The learning objective of this applied workshop is to share evidence-based strategies on promoting a constructive cooperation between parents and coaches in youth sport. Participants will gain knowledge on theoretically derived facilitators and barriers of professional cooperation, and integration of parents in youth sport (Eckardt & Dorsch, 2022). Tools and exercises for parents and coaches will be demonstrated which utilize mechanisms of an integrated understanding of the youth sport system (Dorsch et al., 2020) as well as family systems theory (Broderick, 1993). Further, the workshop will provide the opportunity for participants to share, discuss and reflect on their professional experiences. Upon completion of the workshop, materials and resources for coaches and parents including behavioral recommendations and questions for self-reflection will be distributed to participants to be utilized in sport psychology practice.

Workshop
Topics: Transitions in and out of sport/ dual career

Managing Athlete Body Image Concerns on Retirement from Elite Sport

Anthony Papathomas[1], Karin Moesch[2], Trent Petrie[3], Han Newman[4]
[1]Loughborough University, United Kingdom; [2]Lund University, Sweden; [3]University North Texas, USA; [4]Middlesex University London, UK

Pressure to be lean for athletic performance gains can lead athletes to adopt an unhealthy preoccupation with body weight and appearance. Body dissatisfaction is prevalent across sports and can lead to disordered eating and poor mental health (Papathomas, 2018). An emerging line of inquiry suggests body dissatisfaction persists once an athlete retires (Barrett & Petrie, 2020) and new body image concerns can also emerge due to body changes that occur during retirement (e.g., muscle loss, Papathomas et al. 2018). This evidence-based interactive workshop is designed according to research funded by the IOC Advanced Research Studies Centre. We interviewed 31 former elite athletes (23 former Olympians) across several sports (mean age since retirement = 3.9 years). Delegates will be better equipped to support athletes to successfully manage body changes during retirement from sport.

Delegates will fulfill the following learning objectives:

i. Identify a variety of body image concerns that occur on retirement from sport

ii. Explore real world athlete experiences of coping with retirement body changes

iii. Critically analyse a case study of male athlete body dissatisfaction during retirement from sport

iv. Discuss psychological strategies to promote a healthy body image during retirement from sport

Delivery techniques:

This interactive workshop incorporates: research presentation, case-study, small-group tasks, whole group discussion, and panel question and answer.

Delegates will receive 2 key documents:

1. Executive summary of research report entitled Body Image Experiences in Retired Olympians: Knowledge, Awareness, and Prevention

2. Infographic entitled Healthy Body Image Post-retirement: Top 10 Tips from Olympians

Workshop
Topics: Best practice

First Time at the Olympics: Expecting the Unexpected

Kristel Kiens, Snežana Stoljarova
Tallinn University, Estonia

The Olympics is a unique event that has been considered a “magnifying glass” for the vast variety of experiences and perceptions of those experiences that it brings (Elsborg et al. 2015; Henriksen et al. 2014). This major event is challenging not just for the athletes, but for the sport psychology practitioners themselves (e.g., Haberl & Peterson, 2006; Elsborg et al. 2015). Practitioners need to be ready for “wearing different hats” (Williams & Andersen, 2012) and finding creative solutions for the upcoming challenges that differ from the “normal setting”. Moreover, to be able to provide optimal support, one must not forget to take care of oneself (Haberl & Peterson, 2006; Elsborg et al. 2015).

During the workshop the authors will share their own experiences at the Tokyo and Beijing Olympic and Paralympic Games working with coaches and athletes. What's more, they aim to create a mind map with the participants to identify and visualize main challenges, possible solutions and helpful preparatory steps towards the Games. Participants will benefit from interactive discussions, group work and brainstorming activities with colleagues to widen their knowledge-base and toolkit when working in high profile competitions.

Workshop
Topics: Best practice

An introduction to the use of acceptance commitment therapy processes to help athletes to flourish

Daniel Birrer
Swiss Federal Institute of Sport Magglingen, Switzerland

In the past few years mindfulness and acceptance based approaches have drawn much attention as suitable interventions in sports and a growing number of sport psychologists are using these methods in their applied work (e.g. Henriksen, Hansen, & Hvid Larsen, 2019). The aim of mindfulness and acceptance based interventions is not to overpower thoughts and emotions by suppression and using control techniques, but to change the relationship to these thoughts and emotions. The goal of acceptance commitment therapy (ACT) is to help people to enhance their psychological flexibility in order to bring them closer to living a valued life. Generally, the world of elite sport is very outcome oriented and living a valued life means for many athletes to strive for performance and prove their ability in competition. This puts them under a lot of pressure and flourishing is in danger. Participants of this workshop will be introduced to the six core processes of ACT to enhance psychological flexibility. With the help of a case example they will get to know examples of how to use the six core processes with athletes and experience the six ACT processes through small exercises themselves. Participants will be introduced to the work of teaching athletes to open up, accepting undesired unpleasant cognitions, emotions and sensations and mindfully engage in the present moment to follow their personal values.

Workshop
Topics: Moral action

Preventing doping in sport: An evidence-based intervention

Philip Hurst[1], **Maria Kavussanu**[2]
[1]Canterbury Christ Church University, United Kingdom; [2]University of Birmingham, United Kingdom

Despite increased resource from international and national sport organisations over the past two decades, very few interventions have been shown to be successful in preventing doping. Recently, we developed a theory and evidence-based intervention that reduced the likelihood of athletes doping in Greece, Italy, and United Kingdom. Given that several types of applied practitioners (including psychologists, coaches, and physiotherapists) hold a responsibility to help navigate an athlete's choice in their doping decisions, there is a need to translate research-based evidence into real-world interventions. Using our evidenced-based intervention, we will provide readily accessible resources to researchers and applied practitioners so that they can help athletes make a more informed decision when choosing to dope.

The workshop will present evidence on the impact the intervention had on athletes' emotions, justifications for doping, and doping likelihood. Attendees will be provided with an overview of theoretical underpinnings of the intervention, how it was adapted for each country, and participant experiences after attending. The workshop will involve critical discussions, debates, and real-life stories of athletes who have doped, which will be focused on highlighting the emotions athletes experience when doping and how they avoid negative self-sanction (e.g., guilt and shame) through moral disengagement. Finally, it will give attendees an understanding of the nuances of the moral intervention and participate in the same interactive tasks delivered to participants in the intervention. It is anticipated that after the workshop, attendees will understand how to effectively target athletes' moral emotions and beliefs in their applied practice and research.

Workshop
Topics: Well-being and quality of life

Applied workshop Holistic Recovery

Afke van de Wouw, Yara van Gendt
WOUW Performance Coaching, Netherlands, The

Unfortunately, a lot of sports coaches only tend to focus on physical recovery after games and training sessions. However, psychological recovery is equally important. The game- or training load is also influenced by game pressure, number of mistakes made, winning or losing, (mis)communication etc. In this applied workshop we will explain the influence of game load, post-game load and private load on the quality and quantity of recovery by using the super compensation model. Personal characteristics and external circumstances will also be linked to recovery and injury. All to give a broader and more holistic perspective on recovery. In the workshop you will be provided with interventions and tips & tricks on how to optimise recovery for athletes.

Learning objectives:

- Adopting a more holistic approach on recovery
- Identifying psychological factors that influence recovery
- Recognising the role sports psychology interventions can play in optimal recovery
- Putting the sports psychology interventions into practise

Teaching methods and techniques:

- Power Point presentation with evidence-based information
- Active participation through interactive discussions
- Experiential learning by doing some of the psychological interventions
- Practitioners sharing their professional strategies

Materials we will be sharing:

- Inventories for athletes (‘Energy-takers’-, ‘Belief’- and ‘Big life event’-inventory)
- ‘Out of our comfort zone’, visualisation and relaxation audio exercises
- Related online videos

Workshop
Topics: Mental skills training

Applied workshop Resilience Training

Yara van Gendt, Afke van de Wouw
WOUW Performance Coaching, Netherlands, The

Athletes must be able to deal with different situations, positive and negative ones. They have to learn how to be comfortable with the uncomfortable on their way to reaching their goals. Besides regular resilience training, like strength and conditioning training, athletes should also know how to cope with their thoughts and feelings accompanying difficult situations. Athletes often do so by avoiding and ignoring them. But pushing negative thoughts and feelings away may cause short- term relief; however, in the long term they come back at them unexpectedly and with higher intensity, like a boomerang.

In this practical workshop we discuss different training methods to build psychological flexibility of athletes, like 'planned disruptions', acceptance and commitment training and optimal holistic recovery. We will discuss ways to integrate these strategies into everyday training sessions of coaches and sport psychologists.

Learning objectives:

- Adopting a more holistic approach on resilience
- Identifying, recognising and adjusting coping strategies
- Putting the mentioned interventions into practise

Teaching methods and techniques:

- Power Point presentation with evidence-based information
- Active participation through interactive discussions
- Experiential learning by doing some of the psychological interventions
- Practitioners sharing their professional strategies

Materials we will be sharing:

- 'Out of our comfort zone' worksheet and exercises
- Related online videos

Workshop
Topics: Elite sports and expertise

Sports psychology in the football system (DFB): How do we work with our (youth) national teams?

Christoph Herr, **Stefanie Weigt**
Deutscher Fußball Bund - German Football Association (DFB), Germany

Interactive Workshop:

Supporting talented (young) football players on the path of personality development and discovery, in addition to their athletic or tactical skills / training means that players care about their mental health, mental strength and their mindset. Football is a team sport and the focus of sports psychology at the DFB is on four areas:

1. On training and development of mental skills (teaching and application of cognitive skills e.g. mental training, emotion regulation)

2. On sport psychological consulting (individual consulting and team consulting)

3. Coach the coach (e.g. leadership behavior, activation regulation, conflict management), focusing on the interpersonal processes of their work.

4. Psychological diagnostics for recording and screening of relevant psychological and personality-related characteristics.

In four groups, we want you to disuss and present your idea of how these four areas can be handled in football teams.

We invite you to get an insight into our work at the DFB as a sports psychologist and we want to discuss these perspective with you and figure out how you understand the psychological role in supporting a football team. Afterwards we will compare these results with our approach and our way, integrating sports psychology in the german football association or football clubs.

Workshop
Topics: Best practice

High Performing Brain of the Professional Gamer

Chang-Hyun Ko, Claudio Godoi, Eric LeNorgant
Team Liquid, United States of America

In the past 10 years there has been tremendous growth in the acceptance and utilization of mental skills services across various performance domains. From individuals to teams in athletics, businesses, and military the rise in demand for mental skill services are promising (Weir, 2018). Esports is no different. There are many teams that are investing into integrating mental skills, well-being services, and other human performance modalities to ultimately win more championships. However, the challenge is building integrative systems that are effective across a diverse set of games. From training to travel to the level of competition in the region vary greatly across different games. As organizations invest more into human performance training there is also greater accountability in measuring the effectiveness of programs (Anderson et al. 2002, Lane, 2012; Nagorsky & Wiemeyer 2020). Current research is limited on what interventions and applications are most useful. Therefore applied practitioners need to rely on sound methodologies and evidence based practices and facilitate new research. Our aim was to identify key characteristics of elite level gamers and better understand what translates from individual success to team success.

In this workshop, the presenters will share insights into creating a data driven human performance program and creating buy in using performance profiles that are relevant to the players. The participants will learn best practices and lessons learned along with various tools that were utilized for training adaptations. The presenters will also share some key findings to understanding the cognitive capabilities of esport athletes.

Workshop
Topics: Well-being and quality of life

Creating Your Own Nature Story: How Time in Nature Can Promote Well-Being, Self-Care and Sustainability

Tadhg E. MacIntyre[1], Violetta Oblinger-Peters[2], Francesca Boyd[3], Alan Scarry[4], Philip Clarke[5], Carina Nigg[2]
[1]Department of Psychology, Maynooth University, Ireland; [2]Department of Sport Science, Bern University; [3]Social and Economic Research Group, Forest Research, United Kingdom; [4]GoGreenRoutes, Department of Biological Sciences, University of Limerick, Ireland; [5]School of Human Sciences, University of Derby Online Learning

There is substantial evidence that spending time in nature has a positive impact upon our mental health and wellbeing. COVID19 lockdown scenarios have taught us that engaging with nature has significant benefits for all whom can access it. Lack of nature contact was associated with increased stress and diminished well-being (e.g. during quarantines). In this workshop, we want to explore how our relationship with nature intersects with our professional approach and provides an exemplar for others, including athletes, to follow. Using our personal narratives as a lens to explore our nature experience, we will use this workshop to provide a window into nature-interactions for other practitioners. An outdoor nature experience will form an integral part of the workshop where participants will also become experimenters. Evaluation of cognition, mood, and nature connectedness using online tools (e.g. mobile devices) will be conducted for educational purposes. Three key learning outcomes will be achieved: 1) An increased understanding of learning by analogy (e.g. resilience, homeostasis, metamorphosis), 2) Enhanced appreciation of nature and how it gives us meaning 3) Greater knowledge of scientific evidence on the benefits of nature for health and well-being. This workshop specifically targets practitioners who subsequently can embed these practices in their future consulting. Together we will discuss the research methodologies, provide practical exercise and promote reflection on the application of nature-interactions. This research is of particular importance to the evolution of practitioner self-care, athlete recovery and the promotion of long-term well-being, where both human and environmental health are connected.

Workshop
Topics: Best practice

Developing Comprehensive Mental Health Care for Team USA Athletes

Emily N. Clark, Taryn Brandt
United States Olympic & Paralympic Committee, United States of America

A growing body of research exploring the mental health needs of the elite athletes revealed that this population suffers from mental health symptoms and diagnoses at the same or greater rates than their nonathlete peers, highlighting the need to address these concerns. (Reardon et al., 2019; Rice et al., 2019, 2016; Sudano, Collins, & Miles, 2017; Schinke, Stambulova, Si, & Moore, 2017). Additionally, The International Olympic Committee (IOC) released a consensus statement concluding that “mental health is an integral dimension of elite athlete well-being and performance and cannot be separated from physical health. Mental health assessment and management in elite athletes should be as commonplace and accessible as their other medical care; ideally elite athletes should have access to the best interdisciplinary care.” (as cited in Reardon et al., 2019, p. 687) As a result, the United States Olympic & Paralympic Committee (USOPC) has created the mental health services department to develop and implement comprehensive programming in service of increasing access and decreasing barriers to care for Team USA athletes. In this workshop, participants will use case examples and small group discussion to apply best practices in preventative, early intervention, treatment and crisis intervention to share recommendations and future directions in developing a comprehensive, systemic mental health care strategy for Team USA athletes. Topics include mental health screening and outreach, targeted group programming, Team USA Tokyo and Beijing Games mental health support, group support, and crisis.

Workshop
Topics: Mental skills training

Development and translation of the Wheelchair Imagery Ability Questionnaire; measurement processes and applied practice challenges

Andrea Faull-Brown[1], Eleri Jones[2]
[1]University of Worcester, United Kingdom; [2]Bangor University, United Kingdom

Imagery ability is considered a cornerstone psychological skill in sport (for a review see Cumming & Williams, 2012) and it is widely accepted that individuals who can imagine their movements accurately, vividly and with ease demonstrate greater improvements in their performance compared to those who struggle to use imagery (Robin et al., 2007). Whilst various measurement tools exist for non-disabled athletes (e.g., Vividness of Movement Imagery Questionnaire; VMIQ2, Roberts et al., 2008), such measures are questionable in their suitability for use when working with athletes with a disability. This workshop will be an interactive experience with both authors sharing how they created, developed, and validated the Wheelchair Imagery Ability Questionnaire (WIAQ; Faull & Jones, 2018), an imagery ability questionnaire specifically for use with wheelchair athletes. The workshop aims to include both research and an applied practice focus. There are three learning objectives; 1) help participants identify issues associated with measurement development in disability sport, this will be achieved through discussion and sharing of the methods used in the creation of the WIAQ; 2) the workshop will look to extend participants knowledge on the protocols and challenges associated with translating measures and working with international research teams, and 3) offer practical ideas and interventions for use in applied practice. Participants should consider bringing a psychometric that they may wish to examine as part of the workshop, otherwise they will be provided with appropriate measures to work through, including the WIAQ.

Workshop
Topics: Sports Psychology and COVID-19 Pandemics

10 Week Virtual/In-person Mindfulness Training Program for Students with Autism Spectrum Disorder (ASD)

Jacob Cannon Jensen, Brittney Aquino
California State University, Northridge, United States of America

In this workshop the presenter will demonstrate how mindfulness can be applied to individuals with Autism Spectrum Disorder (ASD) in a program conducted in-person or virtually. ASD is one of the most common neurodevelopmental disorders, and the purpose of this program was to assess both the openness to and effectiveness of using mindfulness interventions with an ASD population of college students (McPartland, Rechow, & Volkmar, 2012). The researchers ran a 10-week mindfulness training program for the past three years for college students (18+) diagnosed with ASD, using both an in-person and virtual format to provide 30-minute mindfulness sessions that followed 60 minutes of physical activity training (IFIT-M). The specific learning objectives of this workshop are to provide and demonstrate how mindfulness interventions can be applied effectively to neurodiverse populations in both an in-person and virtual format. The teaching methods of this workshop will be to provide an overview of the 10 mindfulness sessions developed for an ASD population, as well as to provide practical hands-on experience with how to adapt and run a mindfulness component for neurodiverse populations. Assessments used in the IFIT-M program will also be provided and include focus group questions, the self-reported mindfulness attention awareness scale (MAAS), experience of mindfulness (SMS-PA), intrinsic motivation (modified IMI), profile of mood states (POM Adult Form), and self-reported anxiety and stress (DASS). Workshop participants will receive a handout with the presentation slides and examples of the 10 sessions and how to incorporate them into participants' own applied work with diverse populations.

Workshop
Topics: Mental skills training

Integrated System of Improv Games and Play for improving concentration and attitude in elite athletes

Gherghisan Alina
Romanian Olympic and Sports Committee, Romania

The purpose of the workshop is to share good practice regarding psychological assistance for elite athletes by non-specific means. When watching sports, it's like organically feeling the story that the athlete is telling to the audience. It's the story of the hours spent practicing, of the trust in his own body, in his own abilities and the narrative that develops towards the end he wished for. The body tells a story without words about: emotion, attitude, and will Berlin (2006). Sport performance is both art and science and sport psychology is about working both with the body and mind in a dynamic environment. Athletes understand better the mechanisms of mind by doing rather than talking about. In this sense, the use of play, exercises and games with mental trainings aims is efficient. The essential characteristic element of theatre and sports is that because of the pleasure aspect inherent both of these forms of performance are denoted as "play" (Santhosh, Rajitha Menon, & Jayan, 2008).

Playing sport is an authentic act, and the action is staged in front of an interested audience for their entertainment, similarly to theatre. Athletic performances are not only about strength, speed, and endurance, as they incorporate the creative, aesthetic and emotive elements of theatre (Magdalinski, 2009).

This system was successfully implemented for two Olympic cycles in fencing, judo, artistic gymnastics and wrestling. In this sense, the workshop aims to provide exercises, instruments and alternative means for classic techniques used in sport psychology.

Workshop
Topics: Best practice

Cultivating the Next Generation: A Mentorship Training Circuit for Best Practices in Virtual Mentorship & Multicultural Competency

Victoria Tomlinson, Julie Hayden Blackburn, Michael Gerson, Lauren Tashman, Sara Erdner, Kimberly Shaffer
National University, United States of America

Designed for current or aspiring mentors and supervisors in sport psychology, this workshop will include best practices, hands-on exercises, and interactive discussions, all revolving around mentorship and cultivating a new generation of applied sport, exercise, and performance practitioners. Participants will engage in four rotating circuits: (a) Multiculturalism in mentorship, (b) navigating mentorship challenges, (c) facilitating group mentorship and (d) engaging in virtual mentorship. Each circuit will include a short didactic portion, topical exercises, and/or small group discussion. The first circuit will focus on socio-cultural issues and how mentors and mentees can embrace cultural humility (Krane & Waldron, 2020), emphasizing the vital importance of continued diversity, equity, and inclusion education. The second circuit will discuss navigating mentorship challenges, such as gatekeeping (Watson et al., 2004; Statler et al., 2020), upholding high standards for mentees, and integrating ethical practices for mentoring (Andersen, 1994; Andersen et al., 2000). The third circuit will highlight and curate components of high-quality, competency-building group mentorship experiences (Borders, 1991). The last circuit will outline best practices (Woo et. al, 2020) to navigate virtual supervision and leverage technology as an applied mentor. Participants will have an opportunity to discuss action-oriented next steps, network with other mentors, and establish best practices. The changing world allows sport, exercise, and performance psychology practitioners a chance to reflect (Schoel et al., 1988; Kolb & Kolb, 2009), embrace growth mindset theories (Dweck & Leggett, 1988; Dweck, 2012), and guide the next generation in becoming informed, supported consultants.

Workshop
Topics: Ethics in applied settings

Ethical dilemmas in applied sport psychology: Decision making in rarely black or white situations

Michala Bednáriková[1], Snežana Stoljarova[2]
[1]Private practice, Slovak Republic; [2]Private practice, Estonia

The objective of this workshop is to raise awareness about the ethical dilemmas one can experience in sport psychology practice. Working as an applied sport psychologist can be a dream come true for some, but in every case, it is a privilege. Sometimes the privilege to work with successful athletes, coaches or clubs, but always a privilege to influence lives of our clients. Working in helping profession means, that our aim is to help those we serve, and we should be doing so without doing harm. Often it is easier said than done, as in reality the line between right or wrong can be quite unclear (Etzel, 2014). Even with the help of codes of ethics, making decisions in the applied sport psychology is unfortunately rarely about clear cutting decisions between black or white. Rather it is about seeing all shades of gray, and then deciding, bearing the best of those we serve in our minds. During our workshop, we will share several real life scenarios, and invite the participants to discuss them in small groups following a defined structure. First, to identify a principle or principles from the code of ethics, that should be considered. Second, to provide one or more possible ways of how one can act in the situation from the scenario. Third, to indicate the pros and cons of such decisions. Finally, we will share how we have decided in the cases, what were the consequences and as well as our lessons learned.

Workshop
Topics: Mental skills training

State of art of mental training courses in Europe: Italy, France, Germany, Poland, Spain and Sweden

Emma Guillet Descas[1], Franziska Lautenbach[2], Henrik Gustafsson[3], Francisco Miguel Leo Marcos[4], Marika Berchicci[5], Maurizio Bertollo[5], Dagmara Budnik Przybylska[6], Virginie Nicaise[1], Guillaume Martinent[1], Claudio Robazza[5]
[1]Université Claude Bernard Lyon1 - France; [2]Humboldt Universitatet Berlin – Germany; [3]Karlstads Universitet - Sweden; [4]Universidad de Extremadura - Spain; [5]University G. d'Annunzio Chieti-Pescara – Italy; [6]Uniwersytet Gdanski - Poland

No updated and shared resource in terms of teaching material in the area of mental training that is "a training which consists in developing mental and cognitive skills with the objective of optimizing the personal or collective performance of athletes while promoting the pleasure of practice and autonomy" is available. Thus, there is a chance to align the expertise scattered across Europe in our scientific records and to provide students with an education that no single university can accomplish. Mental training is often required because the coaches lacks adequate knowledge in this filed by recruiting professionals outside the staff.

The objective of the workshop will be to provide an overview of the training courses currently offered in six European countries (i.e., Italy, France, Germany, Poland, Spain and Sweden) and to present the EUROMENTAL project, which aims to: 1) co-build training content in sports psychology and mental preparation for coaches and mental trainers to develop with elite athletes ; 2) disseminate good practices in training and mental preparation towards stakeholders, professionals, and students in these fields. This project brings together the expertise of six European countries (France, Germany, Italy, Spain, Sweden, and Poland), including six universities (Universities of Lyon, Humboldt-Universität zu Berlin, Chieti-Pescara, Extremadura, Karlstad and Gdansk) and nine professors.

SYMPOSIA

FEPSAC

European Federation of Sport Psychology

Symposium
Topics: Elite sports and expertise

Exploring the Pressures Placed on Elite Athletes and Olympians to Perform: Cross-Cultural Challenges and Future Directions

Chair(s): **John P. Mills** (University of Essex, United Kingdom)
Discussant(s): **John P. Mills** (University of Essex)

Research exploring the mental health and psychological wellbeing of elite-level athletes has grown rapidly in recent years (Rice et al., 2016; Baron et al., 2013). The World Health Organization (WHO, 2014) describes mental health as a condition of well-being in which each individual achieves his or her full capabilities, can manage with normal life stressors, can work successfully and effectively, and can contribute to her or his community. However, the severe mental and physical demands imposed on elite athletes are a distinctive element of their career and may make them more vulnerable to mental health concerns (Hughes & Leavey, 2012). Much of the current literature, however, has focused on athletes competing at sub-national levels. The purpose of this symposium is to present a series of exploratory studies seeking to understand the impact of competing at the apex of sport on athlete mental health and well-being. First, we explore how female athletes in both Italy and Great Britain were supported in the build up to the Tokyo Olympics. Second, we discuss the pressures professional football and rugby players face to play through injury and risk further damaging their body's and careers. Third, we explore Team GB member's experiences around mental well-being pre and post the Tokyo Olympics. The fourth presentation dives into the murky world of athlete surveillance and issues of confidentiality within English football. Finally, we present a longitudinal study examining the Irish Olympic Team's mental health before and after the Tokyo Olympics and discuss implications for stakeholders moving forwards.

Presentations of the Symposium

Exploring the psychological well-being of Female Italian and British athletes in the build up to the Tokyo Olympics

Viola Paoletti, Tristan Mayglothling, John P. Mills
University of Essex

The severe mental and physical demands imposed on elite athletes are a distinctive element of their career. This may make elite athletes more vulnerable to mental health issues and health-damaging behaviours more broadly (Hughes & Leavey, 2012). With this in mind, the current study aimed to analyse the influence that training environments have on female athletes in the build up to the Tokyo Olympic Games. A cross cultural qualitative study was conducted on a sample of six world-class female athletes (three Italian and three British). Findings revealed eight higher order themes: (1) positive aspects to the training environment, (2) negative aspects to the training environment, (3) Impact of Covid-19, (4) Relationships with coach and performance director, (5) Relationships with other athletes and team-mates, (6) Well-being support, (7) Positive aspects to organisational environment, and (8) Negative aspects to organisational environment. These higher order themes were then categorized into the following three general dimensions: training environments, relationships' influence on well-being, and organizational environments. The results are presented demonstrate that there are several obstacles that elite athletes may face, one of which is the rising awareness about mental health issues. These obstacles may last many months and present long-term challenges to athlete mental health. The study offers a significant contribution to the sport psychological literature by providing a unique insight into the dynamic nature of well-being in Olympic athletes. Limitations of the study are discussed and recommendations are made for future research.

Exploring Athlete Welfare Pre and Post the Tokyo Olympics: A Qualitative Study

Tristan Mayglothling, Viola Paoletti, John P. Mills
University of Essex

There are ethical issues in performance sport. These are often influenced by personal and cultural values and normative standards in the drive to victory (Kvalnes & Hemmestad, 2010). The performance level of UK sport is currently defined by results rather than the process (Bishop, 2020). This leads to behaviours that are unacceptable in wider society being accepted in return for medal success/funding (Federsen et al, 2020). Within the present study, Team GB athletes were interviewed before (n=5) and after (n=4) they competed in Tokyo via an online platform. Four athletes felt there were additional distractions and increased anxiety in the final build up to Tokyo. The main causes were injury to self and team-mates, illness – especially due to Covid 19, last-moment changes to team selections and support personnel, and the inexperience of key staff (e.g., Performance Director). Whilst we can in no way attribute causality, the only athlete who felt their build up was smooth before the games was also the only medalist interviewed. Limitations to who could be present in the athlete village (e.g., sport psychologists were not present, and physios and coaches had limited access to athletes) were reported as reasons affecting athlete well-being. Athletes also felt being asked to leave within 24-hours of their final competition led to increased stress. In terms of applied implications, it is clear that Covid-19 had a negative impact on athlete preparation. Steps to address these distractions and create a smoother athlete experience will be required for 2024.

Playing through Injury: Exploring the Reasons Why Athletes Put Themselves at Risk of Further Harm

Elizabeth Norman, John P. Mills
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Elite athletes often continue training and competing in sport after suffering serious injuries, with little regard given to the long-term physical and mental effects it could have on them. This study aims to explore elite team sport athletes' reasons for competing when injured. Semi-structured interviews were conducted with eight elite athletes. The athletes were current professionals, ex-professionals or current academy players for professional football and rugby clubs. A thematic analysis was carried out on the data collected. Contractual pressure was found to be the most common explanation for continuing to compete through injuries. Other collective responses were: (i) concerns about missing opportunities to showcase their talents and fears of losing place, (ii) a lack of knowledge around the effects of injury on their anatomy and physiology, and (iii) limited understanding of the mental impact rehabilitation has on the athletes. Continuing to train and compete through injury poses serious consequences to the physical and mental wellbeing of an athlete. These consequences include recurring injury, career ending damage and injury, depression, anxiety, and mental ill health. Therefore, the findings of this study, along with those from previous research, are important for combatting these issues in the future. Further research needs to be conducted to determine ways of educating athletes on the long-term risks of short-term gain when failing to adhere to rehabilitation procedures.

Confidentiality and Surveillance in Psychology Provisions in Men's Football Academies in England

Niels Boysen Feddersen[1], Francesca Champ[2], Stig Arve Sæther[1], Martin Littlewood[2]
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Gathering data (e.g., running distance, fat percentage, sleep quality) on young footballers is commonplace and creates almost complete transparency into their lives. As coaches face increased accountability to clubs and policy, these insights could lead to coaches expecting similar openness into the psychology and mental wellbeing of their players despite ethical issues related to confidentiality. The study examines challenges to confidentiality experienced by sport psychologists. Sixteen psychologists, six women and ten men, working in English football academies (ten in Category 1, three in Category 2, and three in Category 3) participated in two semi-structured interviews. We carried out a reflexive thematic analysis after each round of interviews and developed three themes: (1); challenges to confidentiality; (2) the connection between surveillance and challenges to confidentiality; and (3) consent. First, participants explained that several staff members; including coaches, managers, and support staff; would use covert and subtle ways to try to gain insights. This included trying to get the psychologist to 'slip up' and reveal confidential information. Second, the football academy context was characterised by widespread surveillance of players. It was evident that it is common practice for clubs to gather objective and self-report data creating extreme transparency into all aspects of young people's lives. Last, participants explained that new players, their parents and new staff are socialised into this surveillance, which might manufacture a sense of taken-for-granted consent. We propose that football and psychology governing bodies must examine this issue to provide clear guidelines and training for psychologists and staff.

A longitudinal study of Organisational Stressors and Mental Health within the Irish Olympic Team pre and post the Tokyo 2020 Games

Jo-Anne Browne[1], Kyle F. Paradis[1], Kate Kirby[2]
[1]School of Sport, Ulster University, [2]Sport Ireland Institute

The purpose of the present study was to assess the relationship between organisational stressors and mental health indicators of the Irish Olympic Team around the Tokyo 2020 Olympic Games. The Irish Olympic team was comprised of 271 members including 116 athletes and 155 team staff who were sent an online survey at 2-weeks pre-Games (Time 1) and 4-weeks post-Games (Time 2). A total of 98 participants (36% response rate) responded at Time 1, and 70 participants (26% response rate) responded at Time 2. Respondents represented 18 out of the 21 sports involved. The measures included the Organisational Stress Index for Sport Performers (OSI-SP; Arnold et al., 2013), the Mental Health Continuum-Short Form (MHC-SF; Keyes, 2002) and the Sport Mental Health Assessment Tool-1 (SMHAT-1; Gouttebarge et al., 2021). Results indicated a significant inverse relationship between organisational stressors and well-being for team staff at both Time 1 ($r = .49$) and time 2 ($r = .51$). There was also a significant positive relationship between organisational stressors and risk of ill mental health symptoms for both athletes ($r = .66$) and team staff ($r = .69$). Comparison of findings over time indicated that at Time 1, pre-games, team staff reported significantly greater risk of mental health issues than did athletes, however at Time 2, post-games, athletes reported significantly greater risk of mental health issues than team staff. These findings have implications for mental health support provision to continue to be provided to both athletes and support staff not only pre-event but also post-event.

Symposium
Topics: Social and cultural diversity

Narrative and Discursive Construction of Athletes' Careers: Gendering the Whats and the Hows

Chair(s): **Tatiana V. Ryba** (University of Jyväskylä, Finland), **Milla Saarinen** (University of Jyväskylä, Finland)
Discussant(s): **Stiliani "Ani" Chroni** (Inland Norway University of Applied Sciences, Norway)

The rhetoric of gender diversity, inclusion and holistic development of athletes has inspired the development of numerous policy documents, including the recent safe sport movement. Although scientific evidence that narratives and discourses shape identities and lives has been growing (Hammack, 2011), more research is needed to understand the gendered contents and the gendering processes in the elite sport culture. This symposium will provide a larger understanding of how career contents (i.e., the whats) are culturally defined and intricately linked to gender ideologies. Moreover, it will demystify the different gendering processes (i.e., the hows) that are required for managing different contents in narrative-discursive career construction. Firstly, the organisers will introduce the symposium's theme and objectives, after which the first presenter will present her PhD research on how Finnish ski coaches understand and implement gender equality in their coaching practice. She will also discuss the gendered effects of discursive coaching practice in a cultural context. The second presenter will share a case study concerning a female, Swedish, professional handball player, whose career construction he has followed for five years, reflecting on contents and processes through the lens of his previous work, which discerned gender-specific paths for Swedish handballers. The third presenter will seek to unearth implicit theories of elite sport and motherhood in the Slovenian culture and, moreover, to identify influential individuals and structures through which they become constituted. Finally, the experienced discussant will facilitate the ensuing critical dialogue about how cultural assumptions of gender often lead to reinforcing inequalities in sport.

Presentations of the Symposium

Finnish Ski Coaches' Discursive Constructions of Gendered Dual Career Pathways

Milla Saarinen[1], Tatiana V. Ryba[1], Anna Kavoura[2], Kaisa Aunola[1]
[1]University of Jyväskylä, Finland, [2]University of Brighton, United Kingdom

Athletes in Nordic countries are expected to combine their sporting careers with education to create a dual career (DC). Research indicates that sociocultural discourses of gender are ingrained in DC practices, creating gender inequalities that may influence athletes' motivation and career aspirations (Ryba et al., 2021).While current DC policy documents underscore the importance of gender equality in coaching practice (European Commission, 2012; 2014) there is a gap in the literature regarding (1) coaches' understanding and incorporation of these policy recommendations into their coaching practice; and (2) how dominant discourses of gender and beliefs related to the compatibility of sport and education shape their coaching practice. The present study examined how the Finnish coaches' beliefs about athletes' holistic development are interlinked with broader sociocultural discourses about gender. Seven male and three female ski coaches, aged 25-62 (M = 38.5), participated in semi-structured interviews. The data were analyzed with reflexive thematic analysis and interpreted through a feminist poststructuralist lens (Braun & Clarke, 2019; Butler, 1990). Two main themes were constructed in the analysis: (1) The fluid positioning of education with the subthemes (1a) achieving secondary education is important and (1b) sport is the priority at the mastery level, and (2) holistic development is important for female athletes with the subthemes (2a) female athletes invest in multiple careers and (2b) coaching female athletes is challenging. Our findings reveal that gender hierarchies persist in Finnish sporting culture and that coaches reproduce gendered discourses that influence athletes' DC aspirations and the gendering of DC.

"I Will Most Likely Quit Sport": A Case Study of a Swedish Female Handball Player and her Career Plans

Johan Ekengren
Halmstad University, Sweden

Swedish female handball players consider dual career/education more important than male players, because of lower opportunities for a professional athletic career, and gendered social norms (Ekengren et al., 2020). This presentation will share a case study demonstrating how Alice, a Swedish female handball player, planned to dropout from handball because of challenges as a student-athlete but nonetheless stayed in a dual career pathway. Reflections on Alice's career pathway will be conducted through the lens of gender-specific career paths in Swedish handball (Ekengren et al., 2020). In 2016, Alice wrote a career plan using the 5-step career planning strategy (Stambulova, 2010). She described internal barriers such as being stressed from combining elite sport and studies, having difficulties to adjust to senior level causing her to doubt herself and have periods of low motivation. Structuring her future, Alice stated: "I will most likely terminate handball within 2-4 years". As her University teacher, I followed her career and conducted a follow-up interview 5-years later about her initial career plan and the decision to continue playing. A content analysis was undertaken to analyse her story and why her career plan had changed. In contrast to her initial plan, Alice adjusted to the senior level, decided to continue, and later made a debut in the national team in parallel with managing her academic studies. The presentation will summarize reflections about gendered aspects of career paths, coping with dual career challenges, and lessons learned when navigating a dynamic and unpredictable career as a female handball player.

Women Athletes' Views on Elite Sport and Motherhood

Janja Tekavc
University of Maribor, Slovenia

Although research shows that combining dual career and motherhood affords enhanced well-being and excelling in elite sport (McGannon et al., 2019; Tekavc et al., 2020), pregnancy and motherhood are usually perceived as reasons why female athletes may end their athletic careers or fail to reach their full potential in sport (Palmer & Leberman, 2009). More research is needed to understand the contradictory socio-cultural narratives that circulate gender ideologies impacting women athletes. The focus of this qualitative study is on exploring women athletes' implicit theories on elite sport and motherhood. The research questions are: What is the content of these implicit theories about maternity and elite sport and how do they shape women athletes' projections of their future? Who are the influential individuals and structures that co-create these narratives? The data consist of conversational interviews with 12 elite-level women athletes in their mastery stage of dual career development (Wylleman et al., 2013). Data analysis will consist of inductive thematic analysis, and the creation of composite vignettes to represent findings. The creation of the vignettes will include the most relevant participants' perspectives on combining motherhood and elite sport through their perceptions transformed in one collective voice.

Symposium
Topics: Well-being and quality of life

Thriving in Sport: Conceptual, Empirical, and Practical Advances

Chair(s): **Daniel J Brown** (University of Portsmouth, United Kingdom)

Recent years have seen increased scrutiny on sporting environments owing to a series of high-profile cases where the treatment and protection of athletes within these settings has fallen below acceptable standards. Consequently, sport organizations have undergone culture reviews to ensure changes are enacted that prioritize and protect athlete well-being alongside performance. In consort with these changes, academic literature has emerged to inform and support organizations, their athletes, and their employees to achieve these joint outcomes and, ultimately, to thrive (Brown et al., 2021). The purpose of this symposium is to present contemporary advances from the literature including empirical studies on the social factors influencing thriving, practical attempts to promote thriving, and reflections on key next steps in the field.

Following a brief introduction to the topic of thriving (Paper 1), two papers will be presented examining the role of coaches and teammates on the occurrence of thriving. Paper 2 will examine the importance of athletes' attachment to their coaches on their experience of thriving and the mediating role of athletes' basic psychological need satisfaction. Paper 3 elucidates how teammates can both mitigate and exacerbate the effect of organizational stressors on athletes' subsequent thriving. Shifting focus towards practical applications, Paper 4 describes how, using participatory action research, a researcher worked with an Olympic sport organization to foster thriving through the development of an athlete induction programme. Paper 5 will conclude the symposium by offering critical considerations on how thriving could be conceptualised in team sport settings and on a collective level.

Presentations of the Symposium

What do we mean by 'thriving'?

Daniel J Brown
University of Portsmouth, UK

The past five years have seen a rapid growth in sport researchers studying the topic of thriving. Within this work, advances have been made in our understanding of what characterizes thriving in sport (e.g., Brown et al., 2018) and of the psychological and social factors that can bring about its occurrence (e.g., Brown & Arnold, 2019; Kinoshita et al., 2021; McHenry et al., 2020; McNeill et al., 2018; Rouquette et al., 2021). However, studies conducted on thriving in sport have also continued to perpetuate a trend of researchers adopting different conceptualizations and operationalizations of the construct in their work (Brown et al., 2017). To provide clarity for readers and consumers of this literature, this opening presentation will describe each of the different approaches that have been adopted by thriving researchers, along with arguments for why thriving is best understood from a functioning-based perspective. The presentation will also provide brief considerations on the distinction between the construct of thriving, and the constructs of growth and resilience.

Thriving through relationships in sport: The coach-athlete attachment relationship

Louise Davis[1], Daniel J Brown[2], Rachel Arnold[3], Henrik Gustaffsson[4]
[1]Umeå University, Sweden, [2]University of Portsmouth, UK, [3]University of Bath, UK, [4]Karlstad University, Sweden

The aim of this research was to examine the contextual enablers associated with the occurrence of athlete thriving. One contextual enabler of particular interest is the relationships that athletes develop with significant others, including sports coaches. Outside of sport, research has found that relationships built on secure attachments can act as a contextual enabler for thriving across the lifespan (Feeney and Collins, 2015). Therefore, we aimed to extend previous research by examining (1) how athletes' attachment relationships to their sports coach (e.g., secure, anxious, avoidant) enable or hinder thriving within sport, and (2) the mediating effects of basic psychological need satisfaction on the relationship between coach–athlete attachment and thriving. In total 290 Swedish athletes (138 female and 152 male) ranging from 11 to 46 years old (M = 18.46) completed a multi-section questionnaire measuring the main variables under investigation. Structural equation modelling showed significant predictive relationships existed between anxious and a secure attachment and thriving; however, a non-significant prediction was found for avoidant attachment and thriving. Furthermore, the results suggest that athletes basic need satisfaction fully mediated the effects of athletes' secure, avoidant, and anxious attachment styles on thriving. The findings lend support to the contention that basic psychological needs satisfaction is an underpinning process variable through which social-contextual factors (i.e., coaches) can impact thriving (Brown et al., 2017). Future interventions aiming to promote athlete thriving may be enhanced by targeting coaching strategies and behaviours that facilitate positive secure relations as well as address and satisfy athletes' psychological needs.

Understanding the relationship between organizational stressors, interpersonal dynamics, and thriving in competitive rowers

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[1]University of Portsmouth, UK, [2]University of Winsconsin-La Crosse, USA; University of Portsmouth, UK

Thriving is a desirable experience in the athletic context as it is characterised by both high levels of performance and well-being (Brown et al., 2017). While social characteristics have been found to facilitate its occurrence (Brown & Arnold, 2019), organizational stressors may have detrimental effects on performance (Didymus & Fletcher, 2017) and well-being (Arnold et al., 2017). Given the impact of organizational stressors, it is important to analyse the mitigating role that social characteristics may hold. The aim of this research was to provide the first explicit exploration into the association between organizational and interpersonal dynamics on thriving. A mixed methodology was employed with quantitative data collected to guide questioning within subsequent semi-structured interviews conducted with 15 Italian rowers. Data were collected at two times in the athletic season, first, during the off-season and, second, during the competitive phase. Such distinction was made to understand if and how the athletes' behaviours and perceptions changed during differing levels of competitive stress. Reflexive thematic analysis of the two sets of interviews generated three themes that reflected ambivalent effects of social characteristics in facilitating thriving and mitigating the effects of organizational stressors. The importance of team support and trusting relationships, shared adversities, and self-identification within the team facilitated the experience of thriving. However, as in previous research, social support was also perceived to exacerbate the experience of organizational stressors (Arnold et al., 2018). The results of the study offer insights for practitioners on the mitigating and facilitative role of social characteristics.

Using participatory action research to develop an induction programme to facilitate thriving in an Olympic sport organisation

Michael Passaportis[1], Daniel J Brown[1], Chris Wagstaff[1], Rachel Arnold[2]
[1]University of Portsmouth, UK, [2]University of Bath, UK

Elite sport environments are becoming increasingly complex and volatile as sport organisations search for a competitive edge to deliver instant and consistent success (Wagstaff, 2016). These multifaceted environments have the potential to significantly impact athlete well-being and performance, and may be a particularly salient influence for athletes transitioning into elite sport organisations. Thriving may offer practitioners a means to ease potentially difficult transition processes by promoting high levels of wellbeing and performance simultaneously. Thus, this study aimed to create an induction programme for new athletes transitioning onto an Olympic programme that would facilitate thriving by enhancing both athlete performance and well-being. To achieve these aims, a participatory action research (PAR) design was employed. PAR approaches view research as a collaborative enterprise based on the assumption that academic researchers and community members can come together to create or change practices. The lead researcher and several members of a British Olympic sport organisation (e.g., sport psychology practitioner, Head of People and Culture) undertook a joint process of self-reflective cycles involving planning, acting and observing, and reflecting over eight months. Through this collaboration, an induction programme underpinned by guiding principles of trust, clarity, and belonging was created to promote athlete thriving. These principals were enabled through excellent two-way communication, appropriate challenge and support, and an individual needs led approach. This ensured multidisciplinary support teams maintained a consistent focus on thriving throughout the induction process which positively benefited inductees and effectively communicated the organisation's commitment to holistic development of their athletes.

Collective thriving in team sports: Conceptual and methodological considerations

Cailie S. McGuire[1], Daniel J Brown[2], Luc Martin[1]
[1]Queen's University, Canada, [2]University of Portsmouth, UK

Despite conceptual advances and preliminary associations highlighting the benefits of thriving in sport (e.g., goal achievement, Kinoshita et al., 2021; enhanced life satisfaction, Rouquette et al., 2021), opportunities for continued research are numerous. Notably, sport specific research involving thriving has predominantly taken an individual athlete perspective (Brown et al., 2021). Interestingly, evidence from organizational psychology suggests that thriving can manifest at a collective level through interdependent team member interactions (Walumbwa et al., 2018; Xu & Wang, 2019). Given the potential for collective thriving to occur in team sports, a critique of collective athlete thriving is advanced. More specifically, the authors first discuss the implications of a conceptual shift in focus using example constructs that have been examined at both individual and collective levels from within (e.g., collective efficacy; Feltz, 2007) and beyond sport psychology (e.g., team burnout; Urien et al., 2021). Based on established conceptual underpinnings, the complex and dynamic emergence of collective thriving is considered (i.e., compositional versus compilation emergence; Kozlowski & Klein, 2000), paying particular attention to potential contagion effects. Further, the attainment of 'team thriving' is explored, cogitating the necessity of member awareness and group consensus, and the potential for varying degrees of influence from certain athletes. Finally, and with a view to operationalization, collective thriving is discussed as a shared or configural construct (Klein & Kozlowski, 2000), and if most accurately represented through the aggregation of individual-level perceptions or the adoption of a multi-level approach.

Symposium
Topics: Clinical issues in sport and physical activity

The Ubiquity of Chronic Pain in Sport: Examining an Understudied Area for Supporting Young Athletes

Chair(s): **Courtney W Hess** (Stanford University, United States of America)

Chronic pain (CP) is a common experience, affecting 11-38% of youth each year (King et al., 2011), and is associated with decreased quality of life, functioning (Gold et al., 2009), and increased mood and anxiety symptoms (Palermo, 2000). Athletes are at particular risk for developing CP as injury is a common incident within sport and an established precipitating factor for CP (Becker et al., 2018; Conn et al., 2003). Despite the risk and deleterious outcomes of CP, limited research exists to guide treatment and management for this specific population. Novel approaches to pain management have emerged which could support athletes who are navigating CP. These approaches include interdisciplinary treatment consisting of pain science education, physical therapy and exposure, and psychological support. For athletes, however, limited research exists to guide how this standard of treatment could be better integrated into a sport-specific context. This symposium aims to bridge build between pain treatment and the sport sphere. To do this, the authors will: (a) characterize a population of youth athletes diagnosed with CP including salient demographic and psychosocial characteristics, (b) introduce chronic pain and pain science education, (c) describe current treatment approaches for the rehabilitation of CP, and (d) present a conceptual framework for interprofessional collaboration between pain and sport spheres so to improve outcomes and experiences for youth athletes with CP. These key areas of intervention will be further highlighted in each lecture through the presentation of a single athlete case-study who has managed CP in a high-level sport sphere.

Presentations of the Symposium

Characterizing Chronic Pain in Young Athletes: Cognitive and Behavioral Considerations for Successful Rehabilitation

Lauren E Harrison, Courtney W Hess, Laura E Simons
Stanford University School of Medicine

Worldwide, sport participation for youth is ubiquitous and sport-related injury is common (Maffulli et al, 2010). Many young athletes recover and return to sport; however, some continue to be limited by chronic pain (CP; Becker et al., 2018). This study characterized patients with CP who identified as athletes and assessed the relationship between athlete identity and pain sequelae. Youth participants (N = 305; Mage = 13.9) presenting to a multidisciplinary pain clinic completed measures assessing sport participation, athlete identity, pain-related distress, and functional disability. Descriptive and correlation analyses were conducted to characterize the sample and assess relationships between athlete identity and pain-related distress. Overall, 83.6% of participants identified as an athlete, with 39.2% currently involved in sport and 53.3% intending to return. Neuropathic (35%) and musculoskeletal (25.6%) pain were most common among athletes. Participants reported moderate levels of athlete identity and functional impairment, and high levels of pain catastrophizing. Significant differences in functional disability between current athletes and those intending to return to sport emerged ($F=6.0$, $p<0.05$), with those currently participating reporting less disability. Athlete identity was significantly related to participant pain duration ($r=0.22$, $p<.01$) and pain catastrophizing ($r=0.14$, $p<.05$). Results highlight the substantial overlap between CP and sport, and prompt consideration of the unique cognitive and behavioral factors impacting management of CP as an athlete. This lecture will expand upon these results, further contextualize these data through presentation of an athlete case-study, and discuss potential implications for targeting CP in the sport sphere.

Introduction to the Science of Pain and Delivery of Pain Science Education for Young Athletes with Persistent Pain

Joshua W Pate[1], Hayley Leake[2], Melanie Noel[3]
[1]The University of Technology Sydney, [2]University of South Australia, [3]University of Calgary

Pain science education (PSE) aims to instill an understanding of the scientific basis for chronic pain (CP), the biopsychosocial nature of pain, and the potential disconnect between pain and tissue damage (Harrison et al., 2019). PSE facilitates participation in active, psychological, and self-management skills (Watson et al., 2019), and recent evidence in youth appears promising (Leake et al., 2019). Both adults and youth report that they value learning about pain (Leake et al., 2022) to address psychosocial influences on pain. We propose that this evidence base should be tested in young athletes with CP. In addition to the developmental challenges of adolescence, young athletes face unique pressures, such as performance-related stressors and amplified consequences of injuries. Therefore, the key learning objectives of PSE in athletes may differ. For example, are young athletes with CP already applying the message of “moving despite pain is ok” by 'pushing through'? Do young athletes understand the link between stress and pain? Should education be tailored to individual young athletes? This lecture will begin with an interactive quiz of the audience to evaluate current concepts of pain in a sport setting. Moreover, this lecture will further highlight the relevancy and importance of PSE through the experiences of an athlete with CP case-study. We will discuss how PSE can improve behavioral outcomes, introduce delivery methods for PSE with young athletes (e.g., face-to-face, books, online animations), and conclude with an exploration of future possibilities in clinical and research settings.

Application of Rehabilitative Approaches to Chronic Pain in Young Athletes

Giulia Mesaroli[1], Karen Hurtubise[2]
[1]The Hospital for Sick Children, The University of Toronto, [2]The University of Sherbrooke, Can Child Centre for Childhood Disability Research, McMaster University

Injury and pain in sport is common and has been associated with decreases in physical functioning, social functioning, and global health-related quality of life (Valovich et al., 2009). While many young athletes recover and return to sport, a significant proportion continue to be impacted by their injury resulting in chronic pain (CP) concerns, and at times, early departure from sport (Hsu et al., 2021). To mitigate undesirable outcomes, interdisciplinary, 3-P approaches (i.e., pharmacological, psychological, physical treatments), have been established as gold standard (Ayling Campos et al., 2011). However, a major barrier to physical rehabilitation for youth with CP is fear avoidance, particularly fear of movement (Larsson et al., 2016). These movement fears can lead to sedentary behaviour which can thereby cause tissue changes that further increases pain and disability (Leeuw et al., 2007), at times resulting in early departure from sport (Hsu et al., 2021). Physical rehabilitation for chronic pain, which aims to reduce fear of pain and movement and increase engagement in functional activities (e.g. competitive sport; Kempert et al., 2017) differs from traditional approaches for acute pain. In this session, three specific differences will be explored and described alongside an athlete case-study presentation: (1) The prioritization of active treatment strategies (e.g., graded exercise) (2) The use of psychologically informed physical treatments such as goal-setting and graded exposure, and (3) The inclusion of developmentally appropriate (e.g., play-based) activities into physical rehabilitation. Moreover, innovative virtual reality (VR) protocols designed for pain physical rehabilitation will be introduced.

Interprofessional collaboration for Young Athletes with Chronic Pain: What we can Learning from Elite Sport

Courtney W Hess, Lauren E Harrison, Laura E Simons
Stanford University School of Medicine

Growing understanding of chronic pain (CP) has prompted reconceptualization of the pain model from a biomedical to biopsychosocial paradigm. Consistent with this paradigm shift, approaches to pediatric CP management have shifted and calls in the literature have been consistent in the need for multimodal interventions (e.g., physical, psychological) that demand interprofessional collaboration (Birnie et al., 2020). These same calls for interprofessional collaboration have emerged in the context of athletic injury (Arvinen-Barrow & Clement, 2019); however, researchers have pointed toward the gaps in translation of theoretical conceptualization to professional practice which may result in a biomedical approach to pain management within the sport context (Hess et al., 2019). This lecture will present data from a qualitative study of an interprofessional team involved in two injury rehabilitation cases leading into the 2014 Olympic Winter Games therein highlighting important factors that impacted the interdisciplinary work in an elite sport context (e.g., sociocultural context, interpersonal challenges). Alongside these data, this lecture will include the experiences of an athlete who managed CP within the sport context through a case vignette and recorded interview. Qualitative data and athlete experiences will be presented through an established team science framework (Input-Mediator-Output; Ilgen et al., 2005), thereby offering a conceptual frame for establishing and improving integrated approaches to managing pediatric CP with athletes. This lecture will then initiate discussion of the unique barriers and catalysts to facilitating integrated work in the sport context, and highlight areas for future team science research within this sphere.

Symposium
Topics: Emotion

The Role of Emotions in Sports Performance

Chair(s): **Maciej Behnke** (Faculty of Psychology and Cognitive Science, Adam Mickiewicz University, Poland)
Discussant(s): **Maciej Behnke** (Faculty of Psychology and Cognitive Science, Adam Mickiewicz University, Poland)

Emotions are an integral part of sports performance. Research over the past decades has demonstrated the explanatory power of affective processes when understanding and predicting how athletes think and behave. Five papers in this symposium discuss the emotion-performance relationship in sports. We identify factors that lead to successful performance using diverse methodologies (e.g., psychophysiological lab experiments, behavioral coding, and longitudinal studies) and sports (e.g., football, cycling, and esport). Following a brief introduction, di Fronso discusses individual preferences for pleasant or unpleasant affect in endurance performance. Next, Laborde et al. explain the differences in regulating emotions using slow-paced breathing with and without heart rate variability biofeedback. Behnke et al. then address the mechanism through which pleasant emotions optimize esports performance. Next, Furley outlines contemporary empirical research indicating that thin-slices of pre-performance nonverbal behavior of professional athletes (e.g., darts, basketball) give valid information to observers about subsequent performance tendencies. Finally, Hobson presents how challenge and threat appraisals change during a season (temporally) and develop in youth footballers (longitudinally) as they progress through the professional academy system. Together, our presentations show conceptual, methodological, and technical advances that have been made in the context of sport to study emotions. Our symposium focuses on experiential, physiological, and behavioral aspects of emotions, which provides a broad perspective for understanding the emotions' role in performances' context.

Presentations of the Symposium

The Impact of Pleasant and Unpleasant Core Affect on a Cyclo-ergometer Endurance Task

Selenia di Fronso
Department of Medicine and Aging Sciences, "G. d'annunzio" University of Chieti-Pescara, Italy

Core affect is defined as the most general affective construct consciously accessible that is experienced constantly. Our purpose was to examine the impact of pleasant and unpleasant core affect on cyclo-ergometer endurance performance. Specifically, we considered the influence of core affect on performance outcomes (i.e., time to task completion) and rate of perceived exertion (RPE) collected during a time-to-exhaustion (TTE) test. Thirty-one participants were recruited. Core affect was randomly elicited by 2 sets of pleasant and unpleasant pictures chosen from International-Affective-Picture-System, displayed to participants during TTE in 2 different days in a counterbalanced order. RPE was collected every minute to detect volunteers' exhaustion. The study sample was split into 2 groups. Group 1 comprised participants who performed better (i.e., they obtained longer time to task completion) with pleasant core affect, whereas Group 2 included participants who performed better with unpleasant core affect. Mixed between-within subjects analysis of variance revealed a significant 2(group)×2(condition)×5(isotime) interaction ($p= 0.002$). Post-hoc comparisons showed that participants who performed better with pleasant core affect reported lower RPE values at 75% of TTE in a pleasant core affect condition compared to an unpleasant core affect condition. On the contrary, participants who performed better with unpleasant core affect reported lower RPE values at 75% and 100% of TTE in an unpleasant core affect condition. Findings suggest differential effects of pleasant and unpleasant core affect on performance. Moreover, core affect was found to influence perceived exertion and performance according to participants' preferences for pleasant or unpleasant core affect.

Effects of slow-paced breathing realized with or without heart rate variability biofeedback on emotion regulation

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In the past decade, the use of heart rate variability (HRV) biofeedback based on slow-paced breathing (SPB) greatly spread in sport psychology, showing its positive impact on sport performance (Jimenez Morgan & Molina Mora, 2017; Pagaduan, Chen, Fell, & Xuan Wu, 2020; Pagaduan, Chen, Fell, & Xuan Wu, 2021). However, questions remain regarding its underlying mechanisms, and the current study aimed to address this issue. 112 participants took part in this study. They were involved in a within-subject design, in which they realized in a counterbalanced order SPB at 6 cycles per minute, either with (SPB-HRVB) or without (SPB-NoHRVB) HRV biofeedback, with a rest period before (PRE) and after (POST). Psychophysiological parameters assessed involved emotional (valence, arousal, control) and perceived stress intensity self-report variables, and the log of the root mean square of the successive differences (RMSSD) as a physiological variable. A main effect of time was observed for all dependent variables. However, no main effects for the condition or time x condition interaction effects were observed. Results showed that for PRE and POST comparisons (referring, respectively, to before and after SPB), both SPB-HRVB and SPB-NoHRVB conditions resulted in a more negative emotional valence, lower emotional arousal, higher emotional control, and higher RMSSD. Future research might investigate psychophysiological differences between SPB-HRVB and SPB-NoHRVB across different time periods (e.g., long-term interventions), and in response to diverse psychophysiological stressors.

The Role of Approach-Avoidance Motivational Tendency on Esports Performance

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Emotions that differ on the approach/avoidance motivational tendency are thought to serve different functions (e.g., increasing vs. decreasing physiological reactivity). Based on a motivational model of affect, we expected that a high approach tendency (rather than valence) would facilitate gaming performance. Furthermore, we expected that the effect of high approach emotion on performance would be mediated by higher levels of cognitive and physiological challenge as an approach-related response. To test these hypotheses, 241 men played five matches of the soccer video game FIFA 19. Prior to each match, approach-avoidance tendency and valence were experimentally manipulated by eliciting amusement, enthusiasm, sadness, anger, and neutral states with film clips. Approach-avoidance tendency, challenge-threat evaluations, cardiovascular responses, and match scores were recorded. After watching enthusiastic and amusing film clips, players showed a stronger approach tendency, and thus better performance, compared to negative emotions and neutral states. Furthermore, enthusiasm produced a stronger approach tendency and fostered better performance than amusement. Inducing anger and sadness had no effect on approach-avoidance tendency and game performance compared to the neutral condition. In all conditions, players with higher levels of cognitive and cardiovascular challenge had higher scores. These results indicate that in the context of esport, performance is enhanced by pleasant emotions with high approach tendency.

Nonverbal Pre-performance Expressions and Their Relation to Performance in Sports

Philip Furley
German Sport University Cologne

According to evolutionary accounts of nonverbal expressions, humans have evolved to be well-equipped for communicating important internal states like emotions or social intentions nonverbally. Somewhat surprisingly, research on body language (nonverbal behavior) in sport is only slowly emerging, although it is considered important and has been frequently studied in other disciplines. In this presentation, I attempt to introduce a bio-cultural framework and methodological guidelines for studying nonverbal behavior and, in particular, emotion expressions in sports. I argue that the ubiquity of (intense) emotional expressions and the wide-ranging documentation and coverage of sports events provides an ideal context for studying naturally occurring emotional expressions and their influence on interpersonal outcomes. I will outline the latest empirical research from our group showing that athletes, coaches, and referees' display certain nonverbal behaviors that are correlated with various internal (e.g., emotions) or contextual (e.g., success, playing location) variables and that observers can decode these nonverbal behaviors. In addition, I will discuss recent studies that show that these (emotional) nonverbal expressions by athletes and officials have the potential to influence other people and thereby influence various relevant outcomes in sports. Recommendations for future research will be made on how researchers can exploit the fact that nonverbal behavior often informs observers about what is going on inside a person and thereby gain insights on the reciprocal relationships between contextual factors, the athlete, and performance in sports.

Youth Academy Soccer Players' Challenge and Threat States; Longitudinal and Temporal Change Over Time

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To advance the Theory of Challenge and Threat States in Athletes (Jones et al., 2009; Meijen et al., 2020), more research into how appraisals change temporally and longitudinally is required. Academy soccer is an appropriate setting given the associated developmental stressors (Reeves et al., 2009).

Academy youth (8-19 years) soccer players' demand and resource appraisals and mental health were measured in six waves; twice per season over three seasons (September 2018 to April 2021). Multiple multivariate analysis of covariance were run to explore longitudinal (n=78) and temporal change during three consecutive seasons (n=130, n=124, n=150).

Longitudinally, perceived demands and resources significantly increased after wave 1. Anxiety and depression symptoms were significantly lower at waves 5 and 6 (after the pandemic) than at any other time. Temporally, during season one, perceived demands and resources significantly increased. During season three, players became less challenged and more threatened; perceived demands and anxiety significantly increased. Children's (age 8-11 years) perceived demands and resources increased during season one, and mental health improved during seasons two and three. Younger adolescents' (11-16 years) perceived demands increased during season one. Older adolescents' (16-19 years) anxiety and depression symptoms increased during season two, and mental health worsened during seasons two and three.

Since demand and resource appraisals change over time, these should be monitored to indicate whether players are challenged or threatened throughout the academy system. Mental health also changed over time and in response to external events (e.g., the pandemic); mental health should also be monitored.

Symposium
Topics: Well-being and quality of life

Performers' experiences of severe, contemporary, and lifetime stressors and implications for performance, health, and well-being

Chair(s): **Rachel Arnold** (University of Bath, United Kingdom), **Lee Moore** (University of Bath, United Kingdom)

Operating in performance domains such as sport, performing arts, and the military can be highly stressful. Indeed, how performers respond to stressors in these contexts has significant implications for outcomes at individual, team, and organizational level. It is not surprising, therefore, that stress continues to be widely researched (Arnold & Fletcher, 2021). The aim of this symposium is to unite and showcase innovative, international research on the stress process (i.e., stressors, appraisals, coping) and its implications for performance, health, and well-being. The first presentation outlines a study which assessed the contribution of stressor severity (and neuroticism) to sport performers' physical health and psychological well-being. Turning from severe to contemporary stressors, the second presentation discusses a study which explored athletes' experiences of the Tokyo 2020 Olympic Games postponement and the challenges and benefits this brought for their mental health. Continuing to examine stressors, coping, and well-being during the COVID-19 pandemic, the third presentation reflects the intersection between sport and broader high-performance domains by synthesizing data from athletes, vocalists, and pianists. Moving from contemporary stressors to those experienced across a lifetime, the fourth presentation outlines an experimental study which investigated the association between lifetime stressor exposure and psychophysiological reactivity and habituation to repeated acute stress. Extending beyond stressors and coping, the final presentation offers a thought-provoking reflection on the research conducted over the past decade on stress appraisals, and the importance of these for pertinent outcomes in sport and other high-performance domains. The symposium concludes with a summary and facilitated interactive discussion.

Presentations of the Symposium

Examining the relationship between organizational stressor dimensions and sport performers' health and well-being

Rachel Arnold[1], Daniel Brown[2]
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Whilst research has assessed the multidimensional nature of organizational stressors encountered in sport, a typically overlooked dimension is severity. Given its contribution to illness risk and compromised health and well-being (Slavich et al., 2019), it would be prudent to examine this dimension. Therefore, this study examined the relationship between the severity of organizational stressors encountered by sport performers and physical health and psychological well-being, before examining if stressor severity mediated the relationship between stressor occurrence and the outcomes (whilst controlling for neuroticism). 403 sport performers (186 male; Mage = 21.43 years) completed a questionnaire assessing the study variables. Structural equation modelling was used to analyze the data. The severity of organizational stressors had a significant, negative relationship with physical health ($r = -0.374$, $p < .001$), but not well-being. In the mediation analysis, direct effects were found for neuroticism ($\beta = -0.632$, $p < .001$) and stressor frequency ($\beta = -0.226$, $p = .016$) on physical health. Moreover, when adding stressor severity as a mediator, stressor frequency positively predicted stressor severity ($\beta = 1.025$, $p < .001$); however, the indirect effect of stressor frequency on physical health via stressor severity (-0.018, $p = .885$) and the direct effect between stressor frequency and physical health ($\beta = -0.191$, $p = .204$) were non-significant . The presentation will discuss a potential suppressor situation and the importance of controlling for neuroticism. Furthermore, it will forward theoretical and measurement implications regarding the multidimensional nature of stressors, and make applied recommendations for those tasked with supporting sport performers with their stress and health.

Stress, mental health, and resiliency: What can we learn from Olympic athletes preparing for the Olympic Games in pandemic times

Carolina Lundqvist[1], Elsa Kristiansen[2]
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The pandemic situation declared by the World Health Organization (WHO) in March 2020 combined with the postponement of Tokyo 2020 imposed stress and uncertainty for elite athletes preparing for the Olympic Games (Lundqvist et al., 2021). Concerns were expressed for potential negative effects on athletes' mental health, but some scholars also reported that athletes could experience benefits (e.g., mental and physical recovery; Lundqvist et al., 2020; Oblinger-Peters & Krenn, 2020). This study focused on athletes' experiences of challenges and benefits as well as risk- and protective factors for their mental health during the year before the Tokyo 2020 Games. Twelve elite athletes from Sweden and Norway (six men, six women) from nine individual sports were interviewed in April to July 2021. Seven athletes had qualified for the Games and five were still trying to qualify. Results showed that athletes experienced several challenges during the year (e.g., great uncertainty, logistic problems/difficulties planning, identity and life questions) but also benefits (recovery, training without breaks for competitions, extended at the senior level). Risk-factors for mental health were expressed (e.g., a narrow athletic identity, lack of long-term goals, economic stress). Athletes used several coping strategies to protect their mental health (e.g., focus on the controllable, self-care behaviors, short-term goals, keeping routines, acceptance of the situation, putting sports in perspective, studies/work). The pandemic year undeniably exposed athletes and everyone involved to several psychological strains; however, the situation provided new insights into how highly stressful and uncertain situations can be managed to build future resilience.

A mixed-methods study of stressors, coping, and wellbeing among athletes, vocalists, and pianists during the Covid-19 pandemic

Katherine Tamminen, Rachel Crook, Darryl Edwards, Bina John
University of Toronto, Canada

This study explored the experiences of high-performers who experienced disruptions in training and performance during the Covid-19 pandemic. Participants included seven vocalists, six pianists, and seven athletes, who completed an online survey at three timepoints consisting of demographic information, the BBC Subjective Well-being Scale (Pontin et al., 2013), the Brief Daily Stressors Tool (Scholten et al., 2020), and the Coping Self-Efficacy Scale (Chesney et al., 2006). Participants also completed individual semi-structured interviews to ask about their stressors, coping strategies, and overall well-being at each timepoint. Inspection of the survey data indicated that athletes rated their global subjective well-being higher across the three timepoints compared to vocalists and pianists. Pianists demonstrated a decrease in well-being over time, along with decreases in quality of social relationships and physical health. Athletes had higher coping self-efficacy, although all three groups of performers reported high confidence in problem-focused coping. Athletes' scores for confidence to stop unpleasant thoughts and confidence to seek support to cope with stressors were higher than pianists or vocalists.

Analysis of the qualitative data indicated similarities in stressors and coping across performers; however, there were differences in the impact of the pandemic on their ability to train and perform. One stressor unique to vocalists and pianists was that they appeared to reflect more on the role of performing arts in society and their identities as musicians during the pandemic. These results shed light on the ways that high-performers in different domains are impacted by disruptions due to the Covid-19 pandemic.

Lifetime stressor exposure and psychophysiological responses to repeated acute stress

Ella McLoughlin[1], Lee Moore[1], Rachel Arnold[1], James Turner[1], Paul Freeman[2], David Fletcher[3], George Slavich[4]
[1]University of Bath, United Kingdom, [2]University of Essex, United Kingdom, [3]Loughborough University, United Kingdom, [4]University of California, USA

Greater lifetime stressor exposure is associated with increased risk of health problems (e.g., depression). However, the potential mechanisms underlying this relationship remain unclear. Thus, to help address this issue, this study investigated the association between lifetime (non-sport and sport-specific) stressor exposure and psychophysiological reactivity and habituation (i.e., cognitive appraisals, cardiovascular responses, cortisol activation) to repeated acute stress. We recruited 86 sport performers (45 female; 41 male; Mage = 23.31 years, SD = 4.94) and measured their exposure to a variety of lifetime (non-sport and sport-specific) stressors. Next, participants underwent two consecutive trials of the Trier Social Stress Test (TSST; Kirschbaum et al., 1993) while cognitive appraisals and cardiovascular and salivary cortisol data was recorded. A series of regression analyses revealed that participants who reported high or low lifetime stressor exposure appraised the TSST as more of a threat (i.e., task demands exceed coping resources), and displayed exaggerated cardiovascular reactivity and attenuated habituation, compared to participants who reported moderate exposure. Moreover, participants who reported greater lifetime stressor exposure displayed a blunted cortisol response and attenuated habituation, compared to participants who reported lower exposure. Taken together, these findings suggest that maladaptive psychophysiological responses (e.g., heightened or blunted reactivity, lack of habituation to repeated stressful encounters) might partly explain how lifetime stressor exposure impacts health. Thus, to prevent ill-health among sport performers, applied practitioners could help them to appraise and respond more optimally to potentially stressful situations.

The importance of challenge and threat appraisals for performance, health, and well-being in sport and other high-pressure domains

Lee Moore
University of Bath, United Kingdom

Like individuals working in other high-pressure environments (e.g., medicine, military, aviation), athletes often encounter extremely stressful situations (e.g., sporting competition). Although some athletes successfully navigate these situations and cope effectively, others succumb to the pressure they face and their performance, health, and well-being can suffer. This variability is likely explained, at least in part, by the different ways in which athletes view or appraise potentially stressful situations. While some athletes tend to appraise these situations as a challenge (i.e., personal coping resources match or exceed situational demands), others appraise them as a threat (i.e., situational demands exceed personal coping resources). This presentation will summarise the findings from a range of published and unpublished studies conducted over the last 10 years, highlighting how challenge and threat appraisals are associated with performance under pressure as well as health and well-being. Specifically, after introducing challenge and threat appraisals using relevant theoretical frameworks (e.g., biopsychosocial model of challenge and threat; Blascovich & Tomaka, 1996), research linking task-specific appraisals and performance will be reviewed (e.g., Moore et al., 2012). Next, following a discussion regarding the state- and trait-like properties of challenge and threat appraisals (e.g., Moore et al., 2019), contemporary research will be used to illustrate how these appraisals, when frequently experienced, may impact health and well-being (e.g., McLoughlin et al., 2022). Finally, the presentation will conclude with recommendations for theoretical development, applied practice, and avenues for future research.

Symposium
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Anti-Doping frontiers in Europe: evidence and interventions

Chair(s): **Fabio Lucidi** ("Sapienza", University of Rome)
Discussant(s): **Arnaldo Zelli** (University of Rome "Foro Italico")

This symposium provides the opportunity to learn about the recent scientific efforts in understanding doping use among athletes and in identifying the promising educational strategies that might promote a shift in policy views and actions.

The symposium departs from the realization that some limitations might have undermined research and educational efforts targeting doping, ranging from methodological or measurement issues and its prevalence to the lack of attention to public health issues that have primarily confined the policy efforts of governmental institutions to matters of repression towards athletes who dope. Both theoretical challenges and the lack of convergence across nations have hindered efforts to shift towards educational strategies onto the best conceptual and educational models to endorse.

The symposium is novel in presenting solid collaborative partnerships that permitted collecting and comparing data across several European countries.

Presentations examine traditional issues in doping research in novel ways, as is the case with the shift from general values in sport to a focus on athletes' values priorities and how they may change over their careers (Andrea Petroczi); the novel estimation and prevalence techniques on European representative athletes' sample (Werner Pitsch); the scientifically tackling the phenomenon of doping use with the advantages of mixed data analytical approaches (Andrea Chirico); the evaluation of new technological-based European Anti-doping education programs (Vassilis Barkoukis); and the evaluation of the role of psycho-social predictors to doping in emerging sports discipline with mixed methods (Lambros Lazuras).

Presentations of the Symposium

Be SMART about values and (anti-)doping in sport: Developing an evidence-based sensemaking training for elite athletes

Andrea Petroczi
Kingston University, London

This presentation captures the research and development process of the IOC-funded collaborative project with Germany, Greece, Italy, Russia, and UK, called SMART (Sense-Making in Anti-Doping Reasoning Training). The aim of the project was to explore personal values, value systems and the dynamic of value priorities over time, with the view to develop education module that helps athletes to be aware of their value priorities and the changes they likely experience over their career. The project employed a mixed-method design. Value priorities were explored among amateur and competitive athletes (n=1317). Focus groups with elite competitive athletes were conducted (n=36), followed by six athlete-led international focus groups (n=32) from several Countries. Survey results showed that value priorities differ across countries with characteristic patterns, impacted how athletes approached clean sport and performance-enhancement, and fitted to the norm-based cultural characteristics. In the focus group - through a modified Nominal Group Technique - 127 micro-themes were identified. These were linked to how values are operationalised, the sources of one's values, stability and flexibility of the value priorities, the inseparable nature of values on and off the pitch and forming the basis of personal integrity, the importance of self-reflection and awareness in good and bad times, and value-conflicts and congruence in doping. The micro-themes led into a final set of five education modules: What do you as an athlete stand for?; Your values might change over your athletic career; Conflicting in value-priorities is both common and normal; Personal integrity; and Doping will question your values.

Doping and medication use in recreational sports – prevalence and socioeconomic correlates

Werner Pitsch
Saarland University

Although doping in recreational sport is a recurring topic in research, valid data on its prevalence in the general population of recreational athletes is scarce so far. In 2021, the FAIR+ research group conducted a survey in 8 European countries on the use of doping in recreational sport. The survey used indirect questioning techniques to account for social desirability bias. It covered not only doping but also other forms of medication use in recreational sports, socioeconomic properties of respondents, and psychological drivers for doping use. The presentation will cover the overall prevalence results, will place doping behavior in the context of medication use in recreational sport in general and will present socio-economic factors which account for differences in the doping and medication use prevalence. With these results, the social-scientific focus on performance enhancement in sport shifts from deviance theories to public health perspectives.

The relations of social-cognitive factors with values in doping research: Merging individual and prevalence data from a European s

Andrea Chirico
"Sapienza", University of Rome

Doping in recreational sport is a novel research topic, and data based on representative samples merging prevalence, socio-cultural factors, and values are absent. In 2021, the FAIR+ research group conducted a survey in 8 European countries on doping use in recreational sports. The first part of the survey was concerned with prevalence data of doping behavior considering socio-cultural factors (e.g., Gender, Country), while the second part of the survey focused on social-cognitive factors (e.g., moral disengagement) and personal values (e.g., Moral Identity) relevant to doping use. This presentation describes the analyses of a model linking these latter factors and variables, and the findings that ensued, while taking into consideration the prevalence data established on the large-scale survey.

A preliminary test of the effectiveness of the SAFE YOU program with Greek athletes

Vassilis Barkoukis, Stela Kaffe, Despoina Ourda
Department of Physical Education and Sport Science; Aristotle University of Thessaloniki

Anti-doping education has been suggested as an important means in tackling doping in sport. The past years several anti-doping interventions have been developed aiming to address the psychological factors underlying the decision to dope (e.g., ATLAS and ATHENA, CoachMADE, iPlayClean, GAME, VIRTUE). SAFE YOU program is an anti-doping education program that has been developed to influence athletes' attitudes, self-efficacy to resist pressure and mindfulness against doping. The aim of the present study was to

preliminary test for the effectiveness of the program in altering these constructs in Greek competitive athletes. The sample of the study consisted of 50 competitive athletes (M=20.38, SD=5.05) from team and individual sports. Participants were randomly allocated into intervention and control groups and completed measures of attitudes, situational temptation and willingness to dope before and immediately after the intervention. The intervention group attended the SAFE YOU program whereas the control group saw videos on topics related to the themes of the program. The results of the analyses indicated that athletes in the intervention group reported lower scores on the items measuring willingness to dope and higher scores in those measuring situational temptation as compared to athletes of the control group. These findings provide preliminary evidence on the effectiveness of the SAFE YOU program.

Killing yourself to win: Risk perceptions, moral attitudes, and doping behaviour in Mixed Martial Arts Athletes

Lambros Lazuras[1], Michael Petrou[2], Dara Mojtahedi[3], Matthew Hillier[2]
[1]Sheffield Hallam University, [2]Cyprus Anti-Doping Authority, [3]University of Huddersfield

The present research investigated health risk perceptions, moral attitudes, and self-reported doping intentions and behaviour in an international sample of competitive Mixed Martial Arts (MMA) athletes using a mixed methods design. In Study 1, 249 athletes completed a structured questionnaire and the results showed that approximately 10% were willing to use a lethal performance enhancement drug (PED) as long as this would help them win an important title in MMA, and 31.5% said they were willing to use a non-lethal but prohibited PED to win the title. Short-term doping (< 2 months) was perceived to be less harmful than longer-term doping use and self-reported doping differentiated moral attitudes. In Study 2, 10 British competitive MMA athletes were interviewed and the findings corroborated and further extended Study 1 results. The practical implications of the study for doping prevention are discussed, especially in the context of WADA International Standard for Education.

Symposium
Topics: Leadership

From theory to intervention: Recent research developments in the area of athlete leadership

Chair(s): **Todd Loughead** (University of Windsor, Canada)

Over the last fifteen years we have seen a growth in the number of studies examining the construct of athlete leadership. This is encouraging as researchers have shown that leadership emanating from the athletes is vital to effective team functioning (Loughead, 2017). In particular, researchers have investigated athlete leadership from a variety of perspectives including the measurement of leadership behaviours (Vincer & Loughead, 2010), the leadership displayed by coaches and athlete leaders (Loughead & Hardy, 2005), the relationship between athlete leadership and cohesion (Callow et al., 2009), the presence of shared athlete leadership (Loughead et al., 2022), and interventions to increase the effectiveness of athlete leadership (Duguay et al., 2016). As this fledgling field continues to grow, it is critical to highlight the emerging research with the goal of helping researchers plan for future research endeavours. Therefore, the purpose of this symposium is to provide an overview of the latest theoretical, measurement, research, and intervention developments within this field. The first presentation will examine the unique theoretical contributions of identity leadership and transformational leadership. The second presentation will focus on the use of social network analysis as a novel approach to examine the relationship between athlete leadership and cohesion. The third presentation will contrast the preferences of leadership behaviours that ought to be displayed by coaches and athlete leaders. The fourth presentation will be a meta-analytic review of the relationship between athlete leadership behaviours and cohesion. The fifth presentation will introduce a solution-focused approach to the development of athlete leadership.

Presentations of the Symposium

The presence and prevalence of identity leadership and transformational leadership within athlete leadership

Steafan Deery, Kyle Paradis, Lee-Ann Sharp, Noel Brick
Ulster University

The purpose of the present study was to identify the prevalence and presence of identity leadership and transformational leadership within athlete leadership. In positive sporting environments, coaching is a process where both coaches and athletes are fully connected in the co-creation of an (inter)personal pursuit (Gosai et al., 2021). Leadership must extend beyond the coach to formal leaders and informal athlete leaders (Cotterill, 2012). A systematic review to examine transformational leadership (TfL) and/or identity leadership (IL) through athletes and/or coaches returned 3342 papers. Following initial screening and full text review, 53 studies (41 TfL/12 IL) were included. In these studies, 8/12 IL and 1/41 TfL pertained to athlete leadership. Results highlight that for optimal team functioning, leadership is spread throughout a team (Fransen et al., 2020). Identity leadership behaviours nurture a shared sense of 'we' and 'us' contributing significantly to athletes' identification with their team, motivation, commitment to team goals, and enhanced feelings of well-being (Mertens, 2020; Mertens, 2021). When athlete leaders are perceived as strong identity leaders, athletes behave in more prosocial ways towards their teammates and are also the recipient of more prosocial behaviours from others (McLaren, 2021). However, athlete leaders who do not fulfil their leadership role positively can have negative consequences for team confidence, motivation, and performance of the team (Fransen, Haslam, et al., 2015; Fransen, Steffens, et al., 2015). When athlete leaders display transformational behaviours, their peers report greater enjoyment and intrinsic motivation, establish feelings of team harmony, goal attainment, and confidence (Price, 2013).

Assessing athlete leadership and team cohesion using a social network analysis approach

Ashley Flemington, Todd Loughead, Marie Desrosiers
University of Windsor

The study of athlete leadership (AL) has gained momentum over the past fifteen years and is recognized as a vital component of team performance (Loughead, 2017). Specifically, AL has been most studied with regards to its impact on the outcome of cohesion (Vincer & Loughead, 2010). However, much of current research examining this relationship has utilized traditional statistical methods, limiting interpretation of data because teams and team outcomes are inherently interdependent. An approach that considers the interdependence of team members is social network analysis (SNA). SNA facilitates the study of social structures within networks of people, such as a sports team, as well as individual attributes influencing or being influenced by the network. The present study used SNA to examine AL and cohesion within a sports team of 22 female professional hockey players. Participants self-reported age, position, tenure, and emotional competence, and rated each of their team members on network variables of AL and cohesion. High network density was found for both AL (3.98) and cohesion (4.15), indicating many ties between team members. Average indegree centrality for AL (.13) and cohesion (.07) networks were found to be low, suggesting these relationships are well dispersed amongst the team. Finally, a strong correlation was found between the AL and cohesion networks ($r = .69$, $p < .001$) indication a positive relationship between the AL ties and the cohesion ties. Together these data suggest that a cohesive team shares leadership responsibilities with many ties between teammates.

Coaches and Athlete Leaders: Examining Preferences for Leadership

Katherine Hirsch, Todd Loughead
University of Windsor

Coaches and athlete leaders (ALs) are two vital sources of leadership. While researchers have identified that ALs and coaches share leadership responsibilities (Loughead & Hardy, 2005), research is needed exploring how often athletes want each type of leader to display leadership. As such, the aim of the present study was to compare preferences for AL and coach leadership behaviors. Participants rated their preferences for leadership behaviors using the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980) and Differentiated Transformational Leadership Inventory (DTLI; Callow et al., 2009). Results from a repeated measures MANOVA showed a significant difference in preferences for AL behaviors and coach behaviors, $F(12, 181) = 23.05$, $p < .001$; Wilk's $\Lambda = .396$; partial $\eta 2 = .604$. Specifically, participants reported a greater preference for coaches to exhibit training and instruction ($p < .001$), democratic behavior ($p < .001$), positive feedback ($p = .016$), individualized consideration ($p < .001$), inspirational motivation ($p < .001$), intellectual stimulation ($p < .001$), fostering acceptance of group goals ($p < .001$), high performance expectations ($p = .015$), appropriate role modeling ($p < .001$), and contingent reward ($p < .001$) more frequently than ALs, and for ALs to exhibit more autocratic behavior than coaches ($p = .002$). No significant differences were reported for social support. Findings highlight that athletes want leadership displayed very often, and that coaches are viewed as the primary source of these leadership behaviors. The findings can inform coaches and athletes about how to optimally display leadership on their teams.

The athlete leadership-cohesion relationship: A meta-analysis

Matthieu Boisvert[1], Todd Loughead[1], Ashley Flemington[1], Ernest O'Boyle[2]
[1]University of Windsor, [2]Indiana University

For over a decade, researchers have been interested in a source of leadership emanating from the athletes, known as athlete leadership (Loughead et al., 2006). More specifically, researchers have examined the impact of leadership behaviours exhibited by athletes on a variety of outcomes including cohesion (Boisvert et al., 2020), collective efficacy (Price & Weiss, 2011), and athlete satisfaction (Hirsch & Loughead, 2022). In fact, the construct of cohesion has been the most studied in relation to athlete leadership behaviours. This is not surprising as cohesion is historically viewed as one of the most important small group variables (Carron et al., 1985). Therefore, the primary objective of this study was to conduct a meta-analytic summary of the relationship between athlete leadership behaviours and cohesion. A secondary purpose was to examine the potential moderating impact of age and gender on this relationship. To accomplish these objectives a literature search revealed 606 citations, with a total of 13 studies meeting the inclusion criteria for the study. The analysis was conducted in RStudio, using the metaphor package. In general, the results showed that all ten of athlete leadership behaviours investigated had a small (e.g., .25) to moderate (e.g., .46) positive effect on either task or social cohesion. A Relative Weight Analysis showed that Training and Instruction was the most impactful for task cohesion and Social Support for social cohesion. The results also showed that neither age nor gender had any moderating impact on the relationship between athlete leadership behaviours and cohesion.

Solution-focused shared athlete leadership development: A mixed methods intervention study

Christopher Maechel[1], Todd Loughead[2], Vanessa Wergin[1], Tom Kossak[3], Juergen Beckmann[4]
[1]Technical University of Munich, [2]University of Windsor, [3]Sportpsychologie München GbR, [4]Technical University of Munich, University of Queensland, University of Limerick

Shared leadership is understood to be an emergent team phenomenon that originates from team member interaction (Carson et al., 2007). Previous intervention studies targeting the development of athlete leadership have primarily focused on individuals disregarding interactional processes that occur between teammates. In the present study, we build on systemic family therapy which considers groups as social systems (Cottrell & Boston, 2002). In particular, we utilized solution-focused brief therapy (SFBT; for an overview, see Franklin et al., 2011) as an new approach to develop shared athlete leadership in teams. To implement and evaluate the intervention we used a mixed-methods experimental design with parallel quantitative and qualitative data collection and a combined interpretation of both types of data. Sixty athletes from six different sport teams participated in the study (three in the control and three in the intervention group). The intervention consisted of four workshops that focused on four dimensions of shared athlete leadership (task, social, change and external leadership; Maechel et al., 2020). Using a shared leadership questionnaire (SPLIT; Grille & Kauffeld, 2015), the quantitative data supported a significant difference of shared leadership development between the intervention and control groups over the course of a season. The qualitative data further highlighted the changes in interactional patterns and relationships throughout the intervention teams. In particular, using reflexive thematic analysis (Braun & Clarke, 2006, 2019), we generated four themes: enhanced levels of communication, decrease of relational distance, enhanced coach-team interactions and processes of shared leadership.

Symposium
Topics: Any other topic

Global perspectives on the needs and desires of coaches and athletes with physical disabilities

Chair(s): **Danielle Alexander** (McGill University, Canada), **Gordon Bloom** (McGill University, Canada)

Compared to the vast literature in able-bodied sport, literature on parasport remains in its infancy. Research has identified contextual considerations unique to parasport, including barriers and facilitators to physical activity participation, formal and informal pathways to coach learning and development, as well as mental health concerns for this population, including the influence on the parasport coach-athlete relationship. In fact, a recent scoping review conducted on parasport coaches (Bentzen et al., 2021) demonstrated that a large proportion of research was cross-sectional with little international collaboration. Thus, the purpose of this symposium is to present empirical research specific to parasport and parasport coaching from three countries (Canada, Norway, and Sweden) who all have strong parasport initiatives. Presentation one will present findings from a systematic literature review examining the conceptualization of 'participation' in the parasport context. Presentation two will discuss results of a 10-month formal parasport mentorship program designed to increase the knowledge and skillset of parasport coaches through peer learning. Presentation three will present preliminary findings to a longitudinal study examining increased attention and awareness to athlete mental health and the influence on the coach-athlete relationship in parasport. Each of the presenters have experience conducting research in parasport, as well as practical experience coaching or consulting athletes with disabilities at varying competitive levels. Theoretical and applied implications will be discussed. We believe our studies collectively contribute to fostering high quality experiences for parasport athletes and coaches within this unique context across our three countries, and around the globe.

Presentations of the Symposium

How do we understand participation for individuals with disabilities in the sport context? A systematic review

Linn Engdahl-Høgåsen, Marte Bentzen
Norwegian School of Sport Sciences

Individuals with disabilities participate less in sport compared to their abled-bodied peers (Ginis et al., 2021) and therefore have less opportunities to benefit from the positive social, physiological, and psychological outcomes of sport participation. This has led researchers to explore barriers and facilitators for sport participation for this population. However, scholars within disability research have claimed that research on participation has generally been considered as 'attendance', thus excluding some components of participation, such as involvement (Imms et al., 2016). The aim of this study is to explore how sport participation has been understood in the context of parasport. A systematic literature review following the PRISMA guidelines was conducted (Moher et al., 2009). Six broad-based databases (PsycINFO, Web of Science, PubMed, SPORTSDiscus, ERIC, Google Scholar) were included to identify relevant studies related to parasport participation. Search terms of importance: Sport, parasport, physical activity, attendance, involvement, engagement, participation, disability. Inclusion criteria; peer-reviewed, sports context, published in English between 2001-2022. Exclusion criteria; reviews, meta-analysis, studies examining physical education or disabilities not eligible within parasport classification. The screening process followed recommended guidelines (Jones et al., 2004) and data were pooled by narrative synthesis with tabular accompaniment targeting; aim, method/design, conceptualization of "participation" (attending, engagement, involvement), disability, gender, level, type of sport. The results will be presented to better explain how parasport participation has been understood, elaborated or measured. Moreover, our results will help provide a more nuanced conceptualization of 'participation' in parasport which might ultimately extend our understanding beyond the focus of just attending.

Exploring coaches' perceptions of a virtual pilot parasport coach mentorship program

Danielle Alexander, Gordon Bloom
McGill University

Although mentorship has been considered as a significant learning opportunity for parasport coaches, it remains underdeveloped and understudied (Fairhurst et al., 2017). Partnering with a large provincial coaching association in Canada, the purpose of our study was to explore the perceptions and experiences of mentor and mentee coaches following a 10-month pilot parasport formal coach mentorship program. 29 mentee and 15 mentor coaches voluntarily participated in this program. Two 120-minute focus groups were conducted at the mid-point of the program and they were followed by individual interviews with eight mentor and eight mentee coaches at the end of the program. Data were transcribed verbatim and analyzed using a reflexive thematic analysis. Among the findings, mentee coaches appreciated mentors who were knowledgeable, passionate, and genuinely interested in helping them reach their coaching goals, whereas ineffective mentoring occurred when mentors did not listen or respect the goals of their mentees. Disability was a commonly discussed topic in which mentee coaches were interested in learning disability-specific coaching knowledge, including how to adjust their coaching styles, how to greet athletes with disabilities, as well as information on classification. Although mentees desired to meet with their mentors in person, they also highlighted the benefits of online learning to maximize the reach and accessibility of the program. To our knowledge, this was the first formalized parasport coach mentorship program in Canada. We believe that our results will contribute to higher quality experiences for parasport coaches and athletes, both in our country, and worldwide.

Monitoring mental health in Paralympic athletes – does it influence the coach-athlete relationship?

Göran Kenttä[1], Kristina Fagher[2], Marte Bentzen[3]
[1]The Swedish School of Sport and Health Sciences, [2]Lund University, [3]The Norwegian School of Sport Sciences

While it is common to monitor elite athletes' training load, recovery, injuries and medical health, mental health is rarely included (Vella et al., 2021). Scholars have reported that Paralympic athletes averaged higher levels of injuries and chronic illnesses (Fagher et al., 2020; Steffen et al., 2021). It is likely that a complex life situation together with pain often experienced by Paralympic athletes may cause stress and impact their lives outside sport. Thus, it is surprising that mental health struggles have been understudied in this population. The purpose of this study will be to examine how increased attention and awareness of athletes' mental health influences the coach-athlete relationship. Self-report data will be collected weekly with winter Paralympic athletes (started August 2021) as part of a large-scale longitudinal project that will run over five years and include training load, physical and mental health, injuries and illness. Data will be screened and evaluated each week primarily by a physiotherapist and a sport psychologist, but coaches will also receive the weekly reports. Focus group interviews will be conducted following the 2022 Paralympic Games to address coach perceptions of the following themes: mental health problems associated to performance, team-selection, stigma and help-seeking behavior. Thematic analysis will be used to analyze the data. The results will be discussed with an emphasis on how coach awareness about their athletes' mental health influences their coach-athlete relationship and potential consequences for performance issues. Moreover, applied implications of this study will be suggested to enhance the parasport environment.

Symposium
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Breathing Techniques in Sports

Chair(s): **Maša Iskra** (German Sport University Cologne, Germany), **Nina Zammit** (German Sport University Cologne, Germany)
Discussant(s): **Sylvain Laborde** (German Sport University Cologne, Germany)

Breathing techniques of different frequencies and depths can be implemented by athletes in order to achieve specific mental and bodily states, such as relaxation or activation for optimal performance. This symposium aims to present an overview of breathing techniques used in the sport context, including slow-paced breathing (SPB), alternate nostril breathing, voluntary hyperventilation, fast-paced breathing (FPB), and breath-holding. A systematic review and meta-analysis regarding their effects on physical and psychological outcomes will first be presented, before introducing an experimental study investigating the effects of a slow-paced breathing intervention on cardiac vagal activity and respiratory frequency. Each talk will also include a short practice unit to allow the audience to experience the diverse breathing techniques.

Presentations of the Symposium

A systematic review and meta/analysis of the influence of breathing techniques on physical sport performance

Nina Zammit, Maša Iskra, Sylvain Laborde
German Sport University Cologne, Germany

Voluntary breathing techniques can be used to achieve specific psychophysiological states, such as relaxation or activation. These techniques include slow-paced breathing (SPB), fast-paced breathing (FPB), voluntary hyperventilation, breath-holding, and alternate-nostril breathing. As sport performance depends on being able to place oneself into an optimal activation level required to perform a specific skill, breathing techniques may provide an effective way to improve physical sport performance. The aim of this paper was to systematically review existing studies on the effects of breathing techniques on physical sport performance and to quantify these results using a meta-analytical approach by performing separate meta-analyses for each breathing technique, as well as distinguishing between acute and chronic intervention effects. Physical sport performance outcomes were grouped into time, speed, strength, and sport specific measures. The database search was performed in July 2020 in PubMed, Web of Science, ProQuest, PsycINFO, Scopus, and SPORTDiscus. The Risk of Bias 2 framework and guidelines were used for the risk of bias assessment. A total of 28 studies were reviewed in the systematic review. 11 studies were found for SPB, one for FPB, seven for voluntary hyperventilation and 10 studies for breath-holding. No studies were found for alternate-nostril breathing. Only chronic SPB interventions were found to positively influence physical sport performance (medium effect). No effect was found for breath-holding (acute and chronic) and hyperventilation (acute) interventions. Due to a lack of studies, no other meta-analyses were run. Further research is required to investigate potential moderators and to develop standardised interventions with these breathing techniques.

Influence of breathing techniques on psychological aspects of sport performance: A systematic review and meta-analysis

Maša Iskra, Nina Zammit, Sylvain Laborde
German Sport University Cologne, Germany

Athletes can intentionally modify their breathing to achieve targeted psychological states. This objective may be attained through the voluntary control of specific parameters, including the breathing frequency and depth (Russo et al., 2017). For instance, slow-paced breathing (SPB) aims to induce relaxation, in turn reducing stress and enhancing concentration (Lagos et al., 2011; Paul et al., 2012). On the other hand, fast-paced breathing (FPB) may cause increased activation, thus leading to an energised and alert state (Balters et al., 2018). This study aimed to summarise past research on the effects of breathing techniques on the psychological aspects of sport performance, using a qualitative and quantitative analysis. Through the database searches, 18,822 records were identified. Breathing categories were classified into five categories, including SPB, FPB, voluntary hyperventilation, breath-holding, alternate- and uni-nostril breathing. Upon the exclusion process, 25 studies were retained to be systematically reviewed and 20 were included in the meta-analyses, which were run for SPB, breath-holding, as well as alternate- and uni-nostril breathing. The results of the meta-analysis showed a small positive effect of SPB on the psychological aspects of sport performance. While no significant effect was found in relation to other breathing techniques, the systematic review additionally indicated several benefits of techniques other than SPB. Apart from addressing the limitations associated with methodology and inadequate reporting, future research should focus on further standardisation of breathing techniques in sport, thus contributing to the development of implementation guidelines.

Single Slow-Paced Breathing Session at Six Cycles per Minute: Investigation of Dose-Response Relationship on Cardiac Vagal Activit

Min You[1], Sylvain Laborde[2]
[1]Université de Caen Normandie, EA 3918 CERREV, UFR Psychologie, 14000 Caen, France, [2]German Sport University Cologne, Germany

The practice of slow-paced breathing (SPB) has been linked to a range of positive outcomes, such as decreasing symptoms of depression, anxiety, and stress, as well as increasing well-being. Among the suggested mechanisms of action, SPB has been shown to increase cardiac vagal activity (CVA). The present study aimed to investigate whether there is a dose-response relationship modulating the effects of SPB on CVA. A total of 59 participants were involved in this study. In a within-subject design, participants attended the lab five times, and realized SPB at six cycles per minute with different durations (5, 10, 15, and 20 min), as well as a control condition without SPB. CVA was indexed via the root mean square of successive differences (RMSSD). During SPB, findings showed an increase in RMSSD in all conditions compared to the control condition. However, no differences were found in RMSSD among the different session durations, during SPB or during the resting measurement completed immediately after SPB. Noteworthily, session duration showed an influence on the spontaneous respiratory frequency in the resting measurement occurring immediately after SPB. Specifically, respiratory frequency appears to decrease with session duration, thus potentially contributing to additional relaxing effects.

Slow-paced breathing and endurance, well-being, and sleep quality in healthy recreational athletes during the COVID-19 pandemic

Uirassu Borges, Babett Lobinger, Florian Javelle, Sylvain Laborde
German Sport University, Germany

Since the global outbreak of the coronavirus disease 2019 (COVID-19), a major negative impact on the physiological and psychological health of individuals has been observed (Brooks et al., 2020). COVID can negatively impact athletic performance of both elite and recreational athletes. To support this population, it is important to develop “COVID-secure” intervention techniques that aim at strengthening psychophysiological processes that are relevant for athletic performance and are often impaired by COVID-19 (Borges et al., 2021). In our study, we designed an app-based intervention from which athletes with or without a past COVID-19 diagnosis can benefit. This intervention applies slow-paced breathing (SPB), which consists of slowed breathing at a specific frequency, and is performed at home for 30 days (self-administration). We expect SPB to improve sleep quality, emotional well-being, and aerobic performance (Lehrer et al., 2020) in recreational athletes (both genders, between 18 and 40 years, all types of sports) through mechanisms involving increased lung function and cardiac vagal activity, as already shown in previous studies (Laborde et al., 2019). The cost-effectiveness and easy implementation of app-based SPB makes this intervention promising when it comes to counteracting psychological and physical impairments brought on by the corona pandemic. By strengthening psychophysiological processes involved in endurance performance, SPB may contribute to less physiological sequelae in athletes when they are eventually infected. Thus, SPB could become an indispensable part of the sports psychologist's toolbox in times of widespread restrictions and possible performance decrements. Results of this research will be presented at the conference.

Symposium
Topics: Social psychology

Because We Are in This Together: Emotions and Psychological Well-Being as Interpersonal Phenomena

Chair(s): **Faye Felicity Didymus** (Leeds Beckett University, United Kingdom), **Svenja Wolf** (Florida State University)
Discussant(s): **Faye Felicity Didymus** (Leeds Beckett University, United Kingdom)

Description and significance: Athletes know that success is a team effort. Yet, we as researchers often focus on isolated actors and intraindividual experiences. This is the case in many domains, including the study of affective phenomena (e.g., emotions, well-being). Adequate understanding and regulation of such phenomena requires a shift in focus to consider social contexts and relational processes (e.g., Tamminen et al., 2016).

Purpose: In a global team effort by leading experts, this symposium showcases some of the most contemporary research on the interpersonal nature of affective phenomena in sport.

Overviews: Tamminen et al. begin with a systematic review of literature on the interpersonal experience, expression, and regulation of emotions in sport. They highlight interconnections, common themes, and knowledge gaps. Campo and Sanchez address some of these gaps by reporting quantitative findings relating to social identity and athletes' pre-competition emotions. They report a cognitive bias that led athletes who identified more strongly with their teams to perceive better functional influences of positive emotions and less debilitative effects of negative emotions. Furley then introduces a new bio-cultural framework and methodological guidelines for studying nonverbal interpersonal behavior and, in particular, emotion expressions in sport. Finally, Simpson et al. present a qualitative examination of interpersonal psychological well-being (PWB) among athletes, coaches, and practitioners. They discuss antecedents and outcomes of PWB, including shared values, psychological safety, and relational dynamics. Collectively, the four presentations proffer valuable insight to improve understanding of affective phenomena in sport, and the work of coaches, practitioners, and researchers alike.

Presentations of the Symposium

The Interpersonal Experience, Expression, and Regulation of Emotions in Sport: A Systematic Search and Review of the Literature

Katherine Tamminen[1], Svenja Wolf[2], Rachel Dunn[1], James Bissett[1]
[1]University of Toronto, [2]Florida State University

There has recently been a surge in sport psychology research examining various aspects of the interpersonal and social processes related to emotions and emotion regulation. The purpose of this study was to review the literature related to the interpersonal experience, expression, and regulation of emotions in sport, to provide an overview of the advances and gaps in the research that has been conducted to date. A systematic search and review of the literature (Grant & Booth, 2009) returned 7,769 entries that were screened for inclusion. The final sample of studies included in the review consisted of 79 relevant peer-reviewed articles and eight dissertations. The results of the review describe the interconnected findings on athletes' self-regulation of emotions in social contexts, interpersonal emotion regulation, collective emotions (group-based emotions, emotional contagion, and effervescence), emotional expressions, and individual and contextual moderators (e.g., personality, culture, norms, gender, roles, and situational/temporal aspects). We identify key issues to advance theory and research, including the need for programmatic research to investigate these processes, their effects, and underlying mechanisms; greater theoretical and conceptual clarity; more research among diverse populations (e.g., female athletes, youth athletes); the need to consider interconnected emotional phenomena in future research; and the need for applied intervention research.

Role of Athletes' Social Identities on Pre-Competitive Emotional Functionality

Mickaël Campo[1], Xavier Sanchez[2]
[1]Université Bourgogne Franche-Comté, Fédération Française de Rugby, [2]Université d'Orléans, Université Paris-Saclay, Halmstad University

A key element in the study of sport performance optimisation is the performance functionality of emotions; that is, athletes' directional interpretations of emotions, which can either facilitate or debilitate performance. Moving beyond traditional intra-individual approaches when studying the emotion-sport performance relationship, the present study examined the influence of social identity on athletes' performance functionality of pre-competition perceived emotions in such emotion-performance relationships. To that end, 791 athletes (158 females; Mage = 23.30, SD = 8.57 years) from France and Sweden were first asked to report their social identification as athletes for their sport, and their social identification as athletes for their club. Then, participants were asked to report the precompetitive emotions they feel in general in relation to their teammates/partners, and in relation to their opponents. Lastly, they were asked to report the influence they expected these emotions to have on their subsequent individual performance. Regression analyses revealed that athletes' identity reinforced the way emotional intensity influenced perceived functionality (i.e., emotional direction). In general, our results revealed a cognitive bias that leads athletes to perceive a better functional influence of positive emotions and a less negative effect of negative emotions. In the light of the effects of emotions on performance and health, such a cognitive bias opens up interesting research possibilities that are likely to provide new fundamental as well as applied contributions to sport and exercise psychology.

Nonverbal Behavior and Emotions in the Context of Sports

Philip Furley
German Sport University Cologne

According to evolutionary accounts of nonverbal expressions, humans have evolved to be well-equipped for nonverbally communicating internal states, including emotions. Somewhat surprisingly, research on body language (nonverbal behavior) in sport is only slowly emerging, although it is considered important and has been frequently studied in other disciplines. In this presentation, I will introduce a bio-cultural framework and methodological guidelines for studying nonverbal behavior and, in particular, emotion expressions in sports. I argue that the ubiquity of (intense) emotional expressions and the wide-ranging documentation and coverage of sports events provides an ideal context for studying naturally occurring emotional expressions and their influence on interpersonal outcomes. I will outline the latest empirical research from our group showing that athletes, coaches, and referees display certain nonverbal behaviors that are correlated with internal (e.g., emotions) or contextual (e.g., success, playing location) variables, and that observers can decode these nonverbal behaviors. In addition, I will discuss recent studies that show that these (emotional) nonverbal expressions by athletes and officials have the potential to influence other people and thereby influence various relevant outcomes in sport. Recommendations for future research will be made on how researchers can exploit the fact that nonverbal behavior often informs observers about what is going on inside a person and thereby gain insights on the reciprocal relationships between contextual factors, the athlete, and performance in sports.

Psychological Well-Being in the Coach-Athlete-SEPP triad: The Case for an Interpersonal Perspective

Richard Simpson[1], Faye Felicity Didymus[1], Toni Williams[2]
[1]Leeds Beckett University, [2]Leeds Beckett University, Durham University

The importance of psychological well-being (PWB) is widely acknowledged in global research and policy and has important ramifications for health, performance, and engagement in high-performance sport organizations. Despite this compelling knowledge, and investigation of well-being at an individual level, little is known about PWB among close sport relationships. The aim of this presentation is to explore the interpersonal antecedents and outcomes of PWB among athletes, coaches, and sport and exercise psychology practitioners (SEPPs). Underpinned by an interpretative paradigm, triadic interview methods were used to collect data on the interpersonal nature of PWB among three coach-athlete-SEPP triads (n=12) within individual-based sports. Data were analysed using an abductive approach to reflexive thematic analysis. Themes that reflected the interpersonal nature of well-being among the coach-athlete-SEPP triad included: shared values and characteristics, meaningful experiences of growth and development, interpersonal resilience, factors linked to the organization (e.g., perception of organizational climate), psychological safety, situational properties of stress, and relational dynamics (e.g., alignment, adjustment and development, underpinning relational properties). PWB was found to be transferred among the triad through three interpersonal mechanisms (i.e., interpersonal coping, emotional contagion, and social appraisal). These findings implicate two key recommendations. First, we recommend that researchers extend understanding of how PWB changes over time among key close relationships in sport to extend theoretical knowledge. Second, organizations and practitioners are encouraged to consider how interventions, mentoring, and relationship-building schemes can be tailored within wider education and support packages to augment and manage PWB among their athletes, coaches, and support personnel.

Symposium
Topics: Non-traditional applications (music, dance, military, …)

Applications of Sport Psychology to Esports: Insights into Health and Performance Research

Chair(s): **Oliver Leis** (Leipzig University, Germany)

Although there is a discussion about whether esports are in fact sports (e.g., Holden et al., 2017; Parry, 2019), an increasing number of scholars are calling for more research on esports (e.g., Campbell et al., 2018; Leis et al., 2021; Pedraza-Ramirez et al., 2020). In general, esports (electronic sports) can be defined as an individual or team-based activity including competition and ranking systems on amateur and professional levels (Pedraza-Ramirez et al., 2020). While research is limited on important aspects such as short- and long-term health effects (e.g., Chan et al., 2022; Yin et al., 2020) and psychophysiological stress (e.g., Leis & Lautenbach, 2020), it has also been argued that sport psychology could benefit from researching esports (Leis et al., 2021). Focusing on five research projects, this symposium therefore aims to provide insights into possible applications of sport psychological knowledge to the field of esports, and, in particular, health and performance related aspects. First, Chwiłkowska and colleagues will present two studies on emotional, motivational, and physiological consequences of victories and defeat in esports. Second, Trotter et al. address the longitudinal impact of student involvement in high school esports on health and psychological development. Third, Birch et al. present results of a survey study investigating the predictors of mental ill health in professional esports players. Fourth, Sharpe and colleagues discuss a modified Delphi study that highlights variables to assess individualised first-person shooter esports performance. Finally, Leis et al. focus on psychophysiological stress and performance during training and competition in professional esports players.

Presentations of the Symposium

Emotional, Motivational, and Physiological Consequences of Victories and Defeats in Esports

Patrycja Chwiłkowska[1], Maciej Behnke[1], Adrian Hase[2], Lukasz D. Kaczmarek[1], Paul Freeman[3]
[1]Adam Mickiewicz University, Poland, [2]Université de Fribourg, Switzerland, [3]University of Essex, United Kingdom

Esport competition comprises an ongoing process of winning and losing points, games, and matches. Having experienced progress or obstacles, individuals must keep their emotions and motivation balanced to maintain engagement at psychological and physiological levels and achieve ultimate success. In two studies, we examined the emotional, motivational, and physiological consequences of victories and defeats in esports. We expected victories to be associated with positive emotions and increased engagement, whereas defeats to be associated with negative emotions and decreased engagement. In study 1, we asked Counter-Strike: Global Offensive gamers (N = 652) to recall and write about a situation when they felt amused, angry, enthusiastic, or sad. In our analysis, we used semantic coding. Gamers reported similar (rather than specific) situations for anger and sadness and similar for amusement and enthusiasm. For instance, victories were described as a trigger of amusement and enthusiasm. In contrast, defeats were described as a trigger of sadness and anger. In study 2, gamers (N = 241) completed five matches of the soccer video game FIFA 19. We recorded psychological task engagement, heart rate reactivity, and the difference between goals scored and conceded. Poorer performance (defeats) in the previous game was related to increased task engagement in the subsequent match. Furthermore, lower psychological task engagement was related to blunted heart rate reactivity during the performance. Our findings extend the existing literature by providing initial evidence for emotional, motivational, and physiological consequences of victories and defeats in esports.

Examining the Impact of School Esports Program Participation on Student Health and Psychological Development

Michael Trotter[1], Tristan J. Coulter[2], Paul Davis[3], Dylan Poulus[4], Remco Polman[2]
[1]Umeå university, [2]Queensland University of Technology, Australia, [3]Umea University, Sweden, [4]Southern Cross University, Australia

This study examined the influence of seven high school esports developmental programs on student self-regulation, growth mindset, positive youth development (PYD), perceived general health and physical activity (PA), and sport behaviour. A total of 188 students (male n = 120; female n = 68) originally participated (89 enrolled in an esports program in their school and 99 acted as aged-matched controls), with 58 participants (n = 19 esports group; n = 39 controls) completing both pre- and post-program information. At baseline, no significant differences were found between youth e-athletes and their aged-matched controls. The analysis for the observation period showed a significant interaction effect for the PYD confidence scale, with post-hoc comparisons showing a significant decrease in the control group from pre- to post assessment whereas, the esports group remained the same. Time main effects showed a decrease in the self-regulation motivation factor, PYD connection factor and PA for all participants. Overall, this study showed that students enrolled in their respective school esports program did not differ from those who did not in self-regulation, growth mindset, PYD, perceived health and PA, and sport behaviour. It was likely that all participants showed a decrease in motivation, connection, and PA due to COVID19 lockdown during the study period. This study is the first to investigate the longitudinal impact of student involvement in high school esports and showed that esports participation did not have a negative impact on any health or psychological factors.

Predictors of Mental Ill Health in Professional Esports Athletes

Phil D. J. Birch[1], Benjamin T. Sharpe[1], Angelica B. Ortiz de Gortari[2], Matt J. Smith[3]
[1]University of Chichester, United Kingdom, [2]University of Bergen, Norway, [3]University of Winchester, United Kingdom

The esports industry has seen a dramatic acceleration in growth over the last decade (Himmelstein, et al., 2017), which has led to an increased interest into the science underpinning performance and player health. Although research has consistently highlighted the mental health benefits associated with sport (Stanton & Reaburn, 2014), athletes are not protected against developing mental illness and are often highlighted as most at risk during the peak of their competitive years (Allen & Hopkins, 2015). Consequently, it is important to investigate the stressors faced by athletes and the impact they may have on performance and mental health. Preliminary research in esports has argued that stress may negatively impact performance and player health (see review by Leis & Lautenbach, 2020). Inspection of the literature highlights an array of variables which are understood to influence one's mental health, including social phobia anxiety (Sioni et al., 2017), sleep quality (Lee et al., 2021), and burnout (Madigan et al., 2019; Rice et al., 2016). However, it is clear that more investigations are warranted within the esports community. The aim of this study is to examine the predictors (i.e., stressors, sleep, social phobia anxiety, burnout) of mental ill health (general and clinical symptoms) in professional first-person shooter esports athletes. Data are currently being collected using Qualtrics survey tool. Regression analyses will be used to examine the relationships between tested variables.

Psychological Index of Individualised Esports Performance

Benjamin T. Sharpe[1], Nicolas Besombes[2], Matthew Welsh[1], Phil D. J. Birch[1]
[1]University of Chichester, United Kingdom, [2]L'institut des Sciences du Sport-Santé de Paris, France

Whilst esports has grown exponentially (Himmelstein, et al., 2017), esport research also began to expand across numerous fields of science. However, similar to cognitive research (Miyake et al., 2000), the different test procedures used for measuring performance or expertise makes comparison between studies problematic. For example, by utilising a single measure of performance (e.g., reaction time) this may not truly encapsulate what it is to be an expert performer in a given domain. To address this issue, a latent variable approach may be used to examine the relationship between numerous variables that share commonality of function by including multiple tasks to test for a specific factor (i.e., 'CS:GO performance'). However, this approach can only be adopted if we have a consensus on the attributes that truly capture 'performance'. Within esports, the 'how' to measure performance has yet to be questioned. Therefore, the aim of this study is to identify the variables which best encapsulate individualised first-person shooter (FPS) esports performance. We identified 1,968 articles that tested or discussed measures for recording individualised FPS performance. Subject to our inclusion criteria, articles were screened, rejected, or retained which resulted in a total of 127 articles for final analysis. Collectively, these articles highlighted 32 variables that were used to measure performance or categorise individual expertise. To achieve consensus on the variable(s) that are best associated with player performance, we are conducting a modified Delphi method to draw on esport panellists' experience (i.e., researchers, professionals, practitioners).

Psychophysiological Stress in Esports Settings: Training vs. Competition

Oliver Leis[1], Ismael Pedraza-Ramirez[2], Gantima Demirsöz[3], Matthew Watson[2], Sylvain Laborde[2], Anne-Marie Elbe[1], Franziska Lautenbach[4]
[1]Leipzig University, Germany, [2]German Sport University Cologne, Germany, [3]Leipzig University, Germany; Humboldt-Universität zu Berlin, Germany, [4]Humboldt-Universität zu Berlin, Germany

As sport psychological research aims to help athletes to adapt their training and competitive behavior to maintain or even increase high levels of performance under stressful, competitive situations (see review by Brown & Fletcher, 2017), a similar approach might prove beneficial for esports players (e.g., Leis et al., 2021). However, a greater understanding of the stress-performance relationship in esports is necessary to inform future intervention studies and impact players' performance. Therefore, the main aim of this study is to investigate whether playing esports in competitive settings is related to psychophysiological stress and if so, whether stress responses can predict in-game performance. In contrast to previous research (see review by Leis & Lautenbach, 2020), this study focuses on psychological and physiological stress responses of 27 professional players during training and competition using a within-subject design. Participants are required to play in the League of Legends European Championship (i.e., LEC) or the France's national league (i.e., LFL). Psychological (i.e., perceived stress, affect, emotion) and physiological stress (i.e., cortisol, heart rate, heart rate variability) will be measured 40 min before, 25 min before, 10 min before game play as well as immediately after, 15 min after, and 30 min after game play (i.e., training and competition). In-game performance will be measured using game specific parameters (e.g., kill-death-assist ration, gold), self-rated performance, and outcome of the game (i.e., victory, defeat). Measurements will start in February 2022 and preliminary results will be presented at the conference.

Symposium
Topics: Developmental/ lifespan perspectives

Athletes' Pursuit of Career Excellence: Major Transitions, Coping, and Support

Chair(s): **Natalia Stambulova** (Halmstad University, Sweden)
Discussant(s): **Stiliani "Ani" Chroni** (Inland Norway University of Applied Sciences, Norway)

The aim of the symposium is to promote the pursuit of career excellence as a dynamic and multidimensional process of athletes' striving for healthy, successful, and long-lasting careers in sport and life. From a developmental perspective, a healthy career implies high resourcefulness and adaptability (i.e., readiness for current and forthcoming challenges), successful signifies striving to achieve meaningful goals in sport and life while satisfying basic psychological needs and maintaining health and well-being, and long-lasting is about longevity in sport and in life (Stambulova et al., 2021). The symposium's five presentations will center on a whole career approach--from one's first steps in sport and upward until one's athletic retirement. After a short introduction, the first presenter will bring to light major challenges surrounding the child-to-youth transition in Norwegian handball and cross-country skiing. The second presenter will share a narrative of one Slovenian female gymnast about her junior-to-senor transition and the related changes in her life during three years of investigation. The third presenter will analyze the dual career transition from secondary school to university in the Scandinavian context. The fourth presenter will focus on career development of professional athletes raised in underserved communities in the United States and their key transitions. The fifth presenter will address the complex nature of the athlete-to-coach transition within Norwegian winter sports. The presentations will pave the way for a discussion on career pathway diversity and the need for career-long psychological support services meeting the athletes' needs at every stage and transition of their careers.

Presentations of the Symposium

Dual Career Athletes and the Uncharted Children-to-Youth-sport Transition in Norway

Jannicke Pettersen[1], Stiliani "Ani" Chroni[2], Natalia Stambulova[3]
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The transition from children-to-youth sport (CYST) is under-researched worldwide, though a key one. At the time of this transition (around 12 years of age) some sport participants choose the recreational pathway and others enter sport specialization years (DiSanti & Erickson, 2019). Regardless which pathway is chosen, all young athletes are obliged to attend school, and therefore should be viewed and studied as dual career athletes. In Norway, the CYST coincides with the transition from primary to lower secondary school which is still obligatory to attend. Hence, for the athletes undergoing the CYST, the mandatory school completion signifies that if a balance between sport and school demands and athletes' resources to cope with the demands is not achieved, then the athletes will need to leave sport. In this study, informed by a holistic developmental approach (Wylleman, 2019) and a dual career perspective (Stambulova & Wylleman, 2019) we delved into the experiences of transiting youth as perceived through their eyes. Semi-structured qualitative interviews were conducted with 12 athletes from handball and cross-country skiing who were just entering the CYST. Thematic analysis revealed themes on the meaning of school and sports for Norwegian young athletes, how they experience, perceive, and find balance between sport and school, and how they prioritize and cope with the demands-at-hand. The presentation will position the CYST within the sport context of Norway, share thematic insights and give recommendations on how to support athletes in the CYST helping them to begin their journey to career excellence.

A Route to Being an Elite Gymnast: A Longitudinal Narrative Study of the Junior-to-Senior Transition

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The junior-to-senior sport transition (JST) is one of the most difficult in athletes' pursuit of career excellence (Stambulova et al., 2021). The transition process is complex and lasts from several months to years, during which the athlete faces various demands and barriers, develop coping resources, as well as changes assumptions about oneself and narratives of self-transformations correspondingly (Schlossberg, 1981; Stambulova, 2003). The purpose of this study was to analyze what career narratives were drawn upon by the athlete to make sense of her JST. A single case study of a three-year JST process will be presented. The participant was a 16-year-old female gymnast at the time of competing in her first senior season. This longitudinal qualitative study consisted of three in-depth interviews completed in around the same month of each year. During the three-years of the study, the gymnast transitioned to secondary school and suffered a severe injury between the 2nd and 3rd year, which added non-normative components to the athletic part of the JST. The transition narratives were extracted and analyzed using several complementary theoretical frameworks, including the athletic career transition model (Stambulova, 2003) and the holistic athletic career model (Wylleman, 2019).The results confirmed that the implemented theoretical approaches adequately explained various aspects of the transition. Following other relevant studies (Cecić Erpič, 2000; Franck, 2018; Stambulova et al., 2017), the results revealed the JST is a dynamic and heterogeneous process with concomitant changes in non-sport life requiring support grounded in the whole person approach (Wylleman, 2019).

Supporting the Dual Career Pathway Towards Excellence: A Scandinavian University Case Study

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This presentation will share a good practice example of a how a Dual Career (DC) Development Environment (DCDE) facilitated student-athletes' transition to a Scandinavian university. We designed the study as a mixed-methods intrinsic case study (Hodge & Sharp, 2016) with a convergent design (Creswell & Creswell, 2018), combining the holistic ecological and holistic developmental approaches (Henriksen & Stambulova, 2017; Wylleman, 2019) and considering DC balance (Stambulova et al., 2015) as the primary concern for support. Using the DC-Environment Success Factors (DC-ESF) working model (Henriksen et al., 2020) as our guide we explored the case through multiple sources of data. Semi-structured interviews, with nine student-athletes and four support providers, and document analysis were complemented with ten-months of quantitative monitoring of the student-athletes' transition experiences (e.g., DC balance, demands and coping). Findings are summarized in an empirical version of the DC-ESF model which, for example, showed a challenging transition within a well-coordinated and supportive environment; student-athletes taking part in everyday activities infused by a flexible sport-study exchange and support providers emphasizing balance and targeting empowerment of the whole person. Student-athletes improved in sport and study and in their ability to balance their DC. They started to recognize that to develop optimally they needed to consider their needs across life domains. These findings, and more, will be situated as part of the specific bounded case to illustrate how a DCDE can support student-athletes in the process of striving for career excellence in sport and life, by balancing their DC.

Towards Career Excellence Against the Odds: Pathways of Professional Athletes from Underserved Communities in the United States

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This presentation integrates a series of studies exploring the career pathways of professional athletes who developed within UATDEs (underserved athletic talent development environments, Book et al., 2021) in the United States and achieved career excellence against the odds. Ten professional male athletes from UATDEs, 13 stakeholders (M=10, F=3) with significant experience working with such athletes, and a case study contributed to our learning. Data collection was inspired by the holistic ecological (Henriksen et al., 2010) and developmental (Wylleman, 2019) perspectives, while reflexive thematic analysis was used to analyze the data (Braun et al., 2016) with the process uncovering three key factors promoting career excellence: 1) coping with adversity, 2) experience with successful cultural transitions, and 3) addressing the ripple effects of trauma. The findings suggest that while significant hardship inherently exists within UATDEs, the coping resources athletes developed while there were perceived as key factors enabling them to endure the difficulties of a professional career. Further, the participants also discussed that when athletes leave a UATDE for a more affluent environment (i.e., university or college), it presents a distinct acculturation process, but one that was uniquely beneficial for those who embarked on a professional career abroad. Finally, even though the coping resources acquired in UATDEs were perceived as beneficial for career excellence pursuit, the same participants also believed that the trauma experienced during that period of time can leave such athletes psychosocially vulnerable and therefore must be addressed by support providers.

Retiring and Still in Quest for Career Excellence: From Elite Training and Competing to Coaching

Stiliani Chroni[1], Kristen Dieffenbach[2], Alexander Blackett[3], Steven Rynne[4], Sigurd Pettersen[5]
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The presentation focus will be on the rather unchartered elite athlete-to-coach (A-to-C) transition; a very common event worldwide that has become somewhat culturally accepted and, at instances, is increasingly promoted by national sport governing bodies and player unions without any scrutiny on the potential value or adverse effects this has on the early career coaches and the athletes they work with. Recent research advances on the particular transition started to deepen our understanding of this feature of elite sport, characterizing it as a demanding experience for the person, requiring ample reconstructions (Baker et al., 2014) on multiple aspects of one's being(s) and doing(s). Some retiring elite athletes transit to coaching via the traditional education pathway and many via the fast-tracking one, some are passive and others active in their decisions and preparations for the coaching life. Regardless, the guidance and support provided in dealing with the demands of these transitions, appear to be limited, unstructured, and informal. The presentation will share key knowledge on what the A-to-C transition entails (Chroni et al., 2021a), the good and bad elite athletes bring into coaching and how we can leverage their expertise (Blackett et al., 2018, 2020; McMahon et al., 2020; Rynne, 2014, Rynne & Mallett, 20214), practices around elite athlete recruitment and the structural support provided (Chroni et al., 2021b). The presentation will close with a call-for-action to researchers and practitioners; sport psychologists, coaches themselves, coach developers, and federations on understanding, addressing, and caring for the retiring athletes' quest for career excellence.

Symposium
Topics: Transitions in and out of sport/ dual career

Career-long psychological support services: Insights from sport psychology practitioners supporting athletes along the career path

Chair(s): **Johan Ekengren** (Halmstad University, Sweden)
Discussant(s): **Natalia Stambulova** (Halmstad University)

Sport psychology practitioners (SPPs) work with athletes at specific career stages or transitions and help athletes to meet related challenges. This symposium is aimed at promoting the idea of career-long psychological support services (Ekengren et al., 2020) by discussing experiences of SPPs working with athletes at various career stages and transitions. The symposium will highlight core issues athletes deal with and support provided by SPPs to prompt discussions on how to ensure continuity in the career-long psychological support. The symposium will be structured based on a whole person and whole career perspective (Wylleman, 2019). After a short introduction, four presenters will bring insights into their contextualized work at different career stages. The first presenter will illustrate her work with youth athletes and their support staff within an elite sport school in Estonia. The second presenter will share a dual career framework that can guide applied practice, particularly within the European context when working with student-athletes enrolled in higher education. The third presenter will share his experience of delivering support to Swedish handball players targeting the cultural transition experienced when playing with a professional team abroad. The fourth presenter will focus on supporting the elite athlete-to-coach transition and share lessons learned from former elite Norwegian athletes who transited to life as a coach. A critical discussion will follow focusing on how SPPs can coordinate their efforts and support to optimize athletes' performance, wellbeing, and development throughout the entire career, facilitating their pursuit of career excellence (Stambulova et al., 2021).

Presentations of the Symposium

Integrated Efforts in Supporting Youth Athletes as Whole Persons

Kristel Kiens
Tallinn University

Holistic ecological perspectives (i.e., taking into account the personal as well as environmental factors around the athlete) have been emerging in dual career (e.g., Henriksen et al., 2020; Storm et al., 2021) and talent development (Flatgård et al., 2020; Henriksen et al., 2010; Larsen et al., 2013) voicing the need to widen the perspective outside athletic persona. Therefore, practitioners could work on supporting the development of a holistic skills package when working with youth athletes, who face many concurrent changes and challenges (Stambulova & Wylleman, 2019; Wylleman et al., 2020). Furthermore, working within the environment and with the support staff, especially coaches, is warranted to best support youth athletes' whole development (Henriksen et al., 2018). Although sport psychology is being more recognized by athletes themselves in Estonia (e.g., Meresmaa 2016; Nilender, 2018), there is a lack of systematic support services. The presentation will provide a short overview of main developmental factors during youth sport years and hone in on applied implications on different levels (i.e., environment, support staff, youth athletes). I will focus on sharing my experiences and lessons learned from working within an elite sport school in Estonia.

Supporting an Applied Practice: The Dual Career Assistance Framework

Lukas Linnér, Natalia Stambulova
Halmstad University

In this presentation we will share the Dual Career Assistance framework (DCA; Linnér, 2021) developed to merge the DC research, that has flourished in recent years (Stambulova & Wylleman, 2019), in a model that can guide applied practice. The DCA framework merges the holistic developmental (Wylleman, 2019) and the holistic ecological (Henriksen & Stambulova, 2017) approaches by suggesting a support that integrates a whole person, whole career, and whole environment perspective. It is based on findings from the PhD studies of Linnér (2021), European DC research (e.g., Brown et al., 2015) and the Erasmus+ projects 'Gold in Education and Elite Sport' (e.g., De Brandt, 2017) and 'Ecology of DC' (e.g., Henriksen et al., 2020), with a focus on the university level. Briefly explained, the DCA framework sets the aim of DC assistance to be helping student-athletes develop and maintain optimal DC balance to facilitate their striving for career excellence (Stambulova et al., 2015, 2020). Maintaining balance is not without challenges, and the framework points the attention to the DC scenarios and transitions capable of compromising balance (e.g., Linnér et al., 2021). Support providers are guided in helping student-athletes to choose efficient coping strategies to meet their challenges and maintain their DC balance, based on their current possession of DC competences (e.g., De Brandt, 2017) and available DC support (e.g., Knight et al., 2018), or lack thereof, within a DC development environment (Storm et al., 2021). Target areas for DC assistance based on the framework will be discussed.

Psychological Support to Transnational Professional Handball Players

Johan Ekengren
Halmstad University

Athletes' careers evolve through several stages and transitions in various life domains (Stambulova et al., 2021). The mastery stage is commonly perceived as an intense and stressful period in a professional athletes' life (Arnold & Fletcher, 2012; Ekengren et al., 2020; Henriksen et al., 2019). This is due to demands steaming from, for example, training load, performance pressure, number of matches, and extensive traveling. Because of these internal and external demands athletes are vulnerable to injuries and mental health problems, such as burnout, depressed mood, or anxiety (Ekengren et al., 2018, 2020; Henriksen et al., 2019). The awareness of athletes vulnerability points to a need for psychological support. Sport psychology practitioners are encouraged to adopt a proactive stance and with a whole person approach to reduce unnecessary stress (Ekengren, 2020). The aim of the presentation is to share the author's experiences of delivering psychological support services to male national team handball players who play in professional teams abroad. More specifically, the focus will be on the sport psychology practitioners applied work when helping athletes to deal with major challenges of a cultural transition, such as belonging to different training routines and adjusting to leadership behaviours of the new team. This also includes supporting athletes in everyday life and cultural adaptation. The author will further discuss career assistance guidelines, its content and delivery, and how sport psychology practitioners might support transnational professional athletes in their striving for career excellence (Stambulova et al., 2021).

Applied Practice and the Elite Athlete to Coach Transition: Supporting the Person-in-Transit

Stiliana "Ani" Chroni[1], Kristen Dieffenbach[2]
[1]Inland Norway University of Applied Sciences, [2]West Virginia University

Only recently has post-career transitioning inside sport, where an athlete transits from high-performance training and competing to coaching, attracted researchers' attention (e.g., Blackett et al., 2017, 2018, 2019, 2020; Chroni et al., 2020, 2021; Kavanaugh, 2010; Rynne, 2014). As a discipline, sport psychology is well suited to work within coach education and development and with the transition experience itself, yet to our knowledge, sport psychology-based interventions supporting the elite athlete-to-coach (A-to-C) transition are not common practice. Athletes-in-transit undergo shifts and reconstructions in their professional and personal identity, and while retirement out of sport has been scrutinized by the field of sport psychology to both understand and support athletes, we have not worked with what the A-to-C transition signifies for the person undergoing it and our applied practice. At least, four key areas of the A-to-C transition need to be considered when working with elite athletes preparing to transit to coaching or early career coaches who recently transited to coaching; these concern the occupation of coaching, personal aspects, relational aspects, and contextual ones (Chroni & Dieffenbach, 2021). The presentation focus will be on sharing resources covering the demands, barriers, and resources needed for reconstructions, coping, and adjusting when transiting to life as a coach. These resources address a gap in the A-to-C transition support regardless of the individual's entry pathway and with consideration given to shifting the whole person from being an athlete to becoming a coach, both as an identity and with the skills and resources necessary for the job.

Symposium
Topics: Any other topic

Approaching the 55th anniversary of FEPSAC: Lessons to learn from the past

Chair(s): **Roland Seiler** (University of Bern, Switzerland)

After the 50th anniversary of FEPSAC, celebrated during the Congress 2019 in Munster, FEPSAC MC decided to establish a task force "history of FEPSAC", in the intention of preserving the historical heritage of FEPSAC for future generations and of promoting historical research on sport psychology. This symposium will focus on different aspects of sport psychology development, covering more than a century and mainly influences in Europe.

Based on the analysis of the presentations at the first seven FEPSAC Congresses, the first presentation shows the broad spectrum of sport psychology topics as seen by the early colleagues, and takes a position for a broad understanding of the content of sport psychology. FEPSAC documents are also the basis of the analyses of the second presentation: Annual Reports, FEPSAC Bulletins and Position Statements are used to trace the establishment of sport psychology in academia and in sport federations. The third presentation links developments in sport or, more specifically, in gymnastics and physical education, with the early development of sport psychology. The fourth paper discusses the contribution of European sport psychology to a more recently emerging topic in sport psychology, namely career development.

Presentations of the Symposium

Thematic Breadth in the Early Days of Sport Psychology in Europe: A Contribution to the Terminology Debate

Roland Seiler
University of Bern, Bern, Switzerland

The organisation of European congresses of sport psychology is one of the major purposes of FEPSAC, and the congresses are showcases for the development of the field. As the programme of this congress shows, contemporary sport psychology covers a wide range of topics, theories and methods in various forms of sport activities. Based on an analysis of the congress contributions of the FEPSAC congresses from the first 20 years (1968-1987), this presentation aims at showing which topics were researched in the early years of FEPSAC and how this reflects the efforts to achieve a common understanding of the subject matter of sport psychology in Europe. In this context, the cultural and linguistic diversity of Europe, which is particularly evident in the different understandings of sport, physical activity, and physical culture, becomes apparent. While questions of performance optimisation in competitive sport make up a large proportion of the contributions, fundamental questions of, for example, sensory-motor skills, psychodiagnostics or personality development are also covered, thus representing the broad understanding of sport psychology in those early years. Against this background, the increasing differentiation of sport psychology can be attributed above all to the differences in the understanding of sport. The FEPSAC Position Statement #1 'Definition of Sport Psychology' (1995) tried to embrace all these forms of exercise, sport and physical active pursuits.

Establishment of Sport Psychology in Academia and Sport Organisations

Erwin Apitzsch
University of Lund, Lund, Sweden

In the 1970s psychologists were gradually more engaged in working with elite athletes and teams, but the breakthrough started in the 1990s when sport psychology was established in academia, in organisations and in practice. Many courses in sport psychology were given at universities throughout Europe. The number of theses and dissertations increased gradually and research grants were frequently provided for sport psychology studies. Construction of sport specific diagnostic instruments were initiated, for example, on anxiety and motivation. FEPSAC initiated a European Masters Degree in Exercise and Sport Psychology in 1993, and three years later it became a reality. In addition to courses for elite athletes, educational programmes were started for a healthy life style and mass sport. In many countries journals devoted to sport psychology, both general and peer reviewed, were established.

Sport psychology developed from an academic sub-discipline to a growing professional field serving athletes and coaches, resulting in sport psychology becoming a compulsory branch in the educational programme for elite coaches. The cooperation between sport psychology organisations and national sport federations increased and resulted in the inclusion of sport psychologists in national Olympic teams. On average sport psychologists spent about 70% of their time to teaching, and 30% on counselling. Sport journalists focused more than ever on psychological phenomena in elite sport.

Crossing Ways of the Development of Early Gymnastics/PE and Sport Psychology

Sidonio Serpa
Lusofona University, CIDEFES, Lisbon, Portugal

This presentation aims at discussing the influence on the establishment of sport psychology of new ideas and methods of both gymnastics/physical education and psychology during the XIX Century, in Europe. During this period, social, economic and political movements and humanistic approaches influenced education and science. Philosophical ideas conceiving the human being in a soul-body integration were accepted and methods emerged to educate the mind through physical activities aiming at character development, mental reinforcement and social education, mainly in Sweden, Germany, France and England. Patriotic feelings inspired the need for youngsters' physical and mental robustness. The awareness about the importance of gymnastics/PE and sport became widespread. The positivist perspective influenced science, and the inception of scientific psychology in Leipzig with Wundt initiated the laboratorial experimentalism in psychology. Researchers started using sport as a field for laboratorial research before its psychological study became a specific research topic internationally. Therefore, the pedagogical context related to PE & sport together with the increased credibility and scientific approach of psychology have encouraged psychologists, pedagogues and physicians to study and intervene in the psychological dimension of physical activities. In conclusion, the close concepts of gymnastics/PE pedagogues and of psychologists on the roads of their fields' development have led to a crossroad where sport psychology founds its origins. Pierre de Coubertin used this designation for the first time in the first decade of the XX Century. Since then, research, applied work, publications and congresses developed. The foundation of ISSP and FEPSAC resulted from the field maturity process.

Evolution of Athlete Career Discourse: Contributions of FEPSAC and European Scholars

Natalia B. Stambulova[1], Paul Wylleman[2]
[1]Halmstad University, Halmstad, Sweden, [2]Vrije Universiteit Brussel, Brussels, Belgium

In this presentation we aim to overview major milestones of athlete career discourse (ACD) evolution in Europe and summarize key theoretical, empirical, and applied contributions of European career scholars. Under umbrella of FEPSAC, several key events contributed to transforming separate European career studies into the ACD: establishment of career transition special interest group (1995; during the 9th FEPSAC Congress), FEPSAC Position Statements “Career transitions” (1995), and “Career termination” (1997), FEPSAC monograph “Career transitions in competitive sports” (1999), monographs “Career transitions: International perspectives” (Lavallee & Wylleman, 2000) and “Athletes’ careers across cultures” (Stambulova & Ryba, 2013), Psychology of Sport and Exercise Special Issues on “Career transitions” (2004) and “Dual career development and transitions” (2015). Major theoretical contributions of European scholars include (but not limited to): the holistic developmental perspective and holistic athletic career model (Wylleman, 2019), athletic career transition model (Stambulova, 2003), the holistic ecological perspective (Henriksen et al., 2010), cultural praxis of athletes’ careers paradigm (Stambulova & Ryba, 2014), and cultural transition model (Ryba et al., 2016). Recent European projects, for example, “Gold in Education and Elite Sport” (2015-16), “B-WISER” (2017-18), “Ecology of Dual Career” (2018-19), “Dual Career for Mental Health” (on-going), contributed substantially into the body of empirical knowledge about European student/employee-athletes and related environments paving a ground for evidence based professional psychological support of various categories of athletes throughout their careers in sport and life. These achievements have allowed contributions to relevant policy developments on European and national levels and created a solid foundation for the ACD future.

Symposium
Topics: Leadership

Harnessing the power of 'us': The importance of social identity and identity leadership in sport.

Chair(s): **Katrien Fransen** (KU Leuven, Belgium)

For many decades, sport psychologists have been taking on a too individualistic perspective in explaining the performance, adherence and well-being of athletes. However, in recent years this gap in the field has been recognised and more attention is now being paid to social psychological theories that emphasise the importance of the psychological reality of groups to sport-related behaviours. The present symposium brings together recent work on the importance of social identity and identity leadership in sport contexts.

First, Katrien Fransen will focus on the importance of social identities when athletes have to cope with retirement. In the second presentation, Simon Kawycz zooms in on the role of social identities in the attribution process of football fans. The next presentations then address the question of how to cultivate and strengthen these social identities, with a specific focus on the role of the leaders in sport teams. In this regard, Mark Bruner will discuss two studies that investigate the first longitudinal examination of the benefits of coaches' and athlete leaders' identity leadership in 23 sport teams over the course of a season. Thereafter, Filip Boen presents the findings of a series of three mixed-method studies that develop and validate the Identity Leadership Inventory (i.e., ILI) in Youth Sport. Finally, Radhika Butalia takes on a cultural lens to discuss the findings from a large international study, involving 16 countries, that investigates the benefits of identity leadership across cultural borders.

Presentations of the Symposium

When the final whistle blows: The role of "Groups 4 Health: Sport" in supporting elite athletes' transition to retirement.

Katrien Fransen[1], Catherine Haslam[2], Sarah Bentley[2], Filip Boen[1], Pete Coffee[3], Dean Cooper[2], Tegan Cruwys[4], Koen De Brandt[5], Chris Hartley[3], S. Alexander Haslam[2], Crystal La Rue[2], Ben C. P. Lam[2], Clifford J. Mallett[2], Chloe McAulay[3], Niels Mertens[1], Niklas K. Steffens[2], Xinyan Wang[6], Jie Yang[7]
[1]KU Leuven, [2]University of Queensland, [3]University of Stirling, [4]Australian National University, [5]Vrije Universiteit Brussel, [6]Jiangxi University of Finance and Economics, [7]Guilin University of Electronic Technology

Stakeholders in elite sport are increasingly concerned about promoting and protecting the long-term health and wellbeing of elite athletes, not only during their career, but also into their retirement. Many athletes nevertheless experience considerable challenges in adjusting to retirement, indicating that current strategies are not sufficient. The existing literature recognises the impact of personal athletic identity loss on retirement adjustment. What is lacking is an understanding of the role that an athlete's wider group memberships and associated social identities, both within (e.g., with their clubs and teams) and outside the sporting arena (e.g., with family, friendship, community and other groups), play in adjustment to sport retirement. In this presentation, we present two studies that aim to improve our understanding of ways to optimise athlete adjustment to retirement. First, we provide a novel, theoretically derived analysis of adjustment to sport retirement as a process of social identity change. Second, we test the efficacy of a social identity derived intervention program that targets an important gap in planning for social identity loss and change in retirement. More specifically, derived from the Social Identity Model of Identity Change, this manualised program aims to provide people with the knowledge and strategies they need to manage their own social group memberships and associated identities in productive ways when transitioning to retirement. Speaking to its practical impact, the proposed research will thus provide an important framework for social planning and identity reconstruction at this vulnerable point in athletes' lives.

Surrendering the 'Me' for the 'We': Longitudinal Evidence on the Benefits of Coaches' and Athlete Leaders' Identity Leadership

Mark W. Bruner[1], Colin D. McLaren[1], Niels Mertens[2], Niklas K. Steffens[3], Filip Boen[2], S. Alexander Haslam[3], Katrien Fransen[2]
[1]Nipissing University, [2]KU Leuven, [3]University of Queensland

The social identity approach is an important framework for understanding effective leadership. Two studies detail the first longitudinal examination of the benefits of coaches' and athlete leaders' identity leadership for 23 Belgian and Canadian sport teams over the course of a season (N = 388, Mage = 20.7 years). Using social network analysis, Study 1 explored the relationships between the different dimensions of identity leadership (i.e., identity prototypicality, identity advancement, identity entrepreneurship, identity impresarioship) and those of social identification (i.e., ingroup ties, cognitive centrality, ingroup affect). Results revealed mutually reinforcing bidirectional relationships wherein athletes who perceived team members to actively promote a sense of 'us' (strongest for identity entrepreneurship) perceived those same teammates to identify more strongly with the team (strongest for ingroup ties) both early and later in the season. Study 2 expanded on these relationships to test whether identity leadership positively predicts individual and team outcomes through increased team identification. Structural equation modelling revealed that identity leadership of athlete leaders (and not the coach) early in the season predicted athletes' team identification later in the season, which in turn positively predicted team outcomes (i.e., task climate, team resilience, team performance) and individual outcomes (i.e., well-being, burnout, and individual performance). The mediating role of team identification suggests that by building a shared sense of 'we', athlete leaders can improve the team's effectiveness and enhance athletes' well-being. Collectively, we conclude that empowering athlete leaders and strengthening their identity leadership skills is an important way to unlock sport teams' full potential.

Development and Validation of the Identity Leadership Inventory - Youth (ILI-Y)

Filip Boen[1], Radhika Butalia[1], Anthony Miller[2], Niklas K. Steffens[3], S. Alexander Haslam[3], Mark W. Bruner[4], Colin D. McLaren[4], Matthew J. Slater[2], Kyle Dunn[2], Katrien Fransen[1]
[1]KU Leuven, [2]Staffordshire University, [3]University of Queensland, [4]Nipissing University

Identity leadership has emerged as a prominent theoretical framework to study leadership in sport. Although significant progress has been made in investigating the benefits of identity leadership in adult sports teams, research in youth sports is still in its infancy. One limitation is the lack of a youth-centric inventory to adequately measure identity leadership in this population. To address this gap, we conducted three mixed-method studies to develop and validate the Identity Leadership Inventory for Youth Sport (ILI-Y). Results from Study 1 indicated that youth athletes (N = 14; Mage = 14.42) had substantial difficulties understanding the original ILI items developed for adult athletes. Furthermore, the results revealed that the ILI was not a valid and reliable measure in youth sport (N = 100; Mage = 14.42). In Study 2, we revised the original items from the ILI to improve comprehensibility for youth (N = 20; Mage = 13.40). Moreover, the results of this study also provided partial support that the ILI-Y was a valid and reliable measure of identity leadership for youth athletes (N = 300; Mage = 14.42). Study 3 – currently underway – aims to extend the findings of Study 2 to a larger sample in addition to

establishing the ILI's discriminant and criterion validity. Together, the results across three studies will provide sport psychology researchers with an appropriate tool to investigate identity leadership in youth sport, and better understand if identity prototypes, champions, entrepreneurs, and impresarios benefit youth athletes in similar ways as found with adults.

A cross-cultural examination of the benefits of identity leadership in football teams.

Radhika Butalia, Filip Boen, Katrien Fransen
KU Leuven

What makes leaders effective? The Social Identity Approach to Leadership proposes that the most effective leaders represent, advance, create and embed a shared sense of "we" and "us" (i.e., a shared social identity) amongst their team members. Recent research has validated this approach, demonstrating that sport leaders (i.e., coaches, captains, and informal athletes' leaders) who exhibit identity leadership can foster a stronger sense of social identity in their teams (Stevens et al., 2018; Miller et al., 2020; Fransen et al. 2020). In turn, this strengthened social identity improves athletes' attendance rates, their sense of psychological safety, self-efficacy, perceived social support, and the team's teamwork and team resilience. However, given that effective leadership practices vary across countries, the generalisability of the aforementioned research on identity leadership – primarily conducted in only three countries (i.e., the United Kingdom, Belgium, and Australia) – can be questioned. Therefore, our study investigated whether the findings on the benefits of identity leadership held across 16 countries from different regions in the world. Being a pioneering study within the field, we used a cross-sectional methodology and intend to collect data (which is currently ongoing) from 30 adult football teams – at any level of competition - in each country. We hope to present the findings of this study as it will give sport psychology researchers a better understanding of whether the benefits of identity leadership transcend national boundaries. The implications for applied practitioners of sport psychology will also be discussed.

Red or Blue… What do WE think of you? Exploring the Impact of Social Identity on Observer Attributions

Simon Kawycz[1], Pete Coffee[2], Kacey Neeley[2]
[1]Liverpool Hope University, [2]University of Stirling

Research within this paper adopted a social identity approach to explore attributions formed by football fans (observers: in-group/out-group) of actors' (football teams: in-group/out-group) performances. To explore the impact of social identity as a moderator in the formation of observer attributions, two qualitative studies were conducted. Aims of the studies were to investigate: how social identity may influence explanations given by observers depending on whether the actor(s) observed were in-group or out-group and if attributions formed differed from previously held beliefs within Actor-Observer literature. In study 1, 3 in-group (n=22) and 3 out-group (n=20) focus groups retrospectively viewed the same selected moments from a performance of an in-group English Premiership football team and provided causal explanations for the behaviours they observed. Study 2 adopted an ethnographic approach, analysing fan forums of two English Premiership football teams who were playing a match against each other. All attributions were formed 'live', during performance, therefore participants acted as both in-group and out-group observers depending on the identity of the actor being observed. Findings suggest that observers (fans) identity moderates' attributions formed for actors' performances. When actors are considered in-group, more favourable explanations were given and vice versa. Observer's identity influenced perceived explanations and potential behaviours of other fans based on identity. Results provide further insights into the impact of social identity on observer attributions. This is important, as understanding how attributions are formed and the potential influence on future explanations and interactions with others, within a sporting context, could be significant to all involved.

Symposium
Topics: Elite sports and expertise

Mental health in young elite athletes – Current research and practical implications

Chair(s): **Nadja Walter** (Leipzig University, Germany), **Sascha Leisterer** (Leipzig University, Germany), **Anne-Marie Elbe** (Leipzig University, Germany)

Mental health in competitive sports is more than ever a hot topic for researchers, sport psychologists and practitioners.

The aim of this research-based but practically oriented symposium is to present current research on young athletes' mental health and to discuss practical implications and possible training/teaching approaches. Furthermore, the symposium will address lessons and challenges both in research and applied practice.

The three-part symposium begins with two research presentations about challenges young athletes are currently facing. Moesch et al.'s presentation focusses on Covid-19's impact on young athletes` psychological well-being and subsequent behavioral changes whereas Walter et al. will present and discuss factors associated with disordered eating and clinical eating disorders in adolescent athletes.

The second part of the symposium focusses on the environment and the impact of different persons on athletes` mental health. Johnson et al. will discuss associations between social support and perceived well-being in adolescent soccer players focusing on the importance of coaches, age, and gender. Furthermore, Hutter et al. will present the development and evaluation of a practice-oriented online module to increase mental health literacy of the athletes' entourage and will give insights into the implementation and the evaluation of this interactive online program.

In the symposium's final part, Durand-Bush et al. will present the results of a quantitative and qualitative longitudinal study in the context of the postponed 2020 Tokyo Olympic Games highlighting the importance of athletes' mental health in interplay with mental performance, mental illness, and athletic performance.

Presentations of the Symposium

Mental health in Swedish student-athletes during the covid-19 pandemic: Research and applied initiatives

Karin Moesch[1], Anders Håkansson[2], Göran Kenttä[3]
[1]Department of Elite Sports, Swedish Sports Confederation, Department of Psychology, Lund University, Region Skåne, Malmö Addiction Center, Clinical Sports and Mental Health Unit, [2]Department of Clinical Sciences Lund, Psychiatry, Faculty of Medicine, Lund University, Region Skåne, Malmö Addiction Center, Clinical Sports and Mental Health Unit, [3]Department of Elite Sports, Swedish Sports Confederation, The Swedish School of Sport and Health Sciences, School of Human Kinetics, University of Ottawa

The mental health of elite athletes has received increased attention in the last years. Additional concerns have been raised specifically about athletes' mental health in association to the Covid-19 pandemic (Stambulova, et al., 2020). Importantly, it has been highlighted that student-athletes already before the pandemic were at high risk of poor mental health, calling for special attention to this group in light of the pandemic (Grubic et al., 2021). The aim of the presentation is to describe data of a study done with Swedish student-athletes and present applied initiatives targeting this group. Athlete-students at sports high schools in Sweden (N = 7'025) completed a web survey study in February 2021 during the ongoing pandemic. The survey included questions about symptoms of depression (PHQ-9; Kroenke et al., 2001) and anxiety (GAD-7; Spitzer et al., 2006) as well as self-reported psychological and behavioral changes during the pandemic (Håkansson et al., 2020). Sixteen and 14 percent met criteria of moderate/severe depression and anxiety, respectively. Many student-athletes reported feeling mentally worse during the pandemic (66%) and were worried about their own future in sports (45%). Increased gaming behavior was reported by 29 percent. The results suggest that the mental health of student-athletes in Sweden during the pandemic is compromised. Early signs of distress within this population were reported by teachers, coaches, and sport psychology consultants. Therefore, applied initiatives (e.g., a webpage and a video-recorded presentation) were initiated by the sport psychology section of the Swedish Sports Confederation and will be presented during the seminar.

Disordered eating and clinical eating disorders in adolescent elite athletes – Current research and practical implications

Nadja Walter[1], Thomas Heinen[2], Anne-Marie Elbe[1]
[1]Leipzig University, Faculty of Sport Science, Sport Psychology, [2]Leipzig University, Faculty of Sport Science, Perceptual Research and Movement Arts

Recent studies indicate a worrying increase in disordered eating and eating disorders in adolescent athletes (Bratland-Sanda & Sundgot-Borgen, 2013; Conviser et al., 2018). As an eating disorder or disordered eating ontogenetically often occurs during the transition from childhood to adulthood (Byrne & McLean, 2001), this target group is of particular interest. However, research on risk factors for developing eating disorders in adolescent athletes is scarce. This study investigates the prevalence of disordered eating and clinical eating disorders and their association with personality- and sport-related risk factors in a sample of 439 elite athletes between 13 and 18 years of age. Self-regulatory personality factors, sport and social pressure, and sport biographical data were investigated concerning disordered eating and clinical eating disorders assessed with different weight control methods and the Eating Disorder Examination Questionnaire (ChEDE-Q8, Kliem et al., 2017). Results indicate a prevalence rate of clinical eating disorder symptoms of 5.5% for the total sample, in which female athletes aged 15-18 years show the highest rate (9.6%). A structural equation model indicates a predominant association of sport, social pressure, and personality factors with eating disorders. Being in the age range 15-18 years, being female, and an athlete in a high-risk sport (e.g., aesthetics, weight-class or endurance sport) were identified as risk factors as well as athletes' mental association of weight loss and success, and athletes' perceived social pressure on eating and body shape. Based on the results, recommendations are made for training and competition for coaches and adolescent elite athletes.

Can perceived social support facilitate perceived well-being in adolescent soccer?

Urban Johnson, Jenny Back, Petra Svedberg, Andreas Ivarsson
Halmstad University

Perceived social support from different persons is suggested to influence health and well-being among adolescent athletes. One limitation in most previous studies is, however, the lack of prospective designs (Sheridan, Coffee, & Lavallee, 2014). The objective of the study was, therefore, to investigate the associations between social support (from coach, family, and friends) and perceived well-being in adolescent soccer players. We used a prospective design were perceived social support were collected at baseline (T1). Perceived well-being was collected one year later (T2). The participants were 237 soccer players aged between 11 and 19 (M = 13.06, SD = 1.58). The sample consisted of 48% females. One Bayesian Linear Regression analysis, using model averaging, were performed to select the model

with the predictors that combined had the strongest association with perceived well-being. In addition to the three social support variables, gender and age were also included as potential predictors. The participants reported, on average, high levels of perceived well-being (M = 70.10, SD = 18.75). The results showed that support from the coach (Bayes Factor = 40.11), gender (Bayes Factor =42.71), and age (Bayes Factor = 3.20) were the strongest predictors, together explaining 14.3% of the variance of perceived well-being at T2. More specifically, higher level of perceived coach support was associated with higher levels of perceived well-being. Also, males and older participants were more likely to report higher levels of perceived well-being. The results underline the importance of coach also in relation to facilitate perceived well-being in adolescent athletes.

CANCELLED: Lessons learned from the development of an interactive, online module to promote mental health literacy

Vana Hutter, Elke Reisch, Adam Montrose, Laura Lageweg, Nikki Ligthart, Max Simon, Moesha van Leeuwen
Vrije Universiteit Amsterdam

The importance of mental health of athletes for sustainable, successful, and fulfilling careers has by now been widely recognized. People in the environment of an athlete (parents, coaches, peers, etc.) may play an important role in supporting the mental health of athletes. Therefore, we set out to contribute to mental health literacy of such stakeholders, by means of an interactive online module.

We used the mental health continuum of Keyes (e.g., 2002) and the corresponding mental health continuum short form (Keyes, 2009; Foster & Chow, 2019) as a basis for the educational module. The aim of the module was to help stakeholders in the lives and careers of an athlete develop a better eye for recognizing the mental health status and well-being of the athlete. The constructs and dimensions from the mental health continuum and the short form were translated into everyday language, observable behaviors and characteristics, and practical examples in a football context. The final module consists of short videos, interactive tasks, surveys, and information leaflets for participants to keep after completion. In this presentation we will share examples of the videos, interactive tasks, etcetera. Moreover, we will share the lessons and challenges we encountered in developing and testing the interactive module. As a final step in the development, the module was empirically tested (N = 49), and we found that its use increased mental health literacy, and stakeholders of athletes found the module both useful and easy to use.

The interplay between mental health, mental performance, mental illness, and athletic performance in high performance sport

Natalie Durand-Bush[1], Rachel Jewett[2], Connor Primeau[1], Krista Van Slingerland[1], Michelle Dionne[2]
[1]University of Ottawa, Ottawa, Canada, [2]Ryerson University, Toronto, Canada

Mental health is an important component of elite athletes' overall functioning and performance (Reardon et al., 2020) and mental performance can help protect athletes' mental health (Durand-Bush et al., 2021). While research on mental health in elite sport is growing (Larsen et al., 2021), the inter-relationships between mental health, mental performance, mental illness, and athletic performance require further investigation as scientific evidence remains limited. The purpose of this study was to better understand the interplay between these variables in a sample of Canadian elite athletes. A longitudinal mixed-methods design was used to track a sample of 27 elite athletes (22 women) before and after the 2020 Tokyo Olympic Games. Participants selected (n = 9) and non-selected (n = 18) to compete at the Games completed an online survey at two time points and a sub-sample (7 selected and 6 non-selected) participated in an in-depth interview. The quantitative and qualitative data analyses revealed important relationships between the variables. For example, increased mental performance over time was linked to both increased mental health (i.e., psychological, emotional, social well-being) and decreased mental illness symptoms (i.e., anxiety). Furthermore, increased perceived athletic performance was related to decreased mental illness symptoms (i.e., anxiety, depression). There was congruence between the quantitative and qualitative data, as illustrated by this individual sport athlete: "My mental health is really crucial to how I perform in my sport". Findings will inform the development of evidence-informed and culturally appropriate resources, policies, and programming to support Canadian Olympic and Paralympic athletes and coaches.

Symposium
Topics: Best practice

The importance of multi-disciplinary teams within individual and team sports

Chair(s): **Claire Joanne Louise Rossato** (University of Greenwich)

This symposium will examine the importance of multi-disciplinary teams within a mix of both individual and team sports. This is an important topic to highlight as more positions within sport psychology become available within multi-disciplinary teams. The first presentation will look at how a multi-disciplinary team operates within a football academy environment, specifically examining the support structure available for player to enable a holistic support structure. The second presentation examines the importance within motorsport to gain performance optimization, working alongside the manager, mechanics, and the driver. This presentation will also discuss the driver's psycho-bio-social state across a season. The third and final presentation will examine the role of sport psychology within an NCAA DII Institution, specifically working with a volleyball team. This will include a discussion of the potential benefits for working within an interdisciplinary collaboration overcoming obstacles, including testimonies of how full integration has affected a volleyball team. Overall, this symposium will explore multi-disciplinary approaches within football, motorsport and volleyball. It is hoped that this will bring awareness to the importance of working as a sport psychologist within various different environments within a multi-disciplinary team.

Presentations of the Symposium

Working within a multi-disciplinary team: Football Academy Environment

Claire Joanne Louise Rossato
University of Greenwich, United Kingdom

Working within sport often includes multi-disciplinary teams. Communicating between each discipline, is important to understand how support operates for individuals. Working within youth sport and specifically football academies, there is clear support structure including physiology, performance analysis, psychology and strength and conditioning (Pazo et al. (2012). Furthermore, there is an increase in pressure to identify promising talent, and to create an optimal learning environment for these individuals (Baker et al, 2013). This is particularly important when working in a football academy, specifically when making retain or release decisions. Research suggests experienced football coaches, are able to identify factors relating to environmental factors, and in some instances resilience, intelligence and sport-specific attributes important to development (Mills et al, 2012), which maybe important for maintaining a position in the team. This presentation will focus on working within a football academy, specifically the Youth Development Phase. Within the various discipline areas, work is undertaken in silo. However, we will discuss how players develop their skills in certain areas as a team. This allows staff members to gain an overview of the player and the various attributes that contribute to their performance using a holistic view.

Performance Recovery and Optimization in Motorsports: A Multi- and Inter-disciplinary Approach

Edson Filho
Boston University

To thrive and stay health, athletes need to learn both performance recovery and performance optimization strategies (Kellmann et al., 2018). As such, a multi- and inter-disciplinary team of professionals is often needed to ensure athletes can excel without compromising their health (Keegan, 2015). In this presentation I reflect on my role as a sport psychology consultant (SPC) working with a Formula Ford racecar team which included (a) the manager; (b) mechanics responsible for assembling and maintaining the race cars; and (c) one professional driver, who was the client. The goal of the team was to ensure the driver had the resources needed to consistently perform well. In terms of performance restoration, we monitored the driver's psycho-bio-social states over the season using the RESTQ-Sport (e.g., Kellmann et al., 2018). Issues with his sleeping patterns and social recovery were recurrent and were addressed using cognitive-behavioural strategies (e.g., goal setting). In terms of performance optimization, intra-team conflict issues were prevalent, as the driver was overcontrolling about the car and had difficulty trusting the mechanics. We addressed this through team-building activities (e.g., values clarification, cohesion workshop). Multidisciplinary teamwork with input from the coach, mechanics, and SPC allowed the driver to identify his core components of action (see Bertollo et al., 2015) and engage in post-event reflection (see Chow & Luzzeri, 2019). Overall, proactive, and reactive interventions developed by the team helped to ensure that the driver maintained a functional |recovery-stress balance status. Notably, challenges of our multidisciplinary teamwork included identifying areas of shared and complementary know-how.

The Role of a Sport Psychology Consultant at an NCAA DII Institution

Nataniel Boiangin[1], April-Grace Sicam[2]
[1]Barry University, [2]MINDTAP

The modern sport psychology consultant is no longer a check in a box for teams. Today, we are integrated within the coaching staff, as well as, within the athletic administration (at the university level). The purpose of the current presentation is to elaborate on the role of a sport psychology consultant at the NCAA DII institution and the interdisciplinary collaboration that has become a necessary and an integral part of the university system, due to the rise of mental health cases and awareness in the United States. As members of a unique consortium that includes sport psychology, athletic training, strength and conditioning, athletic administration, and mental health counseling center, we are charged with being proactive in making sure that the student athletes are supported both on and off the field, in all matters of their life, in order to provide an environment of excellence and growth. Specifically, as coordinator of sport psychology services, managing our neophyte consultants and maintain relationships with all parties has assisted in providing better services for clients. Discussion will include benefits to all parties, obstacles that have been overcome and have yet to be overcome. A secondary purpose of the current presentation will be to discuss how a similar model was introduced at an Italian university's football program. Cross-cultural differences will be discussed, as well as, how introducing a standard of practice of sport psychology to the program has further enhanced the quality of the experience for the student-athletes, as well as the coaches and administration.

CANCELLED: Collaboration of Sport Psychology and Athletic Training with an NCAA DI Tennis Team

Yonatan Sarig
Florida State University

Athletic trainers (ATs) are an integral part of collegiate teams in the US. ATs interact with their respective teams on a day-to-day basis, and attend most practices and competitions, they often possess more access to the athletes than sport psychology consultants. Due to the nature of ATs work of providing injury prevention and rehabilitation services, it is imperative to introduce them to the connection between high levels of stress and propensity for injury, give them tools to detect and assess stress levels of athletes, and encourage a collaboration with the sport psychology consultants of their respective teams. Therefore, the aim of this presentation is to introduce a

biofeedback training for ATs that is being implemented at Florida State University, with the goals of providing psychoeducation about the stress-injury model, promote technical literacy of using the biofeedback to assess stress levels, and encourage better communication between sport psychology consultants and ATs. ATs can detect high levels of stress among athletes due to their daily interactions and often high levels of rapport, and thus, can use the skills they learn in the biofeedback training to evaluate stress levels and advocate referrals to sport psychology consultants when the need arises. In addition, understanding the stress-injury model and using biofeedback can help ATs to prevent protentional injuries and implement more effective rehabilitation protocols. In the presentation, the biofeedback training protocol for ATs will be discussed, as well as the effectiveness of the training in promoting collaboration between ATs and consultants.

Symposium
Topics: Leadership

"Sharing the lead": Leadership as an emergent group process

Chair(s): **Todd Loughead** (University of Windsor, Canada), **Katrien Fransen** (KU Leuven), **Stewart Cotterill** (AECC University College)

Traditionally, leadership has been viewed around the notion that one person is firmly "in charge" while the rest are simply followers; what is commonly known as vertical leadership. However, recent research in sport and physical activity indicates that leadership can be shared by team leaders and team members; rotating to individuals with key knowledge, skills, and abilities (Loughead et al., 2022). Research also indicates that poor-performing teams tend to be dominated by the team leader, while high-performing teams display more dispersed leadership patterns or shared leadership (Duguay et al., 2019). Shared leadership is defined as an emergent team property that results from the distribution of leadership influence across multiple team members. It represents a condition of mutual influence embedded in the interactions among team members that can significantly improve team performance (Day et al., 2004). The purpose of this symposium is to explore beyond typical individualistic approaches to leadership by highlighting studies that are adopting relatively new leadership approaches that demonstrate the power of group-based or shared leadership perspectives. The first presentation will focus on the validity of a new inventory to measure shared athlete leadership. The second presentation will examine shared leadership in soccer teams from a cross-cultural perspective. The third and fourth presentations are intervention studies that highlight the effectiveness of the 5R Shared Leadership Program in two distinct settings: elite level basketball and older adult walking groups. The fifth presentation will focus on the development of athlete leadership within the context of a professional youth football academy.

Presentations of the Symposium

Examining the psychometric properties of a shared leadership inventory for the study of athlete leadership

Mason Sheppard, Todd Loughead, Krista Munroe-Chandler
University of Windsor

Athlete leadership researchers have assessed the leadership behaviours of athletes with inventories that were originally developed from other fields of research (e.g., military leadership). The approach typically adopted was to assess athlete leadership by rating the behaviours of a few selected athlete leaders (e.g., captains). The problem with this approach is that athlete leadership is a shared phenomenon consisting of numerous athletes (Loughead, 2017). In fact, within the definition of athlete leadership is the notion that the leadership behaviours exhibited by athletes are shared amongst numerous teammates (Loughead et al., 2021). Yet, the inventories used to assess athlete leadership do not fully capture the shared essence of this construct. Grille and Kauffeld's (2015) Shared Professional Leadership Inventory for Teams (SPLIT) fills this need of a shared leadership measurement tool. However, this inventory was originally developed for the business setting and not for the sport athlete domain. Thus, the purpose of this study was to modify the items of the SPLIT and test its validity using an athlete population. First, the items of the SPLIT had to be transformed to fit an athlete leadership context using a think-aloud protocol with athletes. Second, an expert panel was utilized to evaluate and provide suitability of the items for an athlete population. Third, a Confirmatory Factor Analysis (CFA) was conducted on intercollegiate athletes to assess the SPLIT's factorial validity. The results of the CFA offer an alternative inventory for assessing the leadership behaviours of athletes.

A cross-cultural examination of shared leadership structures in football teams

Radhika Butalia, Filip Boen, Katrien Fransen
KU Leuven

A rapidly increasing body of research has evidenced the importance of shared leadership in sport teams for team functioning, team performance, as well as athlete well-being. This shared leadership entails that not only the coach, but also athletes within the team – athlete leaders – take up important leadership roles (i.e., task, motivational, social, and external leadership). However, given that most of this research has been conducted in Western cultures, the question remains whether shared leadership is also beneficial in other cultures? In this cross-cultural study, we examine differences in leadership structures in 16 different countries as well as their relationships with team functioning and athlete well-being. Furthermore, we investigate whether cultural values and practices such as power distance can predict the observed differences. Our on-going data collection aims to assess 30 adult football teams (i.e., 15 male and 15 female teams) in each of the 16 participating countries. Social network analysis will be used to map the leadership structure in the different teams on the four above mentioned leadership roles. In this conference presentation, I will present the findings of the study, together with implications for leadership theory and practice in sport psychology. Moreover, we also hope that this study would inspire more such culturally sensitive sport psychology research.

Harnessing the power of 'Us': Two experiments testing the effectiveness of the 5R Shared Leadership Program in basketball teams

Niels Mertens[1], Filip Boen[1], Alex Haslam[2], Nik Steffens[2], Stewart Cotterill[3], Mark Bruner[4], Jamie Barker[5], Matthew Slater[6], Katrien Fransen[1]
[1]KU Leuven, [2]University of Queensland, [3]AECC University College, [4]Nipissing University, [5]Loughborough University, [6]Staffordshire University

Leadership has been identified as a key factor for sport teams to gain competitive advantage. Besides the role of the coach, recent research has emphasized the importance of leadership provided by athletes within a team (i.e., athlete leaders). Yet to unlock the benefits of shared leadership, it is essential to increase the quality of those athlete leaders. The 5R Shared Leadership Program (5RS) was designed to identify and appoint the best athlete leaders in different athlete leadership roles and then further develop their identity leadership skills. To test the effectiveness of 5RS, we conducted two experimental field studies. Study 1 recruited eight national-level Belgian male basketball teams (N = 96), of which four teams received 5RS and four teams served as a control group. Study 2 used an improved methodological design that recruited 16 basketball teams (N = 170), of which eight teams (four male and four female teams) participated in the experimental condition (i.e., received 5RS in the first half of the season) and the other eight teams participated in a wait-list control group (i.e., received 5RS in the second half of the season). Noteworthy is that Study 2 provided 5RS using a train-the-trainer approach, whereas in Study 1 an expert delivered the program. Our findings highlight the capacity of 5RS to improve athlete leaders' ability to create a shared sense of 'us'. In turn, this strengthened their teammates' sense of 'us', as well as their team identification, perceived social support, motivation, confidence in their team's abilities, and well-being.

Leading the way together: A cluster randomised controlled trial of the 5R Shared Leadership Program in older adult walking groups

Katrien Fransen[1], Tegan Cruwys[2], Catherine Haslam[3], Peter Iserbyt[1], Jan Seghers[1], Julie Vanderlinden[1], Jannique van Uffelen[1], Elvire Verbaanderd[1], Filip Boen[1]
[1]KU Leuven, [2]The Australian National University, [3]University of Queensland

With a rapidly ageing society, healthy ageing has become a key challenge for older adults. Engagement in physical activity, and particularly walking, is a key strategy that contributes to healthy ageing. The present study aimed to evaluate the efficacy of a group walking program for older adults that incorporates the 5R Shared Leadership Program (5RS), compared to a regular group walking program. By implementing a structure of shared leadership and strengthening peer leaders' identity leadership, 5RS has been associated with greater performance and well-being in other contexts. Our cluster randomised controlled trial included 19 walking groups (i.e., the clusters; N = 503; Mage = 69.23 years, SD = 6.68), in which older adults participated in a 12-week structured group walking program. Nine of these walking groups (n = 304) were randomly assigned to the intervention condition and received additionally the 5RS program.

Results revealed that 5RS was successful in strengthening the identity leadership qualities of the appointed peer leaders. Moreover, multilevel regressions showed that 5RS succeeded in increasing group cohesion and walking activity to a greater extent than a regular group walking program, while participants' group identification and well-being increased to a similar extent in both conditions. Using structural equation modelling, we found that group identification mediated the impact of peer leaders' identity leadership on group cohesion and well-being, but not walking activity. We can conclude that by harnessing the capacity of the group and its peer leaders, 5RS constitutes a promising intervention to engage older adults in physical activity.

Athlete leadership and it's development in an English Premier League football academy: The players perspective

Isobelle Cocker[1], Stewart Cotterill[2], Jonathan Griffin[3]
[1]University of Winchester, [2]AECC University College, [3]Fulham Football Club

The effective leadership of, and within, sports teams has consistently been highlighted to be an important factor impacting upon a range of outcomes including team performance, and team functioning. However, while there has been an increasing focus on athlete leadership and leadership development in recent years there is little research exploring leadership (rather than leader) development in youth sport. As a result, the aim of this study was to explore athlete perceptions of athlete leadership and its development in a professional football youth academy. Participants were 34 professional football club youth academy players, arranged into 9 focus groups (depending upon age). The data were analyzed using thematic analysis, with six first order themes emerging (Leader behaviors, selection criteria, shared leadership, growth, and development, changing environmental constraints, and leader development). The results highlight a good level of awareness of leadership amongst the youth footballers. In terms of athlete leadership development, participants recognized that leadership skills can be learnt and developed through personal experiences and learning from others, as opposed to being a fixed trait. But that continued growth and development, was an important part of the developmental process. However, the participants felt that their development as leaders was currently limited offering significant future scope for development in the elite academy environment.

Symposium
Topics: Mental skills training

Interventions for performance under pressure in sports, military, and the performing arts

Chair(s): **Peter Gröpel** (University Of Vienna, Austria)

Athletes, musicians, and performing artists often face extraordinary expectations of flawless technique and superior performance, which can result in pressure and paradoxically harm performance. Evidence indicates that the performance-harming effect of pressure depends on increased arousal, maladaptive attention, disrupted flow of behavior, and weak self-confidence. This symposium addresses interventions that may help to support skill execution, ultimately improving performance. The addressed interventions are pre-performance routine (PPR), slow-paced breathing, left-hand dynamic handgrip, and goal setting. A PPR is a set of cognitive and behavioral elements an athlete systematically engages in prior to performance execution. Slow-paced breathing may be considered a behavioral element of a PPR which helps to calm down. The left-hand dynamic handgrip also constitutes a PPR; it refers to clenching the left fist prior to task execution, which has been found to facilitate the flow of behavior. Goal setting refers to setting specific performance standards, which promotes regular practice and self-efficacy. Four papers on the effectiveness of these interventions will be presented. Aodhagan Conlon found that slow-paced breathing enhanced performance by promoting feelings of calm and improving decision-making. Veronika Lubert observed that individualized PPR and goal setting interventions improved self-efficacy and reduced performance anxiety. Christopher Mesagno expanded research on the left-hand dynamic handgrip, testing it with cognitive-motor performance but found weaker effects; this may indicate its effectiveness is limited to fully automated motor tasks. Finally, Peter Gröpel conducted a meta-analysis on the effectiveness of PPRs in sports and found positive evidence. Implications for research and practice will be discussed.

Presentations of the Symposium

The effect of slow-paced breathing on psychophysiology stress responses and pressurised performance among professional jockeys

Aodhagan Conlon, Rachel Arnold, Ezio Preatoni, Lee Moore
University of Bath, UK

Slow-paced breathing has been shown to benefit the performance of athletes (e.g., Morgan & Mora, 2017), however, the mechanisms underlying its effect remain relatively unclear. Thus, to address this gap in the literature, a case study was conducted with six male professional jockeys (M age = 25.33 years, SD = 1.37) to examine the effects of a slow-paced breathing intervention on psychophysiological responses to stress and performance under pressure. Participants were instructed to breathe diaphragmatically at six breaths per minute for 10 minutes daily for the duration of the six-week intervention. Quantitative measures of psychophysiological stress responses (e.g., perceived stress, heart rate variability) and subjective ratings of performance were taken before and after the intervention. Additionally, following the intervention, semi-structured interviews were conducted. The quantitative data revealed predominantly beneficial effects on psychological stress responses (e.g., reduced perceived stress and stress reactivity) and improved performance. Meanwhile, mixed results were found for physiological stress responses (e.g., reduced heart rate, little change in heart rate variability). In addition, the qualitative data indicated that the slow-paced breathing intervention benefited performance by reducing stress, promoting feelings of calm, and improving cognitive processes such as decision-making. Taken together, the results imply that slow-paced diaphragmatic breathing might be a relatively easy to access and low-cost technique for helping athletes better manage stress and perform optimally under pressure.

Mechanisms and effects of tailored interventions for performance under pressure in the performing arts: A collective case study

Veronika J. Lubert, Peter Gröpel
University of Vienna, Austria

Performing artists and athletes share many similar aspects of performance under pressure. Lacking psychological strategies to manage performance anxiety in high-pressure situations and to refocus attention can be detrimental to performance, particularly for performers with high trait performance anxiety. In a mixed-methods, collective case study with a single-case design, we investigated whether the use of tailored choking interventions, such as pre-performance routines (PPR) and goal-setting, reduces performance anxiety and improves self-efficacy and performance under pressure of performing artists who were especially affected by performance anxiety. The aim was to gain insight into artists' individual need for interventions, explore the underlying mechanisms of such interventions, and understand the effect of solution-focused coaching on their performance experience. Ten performing artists received five coaching sessions including tailored interventions and recorded performance videos for consecutive ten weeks. Before and after this period, they filled in questionnaires on performance anxiety, fear of negative evaluation, and self-efficacy; performed in front of a jury; and were interviewed about their experience. Heart rate was measured during both pre- and posttest performances. Transcripts of interviews and coaching sessions are currently being analyzed using thematic analysis. After the intervention period, almost all participants exhibited lower physiological arousal during performance and reported less performance anxiety, as well as higher self-efficacy. The qualitative material of this study provides a comprehensive picture of the challenges that performing artists with high performance anxiety embrace in their artistic everyday life. Participants emphasized the value of having psychological strategies on hand to deal with high-pressure situations.

Testing the left-hand dynamic handgrip intervention to improve cognitive-motor shooting performance

Christopher Mesagno[1], Marie Luise Brand[2], Peter Gröpel[3]
[1]Victoria University, Australia, [2]Vienna University of Economics and Business, Austria, [3]University of Vienna, Austria

Left-hand dynamic handgrip, which refers to clenching the left fist prior to task execution, has been found to produce cortical relaxation and facilitate performance under pressure. Notably, the performance benefits have exclusively been reported for automated motor skills, including accuracy-based performance in sport shooting. The aim of this study was to extend these findings to a shooting performance that involves both cognitive and motor skills. Twenty-nine skilled shooters performed an adapted counter terrorism confidence drill, which is a shooting task coupled with mental arithmetic. Participants saw five targets containing three numbered circles each. An instructor called out a math equation (e.g., 5 + 7), while participants' task was to solve the equation quickly and correctly, call the number out loud, and fire one shot at the corresponding (numbered) circle. Performance was scored by correct hits, that means, the equation was solved correctly and the shot hit its target. Participants completed two sets of 15 trials under pressure, with an intervention before the second set. The intervention group clenched the left fist for 30 s, whereas control participants either clenched the right hand (control group 1) or did not perform dynamic handgrip (control group 2). Pressure was induced by noise and time pressure, and validated by heart rate measurement. The analysis revealed no performance differences among the three groups over the two phases. The intervention group

did not improve after the intervention, indicating that left-hand dynamic handgrip may not be an effective intervention for tasks that require cognitive involvement under pressure.

Pre-performance routines facilitate sport performance under pressure: A meta-analysis

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A pre-performance routine (PPR) refers to a sequence of cognitive and behavioral elements prior to performance execution (Moran, 1996) and represents one of the most common interventions delivered by sport psychologists in the field (Cotterill, 2010). The aim of this meta-analysis was to determine the effectiveness of the PPR intervention in sports in general, and under pressure in particular, along with testing potential moderators such as the type of PPR, age, gender, skill level, and individualization. Extensive PPRs with several preparatory elements as well as specific stand-alone PPRs, such as left-hand dynamic handgrip and quiet eye, were analyzed. Literature search returned 33 articles that met all inclusion criteria, with 61 separate intervention samples and 112 effect sizes to meta-analyze. The analysis revealed a significant but small effect of PPRs on sport performance in pre–post designs (SMC = 0.31) and moderate-to-large effects in experimental designs, both without (Hedges' g = 0.64) and with pressure conditions (Hedges' g = 0.70). These effects were not moderated by the type of PPR, age, gender, skill level, or individualization. Overall, the results indicate that using a PPR before performance execution brings a substantial benefit to the performer, both in general and under pressure in particular.

Symposium
Topics: Developmental/ lifespan perspectives

Nurturing developmental sport psychology

Chair(s): **Lisa Musculus** (German Sport University, Germany)

In this symposium, we present an overview of key sport psychology topics investigated from a developmental perspective. A developmental perspective comprises age-specific 1) changes and interactions of, 2) trainability of, and 3) expertise in motor, cognitive, emotional, motivational and social concepts. To provide an insight into the state-of-the-art in developmental sport psychology, the talks together cover all developmental dimensions (1-3) and individually focus on specific, different concepts:

Testing the impact of sport participation on social-cognitive concepts, Bisagno and colleagues showed that self-esteem mediated the impact on well-being in female adolescent volleyball and basketball players.

Looking at age-specific interactions of cognitive and motor creativity, Zahno and Hossner investigated divergent thinking and motor skills in a series of studies with children and adolescent soccer players.

Scrutinizing age-specific changes of, the interaction between, and the impact of training on motor- and cognitive control in climbing, Musculus and colleagues conducted developmental studies with children, adolescents and adults.

Last, adding a meta-analytical overview of prospective studies, Kalén and colleagues provide a developmental perspective on the role of cognition for sport expertise.

In detail, each talk discusses original data in light of the respective developmental state-of-the-art and emphasizes the added value of this work for „nurturing developmental sport psychology“ in particular, going beyond performance to the role of sports for the full developmental potential of youth. Thereby, we broaden the scope beyond the invidual studies to foster scientific discussion in the field and to inspire systematic research programs for devevelopmental sport psychology in the future.

Presentations of the Symposium

Sport makes me value myself! Perceived physical ability is associated to well-being in female team sports youth athletes

Elisa Bisagno[1], Chiara Pecini[2], Luca Andrighetto[2], Loris Vezzali[1], Allessia Cadamuro[1]
[1]University of Modena and Reggio Emilia, Italy, [2]University of Genoa, Italy

Sport participation fosters perceived physical ability (PPA) which, in turn, positively impacts self-esteem, psychological well-being (Reinboth & Duda, 2004), and body image (Morano et al., 2011). This is particularly relevant during development for adolescent girls, less active than their male counterparts and often struggling with body shame and low self-esteem (Slater & Tiggemann, 2011). However, little is known about the mechanisms underpinning the PPA and body-related self-esteem association. Another relevant yet overlooked construct in youth sports is athletic identity (AI), which is positively associated with sport participation, focus on body's performance and well-being (Edison, 2021). Given that self-esteem and body image concerns are directly (inversely) related and play a central role in shaping individuals' well-being (Mirza et al., 2005), we investigated whether PPA would be associated to higher well-being and whether this relationship would occur via enhanced self-esteem and decreased body shame. Furthermore, we explored whether these relationships would be stronger for high-AI participants, who value body performance over appearance. A survey was administered to 121 female adolescent volleyball and basketball players. Moderated mediation analyses showed a direct association between PPA and well-being, with stronger association for high-AI participants. Self-esteem (but not body shame) mediated the relationship between PPA and well-being. With adolescence being a crucial developmental window for body image issues, we argue that PPA acquired through sport participation could favor girls' self-esteem and well-being. Future studies should investigate (a) psychological mechanisms fostering PPA, (b) the best developmental window for intervention, and (c) mechanisms enhancing AI to maximize results.

Creativity in team sports: Enhancing players' motor skills rather than divergent thinking fosters creative actions

Stephan Zahno, Ernst-Joachim Hossner
University of Bern, Switzerland

In team sports, developing creative players is widely discussed as a crucial – as well as challenging – objective. In respective empirical studies, creativity has predominantly been understood as a player's divergent thinking (DT) ability and assessed with specific cognitive tests (Memmert, 2015). Numerous studies indicate that DT can be improved with training. So far, however, no empirical support has been provided for the underlying assumption that enhanced DT transfers to creative on-field actions. Alternatively, we hypothesize that players' potential to perform creative actions is foremost rooted in their sensorimotor-skill repertoire rather than in DT. Both explanations were put to test in a series of studies consisting of two field-based experiments (I, II) and two correlational studies (I, II) in elite youth football. In field-based experiment I (N = 16; males; Mage = 12.90 +/- 0.27), improvements in DT did not manifest in more creative on-field actions. In contrast, players who received motor skill focussed training showed larger improvements not only in the functionality but also in the creativity of on-field actions. Correlational studies I (N = 33; males; Mage = 11.40 +/- 0.46) and II (N = 16; females; Mage = 17.51 +/- 0.81) perfectly support this finding indicating no correlations between on-field creativity and DT but moderate to large correlations between on-field creativity and motor-skill level. The results obtained in field-based experiment II (N = 34, males, Mage = 11.78 +/- 0.46) that was conducted recently to conclude the series of studies will be presented at the conference.

Understanding the development of embodied planning: age-specific changes and training effects

Lisa Musculus[1], Laura Juppen[1], Azzurra Ruggeri[2], Markus Raab[3]
[1]German Sport University Cologne, Germany, [2]Max-Planck-Institute for Human Development; TUM Munich, Germany, [3]German Sport University Cologne, Germany; London Southbank University, UK

In everday life and sports, people of all ages cognitively plan and execute actions to achieve goals. So far, the interaction between cognitive and motor planning has rarely been investigated, even in sport psychology (Musculus et al., 2021). This is surprising, given cognitive and motor processes are often intertwined in sports (Raab, 2017; Araujo et al., 2009). In this research line, we focus on the interaction between motor and cognitive planning in climbing by taking a developmental embodied cognition perspective (Musculus et al., 2021). We aim to better understand the development of climbing-specific embodied planning through capturing age-specific changes and training effects.

In study 1, we tested how climbing-specific embodied planning developed from childhood to adulthood (N = 104, 6-32 year-olds). Regression analyses revealed that embodied planning became more efficient between 6-8 y.o.a., indicated by fewer holds used and

faster route completion, but did not change during later childhood, adolescence, or adulthood. In study 2, a pre-post, randomized-controlled 8-week training study (30min session/week; current N = 79), we are testing whether climbing-specific embodied planning improved through motor, cognitive and/or combined motor-cognitive training and whether training effects are age-specific, i.e., differ for children (6-12 year-olds) and adults (18-40 year-olds).

Beyond the specific results obtained, we discuss how to set up systematic research programs for developmental sport psychology and suggest the following guiding principles: to consider age-specific changes, trainability and expertise and to relate sport-specific to general development. Thereby, future developmental research will foster a better understanding of developmental mechanisms at play in sports.

The role of cognition in the development of sport expertise: A review and meta-analysis

Anton Kalén[1], Elisa Bisagno[2], Lisa Musculus[3], Markus Raab[4], Alexandra Pérez-Ferreirós[5], A. Mark Williams[6], Duarte Araújo[7], Magnus Lindwall[8], Andreas Ivarsson[9]
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Cognitive functions and skills play an important part in sport performance (Scharfen & Memmert, 2019; Voss et al., 2010), but there is limited evidence from a developmental perspective. We performed a literature search in four databases, selecting 128 studies with 7998 participants. While there was an overall relationship between better cognitive and better sport performance (d = 0.60, 95% CI [0.49, 0.72]), the difference between age groups was unclear. As cross-sectional studies at different ages seem insufficient to understand the role of cognition in the development of expertise, we reviewed 13 longitudinal studies with 1222 participants: 10 prospective cohort (de Joode et al., 2021; Gabbett et al., 2011; Hagyard et al., 2021; Ishihara et al., 2018; Lundgren et al., 2016; Morris-Binelli et al., 2018; Murr et al., 2021; O'Connor et al., 2016; Sakamoto et al., 2018; Vestberg et al., 2012) and three panel studies (Hagyard et al., 2021; Raab & Farrow, 2015; Raab & Johnson, 2007). One study tested participants in primary school age (383 participants), two in preadolescence (49 participants), two in early adolescence (177 participants), two in late adolescence (155 participants), and six in adulthood (458 participants). The follow-up time ranged from one month to seven years. The panel studies used 2–4 waves of testing. In conclusion, more longitudinal studies are needed to better understand the relationship between cognitive functions and skills and sport performance from a developmental perspective. Especially panel studies that track the development of both cognitive and sport performance over multiple waves of measures.

Symposium
Topics: Clinical issues in sport and physical activity

Differential effects of physical activity on mental health

Chair(s): **Markus Gerber** (University of Basel, Switzerland), **Felipe B. Schuch** (Federal University of Santa Maria, Brasil)

Meanwhile, there is good empirical evidence that regular physical activity protects against the occurrence of mental health issues, and that exercise, the structured subset of physical activity, can play an important role in the treatment of mental illnesses, improving both physical and mental health outcomes. Conversely, we know less about (i) whether the effects of various types of physical activity (e.g. leisure time, work-related) are different, (ii) whether physical activity produces positive effects especially when certain motivational prerequisites are met, (iii) whether physical activity can be used as a transdiagnostic treatment approach, (iv) whether physical activity also leads to positive effects in very specific mental disorders (such as perinatal depression), and (v) whether physical activity counselling can be used as part of in-patient treatment to foster physically active lifestyles among people with psychiatric disorders. The aim of this symposium is to address these questions in five presentations in order to provide impulses and ideas for future and innovative projects in this field of research.

Presentations of the Symposium

Are all physical activities equally beneficial for mental health? Discussing the role of physical activity domain

Felipe B. Schuch
Department of Sports Methods and Techniques, Federal University of Santa Maria, Brasil

Physical activity is a protective factor for the emergence of depression (Schuch et al., 2018) and anxiety (Schuch et al., 2019) symptoms and disorders at a population level. Further, evidence suggests that exercise, the structured subset of physical activity, can improve mental health, reducing depressive and anxiety symptoms and improving cognitive outcomes in people with mental disorders (Ashdown-Franks et al., 2020). However, recent evidence has suggested that not all physical activity influences mental health outcomes equally and that the domain in which the physical activity is given matters. Accordingly, leisure-time physical activity is more likely to be associated with mental health benefits than physical activity for work or time spent commuting (Schuch et al., 2021; Werneck et al., 2020). The differential effects on mental health outcomes across physical activity domains might be potentially explained by the extent to which a given physical activity fulfills basic psychological needs of autonomy, competence, and relatedness. The aims of this presentation are 1) to discuss the current evidence on the role of physical activity domain with prevalent and incident mental health disorders and symptoms, focusing on depression and anxiety; 2) to discuss the potential underlying mechanisms of the differential effects of leisure physical activity, and 3) to discuss the clinical implications of these findings for physical activity promotion.

Physical activity, exercise and sport as stress-buffers: The role of motivational factors

Markus Gerber
Department of Sport, Exercise and Health, University of Basel, Switzerland

It is still not well understood whether the potential of physical activity, exercise and sport depends on motivational factors and the availability of other resources. The goal of this presentation is to summarize the findings of three studies in which these influences were analyzed in different populations. The first study used an adolescent sample (N=864) to examine whether intrinsic motivation moderates the relationship between stress, physical activity, and life satisfaction (Meyer et al., 2021). The results show that heightened stress at baseline was associated with lower life satisfaction levels at the 10-month follow-up. Moreover, a significant three-way interaction occurred between stress, physical activity, and intrinsic motivation, showing that a stress-buffering effect of physical activity was observable only when intrinsic motivation was high. In the second study, these findings were confirmed in an adult sample of 369 French university staff members, with symptoms of occupational burnout as outcome measure (Isoard-Gautheur et al., 2019). In the third study, we examined the interaction between perceived stress, leisure-time physical activity (LTPA) and psychological need satisfaction (PNS) on occupational burnout symptoms in 306 Swiss workers (Gerber et al., 2018). The hierarchical regression analysis showed that the potential of LTPA to buffer stress was particularly evident in participants who reported low PNS. In conclusion, emerging evidence points towards differential effects on physical activity, exercise and sport as a stress-buffers, based on whether physical activity is intrinsically motivated or whether other resources (e.g., autonomy, competence, relatedness) are lacking in everyday life.

Efficacy and cost-effectiveness of a Transdiagnostic group-based exercise intervention: A pragmatic multi-site RCT

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Mental disorders are prevalent and cause considerable burden of disease (Kessler et al., 2005). Exercise has been shown to be efficacious to treat major depressive disorders, insomnia, panic disorder and PTSD (Ashdown-Franks et al., 2020). This pragmatic, two arm, multi-site randomized controlled trial will evaluate the efficacy and cost-effectiveness of the manualized, group-based six-months exercise intervention “ImPuls”, among physically inactive patients with major depressive disorders, insomnia, panic disorder, agoraphobia and PTSD within a naturalistic outpatient context in Germany. 375 eligible outpatients from 10 different study sites will be block-randomized to either ImPuls in addition to treatment as usual (TAU) or TAU only. ImPuls will be conducted by trained exercise therapists with a specific additional therapeutic qualification and delivered in groups of six patients. The program will combine (a) moderate to vigorous aerobic exercise carried out two-three times a week for at least 30 min with (b) behavior change techniques for sustained exercise behavior change. All outcomes will be assessed pre-treatment, post-treatment and at follow-up (12 months after randomization). Primary outcome measure is self-reported global symptom severity assessed with the Brief Symptom Inventory (BSI-18). Secondary outcomes measures are accelerometry-based moderate to vigorous physical activity, self-reported exercise, disorder-specific symptoms, quality-adjusted life years (QALY) and healthcare costs. Intention-to-treat analyses will be conducted using mixed models. Cost-effectiveness and cost-utility analysis will be conducted using incremental cost-effectiveness and cost-utility ratios. Group-based exercise interventions might provide an option to close the treatment gap within outpatient mental health care settings.

Treating perinatal depressive symptoms with exercise. A systematic review and meta-analysis of randomized controlled trials

Ioannis D. Morres[1], Natalia A. Tzouma[1], Antonis Hatzigeorgiadis[1], Charalampos Krommidas[1], Konstantinos V. Kotronis[2], Konstantinos Dafopoulos[3], Yannis Theodorakis[1], Nikolaos Comoutos[1]
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This systematic review and meta-analysis aimed to synthesize evidence from exclusively randomized controlled trials (RCTs) investigating the effects of exercise on perinatal depressive (PD) symptoms in women from perinatal health services. Nine e-databases and fifteen systematic reviews were searched. A random effects meta-analysis (Standardized Mean Difference [SMD]) investigated the effects of exercise on post-intervention PD scores. From 285 records, 14 RCTs (2.025 participants) were considered eligible including two RCTs with clinically diagnosed PD women. Exercise demonstrated a statistically significant, small, overall antidepressant effect (SMD = -0.21, 95% CI = -0.31, -0.11, p = 0.0001) with low/non-significant heterogeneity (Q = 17.82, I2 = 16%, p = 0.27). Only the fail-safe criterion recorded marginally significant publication bias, but trim-fill analysis added no study. Sensitivity analyses increased the overall effect in RCTs showing lower risk of bias or delivering moderate intensity aerobic exercise for ≥ 150 min/week. Subgroup analyses revealed significant antidepressant effects for exercise in various deliveries, depressive severities and outcome measures used. Heterogeneity was low and non-significant. Hedges' g corrections did not influence the results. The small number of available trials and clinically diagnosed PD samples and the variety of exercise modalities are the major limitations of the study. Exercise improved PD symptoms, especially in RCTs with lower risk of bias or with moderate intensity aerobic exercise for ≥ 150 min/day. Findings are useful, but further RCTs with clinically diagnosed PD women are needed for more robust clinical findings.

Short-term effects of in-person and remote physical activity counseling in people with depression

Robyn Cody, Jan-Niklas Kreppke, Oliver Faude, Markus Gerber
Department of Sport, Exercise and Health, University Basel, Switzerland

People with depression exhibit poor mental and physical health (WHO, 2001). Physical activity may have a therapeutic effect when done regularly. However, this may prove to be particularly difficult because of poor psychosocial health, lack of motivation and reduced self-regulation (Kramer et al., 2014). The PACINPAT multi-center randomized controlled trial aims to facilitate a more physically active lifestyle in people with depression by implementing an in-person and remote physical activity counseling intervention (Gerber et al., 2019). The sample consists of women and men in in-patient treatment, between the ages of 18 and 65, who were physically inactive (< 150 minutes of physical activity per week) before admission to in-patient treatment and diagnosed with a moderate to severe depressive (recurrent) episode. The short-term effects of an in-person and remote physical activity counseling intervention on psychosocial health, physical activity and related attitudes will be calculated using ANOVAs (across time and between groups). 254 participants (intervention group: n = 127, control group: n = 127, 52% women, 48% men, mean age = 42 years) will be included in the analysis. The calculated group differences over time, upon which the variance of physical activity may be based, will be presented. This analysis gives an insight into the initial effects of a physical activity counseling intervention in in-patients with depression. By so doing, key elements of a potentially successful program for promoting physical activity may be identified.

Symposium
Topics: Coaching

Promoting interpersonal relationships to develop nourishing coaching environments in sports

Chair(s): **Svenja Wachsmuth** (Univeristy of Tübingen, Germany)

The benefits of sound coach-athlete relationships for individuals' performance, wellbeing, and growth have been widely acknowledged within the sport coaching literature (Jowett, 2017). Yet, initiating and maintaining high-quality working alliances based on trust, openness and collaboration is no easy endeavour. Instead, relationship building seems like "riding a rollercoaster" - defined by changes in communication and influenced by numerous intra-individual and environmental factors (Mongeau & Miller Henningsen, 2021).

Grounded in different theoretical and methodological approaches, the purpose of this symposium is to discuss the impact, nature, and development of coach-athlete relationships within a performance sport context. The session specifically aims to (1) illustrate the benefits of and barriers to forming close, committed, and collaborative partnerships between coaches and athletes, and (2) introduces an evidence-based approach to facilitate thriving through relationships in sports. Utilizing a quantitative research design, presentation one sets the scene by highlighting the impact of coach-athlete interactions on perceived psychological safety and individual flourishing (Gosai & Jowett). Examining coach-athlete interactions more closely, the second presenter then introduces a narrative inquiry on the perceptions of reciprocity, trust, and security within mixed-gender coach-player dyads (Solstad). Presentation three follows up with a qualitative study outlining a range of environmental, intra- and interpersonal barriers experienced by performance coaches in their efforts to effectively communicate and bond with their team sport athletes (Davis et al.). Finally, presentations four and five introduce a humanistic framework for thriving through interpersonal relationships in sport and its application within a team sport setting (Zakrajsek & McHenry).

Presentations of the Symposium

When leadership, relationships and psychological safety promote flourishing in sport and life

Jyoti Gosai, Sophia Jowett
Loughborough University

This study aims to explore the hypothesised associations between coach leadership and coach-athlete relationship constructs, as well as psychological safety in athletes' perceptions of flourishing and thriving. A total of 166 participants (males =87 and female =79) from team sports completed a multi-section survey measuring athletes' perceptions of coach transformational leadership behaviours, quality of the coach-athlete relationship, team psychological safety, flourishing and thriving (positive/negative emotions and performance satisfaction). A covariance-based structural equation modelling was employed to test the hypothesised model. The analysis indicated that coach transformational leadership served as an antecedent to both team psychological safety and coach-athlete relationship quality. The analysis further highlighted that both relationship quality and psychological safety predicted athletes' flourishing and in turn thriving. Collectively, these findings suggest that coaches as leaders have a significant role to play in creating a sporting environment that athletes feel valued, engaged, connected, confident and comfortable. In such psycho-socially-based sporting environments, coaching becomes a positive process within which both coaches and athletes are fully integrated and sport becomes a vocation and a worthwhile (inter)personal pursuit.

Shared realities in the female athlete – male coach relationship within elite junior soccer

Bård Erlend Solstad
University of Agder

The purpose of the present study was to examine the experience of reciprocity in the coach-player relationship within a team sport setting. Shared Reality Theory was used as a conceptual framework to understand how interpersonal relationships between the coach and the players developed over time, where a sense of trust is the core foundation of experiencing well-being and performance development. Narrative inquiry guided the present study, with semi-structured interviews with four female, elite junior soccer players between 15-19 years of age (M = 15.6) and their head coach conducted over an 8-month period. Data were analysed using a narrative thematic approach. Four narratives were developed, one pertaining to the coach (Ben) and three narratives related to the players (Sally, Eleanor, and Juliet). Ben's narrative is focused upon value-driven development, particularly as it pertains to the executive practice of a coach. Sally's narrative explores how players can gain and experience security in the coach-player relationship. Eleanor tells the story of a player who wants a secure relationship with a coach but struggles to understand how to establish a trusting and open relationship. Finally, Juliet's narrative examines the consequences of uncertainty and subsequent ambiguity within the coach-player-parent relationships. Collectively, the four narratives provided show how reciprocity can depend upon the degree of perceived security within the relationship and the extent to which a coach and his/her players want to share their inner states with each other.

Why can't we communicate?! Identifying the barriers of effective communication within the coach-athlete relationship

Louise Davis[1], Svenja Wachsmuth[2], Sophia Jowett[3], Kendal Hajo[1], Niklas Norberg[1], Petteri Räisänen[1]
[1]Umeå University, [2]University of Tübingen, [3]Loughborough University

The coach-athlete relationship is a central relationship to athlete's development and performance success (Jowett, 2017). That said, not all relationships are effective or successful, and this can often lead to unfavourable outcomes for athletes' personal development and wellbeing. A well-functioning coach-athlete relationship requires effective communication strategies as they are, for example, presented within the COMPASS model (Rhind & Jowett, 2010; Davis et al., 2019). That said, previous research indicated that insufficient or low-quality communication is one of the most frequently cited antecedents of conflict between coaches and athletes, thus endangering their working alliance (Wachsmuth et al., 2017). To understand why such difficulties are experienced, the present study aimed to examine coaches' perceived barriers to developing and maintaining effective communication within the coach-athlete relationship. Following a qualitative research approach, twelve Swedish coaches (9 male, 3 female) of high-performance team sports (e.g., football, basketball) participated in semi-structured interviews (48 to 70 minutes). Subsequently, a content analysis (Hsieh & Shannon, 2006) was conducted which resulted in three overarching categories, including seven subcategories: (1) Intrapersonal barriers (e.g., lacking personal resources and skills, critical life events); (2) interpersonal barriers (e.g., lacking relationship engagement, differing expectations), and (3) environmental barriers (e.g., power attributions, lacking environmental resources, elite performance environment). Overall, these findings provide important information for promoting interventions/educational based programs that aim to enhance coaches' and athletes' interpersonal skills and communication within the coach-athlete relationship.

A Humanistic Framework for Thriving through Interpersonal Relationships in Sport

Rebecca A. Zakrajsek[1], Lauren K. McHenry[2]
[1]University of Tennessee, [2]McHenry Mental Performance

Scholars have turned to the concept of thriving to counter the win-at-all cost culture so prevalent in sport. Specially, thriving occurs when performance success is achieved through and with holistic well-being and results from various process, personal, and contextual enablers (Brown et al., 2017). Self-Determination Theory (SDT, Ryan & Deci, 2017) is a widely adopted framework to understand the enablers of thriving in sport. For example, psychological needs satisfaction is considered a key process enabler of thriving, derived from an interaction between an autonomy-supportive environment (contextual enabler) and a person's motivation (personal enabler). However, psychological need satisfaction is only one of two key processes that enable thriving in sport contexts. The second process enabler of thriving is challenge appraisal (i.e., appraisal of stressors as challenges rather than threats, Brown et al., 2017). Research findings support the notion that challenge appraisal (process enabler) is cultivated through a secure relational base (contextual enabler) and psychological safety (personal enabler). Notably, Roger's (1959) Person-Centered Theory (PCT) extends beyond SDT to offer an understanding of how a secure relational base (with psychological safety) can be cultivated in the sport environment (McHenry et al., 2020, 2021). The purpose of this presentation is to introduce a humanistic framework that combines the tenets of both PCT and SDT to offer a more comprehensive understanding of how to support thriving through interpersonal relationships in sport systems. Sport psychology professionals may apply this framework to support coaches' ability to thrive which is a necessary precursor for athlete thriving.

Helping sport industry professionals become a secure relational base for athletes

Lauren K. McHenry[1], Rebecca A. Zakrajsek[2]
[1]McHenry Mental Performance, [2]University of Tennessee

The humanistic framework for thriving through interpersonal relationships in sport integrates person-centered theory (Rogers, 1959) and self-determination theory (Ryan & Deci, 2017). This evidence-based framework suggests a secure relational base is cultivated through sport industry professionals' provision of a person-centered way of being, namely unconditional positive regard (UPR), empathy, and authenticity from which psychological need supportive behaviors become a natural biproduct. Bringing this framework to life, the current presentation will share key methods and evaluation results of a professional development program designed to improve coaches' and support staffs' provision of UPR, authenticity, and empathy to athletes. The program Thriving Through Being was implemented and empirically evaluated with 53 collegiate women's basketball coaches and support staff in the United States (McHenry, 2021). Participants were placed into communities of practice to engage in six educational modules including an audio podcast, reflection questions, application activities, and discussion questions. Each module served as scaffolding for the next to nourish participants' improvement of self-awareness, self-regard, and emotion regulation to support their being authentic, empathic, and consistent in UPR with athletes. Realist evaluation results offer support for the humanistic framework for thriving through relationships in sport. Pre- and post-program assessments revealed a significant increase in participants' unconditional positive self-regard and demonstrated learning of humanistic concepts, self-awareness related to UPR and its opposites (e.g., conditional regard), and communication of UPR. Results point to the value of nourishing sport industry professionals' intra- and interpersonal way of being which offers athletes a secure relational base from which to thrive.

Symposium
Topics: Mental skills training

How Individuals Perform and Grow in High-Stress Situations

Chair(s): **Laura Voigt** (German Sport University Cologne, Germany)

The ability to maintain goal-directed behavior despite exposure to stress is critical to success in various high-performance settings, from athletic competitions to emergency situations (Nieuwenhuys & Oudejans, 2017). Understanding how stress can impair or improve cognitive-motor performance is important to design training environments that effectively prepare individuals for high-stress situations (Giessing, 2021). Current views on performance under stress have shifted the focus from deleterious stress effects to resilience, or even improvement when exposed to particular stress levels (Hill et al., 2018; Kiefer et al., 2018). Recent developments in technologies such as wearables, web applications, and Virtual Reality allow researchers and practitioners to assess dynamic responses to varying stressors in ecological settings, thereby advancing the understanding of how individuals perform and grow under stress.

The aim of this symposium is to bring together theory, research and practice to provide a comprehensive view on human performance in high-stress situations. Specifically, Hill et al. provides the theoretical underpinnings of hormesis and stress-response profiles informing training interventions in and outside sports. The second contribution by Voigt et al. leverages this approach by using physiological and behavioral indicators to generate individualized stress-performance profiles in the context of virtual police training. In the third contribution, Den Hartigh presents how new technologies are used in soccer to provide scientific and practical insights into the resilience of individual players. Finally, Klöppel illustrates how insights from the action theory perspective can be applied in an interdisciplinary preparation of an athlete for high-stress situations in sport psychology counseling.

Presentations of the Symposium

Capturing Hormetic Responses to Distinguish Resistance, Resilience, and Growth for Human Performance Training

Yannick Hill, Cornelia Wrzus, Marie Ottilie Frenkel
Heidelberg University, Germany

Although the term “stressor” seems to carry a negative connotation in psychological research, studies have shown that humans typically overcome stressors successfully (Masten, 2001). Moreover, stressors can even have facilitative effects on performance (Kiefer et al., 2018). Being able to pinpoint under what conditions stress elicits these different responses is crucial for designing optimal training environments. This is particularly important for individuals who have to perform in potentially dangerous situation during which stress is unavoidable, such as medical first responders. To do so, we may leverage insights from a ubiquitous phenomenon called hormesis that has recently been introduced to the domain of sport (Hill et al., 2020). According to hormesis, the effect of a stressor depends on its dose. For example, a vaccine works by exposing the immune system to a dose that is high enough to stimulate an immune response, but not low enough to prevent harm to the immune system. To determine the specific dose-response dynamics, the functional responses of a system need to be mapped over increasing doses of a stressor. This presentation will introduce the theoretical underpinnings of hormesis and how these dose-response profiles can be established for human performance. Finally, the usability of hormesis will be illustrated using examples from both inside the sport domain (i.e., crew rowing) and outside sport (i.e., medical first responder training).

Determining Optimal Stress Levels for Cognitive-Motor Performance: Stress-Performance Profiles in Virtual Police Scenarios

Laura Voigt[1], Yannick Hill[2], Marie Ottilie Frenkel[2]
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Training for high-stress situations in sports and other domains requires a better understanding of how individuals respond to varying stress levels in the context of ecologically valid tasks. So far, research has focused on the maladaptive effects of stress on cognitive-motor performance (e.g., Nieuwenhuys & Oudejans, 2017), often neglecting the idea of dose-dependent effects of stress in an inverted U-shaped curve (Yerkes & Dodson, 1908; Hardy, 1990). Leveraging the concept of hormesis from biology, such hormetic (i.e., stress-response) curves can be considered fitness profiles that indicate to what extent individuals are able to adapt and maintain or increase effective behavior relative to environmental change (Kiefer et al., 2018). The present study aimed to generate such individualized stress-performance profiles in the context of police operational scenarios. Riot police officers (n = 37) underwent three amok scenarios with increasing stress potential (i.e., increasing weapon violence and number of injured civilians) in Virtual Reality. We quantified the individual ability for self-regulation by cardiac vagal activity (Laborde et al., 2018) and behavioral responses of each intervention team by trainer ratings and position data. Police officers reported higher stress levels, anxiety and mental effort with increasing stress potential in the scenarios. We will present individual stress-performance profiles and discuss how they might be used by coaches in sports and other domains to systematically select optimal stress levels in personalized training interventions, informing the literature on pressure training (Low et al., 2021).

Resilient athletes: A multidisciplinary personalized approach

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University of Groningen, Netherlands

Athletes are regularly exposed to various stressors, such as losing matches and high training loads. In order to maintain optimal performance, it is important that athletes quickly recover from such stressors, both psychologically and physically. In other words, athletes need to demonstrate resilience by quickly bouncing back from the stressors (e.g., Bryan et al., 2019; Hill et al., 2018). Recent work suggests that resilience processes are athlete-specific, which warrants a focus on psychological and physiological processes over time, within individual athletes (e.g., Hill et al., 2021; Neumann et al., 2021). Following this idea, a major challenge is to develop an infrastructure in professional sports organizations, allowing the measurement, integration, and analysis of stressors and athletes’ psychological and physical changes (Den Hartigh et al., 2022).

In this contribution, I will present a multidisciplinary and personalized approach to measure and improve resilience of athletes. Our research project involves a close collaboration between psychologists, human movement scientists, data scientists, and professional sports organizations (see project-ris.nl/english). We have developed an infrastructure to measure the stressors and states of soccer players through wearable sensors on the pitch and a tailor-made web application. I will demonstrate scientific insights on warning signals of resilience losses in individual players: How can we detect when athletes are losing the ability to bounce back from stressors? Furthermore, I will illustrate how our analytic algorithms are translated into visualizations for practitioners on the resilience of individual athletes.

An Interdisciplinary Applied Approach to Preparing an Athlete for an Extreme Stress Situation

York-Peter Klöppel
Red Bull Athlete Performance Center, Salzburg, Austria

Traditionally, in applied sport psychology, stress has been seen as a psychophysiological response that should be avoided, coped with or managed, as too much stress will lead to competitive anxiety (Mellalieu, 2019). In line with the recent advances in theoretical approaches to performance under stress presented in this symposium (e.g., Hill et al., 2018; Kiefer et al., 2018), this presentation gives detailed insights to an applied case, in which an athlete was systematically exposed to physical, mental and social stressors in training.

To prepare an individual mentally and physically for an extreme stress situation, it is paramount to expose them to the adequate amount of task-relevant stress (Giessing, 2021). The systematic, personalized and holistic approach developed and applied during the 10 months preparation phase for the first ever tunnel flight with a plane, is presented. From a bio-psycho-social and action theory perspective (Nitsch & Hackfort, 2016), we tailored an interdisciplinary training program including a controlled progression of physical, mental and social stressors to prepare the athlete for the project.

More specifically, an interdisciplinary team of experts from mental performance, physiotherapy, strength and conditioning, nutrition and sports medicine developed innovative training interventions using new technologies that simulated the stressors the athletes was expected to experience during the project. These interventions included a 360° video of the tunnel, a hand-eye-coordination training with simulated g-forces, regular performance tests under psychosocial stress and environmental adaptations to the training. Finally, insights on how the athlete successfully completed the project are illustrated and explained.

Symposium
Topics: Consulting/ counseling

#SportPsychMapping: theoretical foundations, application, and research

Chair(s): **Alexander T Latinjak** (University of Suffolk, United Kingdom)

The aim of this symposium is to present the interview framework #SportPsychMapping including its theoretical foundations as a tool for applied practice and research. Overall, the symposium consists of five presentations, one of which is focused on theoretical principles, two on the applied use of #SportPsychMapping and two on research with #SportPsychMapping. In the first presentation, the knowledge map of sport and exercise is presented and its role in the selection of interview questions and in the development of simple explanations for clients in applied practice is described. In the second presentation, the essential steps for the use of #SportPsychMapping are presented using a case study from a handball talent development environment. This case also exemplifies the usefulness of the summary map in identifying key issues related to injury recovery. In the third presentation, important aspects the online version #SportPsychMapping is presented on the basis of a case study in professional esports. In addition, this second case study illustrates how the summary map can help the practitioner choose interventions. In the fourth presentation, the use of #SportPsychMapping as a pre- and post-test measure in a multi-case-reflexive self-talk intervention is presented. In this research, #SportPsychMapping was also useful for adapting the intervention to the needs of the participants. The last presentation describes research to develop a #PsychMapping intervention package for multidisciplinary coaching teams. In addition to #SportPsychMapping, #TeamMapping, a variant in which the coaching team analyses a group of athletes, is developed, and tested it in a multiple case study.

Presentations of the Symposium

The theoretical foundations of #PsychMapping: The #KnoweldgeMap of sport and exercise psychology

Alexander T Latinjak
University of Suffolk

The aim of this presentation is to introduce the theoretical foundations of #SportPsychMapping and the #TeamMapping adaptation that is described in another presentation at the symposium. The knowledge map of sport and exercise psychology (SEP; Latinjak & Hatzigeorgiadis, 2021) is the result of a synthesis of 650 theoretical and review articles in the area of SEP. The primary goal of the synthesis was to create an organization and overview of research topics in SEP. The knowledge map shows that research concepts describe people and their behaviour as well as aspects of SEP practice. Within the former, we can further distinguish concepts describing external variables, personal descriptors, and psychological skills. In each large cluster, subdivisions could be added to further synthesise SEP research topics. It was the use of the knowledge map in our applied practice that led to the development of the interview framework #SportPsychMapping. Moreover, the knowledge map has also been useful as a simple explanatory model of psychological events. For example, an external variable (e.g., coach criticism) influences personal descriptors (e.g., self-efficacy). Personal descriptors determine actions and behaviour (e.g., tactical performance), and thereby influence external variables. This circular relationship can be altered through the use of psychological skills (e.g., self-encouragement), which can adjust personal descriptors and thereby influence actions and behaviour and their impact on external variables. Overall, the knowledge map is a simple model through which concepts on the summary maps elaborated during a #PsychMapping sessions can be joined into understandable explanations for coaches, athletes, and parents.

#SportPsychMapping in applied practice: A case study of a sub18 Hungarian handball player

Dorottya Molnár
Independent practitioner

The aim of this presentation of a case study is to introduce the exploratory interview framework of #SportPsychMapping (Latinjak et al., 2021) that can guide practitioners in exploring the psychological reality of individuals and teams. Overall, the interview is divided into three sections: opening, central, and summary section. Based on the Knowledge Map of Sport and Exercise Psychology (Latinjak & Hatzigeorgiadis, 2021), in the central section three main clusters of psychological variables as addressed: external variables, personal descriptors, and psychological skills. In this presentation we present the basic structure and corresponding questions of the interview through an applied example conducted in a Hungarian handball academy. A sub18 male player participated in completing the interview regarding his injury recovery status and his position the team. The #SportPsychMapping procedure was completed in two individual sessions: in the first session, we completed the opening and central sections developing the map. In the second session, we finished with the summary section rating the key concepts by utility and relevance. The map derived from the interview showed that it was difficult for the player to accept his recovery status and his place in the team. Also, the map revealed some challenges with daily habits, namely sleeping issues and time spent on social media. At the end of the presentation, we will discuss how the #SportPsychMapping interview allowed us to have a vision about this player's psychological reality, and to define possible intervention pathways for the following season.

#SportPychMapping in Esports: A case study

Paolo Jesus Olivari
Department of Brain and Behavioural Sciences, University of Pavia

Esports represents the frontier of worldwide competitive gaming, and they possess several parallels with traditional sports (Cottrell et al., 2019; Leis et al., 2021; Pedraza-Ramirez et al., 2020). The aim of this presentation is to present the exploratory interview framework called #SportPsychMapping in the context of esports. To meet our aim, we address (a) the specific context in which the exploratory interview framework was used, (b) the online and face to face with IT support versions of #SportPsychMapping, (c) the summary section of the interview, (d) general experiences using #SportPsychMapping in competitive gaming and (e) an explanation of a map created by a professional esports player. In conclusion, in this oral presentation we show that #SportPsychMapping can be used to explore the psychological reality of esports players related to general performance and wellbeing and how this exploratory interview framework can serve sport psychologists working in the field as guidance to implement tailor-made interventions.

#SportPsychMapping in applied research: A longitudinal study exploring the self-regulatory effects of a reflexive self-talk interv

Philip Solomon-Turay
University of Suffolk

The aim of this longitudinal study is to explore the performance effects of a reflexive self-talk intervention program on athletes. Reflexive self-talk sessions (Latinjak et al., 2016) are focused on bringing the athlete's awareness to their self-talk, the ways this may have been

detrimental to their performance and the ways this could be altered to facilitate the desired response. Evaluation of the effects of this intervention is through using #SportPsychMapping (Latinjak et al., 2021). This is through identifying and evaluating key areas important to the athlete's sport experience. This program and evaluation tool is grounded within the knowledge map of sport and exercise psychology (Latinjak & Hatzigeorgiadis, 2021). In addition, research has showcased the positive effects of reflexive self-talk interventions, however a gap in research is evident, with the lack of longitudinal studies and clear identification of measurement tools showcased. This gap is explored in an ongoing study which is currently at the stage of data collection. Participants undergo nine reflexive self-talk sessions, with the #SportPsychMapping tool being applied at four different time-points (pre/mid/post/follow-up) during the program. Initial findings have shown that through the use of #SportPsychMapping, participants are able to identify their progression and better understand the ways a psychological intervention may impact their performance development. Application of these findings would suggest that as a reflexive self-talk intervention develops athlete's self-regulation skills, the #SportPsychMapping tool is an effective way to give ownership of this development to the athlete.

#SportPsychMapping intervention package for multidisciplinary coaching teams

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Sports and performance psychologists trained in #SportPsychMapping often work in multidisciplinary coaching teams and take on two essential functions that are essential for the development of a teamwork culture: looking after the athletes and looking after the coaching staff themselves (Reid et al., 2004). The aim of this study was therefore to create and test a #PsychMapping intervention package that, in addition to the individual #SportPsychMapping interview, contains a modified version of that interview: The collaborative #TeamMapping exercise, which explored the perception of the coaching staff of their athletes. This new version is based on the same structure as #SportPsychMapping, but it is a group exercise where all staff members share their perspective to help create a map of the psychological reality of their athletes. In this study, the intervention package was applied to six different coaching staff from different sports at different levels. The intervention comprised three steps: First, each team member completed the individual #SportPsychMapping interview to familiarize themselves with the processes. The group exercise #TeamMapping was then carried out to create a map of the athletes the coaching team works with. After completing the #TeamMapping exercise, the coaching team planned specific actions that they could implement to help athletes in general, and in particular to develop the psychological skills that they believe athletes are lacking. The current presentation focuses specifically on the #TeamMapping procedures and presents an example of a summary map and the experiences of various psychologists and staff teams with the #TeamMapping exercise.

Symposium
Topics: Well-being and quality of life

Physical activity, exercise and sport interventions to improve mental health in migrant populations and refugees

Chair(s): **Markus Gerber** (University of Basel, Switzerland)
Discussant(s): **Antonis Hatzigeorgiadis** (University of Thessaly, Greece)

Due to ongoing conflicts, a strong increase in the number of international refugees has been observed. Refugees are exposed to severe mental and physical strain, as well as traumatic experiences during their flight. Therefore, they constitute a particularly vulnerable population with a markedly increased risk of post-traumatic stress disorders (PTSD) and other mental illnesses. The United High Commissioner for Refugees (UNHCR) recognizes the potential of exercise and sport and uses it in refugee camps partly as a peace-building measure. It is expected that exercise and sport activities can promote individual resources, strengthen physical health, prevent conflict, promote integration and improve individual wellbeing. While prior research revealed a beneficial effect of exercise and sport on PTSD (Rosenbaum et al., 2015), research with international refugees is still limited. Therefore, the first aim of this symposium is to summarize the existing evidence regarding the potential of physical activity interventions for promoting psychosocial wellbeing in vulnerable populations, with a special focus on migrant populations. To this end, the findings of a systematic review and meta-analysis will be presented. The second aim is to show new evidence from two intervention studies that were recently implemented in two different refugee camps in Greece. In these two studies, researchers used exercise and sport as a means to improve mental and physical health in two different target populations, namely 12- to 17-year-old adolescents and men and women in the adult age. Valuable implications for further studies can be derived from a critical reflection of the experiences made.

Presentations of the Symposium

Physical activity interventions for promoting psychological wellbeing in vulnerable populations: an evidence-based approach

Eleonora Prina[1], Marianna Purgato[1], Justin Richards[2], Ahlke Kip[3], Lidia Del Piccolo[1], Giulia Michencigh[1], Michaela Rimondini[1], Doriana Rudi[1], Francesca Vitali[1], Mauro Giovanni Carta[4], Mexhmedin Morina[1], Federico Schena[1], Corrado Barbui[1]
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The role of physical activity (PA) in the promotion of mental wellbeing and prevention of psychological disorders in population groups at increased risk for mental health conditions, such as migrant populations, has never been systematically investigated. We conducted a systematic review and meta-analysis according to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) statement. We searched the Cochrane Central Register of Controlled Trials (CENTRAL), Pubmed, Web of Science, SportDiscus for randomized (RCTs), controlled clinical trials (CCT), and pre-post intervention studies. We collected studies evaluating the efficacy of PA interventions compared with any types of control conditions. We included 27 studies (4166 participants) (16 RCTs; 2 CCTs; 9 pre-post design) between 1997 and 2020. Meta-analysis showed a significant beneficial effect of PA over control conditions for general functioning (SMD -0.35, 95% CI -0.83 to −0.16; 400 participants), outcome expectancies (SMD -0.78, 95% CI -1.17 to −0.40; 118 participants), self-efficacy/coping (SMD -0.28, 95% CI -0.52 to −0.03; 269 participants), and psychological symptoms (SMD -0.48, 95% CI -0.88 to −0.08; 6 RCTs; 597 participants). Similar findings were produced by pre-post intervention studies (SMD -0.35, 95% CI -0.60 to −0.10; 7 studies; 302 participants). Migrant populations may benefit from PA interventions in terms of improvement of psychological outcomes. Uncertainty remains about the best approach to promote PA in this population, and future research should embrace the complexity of migration experience in the implementation of PA.

Physical activity promotion in adolescent migrants and refugees in Skaramagas, Athens: a rapid strength/weakness assessment

Manolis Adamakis
University of Luxembourg, Luxembourg

Physical activity (PA) is a scalable, low-cost intervention effective for prevention and treatment of non-communicable diseases and mental health problems. Understanding community attitudes to PA and mental health is key to designing interventions (Wells et al., 2019). The aim of this action research is to present the initial findings of the PA programme in the Skaramagas refugee camp, Greece. The PA programme was developed by a Physical Education teacher to promote physical and mental health of adolescent refugees and migrants. In total, 269 adolescents aged 12 to 17 years old participated. The intervention was an action research, and data were obtained through lesson observations, as well as content analysis of monthly reports and diaries.

Initially, the Sport Education model was implemented, however it was abandoned early due to the following challenges: communication, unstable participants' number, negative reactions between students of different gender and nationality, lack of discipline and motivation, weather conditions, limited facilities. It was replaced by the Teaching Personal and Social Responsibility (TPSR) through Physical Activity model. Following its implementation, students' active participation increased from 70% to 90%, and students' percentage who had negative behaviors decreased from 10% to 0%. Most students (>70%) were actively engaged, and there were students who became capable of practicing without direct supervision (≈50%). The TPSR model was effective in improving students' behaviour, as well as creating a climate of acceptance, diversity and gender equality. The programme successfully fostered an active participatory role, promoting empowerment, self-confidence and eagerness to take an initiative in PA.

Effects of an exercise intervention on mental health indices in refugees. A pragmatic trial

Konstantinia Filippou[1], Florian Knappe[2], Ioannis D. Morres[1], Elsa Havas[1], Emmanouil Tzormpatzakis[1], Christina Kalavrou[1], Chantal Zehnder[2], Luce Ann Pieters[2], Yannis Theodorakis[1], Antonis Hatzigeorgiadis[1], Markus Gerber[2]
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Refugees are more vulnerable to mental health disorders compared to the general population. Experiences such as war, loss of family members, family separation, and resettlement, have been linked to post-traumatic stress disorder, anxiety and depression. Exercise has been recommended as an effective treatment for relieving mental health problems and improving well-being. The purpose of this study was to examine the effects of an exercise and sport intervention on post-traumatic stress disorder (PTSD), depression, and anxiety, in adults residing in a Greek refugee camp. Ninety-two participants (41 men, 57 women, mean age 29.19 years) assigned randomly into intervention (n=50) and control (n=48) groups completed the 10-week exercise program and pre/post-intervention assessment. The exercise program was developed to address participants' needs and preferences according to the self-determination theory. Exercise and sport activities (e.g., football, volleyball, boxing, dance) were offered, separately for men and women, five times per week (40-60

min/session) and participants were asked to participate in at least two sessions per week. Repeated measures ANOVA for the total sample showed non-significant changes in PTSD, depression and anxiety for the experimental and the control group. However, significant improvement in PTSD symptoms were revealed for participants attending on average two or more exercise sessions per week compared to those attending less sessions and the control group. The findings highlight the importance of frequency for exercise treatment to be effective; nevertheless, the lack of wider improvements that may be linked to external factors requires further exploration.

Potential and limitations of a physical activity intervention among people living in a Greek refugee camp: A qualitative approach

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Due to human-made conflicts and natural disasters, the number of forced migrants reached a new all-time high. Forced migrants are generally challenged with severe physical and mental strains before, during and after migration. Whereas forced migrants are supposedly highly resilient, their risk of mental health struggles is markedly increased. The objective was to explore the positive and negative outcomes of a co-designed and tailored sport and exercise intervention among adults living in a Greek refugee camp. The methodological approach relied on ethnography including informal chats, open and participative observations. Data was collected and written down daily in a research diary over an 8-month period. Additionally, debrief meetings with the coaches (4 women and 4 men) were held regularly. This insight builds the basis for a critical understanding and interpretation of 13 focus group discussions. Focus group discussions were conducted with 49 participants (19 women and 30 men) after a 10-week physical activity intervention period. Overall, 58 (55.8%) of the participants took part in the physical activities on a regular basis. Regular participation benefitted physical health, social, emotional and psychological wellbeing, personal competencies and change in behavior. However, some of the same areas were likewise negatively affected, namely physical health and social and emotional wellbeing. Behavior change was further inconsistent. The results indicate that a sport intervention has the potential to positively impact on the living conditions of adults living in a Greek refugee camp. However, participation is not imperatively beneficial and only a specific target population can be addressed.

Perceived exertion and heart rate during an exercise intervention for adults living in a refugee camp in Greece

Ioannis D. Morres[1], Antonis Hatzigeorgiadis[1], Elsa Havas[1], Florian Knappe[2], Konstantinia Filippou[1], Emmanouil Tzormpatzakis[1], Chantal Zehnder[2], Delia Lahmici[2], Marina Zakzagki[1], Evangelos Tzachristos[1], Markus Gerber[2]
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This study aimed to examine the association of perceived physical exertion with heart rate (HR) during exercise among refugees with mental health needs. Participants were 96 adults (Mage = 27.31± 9.24) including 44 men residing in a refugee camp; they exercised through group-based training (e.g., football, basketball, martial-arts, fitness), prescribed at moderate intensity and delivered 5times/week for 10 weeks. We assessed perceived exertion with the Borg's 6-20 Rating of Perceived Exertion scale (RPE, Borg, 1998) and HR with wrist monitors every10 minutes in different exercise sessions. The average training time was 44.43 (±10.34) minutes per session; the mean RPE was 9.42 (±2.48) and the mean HR was 126.21 (±18.23) beats/minute, indicating light and moderate intensity, respectively. No correlation between average RPE and HR measures was recorded ($r = .09$; $p = .45$). The correlations at the different time-points (10min intervals) ranged from .01 to .32 ($p > .05$). Even though the intervention had beneficial mental health effects for participants, perceptual processing of information (RPE) was not significantly related with cardiovascular markers (HR) during exercise. Findings suggest anaemic to disturbed physical exertion given that RPE is typically associated with a linear moderate to high significant relationship with HR. Similar findings have been previously detected in people with negative affective states (Morgan, 1993; Morres et al., 2019). Identifying adverse predictors of physical exertion may help understanding the relationship of perceptual processing of information with cardiovascular markers during exercise and increase further the mental health effects of exercise.

Symposium
Topics: Emotion

Emotional processes in competitive sports

Chair(s): **Darko Jekauc** (Karlsruhe Institute of Technology, Institute for Sports and Sport Science, Germany), **Julian Fritsch** (Karlsruhe Institute of Technology, Institute for Sports and Sport Science)

The study of emotional processes in sport is one of the central topics in sport psychology. Evidence from recent research in this area shows that emotional processes are both antecedents and consequences of sport performance at various levels. In this symposium, one theoretical, one methodological and three empirical contributions will be given on this topic. In a first contribution, Jekauc et al. will present a new theory of emo-tions in competitive sports, focusing on affective processes from their emergence, their in-fluence on performance, and how they can be regulated. In a second presentation, Fritsch et al. will investigate the extent to which nonverbal behavior can be correctly interpreted after winning and losing points in tennis. In the third contribution, Chwilkowska et al. deal with the question to what extent the smile intensity from the photographs of the player pro-files is related to the athletic performance. In the fourth presentation, Wolf et al. investigate the phenomenon of emotional agreement and present a mathematical method how this could be assessed. In the fifth and last presentation, Lautenbach et al. examine the re-search question what athletes consider positive emotions during competition, what tech-niques they use to increase positive emotions, when they use them, and why. Overall, this symposium focus on a wide range of phenomena related with emotional processes and provides different theoretical and methodological approaches of how emotions can be as-sessed in sport.

Presentations of the Symposium

Toward a Theory of Emotions in Competitive Sports

Darko Jekauc[1], Julian Fritsch[1], Alexander Latinjak[2]
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Sport competition influences the emotional life of athletes, and affective processes in the context of competitive sport are poorly understood. In this presentation, we introduce a new theory on the dynamic development of affective processes, affect regulation, and the rela-tionship between emotions and sport performance. The theory focusses on how affective processes emerge and develop during competitive sport involvement. Based on Scherer's (2009) component process model, we postulate six components of emotion that interact with each other in a circular fashion: triggering processes, physiological reactions, action tendencies, expressive behaviors, subjective experience, and higher cognitive processes. The theory stresses the dynamics of affective processes and describes the consequences for performance in competitive sports. The dynamics of affective processes lead to a spiral of emotions that significantly influences athletes' performance. In this context, different mechanisms of action of affective processes on performance are discussed. Furthermore, the theory assumes that the peculiarities of different sports must be taken into account in order to understand the affective processes, and offers starting points on which strategies can be used to effectively regulate affective states. A special role is played by emotion reg-ulation, through which the cycle of emotions can be controlled. Consequences for research and practice are derived and discussed. To study the development of affective processes, future research should test the assumptions in ecologically valid contexts, such as real competitions or competition-like situations, using multi-component measures of emotions.

A study on non-verbal behaviour in tennis

Julian Fritsch[1], Kirstin Seiler[2], Chris Englert[3], Matthias Oliver Wagner[2], Darko Jekauc[1]
[1]Karlsruhe Institute of Technology, Institute for Sports and Sport Science, [2]Universität der Bundeswehr, [3]Goethe University of Frankfurt

Athletes' non-verbal behaviour is a central component of emotions and thus may indicate their emotional state (Jekauc et al., 2021). The focus of the present study was on how well individuals can estimate the point outcome based on the nonverbal behaviour shown by tennis players. The specific research questions were to which extent (a) the point outcome and (b) the tennis experi-ence of the individuals influence the accuracy of judgment. From a pool of 229 videos, 266 sub-jects (Mage= 30.45; tennis experience: n = 76; Myears = 9.22) watched 60 randomly chosen videos via the Inquisit software. The videos showed the nonverbal behaviour of a tennis player in the first 3 seconds after the end of a rally. Based on these videos, subjects gave an estimate on the point outcome of the previous rally. On average, individuals correctly categorized 62.51% (SD = 13.14) of the videos. For the lost points, it was 68.20% (SD = 11.84) and for the won points 56.82% (SD = 13.14). This difference was found to be statistically significant, $t(265) = 8.85$, $p < .01$, $d = 0.54$. In addition, individuals with tennis experience correctly categorized 63.55% (SD = 6.71), whereas individuals without tennis experience correctly categorized 62.09% (SD = 6.82) of the videos. This difference was not statistically significant, $t(264) = 1.58$, $p = .12$, $d = 0.22$. The difference between won points and lost points suggests a negativity bias in the assessment of nonverbal behaviour (Baumeister et al., 2001).

Smile intensity in volleyball players' profile photographs is unrelated to sports performance

Patrycja Chwilkowska, Maciej Behnke, Lukasz Kaczmarek
Adam Mickiewicz University

Studies indicated that individuals who tend to smile while taking their photographs tend to experience more positive emotions in their life and, in turn, achieve superior outcomes in several life domains. However, little is known whether positive emotionality revealed in players' profile photographs is related to sports performance. This study examined whether the smiling intensity in volleyball players' profiles (full, partial, and no smile) predicted individual (e.g., points scored, service, and reception errors) and team performance (winning a match). Building upon previous studies on positive emotions, we expected that players presenting full (Duchenne) smiles would achieve better results. We analyzed 196 volleyball players' profiles from the Polish highest-level professional league competition (PlusLiga). Raters coded smile intensity. Using three-level path models, we found that teams with more frequent Duchenne smiles performed as well as those who presented Duchenne smiles less often. We conclude that positive emotionality (as reflected in profile photo smiling) might be independent of male volleyball accomplishments.

The Value of Emotional Agreement: Euclidean and Cosine Distances and Relationships With Team Unity, Teamwork, and Team Performance

Svenja Wolf[1], Marc Heerdink[2], Desmond McEwan[3], Gerben van Kleef[2]
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Whereas there is accumulating evidence that sport teams exhibit emotional agreement (Tamminen et al., 2016; van Kleef et al., 2019), it remains challenging to operationalize this agreement validly, especially when considering multiple emotions and objects. Similarly,

although there are indicators that collective emotions relate to team processes and performance outcomes (Campo et al., 2019; Totterdell, 2000), the role of emotional agreement (rather than intensity) in this context is not yet clear. Finally, if agreement is indeed relevant, it is important to understand which types of teams that are most likely to exhibit it.

To address these issues, we recorded match scores and outcomes, and 360 adult members (50% female) of 30 integrated sport teams self-reported team cohesion (Eys et al., 2007) and identification (Bruner & Benson, 2018); anger, anxiety, and happiness (Jones et al., 2005) about their own team, the opponent, and the environment; and team coordination, cooperation, and communication (McEwan et al., 2018) across the match.

Across our analyses, we show that Euclidean and Cosine distances, capturing differences between response vectors instead of means, are conceptually valid and reliable ways to operationalize emotional agreement. Although distances do not show any direct relationships to teamwork behaviors or performance outcomes, team unity predicts distances with the direction and strength of these relationships changing throughout the match.

With this, we provide novel and valid strategies to conceptualize and measure emotional agreement in (sport) teams and, consequently, tools to research the consequences and sources of such agreement further.

The experience and regulation of positive emotions in athletes

Franziska Lautenbach[1], Jana Lisa Rother[1], Gantima Demirsöz[1], Svenja Wolf[2]
[1]Humboldt University of Berlin, [2]Florida State University

Athletes experience positive emotions (PEs) during training and competition (Moen et al., 2018). However, what kind of PEs is unclear. Also, increasing PEs can also be the target of emotion regulating strategies (Waugh, 2020). Thus, this study aims to understand what athletes consider positive emotions during competition, what techniques they use to increase PEs, when they use these strategies, and why.

44 high-competitive athletes (23 females, Mage = 23 years) completed an open-question online survey in December 2021. Their answers regarding PEs regulation strategies were clustered based on the consensual process model of emotion regulation (Gross, 1998).

The most often reported PEs during competitions were joy (22 mentions), pride (14 mentions), and excitement (7 mentions). Furthermore, results show that overall 71% of these athletes use strategies to increase PEs. They report using all strategies proposed by Gross (1998) except situation selection. Most athletes (87%) used the techniques prior to competition. Several reasons for using these techniques were mentioned, such as positively increasing their mental (e.g., fun, good feelings, focus, self-confidence) and physical (e.g., energy, performance) state as well as to reduce negative aspects (e.g., reduction of pressure, negative thoughts).

Overall, athletes experience PEs during competition. Interestingly, they ascribe aspects of affect such as arousal to emotions which might imply that they are not well enough educated on their emotional states. Finally, a variety of known techniques were used by athletes. Future research should focus, despite interindividual differences, on the most effective techniques.

Symposium
Topics: Prevention and rehabilitation

Prevention of sport injuries

Chair(s): **Urban Johnson** (School of Health and Welfare at Halmstad University, Sweden)

Sport injuries are common phenomena that many team and individual athletes experience every year. Sport injuries can have effects beyond sport participation at the individual, team/club, and community levels. Regarding injury sequelae for athletes, researchers have found that injuries are one of the most common reasons for termination from sport (e.g., Drawer & Fuller, 2002). Moreover, injuries have also been associated with cognitive and emotional reactions which in turn could influence athletes' well-being (e.g., Wiese-Bjornstal, 2010). Thus, any effort aimed at preventing the number of occurred injuries in sport is beneficial. The aim of this research-based symposium is to present current research particularly related to prevention of sports injuries and to discuss practical issues and future research. In the first presentation Rubio and Quartiroli will present a review about the relationship between perceived vulnerability (PV) and sport injury (SI). But also, how PV evolves over time and how to decrease risk behaviors that can lead to increase in SI prevention. In the second presentation, Moesch and colleagues will describe the process and results of developing injury prevention exercises based on psychological principles to be included in the I-PROTECT model in youth sport. In the third presentation, Johnson and colleagues will discuss results from a systemic review investigating psychological, social, and cultural risk factors to acute sports injury. In the final presentation, Conti and Bertollo describes an online training program that focuses on the psychological content and skills that should be possessed by professionals.

Presentations of the Symposium

Prevention of sport injuries

Urban Johnson
School of Health and Welfare at Halmstad University, Sweden

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Do superheroes sustain sports injuries? A review of the role of perception of risk in sports injuries

Victor J Rubio[1], Alessandro Quartiroli[2]
[1]University Autonoma Madrid, Spain, [2]University of Wisconsin-La Crosse (USA) and University of Portsmouth (UK)

Sport injury (SI) is a multifactorial event many internal and external, proximal and remote factors play a role in a recursive way. Among those factors, what people do (e.g, wearing the protections) or do not (e.g., an over-tough tackle) may directly and indirectly drive to sustaining an injury. Perceived vulnerability (PV), also named perceived susceptibility or perceived risk, refers to the extent to which an individual believes that they are subjected to a health threat. Perceived vulnerability is supposed to contribute to an increased motivation in active health-protective behavior. Nevertheless, the role of perceived vulnerability in sustaining a sport injury or suffering some other health condition related to people's behavior seems to be elusive. Here we review the relationship between PV and Sis, how perceived vulnerability evolves through time and how to decrease risk behaviors that can lead to increase in SI prevention.

Psychological exercises for injury prevention training in youth handball - an important component in the I-PROTECT model

Karin Moesch[1], Bunke Sofia[2], Linnéll Jennie[3], Eva Ageberg[4]
[1]Department of Psychology, Lund University, Lund, Sweden, Department for Elite Sports, Swedish Sports Confederation, Sweden, [2]Department of Psychology, Lund University, Lund, Sweden, [3]Department of Health Sciences, Lund University, Lund, Sweden,Swedish Handball Federation, Sweden, [4]Department of Health Sciences, Lund University, Lund, Sweden

Injuries are common in youth team sports. Even though there is evidence for the effectiveness of both physical (e.g., Soomro et al., 2016) and psychological (e.g., Gledhill et al., 2019) injury prevention programs, there is yet a lack of interventions combining these two (Johnson & Ivarsson, 2017). As a response, the I-PROTECT model was initiated. It includes interdisciplinary handball- and age-specific injury prevention training exercises for youth players and for coaches to implement with their players (Ageberg et al., 2020). The exercises are available in a mobile application, called I-PROTECT GO. The aim of this presentation is to describe the process and results of developing injury prevention exercises based on psychological principles to be included in the I-PROTECT model. The development of the psychological exercises was based on steps 1-3 in the generalizable six-step intervention development process (Donaldson et al., 2016) including identifying and synthetizing research and applied clinical experience, consulting experts, and engaging end-users (i.e., players and coaches). The process applied the four principles self-awareness, relaxation, being in the present moment, as well as prevent and handle stress. Based on these principles, exercises were developed for individual players and for coaches to implement with their teams. The principles and examples of exercises will be presented.

Setting the future research agenda for research on psychological risk factors for injury: A systematic approach

Urban Johnson[1], Rasmus Christiansson[1], Ulrika Tranaeus[2], Andreas Ivaarsson[1]
[1]School of Health and Welfare at Halmstad University, Sweden, [2]The Swedish School of Sport and Health Sciences, Sweden

The objective of this project was: (1) to perform a systemic review study investigating psychological, social, and cultural risk factors to acute sports injury, (2) propose future methodological as well as theoretical development within the field of sport injury prediction. In total, the literature review resulted in 65 studies. Most of the studies had a particular focus on psychological variables, where only a minority

investigated sociocultural risk factors. The studies used mostly one single measurements wave´s for the risk factors, with regression-based analyses to analyze the result. The result showed that psychological as well as sociocultural variables can influence the risk of becoming injured. Progress has been made in the field of risk factor research, both in terms of expanding the focus as well as in methodological aspects. To continue with the development of the field, four specific needs for future research is proposed: (1) the application of sophisticated analyses investigating how patterns of risk factors, and their interrelationship, is related with injury, (2) more regularly use of repeated-measure designs (preferable three occasions) combined with person-oriented analyses, (3) expand the knowledge regarding intrapersonal, interpersonal, and structural factors as a "third variable", (4) focus on the sociocultural and behavioral influences in acute injury. An integrated and holistic standpoint is warranted for future research, where research based on the inclusion of various theoretical models which seek to explain the injury process will expand the understanding of the complex, interactive, and dynamic conditions.

A training proposed for professionals as an intervention strategy to reduce the risk of injury in athletes

Cristiana Conti[1], Maurizio Bertollo[2]
[1]Sport Psychologist and Psychotherapist, Private Practice, Italy, [2]BIND-Behavioral Imaging and Neural Dynamics Center, Department of Medicine and Aging Sciences, University of Chieti-Pescara,, Italy

Studies conducted with competitive Italian athletes in 2019 underlined the essential influence of professionals (e.g., physiotherapists) on the athlete's cognitive, emotional, and behavioural responses during the phase of an injury (Conti et al., 2019). Our findings suggested that the support of qualified professionals plays a key role in providing information to athletes about return to sport process and in encouraging them to adopt efficient coping strategies. Professionals play a substantial role in the life of athletes, not only in the post-injury context, but also in the pre-injury phase. In fact, they are in position to empower the athlete through education about the psychological factors involved in injury resiliency (e.g., self-awareness) and vulnerability (e.g., stress response) and, for instance, to understand how an athlete's personality may heighten or reduce the risk of injury. As highlighted in the literature (e.g., Hemmings & Povey, 2013), there is a lack of well-developed training programs that target the education of professionals on the aforementioned psychological aspects. A greater emphasis should be placed on integrating training programs for professionals who surround athletes to ensure that they possess adequate levels of awareness and knowledge about the psychological factors and processes that are key issues in injury resiliency and vulnerability. Emphasizing the crucial role of professionals in reducing the risk of injury in athletes, the purpose of this presentation is to describe an online training program that focuses on the psychological content and skills that should be possessed by professionals.

Symposium
Topics: Cognition

A symposium on recent developments about self-talk in sports

Chair(s): **Julian Fritsch** (Karlsruhe Institute of Technology, Germany)

The way athletes talk to themselves indicates psychological challenges they have during a sport competition as well as their attempts to overcome these challenges. The different ways in which self-talk can be relevant in sports are reflected in the distinction between (a) organic self-talk, which refers to athletes' natural self-talk during sports, and (b) strategic self-talk, which refers to the use of pre-determined cue words primarily to enhance sport performance (Latinjak et al., 2019). Considering this distinction, the symposium includes five presentations that focus on either organic self-talk, strategic self-talk, or the relationship between the two. In the first presentation, Fritsch et al. will present results of a study in football that extends the previous categorical classification of spontaneous and goal-directed self-talk within organic self-talk using dimensional measures. Next, Mathas et al. will present a board-game version of reflexive self-talk interventions in which participants reflect on their organic self-talk in challenging situations. Thereafter, Whitehead et al. will present the Think Aloud method to assess primarily organic self-talk during the sport performance. The fourth presentation of Panoulas et al. will address preliminary psychophysiological findings portraying the activation of the autonomous nervous system during a pistol shooting task. Finally, Hardy et al. will present a study that focuses on the motivational effects of strategic self-talk based on self-determination theory. Altogether, this symposium highlights recent developments in the literature and illustrates how self-talk is related to various other psychophysiological processes.

Presentations of the Symposium

A study on self-talk before and after a penalty kick

Julian Fritsch, Nadine Engelmann, Darko Jekauc
Karlsruhe Institute of Technology

It has been suggested that the difference between spontaneous self-talk as a more uncontrolled type of self-talk and goal-directed self-talk as a more controlled type of self-talk should be considered proportional rather than using mutually exclusive categories (Latinjak & Hatzigeorgiadis, 2021). Thus, considering this proportional categorization, the purpose of the present study was to assess football players' self-talk before and after a penalty kick. For this purpose, a total of 66 competitive amateur players (18 female, Mage= 30.62) taking a penalty kick, with two players competing against each other at a time. Immediately after the penalty, they were then asked to write down the self-talk they had (a) before and (b) after the penalty. The players were also asked to rate, for each self-talk statement, the extent to which their self-talk was goal-directed and the extent to which it was spontaneous on a scale from 1 (not at all) to 7 (very much). The self-talk before the penalty was significantly rated more as goal-directed (M = 5.19; SD = 1.55) than spontaneous (M = 3.01; SD = 1.75), t (65) = 6.19, d = 2.86. The self-talk after the penalty was significantly rated more as spontaneous (M = 5.54; SD = 1.27) than goal-directed (M = 2.74; SD = 1.50), t = 9.20, d = 2.47. These results suggest that before the penalty the players primarily engage in goal-directed self-talk to regulate themselves, whereas their self-talk after a penalty is primarily an uncontrolled response.

Reflexive self-talk interventions: game board format and transference of control over the sessions

Vassilis Mathas[1], Alexander T. Latinjak[2]
[1]University of Thessaly, [2]University of Suffolk

The aim of this study was to examine the experiences of one practitioner and four participants with the board-game version reflexive self-talk intervention (Latinjak et al., 2020) and to observe how control of the exercise passed from the practitioner to the client over four sessions. Reflexive self-talk interventions consist of a reflexive process in which clients analyse their organic self-talk in challenging situations and develop suggestions on how they can improve their goal-oriented self-talk in the future. For clients to better follow the various intervention steps and take on more personal responsibility for the exercise, a game board version of the exercise was developed. An amateur athlete, a semi-professional referee, a senior tennis coach and a professional tennis player participated in this study. Evidence was collected in the form of a reflective diary of the practitioner and an interview with the participants after the intervention. In general, all participants reported a very positive experience with the intervention, and while encouraged, they did not report any aspects that they disliked. Regarding the board game format, the participants reported that this innovative made the exercise easy to follow. Regarding the transfer of control, differences could be observed between participants who tried quickly to control the exercise and participants who preferred the practitioner to guide them. Some relevant suggestions have been made by the practitioner regarding the selection of the challenging situations to be analysed during the exercise.

Using the Think Aloud method to understand Self-Talk in sport performance.

Amy Whitehead[1], Laura Swettenham[2], Steve Vaughan[1], Trish Jackman[3]
[1]Liverpool John Moores University, UK, [2]Cultiv8 Tennis Academy and International Federation for ESports Coaches, [3]University of Lincoln, UK

The Think Aloud (TA) method allows for real-time cognitive processes to be collected during the performance of a task. Within sport participants using TA will verbalise their thoughts out loud throughout the duration of a performance most commonly wearing a Dictaphone and a microphone. This allows for real-time cognitive processes and decision-making to be collected and is an effective way to overcome memory decay issues of retrospective methods, such as questionnaires or reflection-on-action. TA has been previously used within sport psychology research to understand cognitions in golf (Whitehead et al., 2016), tennis (Swettenham et al., 2020), cycling (Whitehead et al., 2018), and snooker (Welsh et al., 2018) supporting its use as a viable tool across many performance contexts. Within the content of TA, different forms of self-talk across different performance environments, such as training and competition can be detected. With the applicability of TA across different performance contexts, it is a viable and effective tool for identifying internal and external self-talk dialogues within athletes and allows for the exploration not just the performer, but the person behind the athlete too. Additionally, it can be used by a range of individuals such as by coaches, athletes, and sport psychologists to understand and enhance the application of self-talk by individual performers. This presentation will provide a number of examples, where self-talk data can be examined through the use of Think Aloud, specifically within tennis and cycling.

Psychophysiological traces of strategic self-talk in pistol shooting

Orestis Panoulas[1], Evangelos Galanis[1], Emmanouil Tzormpatzakis[1], Maurizio Bertollo[2], Andreas Flouris[1], Antonis Hatzigeorgiadis[1]
[1]University of Thessaly, [2]"G. d'Annunzio" University of Chieti-Pescara

Strategic self-talk is a well-documented performance enhancing technique. Furthermore, there is considerable self-reported and behavioral evidence suggesting that the facilitating effects of strategic, and in particular instructional, self-talk, can be attributed to attentional mechanisms. Nevertheless, the psychophysiological traces underpinning these effects remain largely unexplored. The aim of this study was to investigate how functions of the autonomous nervous system, as these are reflected in heart rate variability, are linked to strategic self-talk in a pistol shooting task. Novice pistol shooters were randomly assigned into experimental and control groups. Following a baseline assessment, participants of both groups practiced shooting over four sessions. The experimental group practiced using instructional self-talk aiming to focus attention to the core components of the task prior to execution, whereas the control group trained following similar instructions without the use of strategic self-talk. A shooting trial was implemented following the practice phase of the intervention. The results showed that performance of the experimental group improved and, in addition, vagal activation was increased. The present findings suggest that the effectiveness of strategic self-talk in fine tasks and its attentional interpretation can be partly attributed to changes in the autonomic nervous system and encourage further research to extend a psychophysiological perspective on the effectiveness of strategic self-talk.

Pep talks: Can self-talk increase your motivation?

James Hardy[1], Jamie A. van Santen[1], Emily J. Oliver[2]
[1]Bangor University, [2]Durham University

While much has been written about self-talk and motivation, relatively little empirical investigation has occurred to date. Couched within a self-determination theory framework, we conceptualized self-talk as a vehicle for providing informational and controlling information to the self. In two experiments we investigated how informational and controlling forms of self-talk influenced behavioural regulation following setback-oriented feedback (Study 1; N = 65, Mage = 20.62) along with a test of a potential underlying mechanism, namely need satisfaction (Study 2; N = 51, Mage = 24.0). For both studies we expected those using informational self-talk would demonstrate higher levels of internalized forms of behavioral regulation compared to those using controlling self-talk or those in a control group. In both studies, we utilized 3 (group) x 2 (pre/post-test) factorial designs involving balance experimental tasks and used the Situational Motivation Scale (Guay & Vallerand, 1995) to assess motivation, supplemented by a behavioral free choice measure. To better understand the mechanism behind our effects, in Study 2 we assessed needs satisfaction via an adapted version of the Intrinsic Motivation Inventory (McAuley et al., 1989). Across both studies, at post-test, results from ANOVA indicated the informational self-talk group processed significantly more internalized forms of behavioural regulation than the controlling self-talk and control groups. In Study 2, informational self-talk appeared to buffer the effects of the setback feedback on perceived competence. The findings give practitioners belief that motivation-oriented self-talk interventions can be effective.

Symposium
Topics: Sports Psychology and COVID-19 Pandemics

The Olympic Games and the Sport Psychology Practitioner: From Pregame Covid and Motivation Issues to Postgame Blues

Chair(s): **Kristoffer Henriksen** (University of Southern Denmark & Team Denmark)

The recent Olympic Quadrennial has put applied sport psychology to the test (Lundqvist et.al., 2021). Postponement, speculations of cancellation, changes in preparations, lack of opportunities to compete, and severe restrictions all provided fertile ground for rumination, stress, and losing sight of the deeper meaning. Therefore, the Tokyo and Beijing Games will go over in history as an event that truly tested the athletes' mental game and jeopardized their mental health.

The presenters in this symposium all have first-hand experience of the pressure related to the Olympics, either as experienced sport psychology practitioners or as athletes. The symposium represents multiple perspectives, including those of different European countries as well as different roles related to the Games. The presenters will take us through a journey that starts in the exhilaration of preparation and ends in the search for meaning after the Games.

Carolina Lundqvist supported Swedish athletes and collected data in the lead-up to the Games. She will talk about challenges related to motivation and wellbeing in preparation for the Games. As head of the performance behavior team of the Netherlands, Paul Wylleman represents a management perspective. He will talk about the sport psychologist's role in managing Covid testing and quarantines. Anne Marte Pensgaard has supported Norwegian athletes for decades and will present a success story of using a mindfulness and acceptance approach to help shooters perform in the face of challenges. Finally, Violetta Oblinger-Peters, herself an Olympian, will present athlete stories of feeling lost upon return.

Presentations of the Symposium

To Deal with Uncertainty and Foster Resiliency: What can We Learn from the Tokyo and Beijing Olympic Games?

Carolina Lundqvist
Linköping University

The COVID-19 pandemic imposed major challenges for athletes' striving to participate the Tokyo 2020 and Beijing 2022 Olympic Games. Challenges related to athletes' well-being and motivation as well as Olympic preparations. Conditions for training, competitions and qualifications shifted rapidly throughout the pandemic's different phases. Subsequent adaption of the psychological support was necessary to meet varying needs emerging among athletes and coaches. This presentation focuses on lessons learned and data collected on Swedish elite athletes related to their preparations before the Tokyo 2020 and Beijing 2022 Olympic Games. Dealing with uncertainty and worry were central themes prior both Games. Athletes' worries related, for example, to general training logistics, Olympic Games preparations, travels, qualifications and the risk of testing positive on a PCR-test before or during the Games (e.g., Lundqvist et al., 2021). In this presentation, applied experiences of using evidence-based CBT approaches will be exemplified. A particular focus is the use of low-intensity CBT interventions (e.g., Chellingsworth et al., 2013; McEvoy, 2020) with elite athletes which were delivered face-to-face or by use of digital tools. Low-intensity CBT are brief and evidence-based interventions with a "here and now" and skills-based approach that have demonstrated efficacy and effectiveness for a great variety of psychological concerns (e.g., worry, depression; Bennet-Levy et al., 2010; David et al., 2018; Hofmann et al., 2012). Thus, low-intensity interventions can be useful to preventively support elite athletes with psychological skills to increase their coping ability and resiliency to protect mental health in stressful and uncertain situations like pandemics.

The Negativity about being Positive: COVID-19, Quarantine and the Team Psychologist at the 2020 Olympic Games

Paul Wylleman
TeamNL/Olympic Committee of the Netherlands & Vrije Universiteit Brussel

With the best ever Olympic Games (OGs) performance (seventh Olympic medal table) TeamNL also faced positive COVID-19 testing and quarantining. The Olympic team's psychologist (OTP) role consisted first of assisting team members unable to travel to the OGs to COVID-19 restrictions. Secondly, the OTP focussed on crisis intervention during the process of testing, isolation and quarantining of team members. A step-by-step support process included coping with emotions, stability of daily routine and self-regulation, establishing a primary social support network, staying physically active, and post-quarantine planning, as well as the OTP's direct intervention in the quarantine hotel (QH). Third, the OTP was required to take self-isolation steps after intervening in the QH. Finally, specific post-OGs psychological support was provide for all team members.

Conclusions. The role of the OTP is relevant before, during as well as after the OGs and requires competences related to crisis intervention and mental health support (e.g., Brooks et al, 2020; Oblinger-Peters & Krenn, 2020).

Practical applications. The OTP needs to be integrated in the Olympic team during the preparatory as well as post-game stages with the possibility for one-to-one support to athletes, coaches and staff. The OTP should stay in continuous contact with the chief-medical officer in order to provide multidisciplinary support and be well- and timely informed by the chef-de-mission. Finally, clinical competences will allow the OTP to ensure a preliminary in-depth psychological assessment, triage, possible first-aid clinical support and referral.

From Crisis to Challenge: How Norwegian Olympic Rifle Shooters Focused on Growth and Development Preparing for Tokyo 2020(1)

Anne Marte Pensgaard
Norwegian School of Sport Sciences & Norwegian Olympic Training Center

It came as no surprise that the Tokyo 2020 Olympic Games was postponed with one year. Aim: This paper will tell the story of the young Norwegian Rifle team: The team had prepared well and had put many other things on hold due to the Olympics, so the change of plans was inconvenient. Nevertheless, the team of coaches and the athletes quickly changed mindsets and focused on increasing the training load and take advantage of the situation. It was decided to prolong the stress and coping program we had worked on since November 2019. This was a mental training program based on Mindfulness and Acceptance principles outlined in Henriksen, Hansen & Larsen (2020) and designed to practice how to deal with distractions during a shooting contest. Although there was a surreal atmosphere colored by the ongoing crisis mode that existed at the time, and with no international competitions for more than a year, the young athletes displayed an extraordinary mindset. Conclusions: A combination of creative solutions when it came to competition training and a flexible

group of athletes, led to remarkable achievements when they competed in the Tokyo 2020 Olympic Games. Implications: How athletes employed different types of skills in order to cope with this highly unusual lead up to a major competition, is discussed, as well as "lessons learned" regarding how we can practice stress management in a real practice session.

Post-Olympic Experiences of Beijing 2022 Athletes: Exploring the Role of Meaning on Athletes' Adaptation to the Post-Games Period

Violetta Oblinger-Peters[1], Kristoffer Henriksen[2], Noora Ronkainen[1]
[1]Institute of Sport Science, University of Bern, [2]University of Southern Denmark & Team Denmark

In light of abundant media reports and a growing body of research documenting Olympic athletes' diminished wellbeing, sustained low mood, and feeling of being lost after the Games (Bennie et al., 2021; Bradshaw et al., 2021; Howells & Lucassen, 2018), the wider sport psychology community has recognized athletes' heightened vulnerability and inferred the need to attend to their mental health in the post-Games phase (Henriksen et al., 2020). Albeit several factors influencing the wellbeing of athletes in this phase have been proposed, e.g., social support and pre-planning, there still is a lack of understanding why some athletes experience the post-Olympic phase as psychologically challenging. This study aims to examine Olympic athletes' experiences through an existential-narrative lens by exploring the meaning that sport holds for them (Ronkainen & Nesti, 2019). To generate a deeper understanding of athletes' idiosyncratic post-Olympic experiences, a mixed-methods study design will be adopted. Specifically, participants will complete the Meaning in Sport Questionnaire (Luzzeri & Chow, 2020) at two points in time which assesses the perceived presence of and search for meaning in sport. Semi-structured in-depth interviews conducted with 10 participants of the Beijing 2022 Olympic Games will be informed by the obtained results. Preliminary findings will be discussed in the presentation. By providing in-depths insights into how athletes draw meaning from their sport, the study will deepen the scientific understanding of psychological factors influencing athletes' wellbeing in the post-Games phase. The findings can serve to guide sport psychology practitioners when addressing existential issues with athletes.

Symposium
Topics: Research methods (qualitative & quantitative)

Qualitative research: Exploring challenges and opportunities

Chair(s): **Brett Smith** (Durham University, United Kingdom)
Discussant(s): **Rob Book** (University of Southern Denmark)

It was not that long ago when qualitative research rarely featured in sport and exercise psychology journals, books or conferences. However, times have changed. Whilst qualitative research is no longer a poor cousin of quantitative research, there is though still much to be done. For instance, interviews are too often the default option for qualitative researchers despite the vast options available to collect qualitative data. Whilst creative analytical practices (CAP) have grown in use, the quality and application of CAP needs developing. Researchers face the important challenge of navigating open science on terms that fit the logic of qualitative research. We also face new fallacies about qualitative research that are damaging the quality of the work and the qualitative community in general. This symposium offers responses to these challenges and opportunities for developing qualitative research. It does so by focusing on 4 themes: 1) story completion as an underused yet valuable method; 2) creative non-fiction as a popular type of CAP that requires development; 3) critical perspectives on open science and qualitative research; and 4) common fallacies about qualitative research revolving around social constructionism, critical realism, and rigour. We hope the symposium provides valuable guidance for researchers interested in qualitative research and is a spur for dialogue.

Presentations of the Symposium

Qualitative story completion in sport and exercise psychology research: Potential opportunities and challenges

Toni Williams
Durham University

Story completion is an innovative method that offers a uniquely different approach to generate qualitative data. The method involves participants being provided with the opening sentences of a story and asked to write what happens next. In contrast to more traditional qualitative approaches, story completion is a valuable tool for collecting imaginative data that captures socio-cultural discourses and dominant meanings. As such, story completion is ideally suited to exploring ethically sensitive or taboo topics and permits socially undesirable responses. The method also facilitates comparative designs as responses to key elements of the story can be compared across fictional characters and participant groups (e.g., gender or experience). Furthermore, story completion is theoretically flexible as storied data can be understood through multiple paradigmatic lens. Yet despite the exciting potential of story completion research, examples within the sport and exercise psychology literature are rare. This presentation will explore what story completion has to offer sport and exercise psychology research and address the practical considerations and challenges guiding story completion design and implementation. This includes qualitative story stem design, the piloting of story stems, data collection methods, analytical techniques and potential implications. The aim of this presentation is to encourage sport and exercise psychology researchers to include story completion within their methodological toolkit to create more engaging research and collect qualitative data in new and exciting ways.

Is this good enough? Reflections on quality in creative nonfiction

Francesca Cavallerio
Anglia Ruskin University

Creative nonfiction (CNF) is an approach to the representation of research findings that is becoming more and more popular in the field of sport and exercise psychology. When crafted and used appropriately, CNF has the opportunity to become a powerful resource for (qualitative) researchers to disseminate findings, communicate research effectively, raising awareness and encouraging discussion. But how do we know if a CNF is good enough to impact its readers? In this talk we will reflect and discuss various examples of CNF, to explore what aspects need to be considered to ensure the development of a well-crafted CNF and how to recognise them. In so doing this talk will help as a guide for authors and peer reviewers to enhance the quality and application of CNF as a type of creative analytical practice (CAP).

From confidential narratives to open data: Critical perspectives on open science and qualitative research

Katherine Tamminen, Brenda Gladstone, Denise Gastaldo
University of Toronto

Open science or open research practices can include a variety of approaches and strategies, including study preregistration, sharing datasets and methods (e.g., open data and open methods), and publishing research findings in open-access formats that are freely accessible to the public. These open research practices are increasingly becoming required or recommended for researchers across disciplines, with funding agencies, journals, and academic institutions developing and implementing guidelines and policies for researchers to engage in various open research practices. Some qualitative researchers have engaged with these practices to varying degrees, while others have resisted and remain concerned about the implications and risks associated with open research practices, including the acknowledgement of the collective labour of participants and researchers when co-constructing data, ownership of community wisdom, among other ethical issues. This presentation will first discuss such concerns and risks associated with open research practices, including downstream risks for participants associated with open data and open methods. Then, it will consider some key methodological, epistemological, and ontological critiques of open research practices for qualitative inquiry; these include constraints imposed by open research practices, as well as issues related to replication, reproducibility, and secondary data analysis. Finally, this presentation will explore the political and economic values underpinning the push for open research practices and the implications and consequences of these movements for researchers undertaking qualitative inquiry (e.g., financial, time, and resource barriers to engaging in open research practices; changing metrics, incentives, and rewards for evaluating researchers).

Fallacies in qualitative research

Brett Smith
Durham University

There is much interest in qualitative research in sport and exercise and psychology. Qualitative methods and methodologies are also increasingly being used in the discipline. There is however a need to advance understandings at this stage in the development of qualitative research. One key area to advance because it is severely hampering the quality of qualitative research revolves around fallacies. Fallacies are not so much about misunderstandings but rather about mistaken beliefs and making incorrect claims. Drawing on the literature and my experiences as a journal Editor and Associate Editor, in this paper several common fallacies about qualitative

research are unpacked. These include about social constructionism, critical realism, and rigour. Throughout the presentation some possible reasons are offered as to why fallacies are emerging and being perpetuated. Dangers of perpetuating fallacies for sport and exercise psychology as well as the development of qualitative research and our community are discussed. The paper concludes with a call for action in which we agonistic plurality is appreciated but not at the expense of perpetuating dangerous fallacies.

Symposium
Topics: Social and cultural diversity

Women in sport: Research from a perspective by and for women

Chair(s): **Anna Jordana** (Universitat Autònoma de Barcelona, Spain)
Discussant(s): **Miquel Torregrossa** (Universitat Autònoma de Barcelona)

Gone are the days when women were forbidden from practising sport but this does not mean that gender-related forms of exclusion and discrimination have completely disappeared from the sports culture. Despite the advances towards gender equality in terms of sports participation (IOC, 2021), sport remains a male-dominated context in which the values and experiences of men are assumed to be the standards for everyone (Coakley, 2017). This symposium brings together four research projects from three different countries with the purpose of (a) providing insights into women's experiences within the sports context, and (b) introducing factors that can influence women's coping with different challenges derived from partaking in the sports context. The first presentation is focused on the junior to senior transition in women football players and it's aimed at exploring their levels of irrational beliefs, perfectionism and mental health during this transitional process. The second presentation provides insights about the coping strategies elite rugby and football players use during their premenstrual period to maintain well-being. The third presentation explores whether any gender differences in athletes' vocational development exist to facilitate the transition to an alternative professional career after sports retirement. The last presentation presents the individual and contextual factors that can facilitate the professionalization of women coaches and referees. The symposium will finish with a discussion on the role of sports environments in supporting women's development of healthy and sustainable careers within the sports context.

Presentations of the Symposium

It was time! Junior to Senior Transition in women's football

Anna Jordana, Yago Ramis, Marta Borrueco, Jose Mejías, Miquel Torregrossa
Universitat Autònoma de Barcelona

The professionalization of women's football has grown exponentially in recent years, however, most of the evidence continues to be developed from men's perspective. The objective of this study is twofold: (a) to add evidence regarding the Junior to Senior Transition (JST) in women's football and, (b) to explore the levels of irrational beliefs, perfectionism and mental health of footballers during their JST. A total of 143 women (M = 16.63; SD = 2.97) who played in Spanish (semi)professional football academies during 2020-2021 season, answered iPBI, MPS-2 and GHQ-12 questionnaires in a 7-point Likert-scale. Results show high scores on irrational beliefs (M = 5.6), low frustration tolerance (M = 5.1) and awfulizing (M = 4.7), and low on depreciation (M = 2.7). Also, they showed high emphasis on precision, routines, and order (M = 4.3) and low levels of perceived parental pressure (M = 2.6). Mental health profiles showed high levels of social functioning (M = 5.1) and low scores concerning loss of confidence and self-esteem (M = 2.6). Correlation analysis revealed a moderate relation between depreciation with concern over mistakes (r = .59) and perceived coach pressure (r = .40). The high scores on irrational beliefs may lead to unhealthy long-term consequences that jeopardize their development, and uncertainty towards professionalization seems to endanger female football players mental health. We discuss the differences on this transitional process by male and female footballers, and practical implications based on Rational Emotive Behavior Therapy are proposed for promoting rational beliefs to foster healthy careers.

A challenge for female elite athletes: Coping with pre-menstrual physical and affective symptoms to maintain well-being

Francesca Vitali[1], Elisa Bisagno[2], Simone Carazzato[1], Roberto Modena[1]
[1]University of Verona, [2]University of Modena and Reggio Emilia

Women's participation in sports has grown worldwide over the last decades (Eime et al. 2020). This trend is also true in several sports that are typically associated with men (e.g., rugby and football) (Kunz, 2007). Similarly, literature studying female athletes has significantly increased, but it is still not comparable with that regarding male counterparts. Bonato and colleagues (2022) ask sport sciences to adopt a gender perspective as a mainstream. One of the relatively poorly studied topics is how female athletes cope with pre-menstrual (PM) physical and psychological symptoms (Findlay et al., 2020). Our study aimed to explain which coping strategies elite rugby and football players use during their PM period to maintain well-being. Participants were 263 elite athletes (Nrugby = 105) filled an online survey focused oncoping strategies, physical and affective symptoms as well as cognitive resources, perceived physical ability (PPA), and well-being during PM period. A mediation model, considering coping strategies as independent variables, PPA and well-being as dependent variables, and physical and affective symptoms and cognitive resources as mediators, was run. A dysfunctional impact of avoiding harm (indirect) and adjusting energy (both direct and indirect) and a functional indirect influence of acceptance, self-care, and communication coping strategies were found on PPA and well being during PM period. As predicted, physical and affective symptoms, as mediators, reduced PPA and well-being, while cognitive resources endorsed them. These results may inform practitioners on how supporting female elite athletes in the pursuit of well-being and performance.

Life After Sport: Women's Transition to a New, Post-athletic Career

Sofie Smismans, Paul Wylleman, Koen De Brandt, Simon Defruyt
Vrije Universiteit Brussel

Given the relatively short duration of an elite sporting career, many elite athletes choose to engage in a new professional career upon athletic retirement. For athletes to adequately prepare their transition into a new career, literature suggests the importance of competency development to optimize their employability (e.g., Smismans et al., 2021). Multiple studies (e.g., Coffee & Lavallee, 2014) assume that certain competencies developed throughout the athletic career (e.g., perseverance, stress resistance) strengthens athletes' vocational development. Nevertheless, although the topic of athletes' competencies optimizing their vocational development has been touched upon, limited attention has been paid to the impact of gender on athletes' new, post-athletic career. Differences between men and women in their athletic career suggest that gender might influence athletes' vocational development and consequently their new career. Therefore, the purpose of this study was to explore whether any gender differences in athletes' vocational development exist. The Athletes' Competency Questionnaire for Employability (ACQE; Smismans et al., 2021) was administered to 954 athletes (46% female; 54% active athletes; 46% retired athletes). MANOVA revealed a significant effect for gender □F(8, 1868) = 3.851, p < .001□ with female athletes reporting a lower possession for Career Communication (p = .042) and Career Resilience (p = .001) than their male counterparts. This may indicate that female athletes are less prepared for their transition into a new career than male athletes. Those results can be a crucial element for stakeholders to enhance their support for athletes in the context of vocational development.

Looking at role models: personal and contextual factors influencing the professional career of women coaches and referees.

Marta Borrueco[1], Elena Conde[2], Anna Jordana[1], Miquel Torregrossa[1], Yago Ramis[1]
[1]Universitat Autònoma de Barcelona, [2]Universidad Católica San Antonio de Murcia

The participation of women in sport has increased notably over the past decades (IOC, 2021) but gender equity is far from being achieved when considering access to positions of power (Coakley, 2017). Women are highly outnumbered by men in coaching and refereeing roles, and this imbalance is accentuated as responsibility, power, and visibility of the position increases. In consequence, this situation is aggravated in high-performance settings (LaVoi et al., 2019; FIFA, 2018). The project "Red-REFERENTE" (Referent-network) was designed to address this issue by promoting the professional career of women coaches and referees within the Spanish sports context. The presented work is part of this project and has the objective of exploring the individual and contextual factors that shape women coaches and referees' trajectories in high-performance settings. We interviewed 13 coaches and eight referees and data were analyzed using thematic analysis from a critical realist perspective. In general, results show a need of developing specific career maps that guide women through their professional careers. Findings also indicate a variety of factors at different contextual levels, from the individual (e.g., experience as an athlete, coping strategies) to the structural (e.g., hegemonic masculinity in the sports context), that shape women's navigation through their careers. In addition, results suggest that referees experience more organizational support than coaches on their progression to high-performance contexts. This work contributes to the promotion of women in these roles by providing organizational level recommendations for supporting women through their different career stages (e.g., recruitment, early-stages, progression).

Symposium
Topics: Any other topic

Mindfulness in sport: Interventions and beyond

Chair(s): **Roberta Antonini Philippe** (Université de Lausanne, Switzerland)
Discussant(s): **Jean Fournier** (University of Paris Nanterre (FR))

For the past thirty years, science has been interested in Mindfulness and has sought to explain its cognitive and emotional benefits and, more generally, its positive impact on health. This field of research has helped to better explain the interconnection between the body, mind, brain, subjective experience and well-being. The purpose of this symposium is to illuminate with recent studies this advancement of science in sport psychology by highlighting the benefits and new knowledge navigating through the history, the pandemic situation and the applied programs.

Regarding this need, the present symposium comprises five presentations: The first presentation, Antonini Philippe, Schwab and Biasutti investigate the effects of mindfulness and physical activity on depression and resilience during the first wave of the COVID-19 pandemic. Secondly, Doron, Goisbault, Lienhart and Martinent examine mindfulness skills and performance-related outcomes, athletes' perceptions and the moderating effects related to personality in basketball. The third presentation, Fournier and Bernier aim to present the program "Mindfulness For Performance" and its empirical evidence in two different studies conducted in basketball and table tennis. And the last two presentations propose systematic reviews, the first one will be present from Bondar, Bertollo, di Fronso and Robazza in order to determine the neural correlates of mindfulness practice that enhance performance-related processes. The last presentation, Birrer and Scaldevi present the historical development of mindfulness in sport psychology from 1968 to 2021 by outlining a knowledge map and conclusions about future trends and research perspectives.

Presentations of the Symposium

Effects of physical activity and mindfulness on resilience and depression during the first wave of COVID-19 pandemic

Roberta Antonini Philippe, Laurie Schwab
Université de Lausanne (CH)

The first wave of the COVID-19 pandemic generated a significant number of stressors that the Swiss population had to deal with. In order to cope with and adapt to such adversity, it is essential to have protective factors that allow for resilience. The objective of this study was to investigate the effects of mindfulness and physical activity on depression and resilience during the first wave of the COVID-19 pandemic. A quantitative method was adopted asking participants (N = 147) who were engaged in physical activity or mindfulness to fill a battery of measures of depression and resilience and some demographic questions. The results showed that mindfulness practice strengthened the initial level of resilience of practitioners, suggesting that mindfulness meditation is a tool for coping with adversity during a potentially traumatic event. Conversely, physical activity practitioners maintained a stable resilience score over time, suggesting that exposure to adversity did not disrupt their state of biopsychospiritual homeostasis. Moreover, being physically active decreased the depression score over time. Regarding demographic variables, gender differences were observed in the average scores in the resilience scale and in the Depression Inventory.

The present study aimed to examine (i) the trajectories of mindfulness skills and performance-related outcomes during the interven

Julie Doron[1], Maël Goisbault[1], Noémie Lienhart[1], Guillaume Martinent[2]
[1]University of Nantes (FR), [2]UNiversity of Lyon (FR)

The present study aimed to examine (i) the trajectories of mindfulness skills and performance-related outcomes during the intervention, and athletes' perceptions of the impact of the intervention; and (ii) the potential moderating effects of personality characteristics on changes in targeted variables associated with the intervention. The final sample consisted of 40 young elite female basketball players (M = 16.33, SD = .75 years) from three incoming groups at the National Federal Basketball Center over a 3-year period. All players participated in a 15-week Mindfulness BasketBall Integrated program. They completed online questionnaires measuring personality traits 10 months before the intervention, as well as pre-, mid- and post-intervention measurements of mindfulness skills, intensity and directional interpretation of stress, and performance satisfaction. They also participated in semi-structured social validation interviews conducted one month after the intervention. The results of the multilevel growth curve (MGCA) and thematic analyses revealed how the mindfulness skills and performance-related outcomes evolved over the course of the intervention and how these changes were perceived by the athletes. Specifically, the MGCA showed significant linear increases in acceptance, positive stress direction, and performance satisfaction. The complementary social validation data indicated perceived improvements in mindfulness skills and performance. The MGCA also showed that baseline personality traits moderated the effects of the program on acceptance and experience of stress. These findings may be used to inform the design of more effective integrated interventions and to support the importance of considering the interaction between athletes' characteristics and MABIs when predicting beneficial impacts.

Mindfulness For Performance: Presentation of the program and empirical evidence

Jean Fournier[1], Marjorie Bernier[2]
[1]University of Paris Nanterre (FR), [2]UNiversity of Brest (FR)

Mindfulness For Performance is a programme that has been developed over 10 years. It aims to help athletes maintain effective attentional focus regardless of the disruptive sensations and cognitions induced by the performance situation. It is inspired by the Mindfulness Based Stress Reduction and Acceptance Commitment Therapy programs and adapted to the specificities of sport. It is composed of three steps: (a) psychoeducation and identification of the focus of attention, (b) mindfulness and acceptance training, (c) integrating skills acquired into training and competition. Recently the effects of MFP have been examined in two studies in national basketball players and in young table tennis players. The first study showed that mindfulness skills and free throw accuracy during basketball games increased more in the experimental group than in the control group. Tennis table results revealed that participants who showed the highest percentage of adherence to the program benefited more from MFP training in terms of performance outcome (i.e., accumulated points collected from published results compared with the baseline phase) than participants who showed weaker percentages of adherence to the program. Both studies provided some evidence on the effects of MFP on specific performance indicators (i.e., free-throw accuracy in basket-ball and ranking points in tennis table) but this needs to be confirmed by further research measuring other relevant performance indicators in addition. The impact and conditions of adherence also deserve more consideration.

A systematic review of the neuroscientific implications of mindfulness practice in performance-related processes

Réka Zsanett Bondàr, Maurizio Bertollo, Selenia di Fronso, Claudio Robazza
University of Chieti-Pescara (I)

Previous research found that mindfulness practice can improve athletes' physiological and psychological markers (Bühlmayer et al., 2017), and mental processes (Birrer et al., 2012) relevant for performance. Recent studies also investigated the relationship between mindfulness, brain activity changes, and performance. The aim of the current systematic review was to determine the neural correlates of mindfulness practice that enhance performance-related (cognitive, affective, bodily and motor) processes. Four electronic databases were searched (Scopus, PubMed, EBSCO, and Web of Science). Peer-reviewed studies that implemented mindfulness-based interventions or compared groups of mindfulness meditators with non-practitioners and measured the neural activity underpinning performance were eligible. Of the 1836 records identified, 20 published articles were found eligible. Assessed with the Cochrane risk of bias tool, none of the studies obtained low risk of bias. The quality of evidence was graded (GRADE system) to be low and very low. The most consistent finding, supported by medium effect sizes, suggests that mindfulness practice can enhance performance monitoring abilities which are crucial in adaptively meeting one's goal during performance. Moreover, multifarious effects of mindfulness meditation on the three basic domains of attention (i.e., alerting, orienting and conflict monitoring) were observed. Findings also suggest that focused attention and open monitoring, the two main components of mindfulness practice, are accompanied by different neural correlates and may induce distinct changes in performance-relevant processes. Importantly, there is a clear need for experimental designs focused on the effects of mindfulness on population-specific performance (e.g., athletic population) and the accompanying neural activity.

A bibliometric analysis of mindfulness and acceptance research in sport from 1968 to 2021

Daniel Birrer[1], Beatrice Scaldevi[2]
[1]Swiss Federal Institute of Sport Magglingen (CH), [2]Swiss Federal Institute(CH) of Sport Magglingen (

In 2011 the first symposium with the thematic issue of mindfulness was held at a FEPSAC conference. Since then, the interest of practitioners and researcher for the concept mindfulness has grown steadily. This study comprehensively summarizes the research of mindfulness and acceptance in the field of sport from the founding year of FEPSAC 1968 to 2021 by outlining a knowledge map. Using "mindfulness *" or "meditation *" and "sport*" or "athletic performance *" or "athlete *" as search terms, we conducted a search of articles and review articles in the Web of Science core database resulting in a total of 195 publications. To the previous search terms we added "acceptance*" yielding in 109 articles. The first article with mindfulness and sport was published in 1977 by Hickman, Murphy and Spino. The first article with "mindfulness*" and "sport*" and "acceptance*" was published in 2004 from Gardner and Moore in the journal Behavior Therapy. With 174 citations this is the most cited article in the sport domain. The first randomized controlled trial followed in 2014. Regarding the knowledge map the USA is the most prolific nation with 52 publications producing 791 citations. The most influencing country in terms of citations per publication is Switzerland with a mean of 26.5 citations per publication. In the presentation, we will also report on the most prolific institutions, European countries, journals and the top co-occurred keywords. Based on the knowledge map and its development over time, we will draw conclusions about future trends and research perspectives.

Symposium
Topics: Built environment

Beyond the Talent Development Environment: New Trends from the Holistic Ecological Approach to the study of Athletes' Environments

Chair(s): **Louise Kamuk Storm** (University of Southern Denmark, Denmark)
Discussant(s): **Kristoffer Henriksen** (University of Southern Denmark, Denmark)

Research in athletic talent development environments (ATDE) initiated a shift of attention from the individual athlete to the broader environment in which athletes develop (Henriksen, Stambulova & Roessler, 2010). New developments have shown that the holistic ecological approach (HEA) holds merit beyond the talent development context and is applicable multiple contexts, including underserved communities and dual career development environments (DCDE; Storm et al., 2021).

In the present symposium, we introduce five examples of new trends within a context-driven and holistic ecological approach to the study of athletes' environments. We present five studies, conducted in different countries, sports, and socioeconomic contexts.

Dadi Rafnsson will expand the HEA to explain a country-wide, two decade long and very successful seismic shift in the Icelandic talent development system. Whereas most HEA research has been conducted in Europe and in relatively affluent contexts, Rob Book will present a case study of a successful ATDE in an underserved community in the US. With data from 47 Danish swimming clubs as a basis, Andreas Küttel will present a study that demonstrates how sport environments influence athlete mental health. Kristel Kiens presents a holistic description of an Estonian DCDE. Finally, Chiara D'Angelo will take a fresh look at doping and how athletes' contexts may push athletes into an unfortunate direction. The symposium presents a chance to discuss the role of the environment in athletes' performance, development and mental health. We consider this symposium a step forward in the endeavour to understand how and why sport environments matter.

Presentations of the Symposium

The Southern Quake: A Seismic Shift in Talent Development in Southern Iceland through the Lens of the Holistic Ecological Approach

Dadi Rafnsson, Sara Lind Stefánsdóttir, Margret Lilja Gudmundsdottir
Reykjavik University, Iceland

The southern part of Iceland is constantly prepared for what the locals call "the southern quake" (Suðurlandsskjálftinn), a major earthquake measuring more than 6.0 on the Richter scale.

More pleasantly in the span of two decades, the region has experienced a seismic shift in talent development in sport. From developing few international level athletes and being nowhere close to competing for titles in major sport in the 1980s and 1990s, the region has developed a host of international football players, world class handball players and won major titles in Icelandic basketball, handball and football.

The study is in two parts. A case study of youth culture in the region, through semi-structured interviews with change agents and athletes in the southern region. Additionally observing data from surveys on Young People in Iceland from the Icelandic Centre for Social Research and Analysis. We find a positive change towards lower youth alcohol consumption and substance abuse over two decades driven by dual career options, parent support and visible role models.

By applying the theoretical lens of holistic ecological approach to talent development to the Southern region, the conclusion is that a change in financial and social support for youth sports and new dual career opportunities have given young athletes in the region a greater platform for their talents.

"We are their Last Chance": A Case Study of a College Basketball Environment in an American Underserved Community

Robert Book Jr.[1], Natalia Stambulova[2], Kristoffer Henriksen[1], Ole Winthereik Mathorne[1]
[1]University of Southern Denmark, Denmark, [2]Halmstad University, Sweden

Case studies of athletic talent development environments adopting a holistic ecological approach (HEA) have predominately taken place in northern European countries and within relatively affluent contexts. Therefore, this study shifted the socioeconomic and cultural context by using the HEA as a lens to examine an underserved athletic talent development environment (UATDE) in the United States with the following objectives: 1) to holistically describe a successful UATDE – a community college basketball program (CC-UATDE), and 2) to analyze and interpret factors contributing to the success of developing athletes that earn NCAA athletic scholarships. The research takes the form of a case study and data were collected via in-situ observations, document analysis, and interviews (both formal and informal with coaches, players, and other stakeholders). The findings were summarized in two empirical models: 1) the CC-UATDE co-constructed description, and 2) the community college underserved environment success factors (CC-UESF) functioning and outcomes. The operation of the UATDE was significantly influenced by the underserved community in which it was embedded, translating to a lack of financial and human resources, while the team's roster was occupied by athletically talented, but psychosocially vulnerable players. These challenges were overcome, in part, by a dedicated support team as well as the cultural paradigm established by the head coach as a cultural leader. Conclusively, this case study constitutes an important supplementation to the evolving body of literature utilizing the HEA, highlighting how an environmental context can shift the focus of athletic talent development when we consider the concept of UATDE.

Mental Health in Danish Elite Swimming using a Quantitative Holistic-Ecological Approach

Andreas Küttel, Carsten Hvid Larsen, Kristoffer Henriksen
University of Southern Denmark, Denmark

Traditionally, studies applying a holistic-ecological approach in sport have used case study designs incorporating different qualitative methods (Henriksen & Stambulova, 2017). The current study applied a quantitative approach to investigate Danish elite swimmers' perception of their environment in relation to their mental health using the recently developed Danish-Talent-Environment Survey (DTS; Wester et al., 2021).

A total of 518 athletes (Mage = 16.14, SD = 2.21) from 47 Danish swimming clubs were included in the study. They rated their environment based on the eight characteristics of the DTS that is comprised of 33 items. Furthermore, general information about their sport and lifestyle (e.g., training hours, restitution, stressors, injuries) was assessed together with their mental well-being (SWEMWBS) and their symptoms of depression (PHQ-9) and anxiety (GAD-7) using validated scales.

The DTS characteristics “Well-being within the environment”, “Somebody to talk to”, and “Inclusion and sparring” were rated highest, with scores above 4 on a 5-point Likert scale, whereas “Communication among key stakeholders” was perceived lowest (M = 2.73). In the following regression analyses, a higher score on the DTS was identified as a protective factor for mental well-being but it was not a significant factor for depressive or anxiety symptoms. Risk factors for mental health were being female, lack of sleep, along with perceived stressors from the sport, school, and private domain. Practical implications are discussed concerning the applicability of the DTS in other sports contexts and/or cultures and its relation to mental health.

Combining Sport and Study in High School: An Insight Into a Dual Career Environment in Estonia

Kristel Kiens[1], Carsten Hvid Larsen[2]
[1]Tallinn University, Estonia, [2]University of Southern Denmark, Denmark

Dual career research in sports has widened its lens from looking at personal factors to considering aspects of the environment (e.g., Henriksen et al. 2020, Linnér et al., 2021; Storm et al. 2021). Inquiry into different contexts has been called for to enrich understanding of dual career development (Stambulova & Wylleman, 2019). Although holistic ecological approaches have been applied in different European contexts (Storm et al. 2021), East European countries have not been well represented in the discussion.

Therefor, the presentation will offer a thorough insight into an Estonian dual career environment with specific objectives: to provide a holistic description of a DCDE and connections within the environment and examine DCDE’s success factors in supporting student-athletes’ development. Data collection was guided by previously developed models by Henriksen et al. (2020). Data was gathered from multiple perspectives within the environment using multiple qualitative methods (i.e., interviews, informal discussions and observations). Data analysis was undertaken as an abductive process, supported by member reflection and critical friend technique. I will share the main findings presented in two empirical models (DCDE and DC-ESF) of Audentes Sports Gymnasium and discuss applied implications to further support dual career development systems in Europe.

Performance and Appearance Enhancing Substances (PAES) use in Italian Recreational Youth Sport: a DRAWS project qualitative study

Chiara D'Angelo[1], Giovanni Aresi[1], Eloisa Cianci[1], Amalia De Leo[1], Edgardo Zanoli[1], Giulia Santangelo[2], Matteo Bovis[2], Caterina Gozzoli[1]
[1]Università Cattolica del Sacro Cuore, Italy, [2]CONI, Italian National Olympic Committee

Doping contrast efforts have been focused on the detection and deterrence of illegal substances in elite competitive sport and applie essentially testing programmes and assigning sporting sanctions. However, there is a growing realization in the EU that such rules and programs need to be backed by wider efforts to prevent the establishment of a pro-doping culture outside elite contexts. This sequential exploratory mixed methods design adopted a holistic ecological approach to understand the psychological, social, contextual, and cultural factors that are related to people's behaviors, and in our case, PAES use. The study examined perspectives of controlled and uncontrolled PAES among adolescents practicing sport in recreational sport settings through eight focus group interviews totaling 40 participants. Each session lasted approximately 1.5 hours and consisted of four to six participants. Discussions used a standardized script with broad questions followed by open-ended prompts. Interviews were digitally recorded and transcribed verbatim. Nvivo 11 was used to support data management and analysis. A matrix that included both theory-driven codes, as well as those related to emerging themes was finalized and used to code all interviews.

Results show that adolescents lack knowledge about PAES and how they influence performance, but they also do not have opportunities to discuss these issues within their contexts of reference: both in the sport environment and in the family, little is said about them. However, the adolescents believe that when illicit behavior occurs, it is often the context that pushes the athletes in this direction.

Symposium
Topics: Transitions in and out of sport/ dual career

Research-based training modules and tools for developing the competencies of athletes and their entourage

Chair(s): **Koen De Brandt** (Vrije Universiteit Brussel), **Paul Wylleman** (Vrije Universiteit Brussel, TeamNL), **Jolan Kegelaers** (Vrije Universiteit Brussel)
Discussant(s): **Paul Wylleman** (Vrije Universiteit Brussel, TeamNL)

In recent years, the translation and implementation of research into practice (also called "knowlegde valorisation") has received increasing attention, demonstrated by various initiatives being taken at European level (e.g. EU Knowledge Valorisation Week) and local level (e.g. university spin-offs).

In the field of elite sport, this direct link between research and practice is increasingly emphasized and ensures that sport stakeholders can use innovative and research-based products (e.g. digital tools, training modules) to support the careers of their athletes and entourage. During this symposium, five early career researchers-practitioners will discuss the development and implementation of research-based training modules and (digital) tools aimed at supporting the competencies of (i) athletes in different career phases (e.g. dual career, athletic retirement) and (ii) stakeholders in athletes' entourage (e.g. dual career support providers, Player Development Managers). First, Suzan Blijlevens will present the implementation of a learning module focused on enhancing mental well-being in Dutch athletes. Second, Simon Defruyt will introduce the Erasmus+ Sport project "Mind the Gap" and zoom in on various (online) tools to support footballers' transition into a new career (e.g. Dual Career Tools). Third, Sofie Smismans will present a research-based framework to optimize Player Development Programmes in professional football. Fourth, Marta Borrueco will discuss the implementation of a training programme for dual career support providers in a professional football academy. Finally, Mattias Dooms will present his initial findings of a qualitative study on life skill transfer in Olympic dual career athletes and discuss the value of a tool to measure life skills.

Presentations of the Symposium

Enhancing mental well-being of high-potential and elite athletes in the Netherlands

Suzan S.J.E. Blijlevens, Paul Wylleman
Vrije Universiteit Brussel, TeamNL

Enhancing athlete's mental well-being is one of the objectives of Team Performance Behaviour of TeamNL. Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to contribute to his or her community. It not only includes the absence of negative symptoms but also the presence of positive characteristics. To make mental wellbeing an explicit topic of TeamNL performance behaviour, we appointed experts on "Elite lifestyle and Well-being". Furthermore, TeamNL developed a learning module called "well-being for high-potential and elite athletes". The learning module focuses on enhancing competencies that contribute to mental and social well-being of athletes, including interpersonal skills, emotional regulation skills, higher-order thinking skills (i.e. decision-making, problem-solving skills etc), self-esteem, coping styles and the ability to nurture and access good social support. The module consists of a short e-learning, aiming knowledge transfer about mental health, followed by a homework assignment. After fulfilling the e-learning and homework assignment, a group session is held to discuss the topic and identify their own challenges. If necessary, there will be one-on-one individual guidance and support by our team of experts. Our first findings shows that the module offers our experts a way to detect athletes with low mental wellbeing and indicate athletes' individual needs in different domains. It is also suggested to run the module periodic as a tool to monitor athletes' mental wellbeing over a longer period.

Mind the Gap: Are professional football players ready for their next career?

Simon Defruyt, Paul Wylleman, Sofie Smismans, Jolan Kegelaers, Koen De Brandt
Vrije Universiteit Brussel

Football Players face several challenges at different levels of development when making the transition from elite football to the post-athletic career (i.e. challenges at the athletic, psychological, psychosocial, academic/vocational, financial, legal; Wylleman, 2020). To cope with those multilevel challenges, it is important that football players develop different competencies and prepare for their professional football career already during their football career (Smismans et al., 2020).

In this presentation, the results of a quantitative study of the Mind the Gap project will be presented, more specifically on how well footballers in European professional Football Leagues feel prepared for their post-athletic career. A sample of 282 professional football players with 33 different nationalities completed an online survey on how well they feel prepared and how competent they feel to make the transition to the post-athletic career. Results showed, amongst other findings, that 67% of the active players did not know what they would do after their professional football career.

Based on the results, concrete implications and outputs for practice will be provided, including (a) the need to involve more role models in motivating athletes to prepare their post-football career, (b) the use of the research-based online tool "Dual Career Tools" to assess and optimize (dual) career competencies of football players, (c) the need for structural and evidence-based education for player development managers that support players to prepare their post-football career, (d) the need for integration of career support services within the football clubs.

Scoring During and Beyond the Game of Football: A Framework for Player Development Programmes

Sofie Smismans[1], Paul Wylleman[1], Simon Defruyt[1], Nienke van Gerven[2], Koen De Brandt[1]
[1]Vrije Universiteit Brussel, [2]FIFPRO

Performance gains in elite sport today occur when the value placed on players' holistic development exceeds the pressure to focus exclusively on performance (Lavallee, 2019). Yet slightly more than half of professional football players indicate that they do not receive support in their multi-level development (Wylleman et al., 2021). A lack of such support might lead to drop-out from football, self-identity issues, crisis-transitions, and mental health disorders (e.g., Wylleman & Reints, 2010). We therefore aimed to develop an evidence-based framework to establish or optimize Player Development Programmes (PDP) in professional football. A three-stage process was used to develop the framework: First, fifteen in-depth interviews were conducted with career support providers in team sports (e.g., football, rugby) to get an initial overview of the framework's components. Consequently, a focus group was held with five experts in the topic of PDPs to optimize the framework. Finally, using a Delphi-method, ten experts from both research and practice reviewed the framework. The study revealed a framework that highlights seven key areas for PDPs: Getting players involved (e.g., via social media), who am I (e.g., personality testing), education and development (e.g., higher education options), career (e.g., career coaching), wellbeing (e.g., support network), finance (e.g., financial plan), and organization (e.g., human resources). The presentation will outline a detailed description of

those key areas and point out some good practices. The framework can be a crucial element for football associations, unions, and independent support providers to enhance players' holistic development during and beyond the game of football.

Implementation of an evidence-based training programme for dual career support providers

Marta Borrueco, Anna Jordana, Yago Ramis, José Mejias, Marina Garcia, Rocio Zamora, Miquel Torregrossa
Universitat Autonoma de Barcelona

Research in Dual Career (DC) highlights the importance of providing specific training for Dual Career support providers (DCSP) in enhancing their professional competencies to maximize benefits on athletes (e.g., Defruyt et al., 2018; Torregrossa et al., 2020). The purpose of this work was to implement an evidence-based training programme that aimed at educating DCSP in relevant aspects related to their role. The programme was delivered to 24 high school teachers from a high-performance centre and to 28 staff members (e.g., coaches, education coordinator) from a professional football youth academy. The programme consisted of four modules, while the first one was introductory and dedicated to setting a common theoretical ground for all participants and to elaborate real-case scenarios, the following three modules were focused on (a) self-assessing and developing competencies, (b) empowering DC athletes, and (c) ethical considerations. Participants reported that the programme provided useful knowledge and tools for the support of DC athletes. The most valued aspect of the programme was that it represented a chance to exchange opinions, experiences and reflections with colleagues from different work areas while working through real cases in small groups. To further improve, participants reflected that the time dedicated to working groups could be longer, and demanded even more practical exercises. The current study offers an example of implementing structural DC education opportunities and contributes to the specific training of DCSP and the professionalization of DC support programmes.

Towards an evaluation tool for life skill transfer: A qualitative study with Olympic dual career athletes

Mattias Dooms[1], Alexandre Garcia Mas[2], Paul Wylleman[3], Koen De Brandt[3]
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The interest in studying life skills development through sport is growing in recent years (e.g., Kendellen & Camiré, 2019). The purpose of this study is to gain insight in Olympic dual career athletes' peceptions on life skills transfer, whereby the definition and model of life skills transfer (Pierce et al., 2017) is used as a guiding framework. The model proposes that the process of life skills transfer is influenced by specific transfer contexts (e.g. classroom, peer group) that athletes experience outside of sport, and how athletes perceive and interpret these contexts. Within the model, four transfer context factors and eight psychological processes deemed to influence an individual's ability to transfer life skills (Pierce et al., 2016). However, the model is not designed to be tested in its entirety (Pierce et al., 2017), so a selection will be made whereby different components, as well as both positive and negative transfer outcomes, will be examined in an intent to have the model evolved. Within a qualitative study design, a semi-structured interview with dual career elite athletes will be elaborated. The results are yet to be gathered. The present paper contributes to the literature by offering a deeper understanding of the process of life skill transfer from the viewpoint of dual career athletes themselves. Furthermore, the findings could offer an onset in the development towards a questionnaire for the assessment of life skill transfer within a quantitative study design, thereby investigating life skills transfer on a larger scale.

Symposium
Topics: Transitions in and out of sport/ dual career

Dual Careers for Mental Health (1): Survey with European student-athletes, non-student athletes, and non-athlete students

Chair(s): **Koen De Brandt** (Vrije Universiteit Brussel, Belgium), **Paul Wylleman** (Vrije Universiteit Brussel, Belgium), **Jolan Kegelaers** (Vrije Universiteit Brussel, Belgium)
Discussant(s): **Jolan Kegelaers** (Vrije Universiteit Brussel, Belgium)

In recent years, there has been a sharp increase in research on dual careers (Stambulova & Wylleman, 2019) and mental health of athletes (Kuettel & Larsen, 2019), and their importance have been increasingly emphasized in light of the COVID-19 crisis and the postponement of the Olympic and Paralympic games. Student-athletes form a commonly sampled subpopulation within mental health (MH) research. Nevertheless, a recent scoping review found that only limited attention has been directed towards examining the relationship between athletes' dual career (DC) experiences and their mental health (Kegelaers et al., submitted).

In response, the Erasmus+ Sport project "Dual Careers for Mental Health" (DC4MH) was initiated by 28 experts from ten organizations in six EU Member States (Belgium, Denmark, Italy, Spain, Slovenia, Sweden). This symposium presents the findings of the first phase of the DC4MH project in which an online survey was conducted with more than 2000 European student-athletes, non-student athletes and student-non athletes in order to investigate their DC experiences, MH and well-being, mental ill-health, MH literacy, resilience, and life satisfaction.

First, Paul Wylleman will introduce the DC4MH project. Second, Jolan Kegelaers will compare the MH of European student-athletes, non-athlete students, and non-student athletes. Third, Koen De Brandt will provide insights into European athletes' DC experiences and how they impact MH. Fourth, Göran Kenttä will zoom in on Sweden and explain how DC experiences and resilience can make a difference to their MH. Finally, Francesca Vitali will provide insights on student-athletes' MH from an Italian perspective.

Presentations of the Symposium

Erasmus+ Sport project "Dual Careers for Mental Health": An introduction

Paul Wylleman, Jolan Kegelaers, Simon Defruyt, Koen De Brandt
Vrije Universiteit Brussel

In January 2021, the 2-year Erasmus+ Sport project "Dual Careers for Mental Health" (DC4MH) was initiated by 28 experts on dual career and/or mental health from ten organizations in six EU Member States (Belgium, Denmark, Italy, Spain, Slovenia, Sweden) with the objective to optimize mental health services within European dual career 'elite sport and education' organizations. More specifically, DC4MH aims to develop, implement, and evaluate research-based mental health promotion recommendations and tools, centered around (i) mental health structures in DC organizations, (ii) mental health monitoring, (iii) mental health literacy, and (iv) psychological resilience-building strategies. This presentation will introduce the DC4MH project and explain its objectives, consortium, different work packages and deliverables. The consortium includes a range of different organizations (i.e. national sport governing bodies, high performance center, elite sport club, universities, sport gymnasium, health institute). The DC4MH project consists of three distinct phases. In a first phase, research was conducted on the relationship between athletes' dual career experiences and mental health. Second, best practices related to MH structures, MH monitoring, MH literacy and resilience-building in DC organizations will be identified. Third, specific tools will be developed and implemented in order to promote MH and optimize MH services. It is projected that 9.195 student-athletes can be involved in the DC4MH project through the consortium partners.

Comparisons of student-athletes', non-athlete students', and non-student athletes' mental health across Europe

Jolan Kegelaers, Paul Wylleman, Simon Defruyt, Koen De Brandt
Vrije Universiteit Brussel

Debate exists surrounding the potential impact of a dual career (DC) in 'sport and education' on student-athletes' mental health (MH). The added demands of simultaneously engaging in two performance domains can strain student-athletes' MH; whereas the benefits associated with DC, including identity development, competence building, and positive socialization, could buffer sport stressors and promote positive MH. To date, studies have mainly compared student-athletes' MH to that of age-matched non-athlete students. However, these studies are limited by (a) lack of inclusion of non-student athlete populations and (b) a focus on negative conceptualizations of MH (i.e. mental disorders). As part of the Erasmus+ project "Dual Careers for Mental Health", this study compared the MH of student-athletes, non-athlete students and non-student athletes across six EU countries. MH was measured using the Mental Health Continuum Short Form (MHC-SF). In total, 1175 student-athletes, 543 non-athlete students, and 167 non-student athletes participated. Student-athletes and non-student athletes demonstrated significantly better overall MH, as well as higher emotional, social, and psychological well-being compared to non-athlete students. Student-athletes only reported higher social well-being compared to non-student athletes. Results suggest that engaging in sports forms a protective factor for MH. However, engaging in a DC does not seem to hold a MH benefit for athletes beyond improved social well-being. Developing a more detailed understanding of the specific MH challenges and experiences within the DC environment is needed to inform the development of contextually-informed initiatives to support student-athletes' MH.

Dual career experiences predict mental health outcomes in European student-athletes

Koen De Brandt, Jolan Kegelaers, Simon Defruyt, Paul Wylleman
Vrije Universiteit Brussel

As part of the Erasmus+ Sport project "Dual Careers for Mental Health" (DC4MH), we investigated athletes' dual career (DC) experiences and mental health (MH) in six EU countries (Belgium, Denmark, Italy, Spain, Slovenia, Sweden). In total, 1175 student-athletes (age = 19.9, SD = 5.24; 51% female; 38% higher education) completed an online survey including, amongst others, the Mental Health Continuum Short Form (i.e. measuring general, emotional, social, and psychological well-being) and the newly developed DC experiences scale (i.e. 24 items measuring DC competencies and benefits, Negative DC experiences, and DC support).

Following Keyes' three category diagnosis of positive MH, 52% of student-athletes were categorized as "flourishing", 44% as "moderate MH", and 4% as "languishing". Significant linear relationships were observed between all dimensions of DC experiences and MH. Multiple linear regressions showed that DC competencies and benefits, negative DC experiences, DC support, Scandinavian background, resilience and MH literacy significantly predicted general well-being (R2Adj = .49), emotional well-being (R2Adj = .40), social well-being (R2Adj = .38), and psychological well-being (R2Adj = .42) in European student-athletes. DC competencies and resilience were the strongest predictors for general, emotional and psychological well-being, while Scandinavian background was the strongest predictor for

social well-being. The study findings highlight the important connection between athletes' DC experiences and MH. Developing a more detailed understanding of student-athletes' MH experiences can inform practitioners to develop research-based and contextually informed tools and initiatives focused on MH monitoring, MH literacy and psychological resilience-building strategies.

Dual Career Experience and Resilience in Swedish Student-Athletes Can Make a Difference to their Mental Health

Göran Kenttä[1], Andreas Ivarsson[2], Kent Lindahl[3], Natalia Stambulova[2]
[1]The Swedish School of Sport and Health Sciences, Sweden, [2]School of Health and Welfare, Halmstad University, Sweden, [3]The Swedish Sport Confederation

This study was aimed at investigating if Dual Career (DC) experiences, resilience, and demographic variables were associated with mental health and mental ill-health in Swedish DC athletes. A total of 487 participants (Mage = 18.51, SD = 3.89), with 45.4% (n = 221) female DC athletes, 30.4% (n = 148) in individual sports, and 16.9% (n = 82) competed at international level completed the DC4MH survey. We performed three Bayesian Linear Regression analysis, using model averaging, to select the models with the predictors that combined had the strongest association with mental health as well as mental ill-health. Results showed that DC competences and benefits and negative experiences were the strongest predictors of depressive symptoms (R2 = 27.2%). Specifically, higher levels of negative experiences and lower levels of perceived DC competences and benefits were associated with higher levels of depressive symptoms. Moreover, negative experiences, resilience, and gender were the strongest predictors of anxiety symptoms. Together, these variables explained 32.6% of the variance in anxiety symptoms. Higher levels of negative experiences and lower levels of resilience were associated with higher levels of anxiety symptoms. Also, females were at a higher risk of experiencing higher levels of anxiety symptoms. Finally, a combination of DC competences and benefits, negative experiences, and resilience could best explain the variance in mental health (R2 = 42.7%). More specifically, higher levels of resilience, DC competences and benefits as well as lower levels of negative DC experiences were associated with higher levels of mental health in Swedish DC athletes.

Dual career experiences and resilience in Italian student-athletes impact well-being and mental health

Francesca Vitali, Cecilia Camellini, Marianna Purgato, Corrado Barbui, Federico Schena
University of Verona, Italy

The importance of optimal well-being and mental health (MH) in elite athletes has received increasing attention in both the academic and public discourse (Giles et al., 2020). A particular challenge for elite student-athletes, who combine sport with education or work, is to protect and promote their well-being and MH in the highly demanding and performance-oriented elite sport context. We conducted a study aimed at investigating if Dual Career (DC) experiences, resilience, and demographic variables influence well-being and mental ill-health (MIH) in Italian student-athletes. A total of 165 Italian student-athletes (Mage = 24.52, SD = 7.69), combining elite sport (55.1% compete at international and Olympic/Paralympic level) with education (n = 131) or work (n = 34), with 47.9% (n = 79) female and 59.4% (n = 98) in individual sports, took part in the DC4MH survey. A linear regression analysis was run to understand which factors were associated with well-being and MIH. Results showed that resilience (Beta .187, p=.022) and life satisfaction (Beta .307, p=.004) were associated with well-being, while negative DC experiences (Beta .233, p=.005) were associated with MIH. Higher levels of resilience and life satisfaction improved well-being, while negative DC experiences endorsed MIH. Female student-athletes reported lower levels of resilience (p=.021) but showed a better MH literacy (p=.002) if compared with male counterparts. These results may guide DC support providers and MH professionals in supporting Italian student-athletes in the pursuit of well-being and MH.

Symposium
Topics: Transitions in and out of sport/ dual career

Dual Careers for Mental Health (2): Good practices across Europe

Chair(s): **Simon Defruyt** (Vrije Universiteit Brussel, Belgium), **Paul Wylleman** (Vrije Universiteit Brussel, Belgium), **Jolan Kegelaers** (Vrije Universiteit Brussel, Belgium), **Koen De Brandt** (Vrije Universiteit Brussel, Belgium)
Discussant(s): **Paul Wylleman** (Vrije Universiteit Brussel)

While mental health of athletes gained attention the last years (Kuettel & Larsen, 2019), the research on mental health in relation to specific dual career contexts remains scarce (Stambulova & Wylleman, 2019). To tackle this, the second phase of the Erasmus+ Sport project "Dual Careers for Mental Health" (DC4MH) focused on gathering good practice case studies on mental health promotion for dual career athletes. This symposium presents a selection of findings of this second phase of the DC4MH project in which eight organisational case studies were conducted and one cross-case analysis was performed.

The first speaker will introduce the second phase of the DC4MH project by presenting the main objectives, methodology and organisations involved in these case studies. The second speaker will present the case study of The High-Performance Sports Centre of Catalonia (CAR, Spanish acronym), an elite sport and education entity. She will zoom in on a four-step approach used to promote and safeguard mental health within this environment. The third speaker(s) will present a case study on a Slovenian secondary school educational institution that is considered a good example of a mental health supportive dual career environment. Finally, the last speaker will introduce the cross-case analysis on the eight organisations involved in the project. He will provide good practice findings across all eight cases, to conclude with some main implications for practice.

Presentations of the Symposium

Good practices for mental health promotion in dual career organisations: A case study approach

Simon Defruyt, Paul Wylleman, Jolan Kegelaers, Koen De Brandt
Vrije Universiteit Brussel, Belgium

This presentation provides more background information on the second phase of the Dual Careers for Mental Health Project (DC4MH), that was co-funded by the Erasmus+ programme of the European Commission. Using case studies in six different EU Member States (Belgium, Denmark, Italy, Slovenia, Spain, Sweden), the objective of this second phase of DC4MH was to gain insight into existing good practices for mental health promotion of dual career athletes, both at organisational level and individual level. Case studies were executed by using different types of data collection methods, including document analysis, focus groups, individual interviews and observations. Eight organisations were assessed to get a view on the mental health promotion strategies and tools they adopted in support of dual career athletes. The organisations involved were Centre d'Alt Rendiment de Sant Cugat, Swedish Sports Confederation,Team Danmark, Royal Sporting Club Anderlecht, Gimnazija Šiška, World Health Organisation, the Italian Rugby Federation and Vrije Universiteit Brussel. The assessment paid specific attention to the strategies and tools with regard to: Mental health promotion structures and organisation, mental health monitoring, mental health literacy and resilience-building strategies.

'Prevent, Communicate, Act and Normalize': A Four Step Institutional Philosophy to Safeguard Mental Health

Rocío Zamora-Solé[1], Susana Regüela[2], Xavier Balius[2], Yago Ramis[1], Miquel Torregrossa[1]
[1]Universitat Autònoma de Barcelona, Spain, [2]Centre d'Alt Rendiment Esportiu de Sant Cugat, Spain

The High-Performance Sports Centre of Catalonia (CAR, Spanish acronym) is an elite sport and education entity, which falls on the category of public sports centre, according to the taxonomy of Dual Career Development Environments in Spain (Mejías et al., 2021). This institution has a long history in contributing to the holistic development (Wylleman et al., 2016) of world-class athletes. The aim of this case study is to present the services provided by CAR and describe the strategies used to promote and safeguard mental health. Data gathering combines document analysis (e.g., institutional protocols) along with semi-structured interviews (i.e., representatives from medical services and the academic area one interview with each) and three focus groups (i.e., ten key informers from tutoring service, psychology department and management team). The analysis depicted one general sustaining environmental philosophy that functions as global strategy and is expressed by the following actions: (a) prevent (e.g., actions designed to detect early signs of mental ill-health) (b) communicate (i.e., constant coordinated interdisciplinary work between services) (c) act (i.e., specialized, and personalized interventions) and (d) normalize (e.g., mental health services are at disposal in the same environment). We conclude that, from a holistic ecological approach (Henriksen & Stambulova, 2017), this is an athlete-centred environment where the main resource is the human interdisciplinary team that shares one common goal of helping athletes to develop all personal dimensions by taking care of multiple aspects (e.g., training, physical and emotional health, education) by the promotion of athletes' autonomy and well-being.

Mental health of secondary school student-athletes: A case study from Slovenia

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[1]University of Maribor, Maribor, Slovenia, [2]University of Ljubljana, Ljubljana, Slovenia

One of the main goals of secondary school educational institutions for student athletes should be to support and promote the mental health and well-being of their students. This case study presents a Slovenian secondary school educational institution that is considered a leading example of an optimal dual career environment for young athletes in that country. Data for this study were obtained through seven semi-structured interviews with mental health professionals, sports and pedagogical coordinators employed at the high school, and two focus groups with student athletes. The programs and tools the school uses to promote student mental health are presented (e.g., the digital platform for increasing mental health literacy), as are the strategies the school uses for mental health screening and monitoring (e.g., observation tools). In addition, some of the school's practices to support student-athlete well-being are presented, such as e.g. mental health activity days and prosocial activities.

A cross-case analysis of mental health promotion strategies within European dual career environments

Jolan Kegelaers, Paul Wylleman, Simon Defruyt, Koen De Brandt
Vrije Universiteit Brussel, Belgium

Recent evidence suggests that engaging in a dual career (DC) in 'sport and education' can promote athletes' well-being but simultaneously also forms a potential risk factor for mental health issues. In particular, DC demands and experiences can have a bi-directional impact on athletes' mental health and well-being. Accordingly, DC environments hold a key responsibility to promote and safeguard the mental health of their athletes. As part of the Erasmus+ project 'Dual Careers for Mental Health', the present study presents

results from 8 case studies, conducted within 6 EU member states. Within each case context, mental existing health promotion strategies and interventions were categorized. These strategies were divided across four key pillars: (a) interdisciplinary collaboration, and evidence-based service provision at the organizational level (e.g., interdisciplinary teams working together on mental health based on an overarching philosophy that is integrated within the mission and values of the DC organisation), (b) effective monitoring of DC experiences and detection of early warning signals of mental health problems (e.g., student-athletes making use of a mental health diary), (c) improving mental health literacy of different DC stakeholders (e.g., by using role model testimonials to reduce stigma), and (d) preventive strategies to strengthen psychological resilience (e.g., workshops based on CBT or ACT principles). Based on the detailed cross-case analysis, good and poor practices for mental health promotion across DC environments will be presented.

Symposium
Topics: Physical activity

IMPACT project: Evidence-based tools to promote European youth physical activity through physical education

Chair(s): **Athanasios Papaioannou** (University of Thessaly, Greece), **Philippe Sarrazin** (University of Grenoble-Alpes), **Attilio Carraro** (University of Bozen-Bolzano)
Discussant(s): **Joan Duda** (University of Birmingham)

The aim of this symposium is to present the main tools, activities and results of the European Erasmus+ sport project aiming at Identifying and Motivating youth who mostly need Physical ACTivity (IMPACT). A consortium consisted of six universities developed a cross-contextual model [from Physical Education (PE) to out-of-school sport and Physical Activity (PA)] and invariant self-reports across countries to capture out-of-school Moderate to Vigorous intensity PA (MVPA) of youth and the most crucial psychological determinants of PA and motivation in PE. Four universities developed the IMPACT training course for PE teachers and delivered it through webinars in four countries. PE Associations and educational authorities were also involved in the consortium to monitor the 3-year long project and assist in its promotion at European level. Additional tools include the IMPACT project website (www.impactpe.eu) providing the tools and results of the IMPACT project. In this symposium we present some of the most important tools and findings that underline the importance of extending this project across Europe.

Presentations of the Symposium

Objectively measured physical activity levels and their psychological determinants for adolescents in three European countries

Erica Gobbi[1], Charalampos Krommidas[2], Geraldine Escriva Boulley[3], George Loules[2], Attilio Carraro[4], Philippe Sarrazin[5], Athanasios Papaioannou[2]
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This study examined (1) objectively measured Physical Activity (PA) levels across three European countries, and (2) the association of objective PA with proximal determinants of PA. The volunteers consisted of N = 188 pupils, aged 11 to 18 years old (M = 13.84, SD = 2.29 years) from France (n = 60), Greece (n = 75) and Italy (n = 53). Participants wore an accelerometer for seven consecutive days and completed measures of the IMPACT project, that is, social support (friends, family), self-monitoring, action planning, intention, attitudes and perceived behavioral control. Boys and younger children had higher levels of PA compared to girls and older adolescents. The majority of youths (87.2%) did not fulfil daily step-recommendations and WHO's recommendations for 60 minutes of Moderate to Vigorous PA (MVPA) per day (71.9%). Controlling for age and gender, partial correlations, revealed that all determinants had significant association with objective PA. Results from regression analysis revealed that social support and intention accounted for unique variance of objective PA. The findings are in line with previous research about European adolescents' levels of PA. The selected determinants of PA in the IMPACT project are significant predictors of objective PA.

Teacher-initiated motivational climate, achievement goals and motivation: A multi-level approach

Joan Pons[1], Charalampos Krommidas[2], Paul Appleton[3], Erica Gobbi[4], Gokce Erturan[5], Geraldin Escriva Boulley[6], Jago Ramis[1], Joan Duda[7], Joao Martins[8], Miquel Torregrossa[1], Giyasettin Demirhan[9], Philippe Sarrazin[6], Attilio Carraro[10], Bouglas Vasileios[2], Athanasios Papaioannnou[2]
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Physical education (PE) is a key context for promoting positive attitudes towards physical activity. Previous literature framed in the Achievement Goal Theory suggests that the environment created by PE teachers might be influential on the quality of PE students perceived motivation. This article aims to contribute to previous research by exploring the influence of the motivational climate generated by the teacher on achievement goals and intrinsic motivation at class level. A sample of 9918 secondary education students (Mage = 13.96; SDage = 1.98) from five countries participated in this study. Students were grouped according to their PE teachers (237 clusters. Mgroup = 41.85; SDgroup = 20.06). Data analysis consisted in a Multilevel Structural Equation Modeling with total mediation using Mplus software. At individual level, mastery climate showed to be a relevant predictor of task orientation, which in turn was a strong positive predictor of intrinsic motivation. Mastery climate and performance-avoidance climate showed low positive predictions on students' ego orientation, which in turn did not predict intrinsic motivation. On the other hand, at group level, mastery climate positively predicted task orientation, and performance-avoidance climate positively predicted ego orientation. Again, task orientation was found as the only predictor of intrinsic motivation. Overall, results are congruent with previous literature suggesting the importance of task orientation on promoting intrinsic motivation towards PE classes and provide support for the relevance of creating a mastery-oriented class environment for promoting an intrinsic motivation towards PE classes.

PE teachers' perceptions about IMPACT project strategies to promote students' physical activity

Geraldine Escriva Boulley[1], Ioannis Syrmpas[2], Nikolaos Digelidis[2], Gokce Erturan[3], Damien Tessier[4], Giyasettin Demirhan[5], Attilio Carraro[6], Philippe Sarrazin[7], Athanasios Papaioannou[2]
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The purpose of this study was to examine physical education (PE) teachers' retrospective perceptions about promoting students' physical activity (PA) following the IMPACT trainning. A qualitative methodology was adopted and semistructured interviews were conducted. Fifteen French, Greek, and Turkish PE teachers (female = 5 and male = 10) were randomly selected to be interviewed. A reflexive thematic approach was adopted to analyze PE teachers' perceptions before and after their participation in the IMPACT programme. It revealed four broad themes: (a) "Identifying students who did not participate in PA"; (b) "Promoting students' participation in out-of-school PA"; (c) "Implementation of the goal-setting theory"; and (d) "Promoting a controlling and/or autonomy supportive climate in PE". The findings imply that most of the PE teachers used to subjectively evaluate their students' levels of PA. Additionally, the majority of PE teachers did not systematically motivate students to participate in out-of-school PA. They also preferred to create a controlling motivation climate during PE. The programme urged PE teachers to adopt goal setting strategies, to identify students who mostly need PA, and motivate them to participate in out-of-school PA. Finally, most of the PE teachers, even after their participation in the programme reported that they prefer to adopt controlling behaviours and provided limited autonomy to students during PE. However, some of the PE teachers reported that IMPACT urged them to create an autonomy-supportive environment.

Effects of the IMPACT-project online course on motivational climate in physical education and students' physical activity

Charalampos Krommidas[1], Athanasios Papaioannou[1], Philippe Sarrazin[2], Attilio Carraro[3], Nikolaos Digelidis[1], Giyaasettin Demirhan[4], Vasileios Bouglas[1], Loules George[1], Damien Tessier[2], Erica Gobbi[5], Ioannis Syrmpas[1], Geraldine Escriva Boulley[6], Claude Scheuer[7]

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The purpose of this intervention was to evaluate the effectiveness of the IMPACT project training course for European teachers with regard to the promotion of out-of-school Physical Activity (PA) through a highly motivating climate in Physical Education PE classes. The training course was based on theories of motivation in PE and self-regulation, with special emphasis on self-monitoring, action planning and goal-setting for PA promotion. PE teachers (N = 189) in four countries (France, n = 27; Greece, n = 68; Italy, n = 31; Turkey n = 63) participated in six 2-hour webinars. In total 2688 students (experimental group) from 117 PE teachers who received training during the academic year 2018-2019 and 1481 pupils (control group) from 65 PE teachers who did not receive training, completed measures of PA and PA determinants before the training (T1) and three months after the last webinar (T2). The results revealed that levels of PA significantly increased in experimental group students (7% increase of relatively active students and 11% decrease of very inactive students at T2). On the other hand, PA significantly decreased in control group students (5% decrease of relatively active students at T2). Moreover, the intervention had positive effects on mastery motivational climate and perceived autonomy in PE and on pupils' self-monitoring and action planning. The results are discussed with regard to the content of the training course that contributed to the positive outcomes of this intervention.

Symposium
Topics: Professional development and mentoring

'I wasn't expecting this': What it takes (and is it worth it?) to become a sport psychology practitioner

Chair(s): **Anastasiya Khomutova** (University of Brighton, United Kingdom)

This symposium will discuss and reflect on the journeys of sport psychology practitioners (SPP) in various cultural and geographic contexts. Every year many students enter universities to study sport psychology, with a vision to embark on this route as applied practitioners. Many of them will find out that a career as a sport psychologist will be very different from their expectations. Some may be disappointed in their education, while some will have to change their career due to lack of opportunities or disappointment with the work itself. The first two presentations will cover the results of an international research project conducted by FEPSAC and ENYSSP, entitled 'Career trajectories in applied sport psychology in Europe'. The project consisted of quantitative surveys in 20 languages and qualitative narrative interviews with Europe-based practitioners, who were reflecting on their journey in the profession so far. The next presentation will cover emotional labour of SPP - one of the most important yet often neglected elements of working in the profession. This presentation draws on a longitudinal study among international practitioners, their experiences of emotional labour and burnout, which could potentially lead to leaving the profession. The final part of the symposium will be dedicated to a group discussion among the presenters and attendees. This discussion will be based on the presented data and personal experiences of those present and will aim to identify possible steps for improvements that can be made to support and develop the sport psychology profession.

Presentations of the Symposium

Career trajectories in applied sport psychology in Europe: A quantitative study

Fabrizio Sors[1], Alexis Ruffault[2], Mauro Murgia[1], Maurizio Bertollo[3]
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This presentation will cover the results of the quantitative part of the FEPSAC-ENYSSP project. Building on previous research of EMSEP students (European Masters in Sport and Exercise Psychology; Lintunen et al., 2009; Papaioannou et al., 2017), the aim of the present study was to quantitatively investigate the career trajectories in applied sport psychology in Europe, to the greatest extent possible. In particular, the inclusion criteria consisted in being a current or graduated student of a sport psychology programme in Europe, or an applied sport psychology practitioner in Europe. The survey, implemented online via LimeSurvey, consisted of three main parts: a) general information (personal information, educational background, and current situation); b) psychometrics scales (Career Resources Questionnaire, Hirschi et al., 2018; Utrecht Work Engagement Scale–9, Schaufeli et al., 2006; Career identity, adapted from Mael & Tetrick, 1992; Career Satisfaction Scale, Greenhaus et al., 1990); c) some (non-mandatory) open-ended questions (e.g., "What was your motivation to pursue a career in sport psychology?"). To facilitate the highest possible participation, the survey was translated in 20 languages by selected members of the two associations (FEPSAC and ENYSSP). At the time of writing the present abstract, almost 400 participants already answered the survey, but we aimed to recruit some more. By the congress time, at least preliminary analyses will have been performed: the results, in combination with those of the qualitative study, will offer precious insights to try to improve sport psychology programmes for future generations.

'I don't feel like I am a sport psychologist yet': reflections on career trajectories by applied practitioners in Europe

Anastasiya Khomutova[1], Réka Zsanett Bondár[2], Svenja Wachsmuth[3]
[1]University of Brighton; FEPSAC, [2]University "G. d'Annunzio" of Chieti-Pescara; ENYSSP, [3]University of Tübingen

This presentation will cover the results of the qualitative part of the FEPSAC-ENYSSP project. The journeys and experiences of novice applied sport psychology practitioners are relatively well documented in some European countries (see McEwan, Tod & Eubank, 2019; Owton, Bond, & Tod, 2013; Stambulova & Johnson, 2010; Wylleman et al., 2009). Such studies explored novice practitioners' initial motivation to enter the field; learning process of working with clients and other colleagues; realisations about limited job markets; and consequent altering of ambitions. However, such studies explore only selected countries (mainly English-speaking), with the focus on novice practitioners. Therefore, the qualitative part of the FEPSAC-ENYSSP research project explores career trajectories of applied sport psychology practitioners in a wider European context, with the focus on experienced professionals (Rønnestad & Skovholt, 2003) who have been working in the applied field for between 5 and 20 years. For this study we used narrative interviews to explore such experiences of participants from various European countries, maintaining gender and geographical diversity. Using thematic analysis (Braun & Clarke, 2006), some preliminary themes of the interviews include dissatisfaction with (or even non-existence of) educational programmes in sport psychology; importance of networking and supervision; unrealistic or conflicting market demands and expectations of stakeholders (federations, coaches, etc.); and the impact of lack of legal protections for the profession. The presentation will end with suggested next steps for developing applied sport psychology practice across European contexts.

Emotional Labour, Professional Commitment, and Intention to Leave the Sport Psychology Field: A Longitudinal Examination

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Sport Psychology Professionals (SPPs) work with a unique clientele and in a range of nontraditional working conditions. These working practises lead SPPs to feel a variety of discrete emotions, the experience and expression of which is not always compatible with effective practice and leading them to engage in emotional labour (EL). With this study we aimed to examine the relationship between SPPs' experience of emotional labour, their professional commitment, physical and mental exhaustion, and the long-term influence of these variables on their intention to leave the profession. A sample of 560 SPPs (47% females) from around the world completed an online questionnaire exploring their experience of EL, professional commitment, level of exhaustion and intention to leave. Twenty months later, these SPPs were again asked to respond to a set of questions focused on their intention to leave the profession. The initial sample predominantly (85%) included experienced (Mexperience = 11.2 SDexperience = 10) professionals, engaging in applied (45.2%), teaching (27.8%) and research (26.9%) activities. More than half (n = 345) of these SPPs also responded to the twenty month follow up survey and offered quantitative and qualitative data regarding their intention (or lack thereof) to leave the profession. The data offer a rich insight to potential factors associated with professional burnout and turnover, and highlight the importance of emotional labour education, training, and professional development activities across the career span.

Symposium
Topics: Moral action

Understanding and Preventing Doping in Sport: Psychological perspectives

Chair(s): **Maria Kavussanu** (University of Birmingham, United Kingdom), **Philip Hurst** (Canterbury Christ Church University)

The use of banned performance-enhancing substances, also known as doping, is a major threat to the health of athletes and the integrity and image of sport. Therefore, understanding and preventing doping in sport is important. This symposium consists of four papers on this topic using different methodologies and addressing slightly different research questions all relevant to doping. The first paper describes a cross-sectional study of Dutch athletes, examining whether users of doping differ from non-users regarding their personal perfectionistic standards, thereby aiming to understand the relationship between perfectionism and doping. The second paper is an intervention study aiming to replicate and extend to Italian athletes the findings of a previous study, which developed and evaluated a psychological intervention aimed to prevent doping in British and Greek athletes (Kavussanu et al., 2022). The third paper describes a qualitative study, which evaluated a moral intervention also delivered in a separate sample of British and Greek athletes (Kavussanu et al., 2021). Finally, the fourth paper describes a values-based intervention developed with and delivered in young German athletes. Thus, our symposium consists of studies conducted in three different countries.

Presentations of the Symposium

Striving for Perfectionism: High Personal Standards and Doping in Athletes

Lieke Schiphof-Godart[1], Philip Hurst[2]
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Background. Many athletes set high personal standards. This perfectionisti¬c trait is often conducive to performance in sport, as athletes strive for excellence at any cost. Recent studies show that perfectionistic athletes demonstrate a greater tendency to dope to help achieve their goals. However, whether users of doping differ from their non-using peers regarding their personal standards is not yet known. Method. In this study, we recruited 287 competitive athletes (age=22.0±6.1 years; 30.3% female) from both individual (25.8%) and team (74.2%) sports. Personal standards were measured, and athletes indicated whether they were currently using, considering using, of not using doping substances. Results. Participants showed moderate scores for personal standards (4.81±0.6) and most were non-users of doping substances (85.0%). Some participants considered doping (11.1%) and very few were users (3.9%). One-way ANOVA ($F_{2,284}=21.943$, $P<0.01$) and post-hoc LSD tests indicated that non-users reported lower scores for personal standards compared to those who considered (mean difference = -0.95±0.19, $p<0.01$), and users of, doping substances (-1.43±0.31, $p<0.01$). No significant differences in personal standards were found between participants considering or using doping substances (-0.48±0.35, $p=0.17$). Conclusion. The results of this study highlight high personal standards may be a factor contributing to the use of doping substances in athletes. Perfectionistic traits may be an important factor to consider when aiming to prevent doping in sport.

A Psychological Intervention Reduces Doping Likelihood in Italian Athletes: A Replication and Extension

Maria Kavussanu[1], Enrico Rubaltelli[2], Irene Leo[2], Marta Giovannoni[2], Philip Hurst[3], Simone D'Ambrogio[2], Christopher Ring[1]
[1]University of Birmingham, [2]University of Padova, [3]Canterbury Christ Church University

Background. Guided by social cognitive theory and empirical research, Kavussanu et al (2022) developed a psychological intervention, which targeted moral disengagement, anticipated guilt, and self-regulatory efficacy. The psychological intervention was more effective than an educational intervention in increasing guilt, but the two interventions were similarly effective in reducing doping likelihood in British and Greek athletes. Objectives. In this research, we aimed to investigate whether these findings are replicated in Italian athletes and examined whether: (a) the psychological intervention is as effective as the educational intervention; and (b) the two interventions are more effective than a no-intervention control group, in preventing doping. Method. A 3 Condition (psychological, educational, control) x 3 Time (pre, post, follow up) mixed factorial design was used. A total of 15 sport clubs (121 athletes) were randomly assigned to one of the three conditions. and athletes completed measures of doping likelihood, anticipated guilt, moral disengagement, and self-regulatory efficacy at pre, post, and 2-month follow up. Results. Data were analyzed using R and a series of generalized linear mixed models with contrasts. Doping likelihood decreased significantly more in the two intervention groups than in the control group from pre to post. Anticipated guilt and self-regulatory efficacy increased in the two intervention groups, more than in the control group, while moral disengagement decreased in both interventions. Except for anticipated guilt, these changes were maintained at the 2-month follow-up. Conclusions. Targeting psychological variables in anti-doping interventions should aid our efforts to prevent doping in sport.

Athletes' experiences of a moral anti-doping intervention: A qualitative evaluation

Philip Hurst[1], Maria Kavussanu[2], Ailish King[3], Rachel Williams[1]
[1]Canterbury Christ Church University, [2]University of Birmingham, [3]Loughborough University

Background. A growing body of research has recently examined the effectiveness of interventions aimed at preventing doping in sport. However, very few research studies have examined participant experiences of these interventions. Kavussanu et al (2021) developed and delivered an intervention, which targeted moral identity, moral disengagement, and moral atmosphere and compared this with an educational (knowledge-based) intervention in British and Greek athletes. The moral intervention reduced athletes' doping likelihood, with this reduction maintained at the three- six-month follow-up. Objective. The aim of this research was to understand the experiences of athletes, who took part in the moral intervention. Method. Three focus groups were conducted involving 19 athletes, aged 16 to 24, from football, Rugby union and netball and data were analysed using thematic analysis. Results. Results showed that participants felt a greater responsibility for their decision to dope and believed that the intervention encouraged them to compete through fairness and a level playing field; they mentioned that real athlete stories, shared via videos, helped them understand and better engage with the material presented in the sessions; that small-group, discussion-based activities facilitated their engagement; and that examples of their own sport and informational handouts summarising the content of the intervention would facilitate engagement and retaining of information. These findings highlight "recipes for success" for anti-doping interventions, including (a) emphasising the importance of personal responsibility in doping decisions; (b) the importance of using athlete stories and discussion-based activities to facilitate engagement; and (c) tailoring content of interventions to the athlete's own sport.

Development and evaluation of a values-based doping prevention program for young elite athletes

Theresa Manges, Kevin Seidel, Nadja Walter, Anne-Marie Elbe
Leipzig University

Background. As doping has tremendous negative consequences for athletes and the integrity of sports, the need for effective prevention programs is obvious. Primary prevention through education with a focus on values, emotions and morality is seen as a promising approach to minimize doping (WADA, 2021), and research indicates which variables could be addressed in anti-doping efforts. These variables are anticipated guilt, empathy, moral disengagement, and collective moral norms, since these constructs have been strongly and consistently linked to doping intention, likelihood, or behavior (e.g., Kavussanu et al., 2020; Ntoumanis et al., 2014). Objective. Therefore, the purpose of this study is to develop a values-based anti-doping intervention, which targets the aforementioned variables and to evaluate its effectiveness in reducing doping intentions in comparison to an information-based intervention and a waiting control group. Method. The newly developed interventions, which both consist of six 45-minutes sessions (one session per week) are currently implemented in a sample (aim: N = 200) of young elite athletes aged 13 to 19 years from team and individual sports. Teams/training groups are randomly assigned to either the values-based intervention, the information-based intervention, or to a waiting control group. Doping intention, doping susceptibility as well as the above mentioned variables are assessed at pre- and posttest and at a three-month follow-up. Results. A 3 (group) by 3 (time) repeated measures MANOVA is going to reveal whether the intervention is effective in reducing doping intentions. The transfer goal is then to apply the developed material into sport schools' doping prevention.

ORAL PRESENTATIONS

FEPSAC

European Federation of Sport Psychology

Oral presentations
Topics: Physical activity

Personality, risk perceptions, and health behaviors: A two-wave study on reciprocal relations in adults

Cecilie Thøgersen-Ntoumani[1,4], Andreas Stenling[2,3], Esther Izett[4], Eleanor Quested[4]
[1]University of Southern Denmark, Denmark; [2]Umeå University, Sweden; [3]University of Agder, Norway; [4]Curtin University, Australia

The aim of the study was to examine reciprocal associations between risk perceptions for cardiovascular disease, physical activity, fruit/vegetable consumption and key personality characteristics (conscientiousness and neuroticism) in middle-aged adults. Participants (N=297; M (SD) age=51 (6.95); 72.4% female) were recruited via convenience sampling. They were asked to complete online questionnaires assessing risk perceptions, physical activity, fruit and vegetable consumption and personality characteristics (conscientiousness and neuroticism) on 2 occasions one week apart (except for personality characteristics which were measured only at time 1). The study adopted a quantitative, prospective research design over a 1-week period. Two cross-lagged panel models (one for physical activity and one for fruit/vegetable consumption) were tested to examine reciprocal associations between the variables of interest. Physical activity did not have a statistically significant effect on risk perception over time, nor did any of the personality or control variables. In the opposite direction, risk perception did not have a statistically significant effect on physical activity over time, however, neuroticism and gender both had statistically significant and negative effects on physical activity. Risk perception was not a statistically significant predictor of fruit/vegetable consumption over time, nor was fruit/vegetable consumption a statistically significant predictor of risk perception over time. Neuroticism was a statistically significant and negative predictor of fruit/vegetable consumption. High levels of neuroticism in middle age may hinder engagement in physical activity and consumption of fruit/vegetable behaviours, and should therefore be targeted accordingly to increase protective health behaviours and reduce incidence of cardiovascular disease.

Oral presentations
Topics: Neuroscience

Praxis functions of left- and right-handers

Ingo Helmich[1,3], Corinna Meyer[1], Maximilian Voelk[1], Coenen Jessica[2], Mueller Sophie[1], Schepmann Julia[1], Lausberg Hédda[3]
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Introduction: The hemispherically specialized function of skilled hand movements (praxis) may differ in right- (RH) and left-handed individuals (LH). We therefore investigated the hypothesis that right- but not left-handers show a superiority of the left hemisphere for the execution of pantomime gestures as well as a right-hemispherical superiority for gestures that depict spatial information. Methods: 20 right- and 20 left-handed participants were asked in two experiments to nonverbally demonstrate with their two hands how to move tachistoscopically presented geometric objects of different rotations into an identical position. Two independent blind raters evaluated the videotaped hand gestures employing the Neuropsychological Gesture (NEUROGES) Coding System. Results: RH present increased pantomime gestures with the right hand as well as increased spatial relation presentation gestures with the left hand when contrasted to LH during stimuli presentation in either visual field (VF). LH showed significantly increased left-hand pantomime gestures during stimulus presentation within the left VF (only). LH did not increase their left-hand pantomimes when stimuli were presented to the RVF. Discussion: RH execute pantomime gestures with the right hand but spatial relation presentations gestures with the left hand. LH did not show a clear lateralization of the right and left hand with regards to handedness or hemispherically lateralized praxis functions. The hemispherical lateralization of praxis is therefore more pronounced in right- than left-handed individuals.

Oral presentations
Topics: Elderly

A systematic review and meta-analysis of the psychosocial outcomes of sport participation for middle-aged and older adults

Hamsini Sivaramakrishnan[1], Daniel F Gucciardi[1], Matthew D McDonald[1], Eleanor Quested[1], Cecilie Thogersen-Ntoumani[1,2], Boris Cheval[3], Nikos Ntoumanis[1,2,4]

[1]Curtin University, Australia; [2]University of Southern Denmark, Denmark; [3]University of Geneva, Switzerland; [4]Halmstad University, Sweden

Recent narrative reviews indicate several psychological and social benefits of sport participation for the ageing population. However, no quantitative synthesis of the literature has been carried out to date. We conducted a meta-analysis to evaluate the magnitude and heterogeneity of the effects of sport participation on psychosocial outcomes for middle-aged and older adults. Ten databases (CINAHL Plus, Cochrane Library, Medline (Ovid), PsycINFO, PubMed, Scopus, SPORTDiscus, Web of Science, ProQuest Dissertations & Theses, and Google Scholar) were searched in July 2020. We included quantitative studies of middle-aged and older adults (>35 years) that measured at least one psychosocial outcome of sport participation. We identified 25 eligible papers. Multilevel meta-analysis showed that the association between sport participation and psychosocial outcomes was small, yet significant (g [95% CI] = .33; [.16, .50]). Moderation analyses revealed that the overall pooled effect differed according to outcome type: small to moderate associations were observed for social (g = .51 [.21, .81]), positive psychological (g = .45 [.22, .68]), perceived physical (g = .43 [.21, .65]), and cognitive (g = .25 [.00, .50]) outcomes, but not for negative psychological outcomes (g = .01 [-.24, .26]). Risk of bias was assessed using the QualSyst tool. We found no evidence of publication bias, but the studies were underpowered and rated as low quality. Our meta-analysis demonstrates that sport participation is associated with multiple psychosocial benefits for middle-aged and older adults – primarily social, positive psychological, and perceived physical ones. These benefits appear to be invariant across participant-related and sport-related characteristics.

Oral presentations
Topics: Motivation

Autonomous Motivation Promotes Goal Attainment Through Conscious Effort, But Automated Responses Make Striving Easier

Hugh Riddell[1], Wesley Lamont[1], Merrill Lombard[1], Sarah Paduano[1], Scott Dunk[1], Nikos Ntoumanis[2]
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Individuals are more likely to attain autonomously motivated goals (e.g., those pursued because they are personally meaningful) than goals driven by controlled motives (e.g., those pursued out of obligation). Recently, Werner et al. (2016) suggested that rather than consciously investing effort to attain their goals, people with autonomous motives instead find goal striving effortless because they rely on automated strategies to sustain goal directed behavior and overcome obstacles. In this experiment we investigated whether participants (N=111) consciously invested effort, subjective ease of goal striving, and objectively measured physiological effort mediated the relation between goal motives and goal attainment in an immersive virtual cycling task. We also trained half of participants in Mental Contrasting with Implementation Intentions (MCII) – a metacognitive strategy that facilitates development of automated responses to obstacles. Structural equation modeling analysis showed that autonomous motives predicted the conscious investment of effort, which in turn predicted higher goal attainment. Both subjective ease of goal striving and objective effort were unrelated to goal performance. Controlled motives predicted more perceived obstacles encountered during goal striving, while MCII predicted a reduction in such obstacles. The model provided a good fit to the data ($\chi2(12)=11.79$, $p=.46$; RMSEA=.00 [95% CI =.00 – .10]; SRMR=.03; CFI=1.00). Results suggest that while the conscious investment of effort predicts success during active bouts of goal striving, access to automated behavioral responses afforded by MCII is associated with fewer obstacles during goal striving, this may be important for sustaining long-term pursuit.

Oral presentations
Topics: Psycho-physiology

Inhibitory control elicited by physical activity and inactivity stimuli: an EEG study

Boris Cheval[1], Daniel A.R. Cabral[2], Marcos Daou[3], Mariane F.B. Bacelar[2], Juliana O. Parma[2], Cyril Forestier[4], Dan Orsholits[1], Silvio Maltagliati[5], David Sander[1], Matthieu P. Boisgontier[6], Matthew M. Miller[2]
[1]University of Geneva; [2]Auburn University; [3]Coastal Carolina University; [4]Le Mans Université; [5]Université Grenoble-Alpes; [6]University of Ottawa

The theory of effort minimization in physical activity (TEMPA) argues that individuals have an automatic attraction toward effort minimization. To engage in a physically active behavior, this automatic attraction needs to be overridden by controlled processes. However, direct evidence showing that inhibitory control is required to avoid effort minimization is lacking. Here, we used go/no-go tasks and electroencephalography to assess the neural correlates of inhibitory control associated with visual stimuli depicting physical inactivity or physical activity, or depicting control stimuli in 50 healthy young adults.The power calculation estimated a required N =55 to achieve a power >.80. The N2 event-related potential component amplitude was used as a physiological index of inhibitory control. Results showed significant two-way interactions between the type of trials (i.e., go vs. no-go trials) and the type of stimuli on N2, revealing a significantly more pronounced no-go effect (i.e., higher N2 in no-go relative to go trials) for physical inactivity stimuli compared with physical activity stimuli. Simple tests further revealed that N2 amplitude was more negative in no-go than go trials for stimuli depicting physical inactivity (b = –.58 mV, 95% CI = –1.08 to .08 mV, p = .025). By contrast, we found no evidence of significant differences in N2 amplitude between no-go and go trials for stimuli depicting physical activity (b = .20 mV, 95% CI = –.31 to .70 mV, p = .445). These findings suggest that inhibiting responses to physical inactivity stimuli requires significantly higher inhibitory control than inhibiting responses to physical activity stimuli.

Oral presentations
Topics: Group dynamics

"We looked good on paper but we just couldn't work well together": A qualitative investigation of teamwork breakdowns in sport

Desmond McEwan, Kaitlin Crawford
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Teamwork is a dynamic process that can fluctuate over a team's time together, including within a competition. The purpose of the current study was to better understand why this process breaks down, whereby teams do not demonstrate effective teamwork execution. To do so, 18 British university athletes (11 men, 7 women; mean age = 21.4 years) from interdependent team sports were interviewed on two occasions and asked to describe experiences in which their team did not communicate, coordinate, or cooperate effectively during gameplay. Underpinned by a critical realist approach and through abductive thematic analysis, we developed seven themes (comprised of 16 subthemes) which reflected precursors to teamwork breakdowns. These included: (1) ineffective team preparation during training and during the pre-competition warmup; (2) ineffective team monitoring, problem solving, action planning, and conflict management during in-competition transition periods; (3) changes to the team's roster composition over the season and during games; (4) ineffective leadership from coaches and athlete leaders during gameplay; (5) poor unity amongst team members regarding the team's instrumental and social objectives; (6) problematic levels of confidence between teammates and among the team as a whole; and (7) poor performance of one's team and successful performances of one's opponent during the competition. The findings from this study extend current knowledge of teamwork and group dysfunction in sport, and provide directions for future research on teamwork breakdowns. The potential applied implications for coaches and other team leaders (e.g., sport psychology consultants, athlete leaders) related to these findings will also be highlighted.

Oral presentations
Topics: Clinical issues in sport and physical activity

Coaches' Role in Athletes' Eating Pathology: An Evidence-Informed Ecological Application to Advance Research & Coach Intervention

Dana K. Voelker[1], Amanda J. Visek[2], Jordyn L. Learner[3], Miranda Dibiasio[2]
[1]West Virginia University, United States of America; [2]The George Washington University, United States; [3]University of Denver, United States

Annually, a staggering 3.3 million healthy-person years are lost to eating disorders worldwide, which remain among the most lethal of all psychopathologies (van Hoeken & Hoek, 2020). Among athletes, the deleterious impact of eating pathology on health, wellness, and performance are well-documented (e.g., Voelker & Galli, 2019), and evidence indicates these ill-effects have only worsened amid the COVID-19 pandemic (e.g., Buckley et al., 2021). In research and clinical practice, coaches have been identified as a significant influence in the development and maintenance of athletes' eating pathology through their direct interactions with athletes and in how they shape athletes' training and competition environments. Using an ecological systems framework, a systematic review was conducted to understand coaches' role in athletes' eating pathology across multiple spheres of influence and interaction. Review of 21 quantitative, 13 qualitative, and 2 mixed-method studies demonstrated athletes' eating pathology was associated with: (a) coaches' reinforcement of the dominant sport ethic; (b) poor quality coach-athlete relationships characterized by criticism and control; and (c) coaching behaviors and practices directly targeting athletes' body weight, shape, size, appearance, and food. Based on the systematic review findings, strengths and challenges of a systems level approach to understand and prevent eating pathology among athletes will be discussed; strategies for extending research that address the underrepresentation of diverse groups in this literature area will be identified; and finally, a coach-centered ecological model will be forwarded to inform needed intervention efforts that position coaches as healthy supports.

Oral presentations
Topics: Motivation

In the Context of a Sports Match, the Goal to Win is Most Important, Right? Evidence for a Hierarchical Achievement Goal System

Nico W. Van Yperen
University of Groningen, Netherlands, The

When evaluating one's own or others' performances, there is a strong tendency to rely on social comparison information. Remarkably, however, the extant achievement goal research suggests that the prevalence of other-based goals (also referred to as ego goals or performance goals) is very low, also in sport contexts. In the present research, survey data was collected among 647 competitive korfball players (69.4% women), ranging in age from 16 to 56 years. Immediately after responding to the 3 × 2 Achievement Goal Questionnaire for Sport (Mascret et al., 2015), the players were asked to indicate their ultimate, overarching achievement goal for korfball matches as well as their competence satisfaction in korfball (cf., Van den Broeck et al., 2010). As expected, for most athletes (51.6%), to win matches was their overarching achievement goal. We run analyses of covariance to test whether the regression weights of the dependent variable (i.e., competence satisfaction) on the covariate "strength of the subgoal" were the same across athletes with different overarching achievement goals. As hypothesized, we found that among athletes with an overarching other-approach goal, competence satisfaction was higher when their self-approach (B = .14) and task-approach (B = .14) subgoals were stronger, Fs(6,632) > 4.79, ps< .001. These findings suggest that athletes with a strong desire to win acknowledge that they need to focus on what needs to be done (i.e., self-improvement and task mastery) to ultimately attain the outcome they desire: Coming out victorious.

Oral presentations
Topics: Consulting/ counseling

Mindfulness-Based Interventions in Distance Consulting and Psychotherapy with Athletes: Lessons Learned and Best Practices

Thomas O. Minkler[1], Megan Hut[2], Carol R. Glass[3], Timothy R. Pineau[4], Keith A. Kaufman[5]
[1]West Virginia University; [2]West Virginia University; [3]The Catholic University of America; [4]MSPE Institute; [5]MSPE Institute

Navigating the changing landscape of COVID-19 protocols and limited in-person contact forced the field of applied sport psychology to evolve. One notable adaptation has been the increased use of online platforms (e.g., Zoom) for distance sport psychology service delivery (Byrd, 2021; Harris, 2021). This forced adjustment presented unique opportunities for sport and performance psychology practitioners to adapt their work, while potentially reaching and serving a wider range of clients.

Also becoming more frequent is the integration of mindfulness-based interventions (MBIs) in applied sport psychology. An emerging empirical base suggests that MBIs can promote athlete wellbeing and sport performance (Noetel et al., 2019), though little research exists examining the differential effects of traditional in-person MBIs compared to those delivered virtually. To encourage future research and further the conversation and knowledge base around online service delivery, this presentation will outline lessons learned and provide examples of best practices that we have observed while integrating MBIs with athletes in both distance psychotherapy and sport psychology consulting (e.g., how to keep clients engaged and maintain the integrity of a program that's usually conducted in person).

There will be a particular emphasis on the use of virtual modalities for didactic instruction and the introduction of mindfulness practices, including our experiences conducting Mindful Sport Performance Enhancement (Kaufman et al., 2018). Moreover, ethical issues like confidentiality, safety, and access associated with distance consulting (Watson et al., 2017) will be discussed, particularly when integrating MBIs. Finally, specific suggestions will be shared with relevance for future practice and research.

Oral presentations
Topics: Physical activity

Does the Frequency, Intensity and Duration of Muscle Strengthening Activity Correlate with Mental Health?

Stephen Shannon[1,2], Noel Brick[3], Gavin Breslin[2,3]
[1]School of Sport, Ulster University Magee, Ireland; [2]Bamford Centre for Mental Health and Wellbeing; [3]School of Psychology, Ulster University Coleraine, Ireland

Inclusion of muscle-strengthening (MS) physical activities is limited in mental health research. To address particular gaps in measurement, the current study examined the relative associations between frequency (days), duration (minutes per-session), and intensity (RPE/RIR) of MS activities on anxiety, depression, and mental well-being outcomes. A cross-sectional study of 601 participants (M= 30.92 years [SD =12.70]; 57.7% female) across Ireland was conducted. Participants completed a questionnaire containing MS and mental health measures. A multivariate path analysis model was tested in MPLUS, using dummy coding for MS frequency in relation to no activity (i.e., 0-days) non-adherence (i.e., 1-day), adherence (i.e., 2-days) and enhanced adherence (i.e., >3 days) to the MS public health guidelines. Duration and intensity were specified in the model as continuous variables; gender and age were included as statistical controls. Results revealed that three or more days engaged in MS activities was most protective against depression (β= -.14, p <.01) and anxiety (β= -.12, p <.05), whereas 1-day of MS activity protected against depression (β= -.11). Increased intensity had a negative association with depression (β= -.15, p <.001) and anxiety (β= -.10, p <.05). To conclude, higher frequency and self-selected intensity of MS activities may protect against depression and anxiety and doing some MS (at least 1-day) is likely more beneficial than none for depression. Co-produced, evidence-based, MS interventions may help curb mental illness rates. Future longitudinal research may consider inclusion of multivariate MS items to help identify at-risk groups and trends within physical activity and mental health surveillance.

Oral presentations
Topics: Prevention and rehabilitation

Examining the Relationship Between Rehabilitation Adherence and Self-Efficacy Beliefs in ACL Reconstructed Female College Athletes

Myles Tutin Englis[1], Marc Louis Cormier[2]
[1]Florida State University, United States of America; [2]University of Kentucky, United States of America

Anterior cruciate ligament injuries are among the most common and traumatic sport-related injuries, and often negatively impact one's quality of life during and post-rehabilitation (e.g., Filbay et al., 2016; Mainwaring et al., 2010). For many NCAA Division I and professional female athletes, rehabilitation is streamlined with a multidisciplinary team, including sport psychology. For others (e.g., NAIA, NCAA Division II, III athletes) this may not always be the case, as many of these athletic programs may not have the resources to meet the various needs of injured and rehabilitating female student-athletes. In these instances, rehabilitation motivation, adherence, and success may be more dependent on the athletes' individual resources and personalities, as compared to their Division I and professional counterparts. With so many more women athletes competing at this level across the U.S., a better understanding of ACL injury rehabilitation and return to sport with limited resources is warranted. Thus, the purpose of this study was to examine what factors related to motivation and self-efficacy contribute to a successful rehabilitation for NAIA and NCAA Division II and III female athletes following ACL reconstruction. Qualitative interviews were used to investigate personal factors, as well as cultural and social elements that impact adherence to rehabilitation protocols and ultimately, recovery.

Oral presentations
Topics: Exercise psychology

Intention to Engage in Mountain Sport during the Summer Season in Climate Change Affected Environments

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Natural environments might facilitate to regularly engage in physical activity, including mountain sport activities. However, climate change is expected to change natural environments, especially in mountainous regions with potential impacts on physical activity behavior (Sommer et al., 2020). A reduced intention to engage in mountain sport was reported in the winter season (Frühauf et al., 2020); however, less is known for the summer season. Therefore, the present study aimed at comparing the effect of being exposed to climate change affected scenario (CCA) to a climate change unaffected scenario (CCU) on the intention to engage in summer mountain sport activities.

Using an experimental cross-sectional study design, participants were randomly allocated to scenarios of either CCA or CCU. Participants were asked to complete questions about Theory of Planned Behavior (TPB) variables and about affective responses referring to the displayed scenarios. Statistical analyses included tests on group differences.

TPB variables (intention to engage in summer mountain sport, attitude, and perceived behavioral control) did not show significant group differences between CCA ($n=155$) and CCU ($n=156$), $p>.131$; $r<-.10$. Significantly lower anticipated affective valence was found in CCA compared to CCU, $p<.001$, $r=-.43$.

Intention to engage in summer mountain sport was similar in the two scenarios. Therefore, a reduced engagement in mountain sport activities due to climate change seems less likely in the summer season compared to the winter season (Frühauf et al., 2020). However, a reduced affective valence during summer mountain sport activities should be considered in the presence of clear signs of climate change.

Oral presentations
Topics: Coaching

A Two-Dimensional Approach to Combat Stereotypical Dilemmas Faced by High Performance Female Coaches

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Inequalities faced by women coaches stem from cultural and organisational practices that normalise and privilege men into positions of leadership by reinforcing gendered norms which predominantly disadvantage women in the workplace creating a glass-ceiling (Burton, 2015; Norman, Rankin-Wright & Alison, 2018). Evidence demonstrates that better diversity in leadership encompasses greater wealth of experience and perspective resulting in better decision making, better performance and success (Farrer & Co, 2019). Despite this, leadership within sport remains dominated by men. Whilst more recently it could be suggested there is increased awareness of the value of gender diverse leadership, this does not appear to effectively translate into ensuring inclusion for women (cf. McKinsey, 2020). Thus, this research aimed to explore strategies utilised on individual and organisational levels by women coaches' who have encountered stereotypical gender bias across multiple sports and national organisations in the United Kingdom. Twenty women coaches coaching either male or female athletes in either individual or team sports participated in a semi-structured interview. Interviews were transcribed and subsequently analysed deductively employing principles of content analysis (Hseih & Shannon, 2006; Mayring, 2000). Data analysis is ongoing. The findings of this study aim to provide a better understanding of the strategies women coaches utilise and raise awareness of the effects of stereotypical bias within sporting communities. From a practical point of view, this research will contribute to a two-dimensional approach to aid, at individual (women coaches) and organisational (NGB's) levels, in minimising stereotypical dilemmas women coaches encounter within high performance coaching.

Oral presentations
Topics: Well-being and quality of life

Providing a clearer insight into how concussion and pain impact mental health, cognition, and quality of life

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Much of the present literature suggests that sport-related concussion (SRC) can lead to poor mental health, impaired cognition, and reduced quality of life. However, physical pain has also been reported to have the same influence on these three outcomes, and while SRC and pain often accompany each other, it is surprising that little research assesses the two simultaneously. Therefore, the present study aimed to further investigate the relationship the two factors have on the three outcomes. Depression was measured using the Center for Epidemiological Studies, anxiety was assessed using the State-Trait Anxiety Inventory while the SF-12 recorded quality of life. A trail-making test assessed cognitive flexibility of participants. Data analysis of 84 participants (Concussed 45 vs. 39 Non-concussed) revealed that (i) SRC history was related to reduced accuracy in the cognitive flexibility task but had no bearing on mental health symptoms and quality of life scores, and (ii) physical pain was not related to cognitive flexibility but was responsible for poorer mental health and lower quality of life. With this this study, like no other study to our knowledge, highlights the different influence that SRC and pain have on mental health, cognition, and quality of life. With the knowledge that concussion appears to be more responsible for impaired cognition whereas physical pain is associated with poorer mental health and reduced quality of life, we are better placed to predict the outcome of these events and support athletes that have sustained SRC, are experiencing physical pain, or both.

Oral presentations
Topics: Motivation

Effects of a challenge-based learning experience on students' motivation in the Physical Activity and Sport Sciences Degree

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Motivation in university contexts has been approached in recent years based on self-determination theory, which postulates that behaviour is regulated by three basic psychological needs (BPNs): autonomy, competence and relatedness, that can determine motivational and behavioural outcomes (Deci & Ryan, 1985; 2000). Previous work has suggested that the satisfaction of the BPNs may be affected by the methodologies used in the teaching-learning processes (Monguillot et al., 2015; Gómez et al., 2015), although few studies have addressed the frustration of these needs in this context (Vansteenkiste, Ryan, & Soenens). The aim of this work is to present the effects that the use of the challenge-based methodology in Sports Fundamentals subject of Physical Activity and Sport Sciences degree has on students' BPN satisfaction and frustration. A total of 83 university students (68 boys and 15 girls) between 17 and 27 years old (M=20.07, SD=1.82) participated in the study. Of total of 128 responses, 70 were learning experiences following a traditional methodology (control group), and 58 were learning experiences following challenge-based learning (experimental group). The t-tests revealed that the experimental group showed higher competence satisfaction ($t = 2.17$, $p. < .05$; 3.80 vs. 4.21; ES=.43) than the control group, which experienced higher competence ($t = 2.52$, $p.<.05$; 2.46 vs. 1.87; ES=.27) and relatedness frustration ($t = 2.09$, $p.<.05$; 1.99 vs. 1.58; ES=.02) . These findings show that challenge-based learning can be considered a motivational methodological resource for university students, suggesting also that satisfaction and frustration of BPNs seem to be affected by different motivational mechanisms.

Oral presentations
Topics: Motivation

Differences in motivational regulations among PE teachers' profiles of perceived pressures and vocation

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Different sources of personal ill-being have been identified in the PE literature that can affect teachers' experiences (Franco, Cuevas, Coterón, and Spray, 2021). Furthermore, vocation has been pointed out as a relevant factor to understand behavioral and motivational patterns (Nye, Su, Rounds, and Drasgow, 2017). The first aim of this study is to determine PE teachers' profiles based on their scores for perceived pressures at work as well the vocation they have for teaching. The second aim is to examine the differences in teachers' motivational regulations across the different profiles. Validated questionnaires were administered to 245 PE teachers (M=39.04; SD=10.12). Three profiles were retained in the cluster analysis labelled as a) low pressure-low vocation (n=58), b) high pressure-high vocation (n=60), and c) low pressure- high vocation (n=127). The results of the MANOVA ($F(18, 296) = 2.62$; $p < .001$; $\eta 2p = .14$) revealed that teachers in the third group showed the most adaptive pattern displaying the highest scores in autonomous motivation (4.48) and the lowest scores in controlled motivation (2.79) and amotivation (1.19). Interestingly, teachers belonging to the second group showed both higher autonomous motivation (4.56) and amotivation (1.41) than other teachers. The lack of a profile combining low vocation and high pressures suggest that teachers with low levels of vocation for teaching might be less likely to perceive the perception of pressures at job. Furthermore, pressures could have a more important impact on dark-side motivational regulations than on autonomous motivation.

Oral presentations
Topics: Motivation

PE teachers' interpersonal styles according to their training in inclusive sports

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Teachers' motivational and behavioural patterns have been suggested to affect class interactions in the Physical Education context (Franco, Coterón, Gómez, & Spray, 2021). Based on Self-Determination theory, a recent approach has identified eight different interpersonal styles which could have a different effect upon (differently affect) relevant student outcomes (Aelterman et al., 2019). The literature is scarce in terms of research analyzing which factors might affect the display of these interpersonal styles (Vasconcellos et al., 2019). The aim of this study is to explore differences in the exhibition of interpersonal styles between PE teachers who have been specifically trained in inclusive sports and PE teachers who have not participated in this kind of training programs. A total of 768 PE teachers (495 male and 273 female) between 22 and 62 years of age (M=40.72, SD=7.64) participated in the study. A Spanish validated version of the Situations-in-School Questionnaire (Aelterman et al., 2019) was administered. A Mann-Whitney U test revealed that teachers who have attended training programs about inclusive sport were more likely to display an autonomy- (Z=-2.96, p. = .003; 5.19 vs. 5.40) and a structure-supportive teaching style (Z=-2.43, p. = .015; 5.67 vs. 5.83) than teachers who had not participated in this kind of programs. On the other hand, this latter group were more likely to exhibit a controlling teaching style (Z=-2.10, p. = .036; 2.86 vs. 3.03). Findings suggest that inclusive-sports program might provide PE teachers with tools which could help them to nurture students' interests, offer them meaningful choices and guide pupils to achieve their aims.

Oral presentations
Topics: Physical activity

Classroom-based Physical Activity Interventions on Psychological Health in Children: A Review

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It is necessary to expand the scope of the benefits of physical activity interventions in the classroom on psychological health in the child school population (O'Reilly et al., 2018; Pascoe et al., 2020). This scoping review synthesizes the evidence of the effects of physical activity interventions in the classroom on psychological health in children aged 6 to 12 years and describes the characteristics of the physical activity interventions implemented. We systematically searched in databases MEDLINE, SCOPUS, PsycINFO, ScienceDirect, Web of Science and SciELO, of randomized control trials published up to July 2020 that assessed the effectiveness of classroom-based physical activity interventions on children´s psychological health. Twenty trials (14,575 participants) with children aged 6 to 12 years were included. There were significant effects on several indicators of psychological health, mainly on attitudes related to physical activity. The most effective interventions those that included physical activity integrated into the curriculum 2-5 times a week, in sessions of between 4' to 10' implemented mainly by the classroom teacher and with audio-visual support. However, the heterogeneity in program designs did not allow definitive conclusions. More evidence is required that examine the effect of classroom-based physical activity on other indicators of psychological health such as depression or anxiety. In addition, studies are needed using an objective device of physical activity to a better compression of the effects on the psychological health of schoolchildren.

Oral presentations
Topics: Elite sports and expertise

A Mental Health Awareness Program for Elite Male Adolescent Hockey Players: Impact on Levels of Stigma

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Elite athletes experience comparable or higher rates of mental illnesses relative to the general population (Henriksen et al., 2020). However, adolescent athletes are reluctant to seek psychological help due to the stigma associated with mental illness and the fear of losing playing time or being perceived as weak (Rice et al., 2016). These stigmatizing views may be reinforced in sport cultures with a “win at all costs” mentality where performance takes precedence over well-being (Henriksen et al., 2019). The purpose of this study was to assess the impact of a mental health and suicide-awareness program on levels of stigma among elite Canadian ice hockey players (aged 16-20). In total, 120 participants completed online questionnaires pre- and post-workshop assessing participants’ attributions towards teammates with mental health issues and participants’ self- and public-stigma. Findings revealed a significant difference for participants’ attributions of stereotypes towards individuals with mental health issues between time-points ($t = 2.011$, $p = .047$). Specifically, attributions of stigma were lower post-workshop compared to pre-workshop. Similarly, there was a significant difference for participants’ personal beliefs towards individuals with mental health issues between time-points ($t = 2.783$, $p = .006$), where perceptions of self-stigma were lower post-workshop. Overall, findings demonstrated that participants reported significant decreases in stigma following the program. This is promising for the implementation of programs among elite male adolescent athletes since this group has typically held negative attitudes toward mental health issues (Swann et al., 2018). However, further research is needed to determine the effectiveness of this program.

Oral presentations
Topics: Coaching

Exploring how experienced tennis coaches developed high-quality relationships with their elite youth athletes

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Research suggests that close coach-athlete relationships are characterised by mutual trust, respect, and appreciation, contributing to greater athlete satisfaction and performance outcomes. However, limited research exists exploring how coaches establish close coach-athlete relationships. Therefore, this study aimed to provide a deeper understanding of how tennis coaches developed close relationships with their high-performance adolescent-aged tennis players. Based on the recommendation of Tennis Canada, five elite tennis coaches known to create close relationships with their athletes, leading to the development of nationally and internationally ranked players, were purposefully recruited. Coaches engaged in two semi-structured interviews and three story completion tasks with our research team. Findings outlined the importance of establishing trustworthy coach-athlete relationships while being mindful of athletes' affective, behavioural, and safety needs. Over time, coaches developed an understanding of athletes' natural tendencies and used this understanding to perceive how the athletes were feeling on the court. They used this information to establish a positive emotional climate helping athletes move through their emotions and ultimately improve the effectiveness of practice. Results also revealed that coaches were aware of recent allegations of athlete maltreatment, and thus shared strategies on ways of establishing mutual trust and closeness with their athletes, while carefully respecting safe sport guidelines. Taken together, this presentation provides practical implications for how coaches can develop and maintain close coach-athlete relationships with elite adolescent athletes.

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Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Time for You: Deploying Trainee Sport & Exercise Psychologists to Support Frontline Workers During the COVID-19 Pandemic

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The restrictions in the UK associated with the COVID-19 pandemic resulted in placements for Trainee Sport & Exercise Psychologists reducing or ending, and new placements being near impossible to set up. Trainees on the Sport & Exercise Psychology Professional Doctorate programme at Glasgow Caledonian University (GCU) were left with significant challenges in meeting the course requirements and learning outcomes associated with their programme. Creative solutions were required to create new placement opportunities for trainees within the context of the pandemic and associated restrictions. GCU staff addressed the challenges associated with placement by partnering with the Scottish Association for Mental Health (SAMH) and gaining funding to deliver an online psychological support intervention – Time for You – to support the mental health and wellbeing of frontline workers, delivered by Trainee Sport & Exercise Psychologists. Trainees provided 1-1 online psychological support to frontline workers from a range of industries, supporting their mental health as part of a tiered support programme. This presentation will share reflections of the programme team on the process of working with SAMH to set up and mange this project setting up this innovative, impactful, and alternative placement opportunity. Reflections from trainee sport and exercise psychologists delivering the service will also be shared along with those of frontline workers who gained support. The presentation will provide evidence as to the effectiveness and appropriateness of non-traditional trainee sport and exercise psychologist placements and applied contexts that can make a positive contribution to the health and wellbeing of society in general.

Oral presentations
Topics: Social psychology

Challenges and Solutions to Humanistic Psychology Delivery with Male U9-U16 Football Players in Professional English Academies

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Humanistic psychology is characterised by letting the client lead the way. However, children's developmental state and verbal abilities might make self-expression difficult. We, therefore, examined the application of humanistic psychology with U9-U16 male football players in English football academies. Doing so entailed exploring why practitioners choose a humanistic approach and the challenges they face. Sixteen psychologists, six women and ten men, working in football academies (ten in Category 1, three in Category 2, and three in Category 3) participated in two semi-structured interviews. We used a stepwise inductive–deductive approach in the analysis and developed three categories: (1) reasons for choosing a humanistic approach; (2) challenges to a person-centred approach where players lead the way; (3) solutions to work with children and adolescents. We show that humanistic psychology can effectively counter dehumanising features (e.g., an overreliance on metrics) in the current English academy context. Practitioners in our study used a humanistic approach to focus on the whole person to support players' growth and counter identity foreclosure. However, many of our participants explained that it was challenging being player-led since players often found it difficult to express their issues. We also found that some practitioners, unsuccessfully, offered different approaches (e.g., acceptance commitment therapy or humanistic psychology) and tried to get the players to choose an approach. We propose that practitioners consider their role as a guide or passenger from the beginning to create therapeutic alliances with players. Practitioners should also engage with developmental psychology to better understand children's unique requirements.

Oral presentations
Topics: Self

Bodies talk: An embodied approach to self-talk in sport and exercise psychology.

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'Listening' to our bodies is advocated in health and performance contexts. To date, self-talk research prioritises the mind as the origin of self-talk, and mind-body interactions are typically viewed through a 'top down' perspective. In contrast, theories of embodied cognition (e.g., Merleau-Ponty, 1962) have long-recognised that semantics can arise from and through the body. Here, we adopt an embodied cognition lens to explore understanding of the 'talking body', and consider whether, how, and indeed if, we can capture its influence.

A case study design was adopted, underpinned by a phenomenological perspective. Maximum variation sampling was adopted to prioritise data from distinctive individuals. Cases comprised an international athlete with an acquired sight-loss disability, and a professional yoga practitioner. A series of theory-informed interviews were conducted involving collaborative recall and thinking-aloud.

Interpretive phenomenological analysis (Smith, 1996) offered insight to when (e.g., fatigue, pain, stillness), how (e.g., signals), and why (e.g., injury prevention, information sharing) body-initiated self-talk occurred. Potent experiences highlighted a cautious body ("I'm exhausted, stop"; "you need to give more time"), and, contrary to expectations, a dialogic dualism between the body as speaker and the mind as the listener.

Findings extend dominant perspectives on self-talk, and suggest that embodied cognition may inform understanding of spontaneous self-talk in particular. Future priorities are to examine diverse experiences of body self-talk, and to explore whether and how social ecologies, particularly body cultures, may influence individuals' body self-talk. In doing so, we can inform new ways of capturing, influencing, and understanding self-talk.

Oral presentations
Topics: Social and cultural diversity

Evaluating Concussion Management Practices in High Schools: Adopting a Disproportionality Lens

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Some practices in concussion management have been codified into law, however current implementation of those policies is not well-characterized, and the existing research indicates high implementation variability (Simon & Mitchell, 2016). In other school-based policies, researchers have demonstrated that implementation variability can be systematic, influenced by unanticipated sociodemographic factors (Sullivan et al., 2013). This framework—termed disproportionality—may therefore offer an important lens for evaluating concussion policy implementation. This study examined concussion management implementation in Massachusetts high schools through a disproportionality lens. School nurses completed a survey on concussion management practices and school demographic data were collected from publicly available databases. Survey scores were tallied such that higher scores indicate more consistent policy implementation. A K-means clustering analysis was used to group schools based on their total implementation score. Group-wise comparisons were conducted to evaluate differences in sociodemographic variables across established groups. Response rate was 66.1% (201/304), with variable response completeness. Clustering analyses revealed two unique groups representing schools with high (M=39.37+/-3.96) and low (M=19.48+/-5.47) implementation scores. Group-wise comparisons revealed significant differences between those groups across several demographic variables including percentage of racially marginalized (p=.003), English language learning (p=.045), and economically disadvantaged (p=.002) students. Findings support the relevance of the disproportionality lens in evaluating concussion policy implementation, as systematic disparities were observed. Informed by these findings, this presentation will: (a) outline the disproportionality literature, (b) describe concussion management policies globally, (c) present current concussion management practice implementation in Massachusetts, and (d) discuss implications for professional practice, future research, and policy development.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Implications of the COVID-19 pandemic on well-being of Italian competitive athletes.

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The novel coronavirus disease (COVID-19) has been responsible for a global pandemic including considerable increase in the daily numbers of cases and deaths. Governments' immediate protective limitations affected the habits of people and posited uncommon challenges to individuals practicing competitive sports. The aim of this study was to gain an understanding of the impact of the ongoing COVID-19 pandemic on well-being of female and male Italian athletes practicing indoor and outdoor team sports (i.e., volleyball, basketball, soccer, and rugby). An online survey assessing demographic characteristics, well-being, satisfaction with life, perceived safety of the training environment, perceived COVID-19 risk, and sport readiness was administered. Differences by gender and sport (i.e., indoor vs outdoor sports) were also examined. Results showed a highly significant difference in the total score of perceived COVID-19 risk: for athletes of indoor sports, $M = 2.74$, $SD = 1.02$; for athletes of outdoor sports, $M = 2.46$, $SD = 0.92$; $t = -3.65$, $p < .001$. For females, $M = 2.75$, $SD = 1.04$; for males, $M = 2.49$, $SD = 0.92$; $t = -3.30$, $p = 0.001$. This study highlighted an understanding of the psychological implications of the COVID-19 pandemic and lockdown, promoting a holistic, grounded, systematic, and educational approach to expound mental health and well-being, and endorsed at the group level but tailored to meet individuals' needs and circumstances (Rossi, 2020). Future studies may advance behavioral interventions to reduce the impact of the consequences to a normal and safe return to sport (Amekran, 2020).

Oral presentations
Topics: Leadership

Is a coach induced empowering climate a protective factor against (peer) interpersonal violence in sport groups?

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Research shows that a coach induced empowering climate is helpful for fostering intrinsic motivation in athletes (Duda & Appleton, 2016). On the other hand, persons affected by sexual violence often report power inequalities between themselves and their aggressors within qualitative studies. Thus, the question arises if a coach induced empowering climate can be linked with observations and own experiences of different forms of interpersonal violence in athletes, and especially with peer sexual violence? In this manner, an online survey with 648 athletes from 58 different kinds of sport was conducted. Participants answered to the German version of the "Empowering and Disempowering Motivational Climate in Sport Questionnaire" (EDMCQ-D; Ohlert, 2018). Furthermore, their observations and experiences of physical, psychological, and sexual violence with the German Version of the "Interpersonal Violence in Sport Questionnaire" (IViS; Vertommen, 2016) were assessed. Different MANOVAs revealed that for almost all forms of interpersonal violence – also for sexual violence executed by peer athletes – athletes who had observed or experienced any form of this violence (Group 1) reported lower empowering climate and higher disempowering climate scores than athletes without these experiences (Group 2). Thus, our results show that a coach induced empowering climate (and less disempowering climate) can serve as a protective factor against all forms of interpersonal violence. Therefore, educating coaches in inducing an empowering climate can not only promote intrinsic motivation, but also prevent interpersonal violence, including violent behavior among the athletes.

Oral presentations
Topics: Social psychology

The effect of fitspiration images on body satisfaction in male and female students

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Fitspiration is a social media trend promoting a health enhancing lifestyle. It includes among fitness-related content, dieting and objectifying images of males and females, showing a negative relationship with mental health in previous studies (Carrotte et al., 2017; Tiggemann & Zaccardo, 2015). Since the majority of body image research focused on female participants, this study aimed to investigate acute changes of state body satisfaction in male and female students through exposure to Fitspiration images.

Following the study design by Tiggemann and Zaccardo (2015), an experimental cross-sectional web-based study design was used. Male and female participants (n=360; Ø=22.29±3.36) were randomly allocated to either gender-matching Fitspiration pictures or travel pictures without people. State body satisfaction and affective mood were assessed prior and after picture exposure. Statistical analyses included repeated measures ANOVAs.

Women did not experience a significantly different change in state body satisfaction after viewing Fitspiration images compared to men ($F(3,331)=.975$; $p=.324$; $\eta2=.003$). However, only women showed significant decreases of state body satisfaction after viewing Fitspiration images ($F(1,202)=8.043$; $p=.005$; $\eta2=.038$). Both men and women reported a decrease in affective mood after viewing Fitspiration images ($p\leq.015$).

This study evaluated that changes in state body satisfaction through the exposure of either travel or fitspiration images did not significantly differ between genders. This is the first study to implement a direct comparison of the effect of objectifying pictures on social media in male and female students. The results suggest that male individuals may be similarly susceptible to developing body image concerns as women.

Oral presentations
Topics: Coaching

Exploring Youth Sport Coaches' Perspectives on The Use of Benching

Anthony Battaglia, Gretchen Kerr
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Youth sport coaches are responsible for implementing athlete and team behavioural management strategies (Hill & Thelwell, 2017). Unfortunately, coaches often use demanding and controlling tactics (e.g., exercise as punishment; Kerr et al., 2016) to address undesirable athlete and team behaviours, despite evidence that behavioural change is best achieved through positive disciplinary approaches (e.g., engagement and reasoning; Canter & Canter, 2010). Of particular interest, benching has been suggested as a method for coaches to manage behaviours in the sport domain (Richardson et al., 2012). Although previous researchers reported that youth athletes interpret benching as a form of punishment associated with detrimental outcomes (Battaglia et al., 2017; 2018), to-date, coaches' perspectives on the use of this practice remains to be explored. Informed by behaviour management theories, the purpose of this study was to examine youth coaches' perspectives on benching practices. Semi-structured interviews were conducted with ten youth coaches (six males, four females) and data were analyzed using inductive thematic analysis (Braun et al., 2016). All coaches reportedly used benching and highlighted the critical role of communication and feedback in distinguishing benching as a punishment from a learning strategy. Reported reasons for benching included optimizing team success, addressing conduct detrimental to the team, and reinforcing the coach's position of power. Although the coaches viewed benching as an inherent practice in sport, they referenced alternative strategies including athlete-centred approaches and punitive practices. Findings are interpreted in accordance with behavioural management, coaching, and youth sport research. Recommendations for future research and practice are suggested.

Oral presentations
Topics: Mental skills training

Best Practice in Mindfulness-Based Interventions: Considerations for Session Scheduling

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Mindfulness-based interventions (MBIs) have become increasingly popular in sport psychology, and one such intervention with a growing empirical base is Mindful Sport Performance Enhancement (MSPE; Kaufman et al., 2018). While research suggests that MSPE may help with well-being and sport performance (Glass et al., 2019; Minkler et al., 2021), some athletes benefit more than others. Research examining variables that moderate MBI effectiveness is needed, such as how intervention timing influences participant experiences.

Twenty-seven student–athletes on an American men's college Rugby Union team were randomly assigned to a 6-week MSPE program either immediately before or directly after team practice. Following the intervention, 10 athletes were randomly selected for structured interviews, including questions about their thoughts on and experiences with the scheduling of MSPE training. Interviews were analyzed using Consensual Qualitative Research (Hill et al., 1997; Hill & Knox, 2021), an inductive method emphasizing research team consensus. Results indicated that many participants thought having MSPE beforehand helped them feel physically and mentally ready for practice, and have time for post-practice priorities. Other athletes shared that having MSPE after practice facilitated post-practice mental and physical recovery, and allowed them to benefit more from mindfulness training.

This presentation will describe in detail why athletes preferred engaging in MSPE either before or after rugby practice. The choice of when to provide mindfulness training might depend on the specific needs of the team. The results of this study may provide coaches and practitioners with an evidence base for the design and delivery of MBIs.

Oral presentations
Topics: Motivation

Motivational climates, well-being and off-field behaviour in youth rugby: The mediational role of achievement orientations

Elisa Bisagno[1], Alessia Cadamuro[1], Loris Vezzali[1], Gian Antonio Di Bernardo[1], Claudio Robazza[2], Francesca Vitali[3]
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In youth sport, there is a well-documented relationship between the coach-created motivational climate (mastery vs performance) and the individual motivational orientation (task vs ego) of athletes (e.g., Duda, et al., 2014). A mastery climate, focused on personal improvement rather than performance, not only favors individual task orientation and enjoyment (MacDonald et al., 2011) but also prevents burnout (Vitali et al., 2015) and on-field antisocial behavior (Kavussanu et al., 2007). However, less is known about the impact of motivational climate on the broader concepts of general well-being and off-field behavior. We aimed at investigating the predictive role of perceived motivational climate on enjoyment, well-being, and off-field prosocial behaviour of youth Rugby players, via the mediation of goal orientation. 561 youth Rugby players aged between 11 and 16 years old completed an online questionnaire. Findings showed positive relationships between mastery climate, task orientation, enjoyment, well-being, and off-field prosocial behavior. A positive relationship was also observed between performance climate and ego orientation, while a negative relationship was found between ego orientation and well-being and off-field prosocial behavior). Mediation analysis using SEM and the bias-corrected bootstrap method based on 5000 resamples revealed positive indirect effects from perceived mastery climate to enjoyment, well-being, and prosocial intentions via task-orientation, and negative indirect effects from perceived performance climate to well-being and prosocial intentions through ego-orientation. These results highlight the role of coach-created climates, capable of impacting youth's lives on and off the field. In this sense, training coaches on psychological topics is becoming more and more relevant.

Oral presentations
Topics: Perception & attention

Research on Anticipation in Sports: Quo Vadis?

Rouwen Cañal-Bruland
Friedrich Schiller University Jena, Germany

Since its infancy in the early 1980s research on anticipation in sports has witnessed a steep incline in both research interest and output leading to more than 100 peer-reviewed papers in 2021 alone (Web of Science; search terms 'anticipation' AND 'sport'). Given the increasing importance of research on anticipation in the field of sport psychology, the aim of my talk is twofold: First, I will briefly synthesize the achievements and contributions of research on anticipation in sports over the last 40 years (see Cañal-Bruland & Mann, 2015; Loffing & Cañal-Bruland, 2017). Second, and more importantly, I will discuss several challenges that remain to be addressed by future research. In this vein, I aim to outline a number of research questions and future routes for research that – in my opinion – deserve systematic examination, including research on (i) the use and integration of multiple sources of information (such as multisensory information and/ or contextual information) and (ii) the role of inter- and intra-individual differences in anticipation. With this talk, I hope to inspire young (and not so young) researchers to join this intriguing field of research and (in response to "Quo vadis?") "walk with us into the future" of research on anticipation in sports. Andiamo!

Oral presentations
Topics: Coaching

Enhancing Role Efficacy in Youth Football: Applying the 5Cs to Job Descriptions by Position

Dadi Rafnsson[1], Hafrun Kristjansdottir[1], Thorlakur Karlsson[1], Karl Steptoe[2], Chris Harwood[2]
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Psychological skills training has been described by experts as football's biggest area of improvement in the coming years (Austin, 2018). As clubs and federations adapt psychological skills training into their curriculums, consideration must be given to how it can be used to positively affect performance. Musculus and Lobinger noted that while psychological characteristics have emerged as relevant predictors of performance in football, expert coaches' assessment and perspectives have tended to be widely neglected in research (2018).

The aim of this research was to enhance efficacy in coaches and role efficacy in players by designing job descriptions by position. For this they were introduced to a psychological skills training framework, the 5Cs for coaching psychological skills in youth football (Harwood, 2008; Harwood & Anderson, 2015). The 5Cs are commitment, communication, concentration, control and confidence. The framework offers a flexible and easy to understand platform to train psycho-social competence.

Nine expert coaches contributed to the design of job descriptions for seven positions. They were selected for high achievements in international, professional and development coaching. The coaches received education on the 5Cs before attending a workshop where they assigned job descriptions. Later each coach was interviewed to obtain individual assessment of the results of the workshop. Resulting data was combined by the researchers and constructed into job descriptions for applied use with 15-17 year old players, at a crucial development age.

The coaches were eager to participate and found the exercise of framing role requirements to the 5Cs helpful to communicate their vision.

Oral presentations
Topics: Professional development and mentoring

Getting Established in Applied Sport Psychology: Stories of Two Experienced Nordic Practitioners Examined

Xavier Sanchez[1,2,3], Timmy Fredriksson[4]
[1]Université d'Orléans, France; [2]Université Paris Saclay, France; [3]Halmstad University, Sweden; [4]Fredriksson Consulting, Sweden

This qualitative study explored sport psychologists' transition into professional establishment through the stories of two highly experienced male Nordic sport psychologists. Participants held both a master's degree in sport psychology and had worked with clients for over 20 years. Narrative interviews, lasting about one and a half hours each, and a follow-up closing interview examined participants' transition stories from novice professional to experienced professional practitioners. Thematic narrative analysis was carried out whereby the second researcher of the study took the position of the story analyst (Smith, 2017). A narrative theme of "paving the way" emerged, in relation to how the participants had to build their own work within a field that was not yet nationally developed, nor recognised. Participants had to lead the way for sport psychology to develop in their respective countries as a professional field as well as academic field. Findings from this study may assist novice and semi-experienced sport psychology practitioners striving to get established in the field as well as academic supervisors and teaching and learning institutions to better prepare students for their upcoming careers as practitioners in applied sport psychology.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Gathering narratives: Athletes' experiences preparing for the Tokyo 2020 Olympic Games during COVID-19

Morgan Rogers, Penny Werthner
University of Calgary, Canada

The COVID-19 pandemic created extraordinary challenges for Olympic athletes, including preparing for the postponed Tokyo 2020 summer Olympic Games amidst a global health crisis. Athletes have been confronted with numerous stressors including social isolation, uncertainty regarding Olympic qualification, and limited access to training facilities and partners (Schinke et al., 2020). Given the profound disruption athletes have faced since the onset of the pandemic in March of 2020, the construct of psychological resilience is a useful framework for understanding athlete experiences during this pandemic. Fletcher and Sarkar (2012) conceptualize resilience as an individual's ability to protect against the negative effect of stressors. The purpose of this study was to explore the experiences and strategies of Canadian athletes preparing for the Tokyo Olympic Games during the COVID-19 pandemic. The research was informed by Fletcher and Sarkar's (2012) resilience model, and centered within a narrative framework.

In-depth, semi-structured interviews were conducted with 20 Canadian athletes from various summer sports, lasting between 37 minutes and two hours in length. All the athlete-participants spoke of the struggles they faced as well as the resilience developed throughout the pandemic. Their stories highlighted diverse approaches to managing and adapting to this unprecedented adversity. Four narratives illustrate the athlete-participants' experiences with this adversity: the critical role of context, the essential nature of received social support, the relevance of learning how to thoughtfully reflect, and the importance of being more than an athlete. Implications for the practice of sport psychology practitioners and future research directions will also be discussed.

Oral presentations
Topics: Emotion

Youth athletes' emotion regulation through cognitive reappraisal and expressive suppression: Effects on their sport experience

Jeemin Kim, Katherine A. Tamminen
University of Toronto

Among various emotion regulation strategies that have been identified in sport and non-sport research, two strategies that are used commonly by individuals are cognitive reappraisal (CR; i.e., changing the way one thinks about the emotion-inducing situation) and expressive suppression (ES; i.e., hiding one's emotions) (Gross & John, 2003). Though previous research has demonstrated that athletes' use of CR and ES can shape their sport experience (Jones, 2012), there is a lack of literature that focused on youth athletes' emotion regulation. Further, little research has examined the interactive effects of CR and ES, despite calls for research (Gross, 2015). The present study examined how youth athletes' engagement in CR and ES related to their sport experiences. Specifically, polynomial regressions with response surface analysis (Schönbrodt et al., 2018) were conducted to explore the independent and interactive effects of CR and ES on outcomes including emotions felt, enjoyment, satisfaction, and loneliness during their sport participation. Analysis of responses from 448 competitive youth athletes (Mage = 15.1 ± 2.3 years old) revealed that more optimal levels of outcomes (e.g., greater pleasant emotions, enjoyment, and satisfaction, and lower unpleasant emotions and loneliness) were reported by athletes who used CR to a greater degree and used ES to a lesser degree. These results are aligned with previous research that demonstrated the benefits of CR and the detriments of ES (e.g., Hu et al., 2014). The present findings suggest that generally speaking, youth athletes should be encouraged to rethink situations and express emotions to regulate their emotions.

Oral presentations
Topics: Emotion

What types of social support do teammates actually provide? Examination of teammate dyads' discussions regarding stressors

Jeemin Kim[1], Katherine A. Tamminen[1], James E. Bissett[1], Chad Danyluck[2], Svenja A. Wolf[3], Carolyn McEwen[4], Christopher R. D. Wagstaff[5]

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Seeking social support from others to deal with stress has been associated with adaptive outcomes for athletes, such as greater well-being (DeFreese & Smith, 2014). However, social support may also exacerbate stress in some cases (e.g., Arnold et al., 2018), and thus continued examination of social support processes is required to better understand their complexities. Further, sport studies have largely relied on self-report measures of social support, leading to little information about the kinds of support that are actually exchanged in conversations where athletes are discussing stressors with teammates. In this study, we video-recorded conversations between teammate dyads discussing stressors in a lab setting to examine how social support from a teammate (i.e., support provider) related to perceptions of received support and stress felt by an athlete (i.e., support seeker). Video-recorded discussions of 46 dyads were coded (ICC = .86 between two coders) to examine the degree of emotional, esteem, and informational support (Freeman et al., 2011), as well as co-rumination (Rose, 2002), during the discussion. A path analysis revealed that greater co-rumination was associated with greater perceived emotional support, as well as greater perceived stress, suggesting that co-rumination has both benefits and costs. Emotional, esteem, and informational support were not associated with perceived stress. Informational support positively predicted athletes' perceptions of emotional and informational support, suggesting that informational support may have multiple functions. The findings highlight the importance of considering co-rumination in support provision processes between athletes and suggest that well-intended interpersonal behaviours may also have costs for athletes.

Oral presentations
Topics: Self

The Dark Place: An autoethnographic study about the author's journey to participate the World Summit of Ultra Trail Running, Ultra

Nadia Portelli, Stuart Beattie
Bangor university,

Ultra Trail Running involves running extreme distances and elevations on mountain trails in punishing environments where athletes endure physical pain, fatigue, and cognitive distress. According to the International Trail Running Association (ITRA), the sport is also an exercise in "self-sufficiency or semi self-sufficiency and is held in the respect for sporting ethics, loyalty, solidarity and the environment". Although such distances have the ability to "strip you bare" (Jurek, 2012, p.123), the sport has gained popularity over the past decades.

The purpose of this study is to make meaning through lived experiences of what it entails to undergo the rigorous training and the way of life of ultra trail runners how they are able to become ultra-race fit.

Using an analytical auto- ethnographic approach (Anderson, 2006), this research focuses on the knowledge, background and lived experiences of the author, an accomplished ultra trail runner, to try to understand the ultra trail runners' multifaceted reality. A layered account was preferred (Ellis et al., 2011), so that the readers could familiarize themselves with the world of the ultra runner through the reflections and analyses of the author. Thematic analysis (Braun & Clarke, 2006) was used so that salient themes could be derived. Significant findings include not only the use of unique coping strategies, but the lack of use of such strategies during times of exhaustion, interchanging use of resilience and mental toughness, and also the very distinct tribal culture. Another salient finding is the use of particular language when using certain strategies or during specific emotional states.

Oral presentations
Topics: Coaching

Toward the Development of a Conceptual Model of Coach-Parent Relationships in Competitive Youth Sport - A Grounded Theory Approach

Sina Azimi, Katherine A. Tamminen
University of Toronto, Canada

Parents and coaches can enhance the effectiveness of youth sport programs through the relationships that they develop with one another (Sheriden et al., 2014). While parents and coaches report positive and negative interactions and relationships with one another in youth sport settings (Wall et al., 2019), no research to date has explored the process through which parents and coaches develop their relationships with one another. Thus, the purpose of this study is to develop a grounded theory (Charmaz, 2006) that explains the developmental trajectory of coach-parent relationships in organized competitive youth sport. To date, seven parents of competitive youth sport athletes (6 female and 1 male) and eight competitive coaches (2 female and 6 male) have been recruited through convenience and theoretical sampling (Bryant & Charmaz, 2007). Preliminary results interpreted through initial and focused coding, and constant comparison (Charmaz, 2006) of semi-structured interviews (DiCicco-Bloom & Crabtree, 2006) demonstrate that the coach-parent relationship is constructed through multiple stages (i.e., initiation, experimentation, and termination). Throughout each stage, parents' beliefs and expectations of their children, and the extent to which they trust coaches' philosophy seem to influence the coach-parent relationship. Likewise, coaches' actions regarding player grouping and playing time appear to influence their relationships with parents. In addition, cultural influences and generational differences among parents and coaches seem to affect the development of the coach-parent relationship. The results from this study can inform sport organizations and key stakeholders of how to navigate and improve the coach-parent relationship in organized competitive youth sport.

Oral presentations
Topics: Exercise psychology

Evaluating the acceptability and engagement of a physical activity mHealth program for persons who walk with spinal cord injury

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SCI Step Together, an mHealth program informed by self-determination theory (Ryan & Deci, 2000), was developed in partnership to improve physical activity (PA) participation among ambulators with spinal cord injury (SCI) (Lawrason et al., under review). The program allows individuals to participate in weekly modules about PA (e.g., goal setting), connect with peers, talk with a health coach, and track PA. The purpose of this study was to assess the engagement and acceptability of the SCI Step Together program. An 8-week pilot randomized controlled trial was conducted among 21 participants (n=11 intervention). Engagement was assessed by time logged into the app and compliance to module activities. Acceptability was assessed by conducting think-aloud and semi-structured interviews with six participants. Using a pragmatic approach, data were analyzed using a conventional content analysis (Hsieh & Shannon, 2005). Compliance with the educational modules waned over time (from 91% to 9%). Weekly, an average of 7 participants used the app on 2.4 days, whereby total time logged in averaged 5 hrs 24 mins. Users were satisfied with the content and interface, but needed instructions on how to use the app, and were too busy to continue engagement. Users offered eight recommendations for app improvement, such as including peer mentors in physical activity and providing access to content post-study. Ultimately, the program received high levels of satisfaction, usability, and acceptability like other mHealth programs for persons with SCI (Allin et al., 2020). Future research can integrate recommendations into the app to improve participant engagement and sustainability.

Oral presentations
Topics: Physical activity

Women's opinions on yoga interventions after a cancer diagnosis: A meta-synthesis

Jenson Price, Sitara Sharma, Jennifer Brunet
University of Ottawa, Canada

Yoga is a potential means of improving quality of life and wellbeing among women after a cancer diagnosis. Yet, yoga interventions are often developed based on researchers' opinions and available resources (e.g., financial, human, infrastructure), resulting in a variety of delivery modes, formats, and content. This meta-synthesis aimed to systematically review and synthesize qualitative evaluations of yoga interventions to understand women's preferences, motives, and barriers for participating in yoga after a cancer diagnosis. Using meta-study methodology, six electronic databases were systematically searched. Two reviewers independently screened titles/abstracts, followed by full-texts against eligibility criteria. The search yielded 6,804 results after de-duplication; 16 articles were eligible and included. Results reveal there are four intervention types: synchronous online, asynchronous online, in-person, and in-person with an at-home component. Participants offered insight into their preferences on practical considerations (e.g., dosage, scheduling, setting), yoga-related elements (e.g., instruction style, yoga type), and member characteristics and interactions (e.g., diagnosis type, support offered) that should be considered when designing yoga interventions for women diagnosed with cancer. Common motives for participation included: health and wellbeing, engaging in an adaptable form of physical activity, sociability, and developing a mind-body connection. However, participants expressed barriers related to time concerns, lack of discipline and motivation, and treatment-related side-effects. This meta-synthesis provides useful data regarding women's opinions on different aspects of yoga interventions, as well as their motives and barriers for participation. Findings can contribute to efforts aimed at developing and delivering interventions to women diagnosed with cancer that prioritize their needs and preferences.

Oral presentations
Topics: Youth

A scoping review of the use of theory in research on youth sport transitions and positive youth development through sport

Rachel C Dunn, Katherine A Tamminen
University of Toronto, Canada

There is a large body of research examining the psychosocial development of young people in sports contexts. Two particularly extensive research areas include the study of youth sport transitions and athlete development pathways (Stambulova & Wylleman, 2019) and positive development through sport (Holt, 2016). While much of the research claims to be informed by lifespan and developmental systems theories, it is currently unclear the extent to which studies in these areas have drawn on and applied theories from child and adolescent developmental psychology. A scoping review of the literature on positive youth development and youth athlete transitions in sport was conducted to investigate the use of theory in research across these areas. Two databases were systematically searched (APA PsychINFO and SportDiscus) and 10,453 abstracts were screened for inclusion in the review (inclusion criteria: full text empirical articles, English language, research conducted with athletes 16 years and younger). Information was extracted from a final sample of 207 articles and dissertations. Results include an overview of the theories most used (e.g., social cognitive theory, Bandura, 1986; self-determination theory, Deci & Ryan, 2000), the ways in which theories were used or applied in studies (Sandelowski, 1993), and a discussion of theoretical trends and theoretical gaps in the youth sport literature. In the future, researchers could draw on theories more fully to ensure stronger theoretical coherence in research, be cautious when applying non-developmental theories to youth populations, and ensure that research in youth sport is informed by theoretical progress in developmental psychology.

Oral presentations
Topics: Youth

Rethinking Youth Sport: A Qualitative Exploration of Generation Z Perspectives During the COVID-19 Pandemic

Luna Ugrenovic[1], Dana Voelker[2], Andrew Augustus[3], Alison Ohashi[4], Daniel Gould[5]
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Generation Z, which represent youth sport participants born after 1996, report greater mental health concerns than other generational cohorts (Twenge et al., 2019) and are perceived by coaches as ill-equipped to cope with adversity (Gould et al., 2020). This study explored the lived experiences of Gen Z athletes following the abrupt suspension of youth sport participation incited by the COVID-19 pandemic. A convenience and maximum variation sample of 14 Gen Z athletes (9 female-identified, 5 male-identified, aged 11-22 years) who were training in the United States from three countries at scholastic, collegiate, and professional levels were interviewed. A social constructivist thematic analysis was used to interpret the data. Among the key findings, participants reported difficulty in autonomously organizing their lives upon the sudden absence of a highly structured sport environment. Yet, they cited numerous coping skills and found joy in the opportunity to self-explore beyond sport. Coaches considered supportive during this time offered continuous, personal communication, while coaches considered unsupportive were described as failing to connect with meaningful frequency and authenticity – a sentiment which mirrored general mistrust of global media and government authorities. Although considered 'digital natives', participants longed to share physical spaces with teammates and, despite immersion in a win-at-all-costs youth sport culture, they reported missing experiential components the most (e.g., competing with friends). The findings inform the importance of creating context- and generation-appropriate climates that promote authentic and person-centered connection, a focus on the quality of experience, and opportunity for diverse identity development in a post-pandemic context.

Oral presentations
Topics: Transitions in and out of sport/ dual career

A longitudinal case study exploring support through an early National Hockey League (NHL) career

Leisha Augusta Teresa Strachan
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Recently, Stambulova and colleagues (2020) revisited an original position paper (Stambulova et al., 2009) and expanded conceptualizations within the athlete career discourse (ACD). One postulate in this paper underscores a focus on an ecological perspective through an athlete's career, inviting more work within elite sport environments. The element of support is an important aspect and one of the purposes of this longitudinal study was to gain further insight into the evolving nature of support through an early NHL career. Using a constructivist approach, a current NHL athlete as well as his parents and sibling (N=4) were interviewed once per year over five seasons (typically at the end of the season) and support was one of the aspects explored. A semi-structured interview guide was used and a thematic analysis was conducted. Data collected related to the progression of coaching support, continuing parental support, and the nature of sibling support. More specifically, themes related to athlete experience include the influence of parents, the delicate nature of coach support, and the role of peers and significant others. Parents and the sibling spoke not only of the support they give to the athlete, but also the support they need through their own experiences as family members of an athlete in professional sport. Results reiterate the importance of support (familial and other) throughout the early stages of a professional career. Implications from this study will encourage organizations to take a more active role in assisting families and players throughout the transitions of an early career.

Oral presentations
Topics: Motivation

Flow state in dance students: An explanatory model

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The current work is framed by the following theories: Goal Achievement (Nicholls,1984), Basic Psychological Needs (Deci & Ryan, 2000), and Flow State (Csikszentmihalyi,1990). The purpose was to develop a model to explain the relationship between contextual and internal factors to predict the flow state in dance students. Two cross-sectional studies were conducted, with opportunity samples, there were 200 classical and contemporary dance students in the first study (M=24.15 years old), 335 in the second (M=19.48 years old). Flow State Scale (Jackson & Marsh, 1996), Motivational Climate Scale - Dance, Peer Motivational Climate – Dance, and Basic Psychological Needs Scale, the last three were developed in this research. Content, item discrimination, correlations, exploratory and confirmatory factor analysis were conducted to develop and to validate the measurement instruments in the first study. In the second study, correlations, multiple linear regression and structural equation modeling analysis were conducted.

The flow state predictors were: need of competence, ego-involving climate generated by the teacher, task-involving climate generated by the teacher and task-involving climate generated by the peers. The final model explained the 30% of the variance, the flow state was explained by the competence, the mediator between the task-involving motivational climate generated by the teacher and flow state. This research highlights the importance of the environment created in class to satisfy psychological needs and promote optimal mental states in students. Further research should implement interventions with dance teachers in order to give them strategies on how to encourage the perception of competence in their students.

Oral presentations
Topics: Emotion

A qualitative examination of tilt in League of Legends esports players

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Some video games offer high-level competitive performance in the form of esports – a discipline recognised as a performance field wherein research is warranted (Pedraza-Ramirez et al., 2020). Tilt, described as severe frustration resulting in suboptimal performance (Himmelstein et al., 2017), is a common, yet still under-investigated performance debilitating phenomenon in esports. The aim of the present study was to gain an understanding of factors and processes relating to tilt in the esport of League of Legends. To that end, 14 esport players (Mage 23.64, SD = 2.29 years) were interviewed, and their answers analysed using thematic analysis to explore (1) antecedents of tilt; (2) the effects of tilt on performance; and (3) players' strategies to manage tilt-inducing situations; at a cognitive, emotional, and behavioural level. Findings showed players experience antecedents of tilt when teammates fail to meet the players' expectations; because of teammates' toxic behaviours; due to players failing to meet their own expectations; and because of negative emotions. According to the players interviewed, these events can result in players experiencing a sense of discouragement, a loss of control, misplaced attention, and ultimately display what they call toxic behaviours. Lastly, the players discussed that they try to avoid tilt-inducing situations by muting the in-game chat, redirecting attention towards controllable actions, letting go of these tilt-inducing events, and taking a break from playing. Findings suggest tilt processes would be partly influenced by the players' teammates actions; thus, it is discussed that different social settings may influence the experience of tilt.

Oral presentations
Topics: Exercise psychology

"Train Harder to Perform Better": Intermixed Brain Endurance Training (iBET) improves maximal dynamic exercise performance

Christopher Ring, Amy Gore, Neil Dallaway
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Mental fatigue can impair exercise performance. Brain Endurance Training (BET) – mental plus physical training – can improve exercise endurance compared to physical training alone. Using a pre-test/training/post-test design, participants (N=29) were randomized to intermixed BET (iBET) or control. At pre/post-tests, they completed calisthenic exercises (press-ups, wall-sit, plank) to exhaustion, before and after completing a 20-min 2-back memory updating task. Training comprised 3 sessions per week for 4 weeks. In training participants completed calisthenic exercises (press-ups, wall-sit, plank, squats). Each 3-min exercise was followed by a 3-min cognitive task (Stroop or n-back) with either high mental workload (iBET group) or low mental workload (control group). Both physical and mental workloads increased every week to produce progressive overload during training. Performance was measured by the number of exercises completed (press-ups) and exercise time to exhaustion (wall-sit, plank). The BET protocol was implemented using the SOMA-NPT app (Sswitch.ch). Both groups performed the 2-back memory updating task faster at post-test than pre-test; the improvement in cognitive processing speed was greater in the iBET group than the control group. Both groups completed more press-ups and lasted longer during wall-sit and plank at post-test than pre-test; the improvement in the number of press-ups completed was greater in the iBET group than the control group. Exercise-related perceived exertion and cognitive-related mental fatigue did not differ between iBET and control groups and between pre-test and post-test sessions. In conclusion, intermixed BET enhanced self-paced dynamic exercise performance but not static exercise performance compared to physical training alone.

Oral presentations
Topics: Motivation

Why did they continue? Female gymnasts' reflections on early specialisation

Charlotte Downing, Karin Redelius, Sanna Nordin-Bates
Swedish School of Sport and Health Sciences, Sweden

Previous research largely advises against early specialisation, due to possible physical and psychological risks (Côté, Lidor, & Hackfort, 2009). For this study, we are interested in exploring gymnasts' reflections of early specialisation in relation to motivation and autonomy. Despite limited empirical evidence, early specialisation is commonly considered necessary for high-level performance in aesthetic activities, such as gymnastics (Kliethermes et al., 2021). This study is one of the first to present qualitative data concerning experiences of early specialisation, and the first known study to collect such data within female gymnasts.

The research questions for this study are, 1) What motivated female gymnasts to remain in early specialised training? 2) How do they reflect upon key specialisation milestones in relation to motivation and autonomy? and 3) How do they reflect upon the necessity of early specialisation? The study is underway, with semi-structured interviews being conducted with female gymnasts aged 15-24 who self-reported a high degree of early specialisation. Specifically, those who reported reaching specialisation milestones at the youngest ages were recruited from a database of 115 high-level gymnasts. The data will be analysed using abductive thematic analysis, where self-determination theory provides a framework to explore the interplay between early specialisation and motivation towards continued participation in gymnastics.

It is anticipated that the results will contribute valuable data regarding experiences of early specialisation, and how these experiences might influence motivation towards continued training. Such data also has the potential to shed light on the often-inconsistent quantitative results exploring motivational correlates of early specialisation.

Oral presentations
Topics: Cognition

Self-control as a mediator between executive functions and physical and sedentary activities

Cyril Forestier[1], Margaux de Chanaleilles[2], Roxane Bartoletti[3], Boris Cheval[4,5], Aïna Chalabaev[2], Matthieu Boisgontier[6,7], Thibault Deschamps[1]

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Conflict resolution models propose that self-control could reduce physical activity intention-behavior gap (Kotabe & Hofmann, 2015). Relations between self-control and health behaviors is well-known (Pfeffer & Strobach, 2017), but predictors of individual differences in self-control remain unexplored. Authors proposed executive functions (i.e., inhibition, working memory, cognitive flexibility) may predict these differences (Hofmann et al., 2012), and that self-control could mediate the relation between executive functions and health behaviors. A study tested this assumption and found unsupportive results (Necka et al., 2018), but did not evaluate the role of executive functions separately; only investigated trait self-control, ignoring state self-control despite its importance (Forestier et al., 2018); and ignored physical and sedentary activities. We compared the role of each executive function as positive predictor of trait and state self-control; and evaluated the mediated effect, through self-control, of executive functions as positive predictor of physical activity and negative predictor of sedentary activities. Our well-powered cross-sectional study recruited 287 highly physical-activity intentioned participants (i.e., 5 on a 7-point scale). We measured executive functions (Stop-Signal task, Letter-memory task, Number-letter task, Diamond, 2013), trait and state self-control and physical and sedentary activities (Forestier et al., 2018). Structural equation model revealed that executive functions were not significantly associated with trait nor state self-control, nor behaviors; while state self-control was positively associated with physical activities (R2=.04), and negatively with sedentary ones (R2=.04). Results suggest that executive functions may not explain individual differences in state nor trait self-control, while state self-control remain a predictor of physical and sedentary activities.

Oral presentations
Topics: Clinical issues in sport and physical activity

Longitudinal profiles of physical activity, sense of coherence, and quality of life in adults over 50 with cardiovascular disease

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Cardiovascular disease (CVD) is the leading cause of morbidity and mortality globally. A physically active lifestyle is an important modifiable protective factor and can improve the health-related quality of life (HRQoL) of people with CVD. Nevertheless, adherence to a physically active lifestyle is poor. This study examined the longitudinal (pre-event, 6-, 12-, 24-, and 36-month follow-ups) physical activity profiles in 275 patients (mean age = 57.1 years; SD = 7.87; 84% men) after the first acute coronary event. Moreover, it investigated the associations among physical activity, sense of coherence (SOC), and HRQoL. Physical activity profiles were identified through latent class growth analysis, and linear regressions were then performed to explore the association between the probability of belonging to the most virtuous profile, SOC, and HRQoL. After the cardiovascular event, 62% of patients reached adequate physical activity levels and maintained them over time (virtuous profile). The 38% could not implement (23%) or maintain (15%) a healthy behavior. A strong SOC at baseline (standardized $\beta=0.19$, $p=.002$) predicted the probability of belonging to the virtuous physical activity profile. Moreover, a strong SOC at baseline (standardized $\beta=0.27$, $p<.001$), together with the probability of belonging to the virtuous profile (standardized $\beta=0.16$, $p=.031$), predicted a better HRQoL over three years. Findings showed a strong relationship between SOC and the ability to adopt a physically active lifestyle stably over time in patients with CVD. They suggest the importance of tailoring physical activity interventions focusing on promoting resilience resources like SOC.

Oral presentations
Topics: Coaching

Associations between the evolution of the quality of the coach-athlete relationship and injury occurrence: A latent class approach

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Introduction. Recent studies suggest that the coach-athlete relationship (CAR) quality (in terms of closeness, commitment, and complementarity) (Jowett, 2007) may be a significant predictor of athletes' injury occurrence (e.g., Martin et al., 2021). However, although CAR is considered as a dynamic parameter (Jowett & Poczwardowski, 2007), most studies used cross-sectional designs not allowing for the exploration of temporal changes. The present study aims to explore the associations between the evolution of the CAR quality and athletes' injury occurrence over a season.

Method. 203 French handball players (Mage = 15.38, SD = 0.94; 52.7% of men) involved in intensive training centers evaluated their CAR through the CART-Q (Jowett & Ntoumanis, 2004) 3 times during the season (early, mid, and late). Moreover, athletes' injury occurrence has been assessed by the ratio between the number of days the athlete was injured to the number of days of training through the whole season.

Results. Latent class growth analyses revealed the existence of five distinct trajectories of the CAR quality (high and stable; high and decreasing; moderately high and stable; moderate and increasing; low and decreasing classes). Moreover, ANOVA indicated that athletes who experienced a deterioration of the CAR quality (i.e., high/low and decreasing classes) got more injured during the season.

Discussion. This study is the first to suggest that the temporal evolution of the CAR quality may be a psychosocial determinant of sports injuries. More studies are encouraged to confirm these results among various contexts, and to identify their underlying processes.

Oral presentations
Topics: Motivation

Self-determined motivation, emotional process and subjective performance among young elite athletes

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In sport settings, competitive stakeholders (e.g., coaches, athletes) and scientific literature (Hanin, 2007; Lazarus, 2000) have largely highlighted the salient roles played by emotions and motivation in explaining athletes' well-being and performance. The purpose of the study (Cece et al., 2020) was to explore relationships between self-determined motivation, appraisals and emotions related to the competitive environment and subjective performance of young elite athletes. Thirty-one young elite tennis players (18.45 years ± 4.63) completed initial (Time 0 – T0) self-determined motivation questionnaire and a fortnightly logbook including every-day cognitive appraisals, discrete emotions, and subjective performance. A series of hierarchical multilevel (considering both within and between levels) linear modelling analyses (HLM) were performed to explore the overtime relationships between the variables. The analyses showed that: (a) T0 autonomous motivation was positively associated with adaptive appraisals; (b) threat and loss were positively related to unpleasant emotions and negatively associated with pleasant emotions, whereas challenge and benefits were positively related to pleasant emotions and negatively associated with unpleasant emotions; (c) subjective performance was positively associated with happiness and negatively associated with dejection. In sum, the present study showed that self-determined motivation impacted the everyday cognitive appraisals of young elite athletes, their emotional experiences, and their subjective performance levels. To conclude, the present study suggests that the sport stakeholders could pay special attention to the self-determined forms of motivation endorsed by the athletes at the beginning of the season. It could be particularly suitable to promote athletes' autonomous motivation in using an autonomy-support motivational climate.

Oral presentations
Topics: Youth

The development of sport enjoyment in the coach-athlete relationship: A 9-month longitudinal study

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Introduction

Enjoyment is a critical component of youth sporting experiences and coaches have been recognised as a key influence on its development (McCarthy & Jones, 2007). However, most studies examining coach influences on enjoyment have used a cross-sectional design. Hence, little is known regarding how enjoyment develops, and is influenced within the coach-athlete relationship over time. Thus, the present study aimed to investigate how coaches' and young handball players' enjoyment developed over a competitive handball season.

Methods

Participants were volunteer parent-coaches (males n = 2; females n = 1) and female handball players (n = 27; aged 12-13 years). The parent-coaches had been coaching this team for approximately four years. Data were collected over a 9-month period, involving three rounds of focus group interviews with the parent-coaches and the players, respectively. Data were analysed using thematic analysis (Braun et al., 2016).

Results

Findings indicated that the study participants experienced enjoyment and excitement during the season either through playing or coaching handball. During the competitive season, the coaches' mood, progression in and mastery of different skills, social opportunities, and socialization within the team were emphasised as themes crucial for coaches' and players' enjoyment.

Conclusion

Findings suggest that coaches should closely monitor how changes in young players' enjoyment are influenced by their perception of competence and the temporal dynamics of social relations within the team. However, given the reciprocity in the coach-athlete relationship, it is important that volunteer parent-coaches are also satisfied and motivated when they are coaching young players.

Oral presentations
Topics: Well-being and quality of life

Effects of running intensity on subjective vitality and perceived fatigue in daily life

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University of Salzburg, Austria

Decades of research have shown the positive effects of exercise on well-being and mental health. But still, inconclusive results between the dose of physical activity (intensity, duration, frequency) and affective outcomes reveal that more research is needed (Chan et al., 2019). In particular, more studies with experience sampling designs, covering daily reports over consecutive weeks, may help to explore the theory of dose-response and exercise behavior outside the lab. Thus, the present study aimed to identify the effect of running intensity on subjective vitality (Buchner et al., in preparation) and perceived fatigue (Micklewright et al., 2017) in young female novices (N = 26, M = 23.69 years, SD = 3.2) in daily life. During an eight-week running intervention study, participants completed on average 20 solo outdoor running sessions (SD = 3.9) of about 30 min. Participants rated three times daily their subjective vitality and perceived fatigue as well as the post-running shift of both measures. Participants ran with light (39%), moderate (59%), and high (2%) intensities. Multilevel analysis revealed, that a higher training dose predicted a higher positive shift in post-running subjective vitality ($p < .05$) but not in post-running perceived fatigue. Subjective vitality was higher and perceived fatigue was lower on running days and subsequent days compared to others ($p < .05$). Generally, perceived fatigue had a negative impact on subjective vitality ($p < .01$). The present findings demonstrate the sensitivity of running intensity on subjective vitality and perceived fatigue and contribute relevant outcomes for future physical activity guidelines.

Oral presentations
Topics: Talent identification/ development

Exploring organisational culture, talent development environments and team cohesion of six South African water polo high schools

Lwazi Nga Madi[1], Per Göran Fahlström[2], Heinrich Wilhelm Grobbelaar[1]
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This study explored contributing factors to success and player development in competitive school sport, aiming to 1) compare talent development environments (TDEs) and team cohesion (TC) of six high schools', and 2) explore the role of organisational culture (OC) in creating effective TDEs. Phase 1: 146 boys (15.51±1.23 years) completed the TDEQ–5 and YSEQ before the 2020 Mazinter Cup. The top-3 and bottom-3 teams were compared on TDE and TC (u/15 & u/18s). Successful u/18 teams had higher TDEQ–5 Overall, Alignment of Expectations, Support Network, YSEQ (Overall Cohesion), Task and Social Cohesion scores. There were no differences for the u/15s. Phase 2: A comparative case study with two purposively selected schools (identified from phase one) to understand how one school consistently outperformed the other. Semi-structured interviews were conducted with coaches and captains (u/15 & u/18). Using Henriksen et al.'s (2011) Environment Success Factors model as theoretical framework, similarities and differences were noted regarding preconditions, processes and OCs. Principles of thematic analysis were applied to analyze the information. The consistently performing school maintained strong coach-to-coach relationships, encouraged interaction between age-group coaches and implemented similar processes, thereby contributing to a stronger OC. High schools should provide nurturing TDEs that incorporate interventions aimed at fostering TC, as it may enhance performance and foster long-term player development. Stable TDEs with robust OCs and well–aligned processes from junior to senior age-group levels performed consistently better. A positive OC may facilitate the development pathway of players and may explain short to medium-term differences in team performance.

Oral presentations
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Mental fatigue effects on motor task and performance

Gian Mario Migliaccio[1], Tania Orgiana[1], Manuel Matteo[1], Riccardo Tocchetto[1], Mattia Camiciottoli[1], Johnny Padulo[2]
[1]Sport Science Academy, Italy; [2]Università degli Studi Milano, Department of Biomedical Sciences for Health

Aim

Mental fatigue (MF) has been defined as a psychobiological state caused by prolonged periods of demanding cognitive activity (Boksem & Tops, 2008). However, the impact of mental fatigue in motor task as the reaction time (RT) to visual stimuli remains largely unknown.

Materials and methods

Therefore, 45 subjects (age 29.18±3.25 y) induced by a routine of 15 minutes of Stroop-Test (PsyTool), with 600 tasks and 5 different colours. Heart rate (HR) was recorded with Cardio-Polar in pre Stroop-Test, during Stroop-Test (every 5'), post Stroop-Test and 1', 3' and 5' after Stroop-Test. While RT were evaluated in pre/post Stroop-Test with a Cognitive Fun software. Univariate ANOVA and Bonferroni Post-hoc was used to compare HR in-between conditions and t-test to compare the RTPR (Pre Stroop-Test) vs. RTPO (Post Stroop-Test). The significance level was fixed at priori as $\alpha < 0.05$.

Results

Analysis of variance (ANOVA) for HR showed a Fischer value of 6.051 and $\eta 2 = 0.101$ with $p<0.001$; while the post-hoc showed a significant difference ($p<0.05$) during the Stroop-Test (HR were 36.58±5.40, 40.31±6.36 and 42.87±7.36 %HRMAX at the 1st 2nd 3rd point, respectively) compared to the other conditions. RTPR and RTPO was 310.29±38.34 and 334.12±38.79 ms ($p= 0.0029$), respectively.

Conclusion

The present findings suggest that the parasympathetic branch of the autonomous nervous system functioning as a relaxation system tends to be activated under increasing mental fatigue with a decreased performance (RT). Therefore, the athletes could use MF induced during the training to improve the time delay related to the motor task.

Oral presentations
Topics: Prevention and rehabilitation

Exploring the Return-to-competition Experiences of Injured Team Sport Athletes

Nikita Davis, Heinrich Wilhelm Grobbelaar
Stellenbosch University, South Africa

Some athletes may not be psychologically ready to return to competition (RTC) after injury, despite being medically cleared. The study aimed to analyze the lived experiences of team sport athletes who sustained injuries (lasting ≥2-months). Seven elite participants (five men, two women; five national team, two provincial team, M: 24.57 ± 1.51 years) were interviewed and completed three questionnaires (measuring fear avoidance, psychological responses and psychological readiness) before and after their first match after injury. Qualitative information were elicited, in line with Wiese-Bjornstal et al.'s (1998) Integrated Model of Psychological Response to the Sport and Injury Rehabilitation Process. Fourteen semi-structured interviews (one before, one after RTC) were analyzed using descriptive phenomenology, applying inductive and deductive reasoning. Four themes (and sub-themes) emerged: 1) established identity (athletic, personal); 2) cognitive appraisal (positive/negative appraisals, perceived benefits, sense of loss, overcoming adversity); 3) emotional responses (positive/negative responses, fear of unknown, fear of re-injury, previous performance level concerns, external perceptions); and 4) behavioral responses (rehabilitation adherence, avoiding maladaptive behaviors, social support, self-talk). Quantitative data revealed moderately high fear levels for three players who were not psychologically ready to RTC, possibly predisposing them to (re-)injury, poor competitive experiences or performances. Two participants who underwent rehabilitation during the COVID-19 lock-down, revealed favorable experiences and psychological readiness to RTC, as they did not experience time-pressure to return. The findings emphasize the need for psychological support and social reintegration of athletes to teams when they RTC and raises questions about the extent to which medical teams consider psychosocial factors.

Oral presentations
Topics: Prevention and rehabilitation

Comparing the effects of virtual reality and real-world training for soccer heading

Ben Marshall, Liis Uiga, Johnny Parr, Greg Wood
Manchester Metropolitan University, United Kingdom

Soccer heading causes impairments in cognitive and neurophysiological function, even after short bouts of acute practice (Ashton et al., 2021). Governing bodies such as UEFA, US Soccer, and the Premier League have recently introduced guidelines for limiting the amount of soccer heading players are exposed to in training and matches. However, heading remains integral within soccer and coaches are presented with a dilemma concerning training an important skill and the long-term well-being of players.

Training soccer heading in virtual reality (VR) is a potential solution which would allow players to train this skill without the subconcussive impact of heading an actual ball. In the present study, recreational soccer players trained soccer heading in three groups: a VR training group (n = 10) who completed three 30-minute sessions over a period of seven days using an immersive VR soccer simulator, a real-world training group who performed the equivalent amount of training (n = 10), and a control group (n = 10).

Participants heading confidence and perceptions of heading ability were assessed at pre-test and post-test along with the number of headed goals scored. Heading accuracy was measured using Kinovea analysis software. Data collection and analysis is currently ongoing. The results of this study could support the use of soccer heading training in VR to limit exposure to subconcussive events.

• Ashton, J., Coyles, G., Malone, J. J., and Roberts, J. W. (2021) Immediate effects of an acute bout of repeated soccer heading on cognitive performance. Science and Medicine in Football, 5(3), pp. 181-187.

Oral presentations
Topics: Coaching

Six-month Stability of Individual Differences in Sports Coaches' Burnout, Self-compassion and Social Support

Nadja Ackeret[1,2], Philipp Röthlin[1], Mathias Allemand[3], Tobias Krieger[2], Thomas Berger[2], Hansjörg Znoj[2], Göran Kenttä[4], Daniel Birrer[1], Stephan Horvath[1]

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Using a three-wave prospective cross-lagged panel design, the study examined six-month stability of burnout, self-compassion and social support among sports coaches in terms of measurement invariance, mean-level change, rank-order stability, and structural stability. The participating coaches (N = 422; Mage = 44.48, SD = 11.03) completed an online questionnaire measuring self-compassion, social support, coach burnout and demographics at baseline and two follow-ups at three months and six months. The various forms of stability were assessed using structural equation modeling. There was no significant mean-level change in burnout, self-compassion, or social support, and all three constructs exhibited measurement invariance. Rank-order stability remained relatively high, ranging from .78 to .94 across the three time points. For all three constructs, covariances between latent factors were invariant over time, indicating high structural stability. While self-compassion and social support were positively related, both were negatively related to coach burnout. These results confirm the importance of preventing and addressing symptoms of burnout, low self-compassion and poor social support in sports settings.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Home advantage and referee bias in matches behind closed doors: An analysis of domestic leagues of UEFA top ranked countries

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The home advantage and the subconscious referee bias regularly occur in professional sports (Carron et al., 2005; Dohmen & Sauermann, 2016). In particular, in association football these two phenomena are consistently documented across several competitions (e.g., Gómez-Ruano et al., 2022). Among the various factors determining them, spectators' support has always been considered as one of the most relevant; yet, normally it was difficult to isolate its contribution from that of the other factors during actual matches (Ponzo & Scoppa, 2018). The possibility to systematically study the effects of spectators' support – or, better, of its absence – in an ecological context was given by the numerous matches played behind closed doors due to the COVID-19 pandemic. Considering both outcome and performance variables for the home advantage (e.g., points earned and shots, respectively), as well as several variables for the referee bias (e.g., cards and extra time), we investigated whether the two phenomena still occurred – and in case to what extent – in matches without spectators. Data from the last part of the 2019/2020 season for the first and second divisions of the top four countries in the UEFA ranking (841 matches) revealed a significant reduction of home advantage with respect to the three previous seasons, as well as the absence of referee bias (Sors et al., 2021). Data from the 2020/2021 season (3,898 matches) are consistent with such results (Sors et al., under review), highlighting that spectators actually contribute to determine the dynamics and outcomes of professional football matches.

Oral presentations
Topics: Cultural sport psychology

A Qualitative Description of Canadian High School Coaches' Perceived Challenges and Recommendations Related to Social Justice

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Although the context of sport offers distinct opportunities to promote social justice, sport culture can simultaneously endorse stereotypes and reinforce systemic inequities (Cunningham et al., 2021). Given that coach support is known to influence athlete activism (Fuller & Agyemang, 2018), research on coaches' perspectives of social justice is warranted. The purpose of the study was to explore Canadian high school sport coaches' attitudes towards social justice within the context of high school athletics. An online survey was distributed to coaches across Canada, which included open-ended questions on perceived challenges (three questions) and recommendations (three questions) related to social justice considerations within their teams, schools, and school boards. A total of 394 coaches (62% men, 85% White) answered at least one of the six questions. In total, 1028 entries for challenges and 794 entries for recommendations were recorded. A qualitative description analysis was conducted allowing for low-inference interpretation and straight descriptions of coaches' perceptions. Overarching challenges included racism, gender equity, mental health, disability, poverty, and climate change. Overarching recommendations included education, funding, dialogue, and guest-speakers/events. Further analysis led to classifying coaches' perceptions into three groups: (a) high school sport faces social justice issues (53%), (b) no challenges to report (44%), and (c) urgency regarding social justice is overblown (3%). The results complement and extend recent research (e.g., Newman et al., 2021) indicating that many coaches do not perceive the existence of social justice issues in youth sport. Implications for future research relating to social justice coach education in Canada are discussed.

Oral presentations
Topics: Youth

Social and Emotional Skills Learned through Sport: An Overview of the LiFEsports Initiative

Samantha Bates[1], Dawn Anderson-Butcher[1], Anthony Amorose[2]
[1]The Ohio State University; [2]Illinois State University

Youth today struggle with a wide variety of issues, many relating to their social and emotional development. Thus, interventions, programs, and implementation strategies that promote social and emotional skill development are growing priorities in schools, afterschool programs, and sport (Durlak et al., 2011; Matula, 2004). The purpose of this presentation is to overview findings associated with the Learning in Fitness and Education through Sports Initiative at The Ohio State University (LiFEsports). LiFEsports is a sport-based positive youth development initiative that uses sport and play to teach four key social skills: self-control, effort, teamwork, and social responsibility (S.E.T.S). Each year LiFEsports serves over 1,100 youth in different social settings including schools, afterschool programs, and through its trademark four-week summer camp. Over the last 10 to 12 years, scholars implementing the program have uncovered key curricular mechanisms that promote social-emotional learning (Anderson-Butcher et al., 2021), as well as uncovered essential design components that contribute to broader health and well-being outcomes for youth (Anderson-Butcher et al. 2014). Importantly, the intervention focuses on using sport as a context for social and emotional skill development by teaching youth how to transfer S.E.T.S. to other key environments such as at home, at school, and in the community. This research presentation will focus on lessons learned over the last 10 years related to the implementation of LiFEsports, key curricular mechanisms and design components that promote social and emotional skill development through sport, and positive outcomes associated with long-term participation in the LiFEsports program.

Oral presentations
Topics: Clinical issues in sport and physical activity

Sport Participation and Adolescent Mental Health

Dawn Anderson-Butcher[1], Anthony Amorose[2], Samantha Bates[1]
[1]The Ohio State University, United States of America; [2]Illinois State University, United States of America

Mental health is a growing public health concern, and identifying protective factors is essential to addressing leading health challenges among adolescents (Siefkin et al., 2019). The purpose of this study was to explore (a) the direct effects of sport participation on adolescents' sport and social competence; and (b) the indirect effects of sport participation on adolescents' mental health outcomes. The study was conducted among a U.S. sample of 2,121 adolescents (M age = 15.29 years, 52.6% Male, 70.9% White; 57.8% involved in sport). Participants completed self-report measures assessing sport competence, social competence, and internalizing and externalizing behaviors (i.e., mental health; see Amorose, 2002; Anderson-Butcher et al., 2013). We tested a model in Mplus Version 8.1 where sport participation had a direct effect on sport and social competence, each of which in turn were predicted to influence the mental health outcomes. Results indicated adequate model fit (X2(2)=7.03, p<.03; RMSEA = .03; CFI = 1.00) with all relationships in the expected directions and significant (p<.01). Sport participation predicted sport competence (β=.61), which predicted internalizing (β=-.27) and externalizing behaviors (β=.07). Similarly, sport participation predicted social competence (β=.21), which predicted internalizing (β=.-.41) and externalizing behaviors (β=-.13). The model accounted for 11% of the variance in internalizing behaviors and 16% of externalizing behaviors. The total indirect effects of sport participation on internalizing behaviors (β=-.24) and externalizing behaviors (β=-.06) were significant (p<.01). Findings contribute to an important discussion about how sport participation can promote self-efficacy and social skill development and therein positively influence adolescent mental health.

Oral presentations
Topics: Clinical issues in sport and physical activity

Symptoms of Depression in Athletes: Who´s at Risk and for Which Symptoms?

Richard Eiríkur Tahtinen[1], Hafrun Kristjansdottir[2], Daniel Olason[3], Robert Morris[4]
[1]University of Akureyri, Iceland; [2]Reykjavik University; [3]University of Iceland; [4]University of Stirling

Depressive symptoms research in athletes commonly report group differences based on summed symptom scores. However, considering the heterogeneity of depressive symptoms, utilizing merely sum-scores in comparative research may mask important information concerning the underlying issues that may be of special relevance across groups (Fried et al., 2014).Therefore, we explored differences in the odds of experiencing different types of depressive symptoms across athletes' age, sex, type of sport, and competition level. Participants (N=894, age=18-42 years) competed in football (n=441, male 70.1%), basketball (n=238, male 62.6%), and handball (n=215, male 51.2%), and nine depressive symptoms were assessed by the Patient Health Questionnaire (PHQ-9). Females had higher odds of depressed mood, fatigue, problems with sleep, appetite, worthlessness/guilt, and concentration than males. Among athletes with clinically significant sum-scores (PHQ-9≥10), females had higher odds of fatigue, but lower odds of psychomotor problems than males. Among males, younger athletes had higher odds of decreased interest, depressed mood, and problems with sleep and appetite than older athletes (age≥ 27). Among females, younger athletes had higher odds of depressed mood, problems with concentration, and worthlessness/guilt than older athletes (age≥ 24). Interestingly, controlling for age and type of sport, competition level accounted for little variability across the depressive symptoms. These findings underline the importance of exploring differences in the underlying symptomatology. By providing more detailed information about the specific symptoms that may be especially prevalent in different athlete populations, future research could more systematically map the relevant individual level and contextual risk factors that may contribute to these symptoms.

Oral presentations
Topics: Mental skills training

Increasing para-athletes' use of psychological skills through online learning modules

Frank O. Ely[1], Krista J. Munroe-Chandler[1], Todd M. Loughead[1], Jeffrey J. Martin[2]
[1]University of Windsor, Canada; [2]Wayne State University, United States

Athletes with a physical disability have been shown to use and benefit from psychological skills training (PST) (Esatbeyoglu & Campbell, 2018; Martin & Malone, 2013). However, many of these athletes have limited access to PST (Dieffenbach & Statler, 2012) and applied intervention research in this area is rare. As such, the purpose of this research program is to deliver and evaluate a longitudinal PST program for athletes with a disability. When participants enroll in our free online program (learnpst.com) they are provided access to eight interactive learning modules. Each module presents a unique psychological skill and is administered once a month for eight consecutive months. Participants' use of psychological skills is assessed at three time points (pre-, mid-, and post-intervention) using a modified version of the Test of Performance Strategies-2 questionnaire for practice (Hardy et al., 2010). Although data collection is ongoing, findings from those who have completed the first four modules (goal setting, imagery, self-talk, and routines) will be presented here. Results indicated that participants (N = 11; Mage = 32.72 years, SD = 12.32) increased their use of all four psychological skills during practice, with statistically significant positive changes in: goal setting, $t(10) = -2.49$, $p = .03$; imagery, $t(10) = -2.75$, $p = .02$; and self-talk, $t(10) = -2.30$, $p = .04$. These findings suggest that this online program has the potential to help athletes with a disability to learn about psychological skills and increase the frequency with which they use such skills in practice.

Oral presentations
Topics: Coaching

An Evaluation of Canada's National Coaching Framework

Joseph J Gurgis, Bettina Callary
Cape Breton University

Over twenty years ago, the National Coaching Certification Program (NCCP) competency-based framework was developed by the Coaching Association of Canada. The framework represented a shift from traditional coach training to competency-based education, which utilizes experiential learning strategies to foster a learner-centred environment (Demers et al., 2006). The practical utility of competency-based coach education has been praised for teaching coaches how to work with athletes (Banack et al., 2012). The framework is defined by seven coaching outcomes that are utilized across three streams of coaching contexts. Almost 100 criteria outline how each outcome is evaluated depending on the coaching context (Coaching Association of Canada, 2011). Given the changing landscape of Canadian sport over the last two decades, it is important to review the NCCP framework to understand whether changes are needed to meet the evolving demands of coaching in Canada. Thus, the following project aimed to evaluate NCCP stakeholders' perceptions of the NCCP framework to assess its perceived impact on coach development. The project adopted a sequential mixed-methodology and utilized online surveys (N=81) and eight focus groups to assess NCCP stakeholders' recommendations for improvements and perceived strengths and weaknesses related to the NCCP framework. The data were analyzed using descriptive statistics and thematic analysis (Braun et al., 2019). The findings suggest some modifications to Canada's NCCP framework, characterized by changes to current outcomes, the simplification of criteria and evaluation processes, and the inclusion of alternative outcomes pertaining to program design, long-term development, effective leadership, and Safe Sport.

Oral presentations
Topics: Developmental/ lifespan perspectives

Parent and Coach Evaluation of A Story-Based Positive Youth Development Program For Young Ice Hockey Players

Jennifer Coletti[1], Kelsey Saizew[1], Karl Erickson[2], Jean Côté[1], Luc J Martin[1]
[1]Queen's University, Canada; [2]York University, Canada

For sport offerings to foster positive outcomes for youth, they must promote engagement, enjoyment, and quality social relationships (Côté et al., 2021). The current project prioritized this understanding through a partnership between a non-profit organization (The Ladd Foundation), a story-based curriculum company (Impact Society), and our research team. The objective was to create and evaluate a positive youth development (PYD) program for young ice hockey players—The 1616 Program. Informed by PYD literature and the Knowledge-To-Action (KTA) framework (Graham et al., 2006), the program used elite ice hockey players and story-telling to introduce youth to important PYD concepts, and critically, included resources for coaches and parents to facilitate youth development. This presentation describes the evaluation of the coach and parent components of the 5-week proof-of-concept program that took place Fall 2021. Program quality (Bean et al., 2018) and feelings of capability, opportunity, and motivation to help athlete development (Michie et al., 2014) were assessed through (a) pre/post focus group interviews (n = 27 parents; n = 8 coaches) and (b) pre/post questionnaires (n = 89 parents; n = 11 coaches). Qualitative and statistical analyses highlighted that parents/coaches felt the program facilitated positive development, while also improving their understanding of opportunities to support athletes. For example, responses on measures of capability, opportunity, and motivation increased from measures obtained pre-program. However, parents and coaches also highlighted how the frequency of resource delivery was challenging in its current form. Findings will be discussed in detail as they pertain to the final 1616 Program.

Oral presentations
Topics: Developmental/ lifespan perspectives

The Development and Evaluation of a Story-Based Positive Youth Development Program For Young Ice Hockey Players

Kelsey Saizew[1], Jennifer Coletti[1], Karl Erickson[2], Jean Côté[1], Luc J. Martin[1]
[1]Queen's University, Canada; [2]York University

Despite the established benefits of participating in youth sport, purposeful efforts must be made to ensure that they are age-appropriate, promote engagement and enjoyment, and involve quality social relationships (Côté et al., 2021). The current project represented an integrated knowledge translation (iKT) endeavour, with the objective of developing and evaluating a story-based positive youth development (PYD) program for young ice hockey players—The 1616 Program. The program used elite ice hockey athletes —through story-telling—to engage youth with important concepts about PYD. The development of a 5-week proof-of-concept program was guided by the Knowledge-To-Action (KTA) framework (Graham et al., 2006), which involved synthesizing and applying knowledge in a practical setting during Fall 2021. The preliminary evaluation comprised the assessment of (a) barriers and facilitators through interviews with 14 youth athletes who were recruited by word of mouth (aged 10-11 years; 22% girls) and (b) questionnaire data from 174 youth athletes who participated in the program (aged 9-14 years; 44% girls) based on dimensions from the RE-AIM framework (Glasgow et al., 1999). Both qualitative and quantitative analyses demonstrated that youth enjoyed the elite athlete stories and learned something about themselves in the process. Process evaluation data also showed weekly engagement with the program content. However, youth highlighted the need for the content to be age-appropriate, as older athletes (aged 14 years) found the videos less enjoyable and younger athletes (aged 10 years) had difficulty understanding the weekly messages. These findings and their implications for the final program will be discussed.

Oral presentations
Topics: Self

The internal/external frame of reference model in the physical and verbal subdomain and their associations with self-esteem

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Based on 825 students from fifth- to ninth grade, this cross-sectional study investigated how grades relate to self-concept formation in the academic (i.e., verbal) and non-academic (i.e., physical) domain using the Internal/External Frame of Reference Model. Relations between self-concept domains and general self-esteem were investigated. Considering the well-established empirical evidence on gender differences in the different subdomains, measurement and structural invariance were tested across female and male students. Grades, self-concept, and self-esteem were assessed via questionnaires. Structural equation modeling revealed positive relations between grades and associated self-concept subdomains (β = .45 - .50, $p < .001$). A negative association was found between the grade in Physical Education and verbal self-concept (β = -.07, p <. 05). In addition, the findings demonstrate that the association between physical self-concept and general self-esteem ($r = .60$, $p < .001$) was stronger than the association between verbal self-concept and self-esteem ($r = .20$, $p < .001$). Gender-stereotypical differences were found only in the mean values of self-concept subdomains and general self-esteem, but not with regard to the relations among constructs. The results indicate that dimensional comparison might occur across the physical and verbal domains. Furthermore, physical self-concept might be a salient and meaningful source for general self-esteem in youth. Implications for self-esteem enhancing interventions in youth and adolescence will be discussed.

Oral presentations
Topics: Transitions in and out of sport/ dual career

Graduated from high school and what now? Junior elite athletes' intentions to pursue a dual career

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Junior elite athletes often drop out from sport once they graduate from high school (Enoksen, 2011). Previous studies have shown that different intrapersonal, interpersonal and structural factors are related to dropout behavior of young athletes in soccer (see review Schlesinger et al., 2018). However, there is a lack of research investigating junior elite athletes' intentions to pursue a dual career (e.g., combining elite sports with a further education or job training) once they graduate from high school. Thus, the aim of this study is to investigate how these aforementioned factors are related to the intention of planning a dual career during the critical high school graduation phase. Junior elite athletes from multiple sports with a minimum age of 16 years that are still enrolled in school were recruited for this study. Athletes will complete an online survey until March 2022 including measures of intrapersonal (e.g., athletic identity), interpersonal (e.g., social support) and structural (e.g., financial security) factors. As criterion variable for dual career intention participants have to respond to the question, 'Will you continue to participate in the competitive sport system after graduation?'. Associations between dual career intention and intrapersonal, interpersonal and structural factors will be analyzed. Furthermore, practical implications for how to prevent dropout of junior athletes will be discussed.

Oral presentations
Topics: Coaching

Building and Maintaining Strong Parent-Coach Relationships in Youth Tennis: Parent and Coach Perspectives

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Parents and coaches who communicate openly, share goals for athletes' development, and trust and respect each other's role within youth sport have more positive parent-coach relationships (Horne et al., 2020; Wall et al., 2019). Despite this, tennis parents and coaches can struggle to develop positive relationships (Gould et al., 2016), potentially due to differences in the types of behaviours parents and coaches value within the relationship. Therefore, this study aimed to understand what coaching behaviours parents and coaches perceived to be most important in maintaining and building strong parent-coach relationships. An online questionnaire using open-ended questions was used to gather coaches' (N=52) and parents' (N=224) perspectives across four stages of competitive youth tennis. Demographic details (e.g., years of experience) will be presented. A content analysis revealed similarities and differences between perceptions of the coaching behaviours they felt were most important to building and maintaining strong parent-coach relationships. Both parents and coaches of younger athletes agreed coaches needed to demonstrate care and commitment for the child by sharing goals and communicating around athletes' holistic development. As athletes matured, however, parents wanted coaches to continue to communicate and collaborate with them to tailor and specialise athletic development whilst coaches believed communication was an opportunity for coaches to acquire parents' trust and respect by providing honest, albeit one-directional, feedback about athletic development. Implications around the research design (e.g., strengths/limitations) and for parent and coach education in how actor-partners view different behaviours as most influential to relationship quality will be presented.

Oral presentations
Topics: Elite sports and expertise

Exploring the Knowledge, Thoughts and Experiences of Virtual Reality Training in Elite Football and Baseball.

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Despite the perceived benefits of implementing Virtual Reality (VR) training in elite sport (Gray, 2019), arguably the most important element – the thoughts, knowledge, and experiences of practitioners – has been largely understudied. Therefore, the present study aimed to explore practitioners' knowledge of VR, current and past usage, important factors for implementation, and perceived obstacles in elite football and baseball via an online questionnaire. Football respondents (n = 25) represented practitioners from major football leagues across the world, and baseball respondents (n = 15) represented practitioners from Major League Baseball. Both football and baseball respondents reported that the most important factor for implementation of VR training was improvement in on-field performance, whether this be mental, tactical, or technical. Furthermore, both football and baseball respondents highlighted cost as the biggest obstacle at their current club. Notably, one-way independent measures ANOVAs revealed that football respondents perceived coach ($p = .014$) and executive approval ($p < .001$) as significantly greater obstacles than baseball respondents. Regression analyses showed that a lack of executive approval was best predicted by the obstacle of cost ($p = .021$), whereas a lack of coach approval was best predicted by VR being perceived as a gimmick ($p = .014$). One-way independent measures ANOVAs revealed that football respondents had a significantly higher mean rating for obstacles ($p = .006$) and significantly lower perceived knowledge of sport-specific VR than the baseball respondents ($p < .001$). These findings have considerable implications with regard to the potential application of VR training in football and baseball.

Oral presentations
Topics: Motor control and learning

How does an internal focus of attention alter the functional coupling between the brain and muscles?

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An internal focus of attention (IF) – compared with an external focus of attention (EF) – can disrupt motor performance, learning and resilience to fatigue. Although the behavioural outcomes using an IF strategy are well investigated, the underlying neural mechanisms remain poorly understood. A relatively consistent finding is that an IF increases electromyographic (EMG) activity, suggesting less economic neuromuscular output. However, the underlying brain mechanisms responsible for the increased and/or less efficient muscular activity are not known. Corticomuscular coherence (CMC) measures the synchronisation between brain (via EEG) and muscle (via EMG) electrical activity and is proposed to reflect the cortical control of motor unit firing via the direct corticospinal pathway. Research suggests that CMC between the upper-limb and contralateral motor cortex increases with increased precision and skill. Conversely, CMC is reduced under increased attentional demands and is lower in movement disorders. It is, therefore, possible that the disadvantage of an IF compared to an EF can be examined through changes in CMC and the efficiency in which cortical control of ongoing muscular activity is maintained. The aim of the present study was to determine whether the manipulation of focus of attention (external vs internal) has a direct effect on CMC during a sustained hand contraction task. We hypothesise that an IF would result in decreased force steadiness, increased EMG activity and decreased CMC compared to EF. Findings will provide novel insights on the neurophysiological mechanisms linking attentional focus with motor performance.

Oral presentations
Topics: Elite sports and expertise

Relationships between stress, coping, performance and burnout during the Tokyo 2021 Olympic Games qualification phase

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The Olympic Games are often considered by elite athletes to be the pinnacle of their athletic career. The qualification phase of the Olympic Games then becomes a particularly stressful period for the athletes, that may expose them to chronic stress and have negative effects on their performance and health. Thus, this study aimed to explore the dynamic relationships of stress and coping processes and their consequences on performance and burnout among elite artistic swimmers during the Olympic Games qualification phase. Fifteen elite artistic swimmers (Mage = 21 years, SDage = 2.85 years) participated in this study during the Olympic Games qualification phase (January-May 2021). Using a single-item definitional approach, they completed an online questionnaire once a week measuring stress appraisals (i.e., stress intensity, stress direction, perception of control), individual and collective coping strategies, performance, and burnout (i.e., 19 measure time-points). The results of the random coefficient regression models indicated that at the individual level (1) mastery coping mediated the association between stress direction and reduced sense of accomplishment ($\beta = -2.31$, $p = .02$), and (2) goal withdrawal coping marginally mediated the association between stress direction and negative feelings towards sport ($\beta = -1.85$, $p = .06$). At the collective level, communal management of emotions marginally mediated the association between collective perception of control and team performance ($\beta = 1.78$, $p = .07$). This study provided new knowledge at individual and collective levels on the dynamic nature of the relationships between stress appraisals, coping, performance, and burnout among elite athletes during the particular stressful period of the qualification phase for Olympic Games.

Oral presentations
Topics: Youth

'They care about my golf, but they care about me more': A daughter-first approach to providing emotional support in youth golf.

Shannon Burke, Lee-Ann Sharp, David Woods, Kyle Paradis
Ulster University, United Kingdom

Introduction: Research examining the parent-athlete relationship has demonstrated the behaviours parents exhibit play a significant and influential role in the continued participation, development, and experiences of youth athletes (e.g., Leff & Hoyle, 1995; Williams et al., 2013). These investigations have furthered our understanding of parenting in youth sport, however, there remains an absence of empirical research examining parental support across a variety of sports and cultures.

Purpose: This study sought to conduct a cross-cultural examination of perceived emotional parental support in female youth golf.

Methods: The Straussian variant of grounded theory (Corbin & Strauss, 2015) was adopted. Sixty-one female youth golfers aged 12 – 19 years were recruited from National Governing Bodies in Australia, New Zealand, Ireland, England, Scotland, Finland, and Canada. Online synchronous focus groups were utilized for data collection. Data analysis included three phases: open-coding, axial coding, and theoretical integration.

Results & Implications: Results revealed that in the provision of emotional support, parents adopting a 'daughter-first' approach was important when supporting their child-athlete. Employing this approach meant placing the child-athlete at the centre of the support provision and displaying behaviours that; (1) demonstrated unconditional love, support, and presence (e.g., providing unconditional verbal and non-verbal positive reinforcement); and (2) were development focused (e.g., emphasizing sport development and enjoyment rather than performance outcomes). Athletes revealed that receiving this support demonstrated that they were supported unconditionally, and alleviated pressure to perform. In addition to providing new theoretical insights, results from this research have several applied implications.

Oral presentations
Topics: Well-being and quality of life

‘Pushing myself beyond the limits’: exploring the pain experiences of female ultra-endurance athletes using a biopsychosocial lens

Britta Maria Sorensen, Carla Meijen, Stacy Winter, Emily Martin
St Mary's University, Twickenham, London

Experiencing pain in ultra-endurance sport is an expected, accepted, and normalized aspect of participation (Antonini-Phillipe et. al., 2020). Pain is not just sensory, it is influenced by biological, psychological, social factors, and personal life experiences (Melzack & Katz, 2012). Therefore, an opportunity exists for researchers to consider a biopsychosocial lens to qualitatively explore pain experiences and coping. This interpretative phenomenological analysis (Smith et. al., 2022) study aimed to gain a rich and holistic insight into how female ultra-athletes made sense of their lived pain experiences during training and competition events, and the development of their pain coping strategies. Thirteen female ultra-athletes (aged between 35 and 55 years old) based in Europe, Northern America, or Australasia participated in one semi-structured interview, which explored the biological, psychological, and social interacting influences on their pain experiences (e.g., what factors have influenced this perception?). Participants had a minimum of five years racing experience in a range of ultra-sports, competing at amateur or professional level events. The cross-case analysis produced two group experiential themes: ‘I really pushed myself above and beyond the call of duty’ and ‘Experience is gold’ representing how the athletes’ self-reflections on pain experiences helped to control their pain in future performances. Various biopsychosocial factors influenced their underlying drive to push through pain, e.g., life experiences, characteristics, significant others, hormones, gender-related perceptions, and overuse/overtraining. Practical implications highlighted the importance of a balanced self-awareness of wellbeing between the benefits of high tolerance levels and pushing beyond physical limits into self-harm situations.

Oral presentations
Topics: Well-being and quality of life

1-year follow-up of an RCT on transdiagnostic effects of an exercise intervention in patients with heterogenous mental disorders

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Although several studies have reported benefits of exercise on symptoms of mental disorders (Ashdown-Franks et al., 2020), long-term follow-up studies are rare. Long-lasting effects on global symptom severity (GSS) and exercise behaviour have never been investigated among a heterogenous outpatient sample. The promotion of self-efficacy (SE) and exercise-specific affect-regulation (ESAR) seem be crucial for long-lasting treatment effects (Carey et al., 2018). The present study reports 1-year follow-up data of the ImPuls study (Zeibig et al., 2021) in which 74 outpatients with depression, anxiety disorders, insomnia or ADHD were randomized to a 12-week exercise intervention (n=38), or a passive control condition (n=36). As primary outcome, global symptom severity and as secondary outcomes, subjective exercise, SE and ESAR were assessed at baseline (T1), post-treatment (1-2 weeks after intervention; T2) and one year after post-treatment (T3). Intention-to-treat analyses were conducted using linear mixed models. From T1 to T3, the intervention significantly improved GSS (d=-0.43,p =.031), exercise (d=0.45, p=.011), SE (d=0.47,p =.017) and ESAR (d=0.44,p =.028) relative to the control group. A larger increase of SE (T1-T2) was not associated with more engagement in exercise at T3 ($\chi2(1,N=39)=0,p=1.000$). A larger increase of ESAR (T1-T2) was associated with more clinically significant changes on GSS (T1-T3) only among the intervention group (U=11.5, p=.011). Exercise might be an efficacious and long-lasting treatment option within outpatient mental health care settings with ESAR as one mechanism of action of long-lasting treatment effects.

Oral presentations
Topics: Decision making and judgement

The impact of video-based exposure to opponents on anticipation in expert and novice soccer players

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Expert soccer players integrate prior opponent-specific information with evolving visual information more effectively than novices; this, in turn, enables faster and more accurate anticipation (Gredin, et al., 2020). Despite recent years' increasing use of performance analyses in sport (Marković et al., 2020), little is known about the utility of exposing soccer players to forthcoming opponents via video. We examined the impact of increasing video exposure to an opponent with consistent and shifting action tendencies on expert and novice soccer players' processing priorities and performance during action anticipation. We employed a video-based task, where 14 expert and 14 novice soccer players had to predict the actions of an oncoming opponent. Anticipation accuracy and visual dwell time were recorded before (Pre1), in the middle of (Mid1), and after (Post1) an initial exposure phase of 36 trials. Thereafter, the same measures were collected before (Pre2), in the middle of (Mid2), and after (Post2) a second exposure phase of 36 trials. Importantly, the opponent's tendency to either pass or dribble was reversed between the exposure phases. Anticipation accuracy increased for both experts and novices between Pre1 and Mid1, and between Mid1 and Post1. For experts, anticipation accuracy decreased between Post1 and Pre2, but increased between Mid2 and Post2. Between exposure phases, experts increased the time spent looking at visual information relating to the opponents' action tendencies. Findings provide valuable knowledge to coaches and performance analysts regarding the utility of providing soccer players with opponent-specific information via video exposure in the preparation for upcoming matches.

Oral presentations
Topics: Prevention and rehabilitation

What about sport and physical activity contribution in substance use disorder recovery: Life Skills Development

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[1]University of Thessaly, Greece; [2]Therapy Center of Dependent Individuals (KETHEA)

It is well established that sport is a learning environment that provides favorable conditions for positive psychosocial development (Goudas, 2010; Danish, 1996). The purpose of the study was to describe clients' perceptions regarding the connection between sport and physical activity (PA) participation and positive life skills development. In this mixed-method research approach study, 774 clients from a total of twenty-nine organizations, from nine European countries, completed self-report tools, nineteen interviews, and five focus groups (31 participants) were conducted. Data collection took place during September 2020 to May 2021. Quantitative and qualitative analysis revealed that skills of communication (M=3.8/5), time management (M=3.4/5), teamwork (M=3.4/5) and leadership (M=3.4/5) were among the most frequent life skills identified by clients. Additionally, goal-setting skills (M=3.4/5) is considered as an important life skill to practice during sport practice, because it supports clients' commitment to their therapeutic goals and their increased sense of control on the personal progress that is made based on their goals (sport and therapy related). The results of the current study are promising, as they can contribute to the appropriate planning and promotion of sport and PA interventions, adapted to the development of life skills of individuals undergoing SUDs treatment, contributing to their sustainable recovery.

Oral presentations
Topics: Personality

"There's only room for one narcissist in this relationship": Examining the role of narcissism in coach-athlete relationships.

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The extent to which coaches and athletes can effectively work together is an essential consideration in the pursuit of athletic success. The interaction between coach and athlete personality has been recognised as a key element in understanding what makes a successful coach-athlete relationship (Jackson et al., 2011; Yang, Jowett, & Chan, 2015). However, despite trait narcissism being recognised as an indicator for performance success (Roberts et al., 2019), little is known of the effects of narcissism within the coach-athlete relationship. A sample of 122 national and international coaches and their athletes completed measures of the Dark Triad (Dark Triad Dirty Dozen: Jonason & Webster, 2010) and Coach-Athlete Relationship Questionnaire (CART-Q: Jowett & Ntoumanis, 2004). The Actor-Partner Interdependence model (APIMs) and dis/similarity effects were analysed using structural equation modelling. The findings demonstrated no actor effects (i.e., how dyadic member's personality will predict his/her own perceptions of relationship quality) for coaches or athletes on all relationship quality constructs. However, partner effects (i.e., how a dyadic member's own personality will predict his/her partner's perceptions of relationship quality) showed coaches and athletes were less committed to each other when their partner was more narcissistic. Additionally, athletes felt lower levels of closeness the higher the coaches' level of narcissism. Dissimilarity resulted in higher relationship quality for coaches. The results suggest that relationship quality is compromised when a partner's levels of narcissism are high, but coaches felt better about their relationship when there was a difference in the levels of narcissism in the dyad.

Oral presentations
Topics: Youth

Parental support and stressors associated with supporting their female youth golfer

Anna Victoria McIlmoyle, Lee-Ann Sharp, Kyle Paradis, David Woods
Ulster University, United Kingdom

Introduction: Burgess et al. (2016) emphasised the importance of parental support in youth sport as they provide financial, informational, and emotional support to the youth athlete. Parental stressors that result from supporting youth athletes are reported to include; athlete disappointment, injury, balancing between commitment and enjoyment, and lack of family time (Clarke & Harwood, 2014; Knight & Holt, 2013a; 2013b). Holt and Knight (2014) highlighted the need for a deeper understanding of parenting in sport through understanding parent's experiences.

Purpose: The aim of this study was to explore how parents support female youth golfers, specifically: (1) What stressors do parents experience supporting female youth golfers? (2) What assistance do parents need to positively support female youth golfers?

Methodology: Twenty-two semi structured interviews were conducted with parents (14 fathers, 10 mothers) of high performing female golfers in the specializing or investment stages of Cote's (1999) DMSP. Female golfers aged between 12 – 18 years old and were on National golfing pathways. Thematic analysis was used to uncover emerging themes (Braun & Clarke, 2012).

Results: Key themes emerged from analysis including three types of support provided by parents; financial, emotional, and practical support. Stressors were found to be linked to each type of support. Each theme was found to be interlinked with stressors as a result of the support, and assistance parents needed who help to reduce their own stressors and provide better support.

Oral presentations
Topics: Movement

Compassionate Movement: Introducing a Novel Construct and Initial Instrument Psychometrics

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This study aims to introduce and develop an instrument for compassionate movement – a novel construct capturing compassionate responding to gendered physical activity (PA) stressors that are associated with lower enjoyment and participation among women (Guthold et al., 2018). Established within a compassionate motivation and behaviour framework (Gilbert et al., 2017), compassionate movement involves awareness of one's PA-related distress and motivation to alleviate this distress. Phase 1 involved experts developing a pool of 21 hypothetical distressing PA scenarios. Based on preliminary testing (N = 79), 5 scenarios were selected, focusing on social comparisons, physical pain, self-objectification, goal setting, and fitness tracking. Phase 2 involved psychometric testing of the instrument via an online survey in adult women (N = 395; Mage = 33.81, SD = 12.21). Participants imagined themselves in each scenario, rated their psychological distress caused by the scenario, then indicated their compassionate responding to that distress using modified items from the Compassionate Engagement and Action Scale for Self (Gilbert et al., 2017). Leisure-time PA and related psychosocial experiences (e.g., appearance social comparisons, self-objectification, exercise motivation, attuned exercise, affective exercise experiences) were also measured. Confirmatory factor analyses revealed good model fit (CFIs>.95, TLIs>.93, SRMRs<.04, RMSEAs<.10) and internal consistency for compassionate responding to each scenario (α's>.92; ω's>.92). Compassionate movement was significantly associated with PA (r = .18) and psychosocial factors (r's = ± .30 to .68), evidencing convergent and divergent validity. Examining compassionate responding to gendered stressors in PA contexts may have utility in supporting sustained and positive PA experiences for women.

Oral presentations
Topics: Youth

Incivility and Psychological Safety in Youth Sport: The Reciprocal Effects and Its Impact on Well-being and Social Outcomes

Keita Kinoshita, Shintaro Sato
Waseda University, Japan

In youth sport, uncivil behaviors are frequent as youths are often the victims of the rude and discourteous behaviors in their sport setting. Incivility refers to insensitive behavior that exhibits a lack of respect for others, namely, disrespectful and rude behaviors (Andersson & Pearson, 1999). Incivility is a significant issue in youth sport since it negatively influences organizational and individual factors such as psychological safety, performance, and well-being. The present study aims to investigate 1) how incivility and psychological safety are associated with each other over time, and 2) the influence of the intercept (initial value) and the slope (the rate of change) of psychological safety on well-being and social outcomes (e.g., prosocial and antisocial behaviors) of youth athletes. A three-wave time-lagged data collection was employed, and the present study included two hundred eighty-three youth athletes (Mage = 16.04) who completed the survey three times. The hypotheses were tested in SEM with cross-lagged panel and growth latent curve modeling. The results showed that coach incivility at T2 and teammate incivility at T1 were significantly associated with the slope of psychological safety. In contrast, the intercept of psychological safety predicted coach and teammate incivility at T2 and well-being and social outcomes at T3. Lastly, the slope of psychological safety was significantly associated with youth athletes' well-being and social outcomes. The present study found a novel mechanism underlying the relationship between incivility, psychological safety, and essential outcomes (i.e., well-being & social outcomes) in youth sport.

Oral presentations
Topics: Well-being and quality of life

Conceptualization and Measurement of Eudaimonic Well-being of Athletes: A Systematic Review

Keita Kinoshita, Shintaro Sato, Michael Annear, Dai Sugimoto
Waseda University, Japan

Eudaimonic well-being among athletes is a growing area of research, although systematic evaluations of the conceptualization and measurement remain limited. Eudaimonic well-being has been defined in several ways (e.g., Huta & Waterman, 2014), but generally refers to positive human functioning encompassed by various psychological characteristics such as personal growth (e.g., Ryan et al., 2008). The purpose of the study was to systematically review the conceptualization and the measurement of the eudaimonic well-being of athletes. A systematic review was conducted following the PRISMA 2020 guidelines. The Mixed Methods Appraisal Tool was used to assess the risk of bias. Electronic database (e.g., PubMed) and manual searches during September 2021 identified 1616 potential articles published over about a half-century (1974-2021). After screening based on the inclusion (e.g., elite or non-elite athlete samples) and exclusion criteria (e.g., review studies), 36 articles constituting over 8,389 research participants satisfying eligibility criteria were included in the review. The current review only included the studies applying multi-component models rather than single-component models of eudaimonic well-being. More than half of the selected studies (63.8%) conceptualized eudaimonic well-being using Ryff's (1989) model. Furthermore, Ryff's Scale was the most frequently used measure to assess athletes' eudaimonic well-being. A variety of participant characteristics and psychological factors, including self-determined motivation, need satisfaction, and personality-related variables (e.g., self-compassion), were also significant precursors of eudaimonic well-being among athletes. The findings suggest that mindfulness intervention might be a significant practice to develop athletes' eudaimonic well-being.

Oral presentations
Topics: Prevention and rehabilitation

What about sport and physical activity contribution in substance use disorder recovery: professionals' perceptions

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The contribution of sport and physical exercise (PE) is vital to a wide range of benefits for the mental, emotional, social, and physical well-being of individuals under substance use disorders (SUD) recovery (Wang et al., 2014). The study was addressed professionals active in SUD recovery, with the aim of enhancing the promotion of PE and sport interventions as part of their practice. The initial purpose of the study was to capture their perceptions about the connection between sport participation and positive life skills development of individuals undergoing SUD recovery (Goudas, 2010). Furthermore, the study explored the extent to which they possess the necessary knowledge, skills, resources, and commitment to design, implement and evaluate sport interventions in SUD recovery. In this multi-method research approach study, 421 professionals from a total of 62 organizations, from 9 European countries, completed a self-report tool (Woodard et al., 2004), and also 26 interviews, and 4 focus groups (30 participants) were conducted based on an interview protocol. Data collection took place from September 2020 to May 2021. Quantitative and qualitative analysis showed that professionals support the idea that sport is a safe environment where individuals with SUD can develop positive life skills. However, while they state knowledge of the values of sport in SUD recovery (M=4.4/5) and they also state high commitment (M=4.3/5) to the sport promotion in the specific population, at the same time they declare deficits of skills (M=3.2/5), and resources (M=3.2/5) for the implementation of sport programs.

Oral presentations
Topics: Paedagogical psychology

Creation and Validation of the Students' Involvement Scale in Physical Education (SIS-PE)

Christoph Kreinbucher-Bekerle, Jana Baumgärtner, Sebastian Ruin
University of Graz, Austria

Student's participation in physical education plays a central role for both the satisfaction of basic psychological needs (Curran & Standage, 2017) and the initiation of self-determination in education and can further promote leisure-time physical activity (Hagger et al., 2003). To guarantee this, it is obligatory to actively engage students in the educational process and involve them in decision making during physical education lessons. Against this backdrop, SIS-PE was created, validated and the views of physical education teachers and students were contrasted.

In total 199 students from fifth to ninth grade (age: 11-15 years, M = 12.3, SD = 1.22 SD, 48.2% female) and ten experienced PE teachers filled out the new SIS-PE, an agentic engagement scale (Reeve, 2013) and three scales of basic psychological needs satisfaction (BPNS: Kohake & Heemsoth, 2021). Finally, the SIS-PE consisted of 12 items and reliability analysis showed a high Cronbach Alpha of .82. The scale includes three layers of involvement and derives content specific as well as superordinate topics. Validation analysis showed high consistency with the other two scales (agentic engagement: r = .40**; BPNS: r = .61**). Moreover, students and their teachers experience involvement differently, showing higher values for involvement opportunities in teachers than students.

The new involvement scale in physical education seems to be an appropriate instrument to in-depth address students' participation and engagement and could also be transferred to other sport-relevant domains beyond school.

Oral presentations
Topics: Any other topic

Can Virtual Reality Provide a Reliable Alternative for Attention Skills Evaluation in Sport?

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VR (virtual reality) has become a well-known platform for enjoyment in the last decade. Although VR is more commonly known for its role to entertain people through various applications and games, specialists in sports psychology noticed that athletes could benefit from VR by improving their cognitive abilities (Correia, Araujo, Watson, & Craig, 2014), reducing anxiety (Stinson & Bowman, 2014), relaxation techniques (Bird, 2019). Although studies using VR to evaluate attention skills are not yet available, some studies have shown that VR has the potential to evaluate cognitive abilities through VR (Pettersson et al., 2018). The present study explores the possibility that a VR application (Enhance) can be as reliable as traditional tests are in evaluating attention skills. Oculus Quest 2 is the device chosen to test this hypothesis. Fifty football players (22 females, 28 males; mean age = 17.5) were tested for attention skills using Oculus Quest 2 as glasses for virtual reality. The participants played a game from Enhance (Virtualeap company) called React. The participants also completed a classic sustained attention test called Flanker AD and Flanker AC (Sava, 2010). Results showed a medium correlation between Reakt scores and Flanker AD and AC scores. Findings support the hypothesis that VR can be a promising platform for assessing sustained attention skills for football players. Overall, the results demonstrate promising potential for VR attention skills evaluation; however, further research is needed. Practical and theoretical findings are discussed.

Oral presentations
Topics: Prevention and rehabilitation

What about sport and physical activity contribution in substance use disorder recovery: Benefits and Barriers

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The study was addressed to individuals undergoing SUDs recovery (clients). The initial purpose of the study was to capture clients' perceptions regarding the connection between sport and physical activity (PA) participation and their SUDs recovery outcomes. In addition, the study assessed clients' perceived benefits and barriers from their participation in exercise and sports interventions as well as the perceived factors that are likely to prevent or encourage them to participate in similar interventions in the future. In this multi-method research approach study, 774 clients from a total of 29 organizations, from 9 European countries, completed self-report tools, and also 24 interviews, and 6 focus groups (40 paticipants) were conducted. The mean age of participants was 36,5 years, while the majority of the sample consisted of males (80,1%). Data collection took place during September 2020 to May 2021. Quantitative and qualitative analysis revealed among the most frequent benefits that exercise contributes to muscle strength (4,4/5), level of physical fitness (4,3/5), as well as mental health improvement (3,9/5). Additionally, prevention of clients from sports activities by therapists (2,1/5), tiredness through exercise (3,08/5) and financial cost as a deterrent (2,3/5), were few of the indicative barriers. Furthermore, clients highlighted, among others, that encouragement, motivation, and the ensurement of more free time can facilitate their engagement in sport and PA in the future.

Oral presentations
Topics: Motor control and learning

Motives and Motor Performance: Current Findings and Future Directions

Florian Müller, Rouwen Cañal-Bruland
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The notion that individuals show stable differences in their motive disposition allows to explain differences in motivation and in turn behavioral outcomes (Schultheiss & Brunstein, 2010). In line with a person x situation approach, effects of the big three of achievement, affiliation, and power depend on their arousal by motive specific incentives. In the past, research has applied this theoretical approach to explain interindividual differences in motor performance and learning. In this talk, we first highlight characteristics of this research such as a dominance of achievement related work, differentiation between different types of motive measurement, and the dominance of correlational studies (see also Müller & Cañal-Bruland, 2020a). Second, we present current studies from our own lab. For instance, in Müller and Cañal-Bruland (2020b) we showed how experimentally manipulated incentives moderate the relationship of the power motive to performance in darts. In Müller et al. (2020) we applied this approach to choking under pressure in a golf putting scenario. Finally, we also present unpublished data on the utility of motives to predict performance in ecologically valid classroom contexts (Müller & Cañal-Bruland, under review) as well as in elite ski-jump athletes (Müller et al., in prep). Together, our findings support the incentive dependent relationship of motives and motor performance. Future directions in the domain of motives and motor performance and learning will be discussed.

Oral presentations
Topics: Talent identification/ development

How Do Scouts Identify Talented Athletes?

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The identification of talented athletes can be challenging. It is often the responsibility of scouts or coaches, who need to make selection decisions: Which athletes have the greatest potential to reach the professional level (Bergkamp et al., 2021)? The aim of the current study was to examine how scouts make such decisions in a soccer context. Through an online self-report questionnaire, 125 Dutch scouts were asked about (a) the age at which they could predict players' future soccer performance, (b) the attributes they considered most relevant, and (c) the extent to which they predicted performance in a structured manner. The most important results were, first, that scouts of young players (under 12) did not believe they could reliably predict future performance. This suggests that these scouts acknowledge that early indicators of later performance are often lacking (Abbott et al., 2005; Den Hartigh et al., 2016). Second, scouts mostly took general technical attributes into account when selecting players. Third, scouts reported that they assessed attributes of players in a structured manner. Nonetheless, they ultimately made their final assessments of players by intuitively integrating scores on different performance attributes. These outcomes provide indications to improve the reliability and validity of the talent identification process. More specifically, talent identification in sports may advance by incorporating methodological principles from selection psychology. This field is concerned with how to best select candidates for different achievement domains, yet has seldom been considered in the sports domain (Bergkamp et al., 2019; Den Hartigh et al., 2018).

Oral presentations
Topics: Consulting/ counseling

Contextual framework of an individual sleep management program for junior and elite athletes

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Sleep is one of the best and most important recovery strategies available. Yet young athletes constitute a vulnerable group that frequently presents insufficient sleep quantity and/or quality (Walsh et al., 2021). External factors (e.g., training schedules) and internal factors (e.g., anxiety) contribute to disparities between recovery demands and sleep (Nédélec et al., 2018). Therefore, several interventions have been developed (Bonnar et al., 2018). However, these were either pilot studies (Driller et al., 2019) or tested in single sport types (O'Donnell & Driller, 2017). Thus, general conclusions about their efficacy seem premature. Moreover, each intervention needs to fit the individual's requirements and (sport) context. This presentation introduces the concept and preliminary results of an individual sleep management program for German junior and elite athletes.

While the intervention is implemented individually (e.g., sleep hygiene recommendations), the program follows standardised procedures and questionnaires to evaluate the effectiveness. Baseline measures of sleep logs and actigraphy present sleep patterns, behavioural, and perceptual parameters for two weeks (e.g., sleep duration, mood). Results and individual goals will be elaborated together with the participants. In the following four to six weeks, participants implement and document the intervention, accompanied by regular coaching sessions. Pre- and post-screenings will additionally be compared (e.g., sleep quality, Buysse et al., 1989; daytime sleepiness, Johns et al., 1991; sleep behaviour, Driller et al., 2018).

Besides optimising the athletes' sleep, this project will contribute to sport psychological sleep research by assessing dysfunctional sleep patterns, influencing factors, and evaluating the effectiveness of individual intervention strategies.

Oral presentations
Topics: Physical activity

Parkrun participation and mental health: An examination of mechanisms among adults diagnosed with mental illness

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University of Toronto

Community-based physical activity (PA) is beneficial for population mental health (MH) and wellbeing. In the past decade, free, 5 kilometre community-based runs organized by the parkrun organization have grown in popularity, with more than 1000 runs per week in the UK. It has been reported that participation in parkrun positively impacts mental health, yet the way parkrun may be associated with MH among participants with a diagnosed mental illness has not been identified. The current study examined the relationship between parkrun participation and MH, and explored theoretically implied mediators of the relationship. Participants with a diagnosed MH condition (N = 786, M(SD)age = 43.14 (12.82) years, 66% female) completed self-reported questionnaires, and a multiple mediation analysis was conducted, controlling for age and gender. Findings suggest that parkrun participation is significantly indirectly related to perceived improvements in MH (R2 = .42), with significant indirect effects of perceptions of social support [b(se)= .03(.01)], sense of achievement [b(se)= .04(.01)], confidence [b(se)= .04(.01)] and fitness [b(se)= .06(.01)]. These findings underscore the importance of ensuring that the runs provide opportunities for social support, for feeling a sense of achievement and improved confidence and fitness – all proposed theoretical mediators of the association between PA and MH. In doing so, the effects of parkrun participation on MH will be augmented, among this clinical population who most critically require such benefits.

Oral presentations
Topics: Prevention and rehabilitation

Profiling long-distance runners to predict injury risk: Results from a latent profile transition analysis

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Long-distance running is notoriously injury-prone and reducing this risk appears challenging (e.g., Yeung & Yeung, 2011; Fokkema et al., 2019). In two previous studies, we addressed this problem by profiling runners based on their passion(s) for running, their recovery from running, and how runners employ running-related resources. We found that these psychological factors shaped three latent profiles, which in turn exhibited different risks of running-related injuries (van Iperen et al., 2022a; van Iperen et al., 2022b). Accordingly, these profiles were termed the low-risk, medium-risk, and high-risk profile. However, the stability of these profiles over time is unknown, an issue that we address in the current study. Using two timepoints (separated by six months), our specific goals are to determine (1) whether profile types remain similar in predictor patterns and risk of injury, (2) how runners transition between profiles, and (3) whether any such transitions depend on a randomized controlled intervention we performed (aimed at supporting self-regulatory behavior through an app; see van Iperen et al., 2022b). To that end, we performed a latent profile transition analysis on the sample of recreational long-distance runners that was also used in the prior two studies (n = 425). Preliminary results indicate that types of profiles remain similar over time, that transitions between profiles are limited, and that our intervention played no major role in transitions. Altogether, these findings highlight the added value of psychological risk profiles, particularly for injury prediction. Suggestions are provided on implementing such profiling approaches in future intervention designs.

Oral presentations
Topics: Youth

Students benefit from autonomy supportive PE regarding affective valence, enjoyment, and aggression

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Background

Autonomy support in physical education (PE) is associated with adaptive outcomes in students (Leisterer & Jekauc, 2020). However, the effects of specific teaching methods on students' affects and emotions needs further research (Rodriguez Macías et al., 2021).

Purpose

This quasi-experiment investigates the effects of highly autonomy supportive (PEhigh), low autonomy supportive (PElow) and controlling (PEcontrol) PE class teaching styles on affective valence, enjoyment, and aggression.

Methodology

German students' (N = 57; age: M ± SD = 15.6 ± 0.6; gender: 52.6% female, 47.4% male) perceived autonomy support, affective valence, enjoyment, and aggression was assessed via questionnaires before and after a 60 minute PE class focusing either high, low autonomy supportive, or controlling teaching. As instruments, the GER-MD-PASS-PE assessed perceived autonomy support (Zimmermann et al., 2020), the Self-Assessment Manikin (Bradley & Lang, 1996) assessed affective valence, the FEFS-J (Engels & Freund, 2019) assessed enjoyment, and the German Aggression Questionnaire (Herzberg, 2003) assessed aggression.

Results

Students reported highest perceived autonomy support after PEhigh, followed by PElow and the lowest level in PEcontrol. Students in PEhigh perceived significantly more positive valence and enjoyment compared to students in PElow or PEcontrol with desirable effects for educational settings. Levels of aggression were significantly decreased by all teaching styles with also desirable but lower effects than for valence and enjoyment. Differences between groups show significant results for valence between PEhigh and PEcontrol, PElow and PEcontrol, and aggression between PEhigh and PElow.

Discussion

These results suggest that autonomy support increases students' enjoyment and reduces their aggression.

Oral presentations
Topics: Exercise psychology

The effects of mental fatigue on resistance exercise performed at different intensities in trained male adults

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Aim: we aimed to investigate the effects of mental fatigue (MF) on resistance exercise performed at different intensities in trained male adults. Considering previous findings, we hypothesized a reduced number of repetitions to failure only for low and moderate intensities. Methods: Eighteen resistance-trained young men were recruited. On separate days, the subjects performed either a Stroop Color task (MF condition) or watched an emotionally neutral documentary (control condition) in a randomized counterbalanced order. Following the intervention, the subjects performed three sets of half back-squat at 50, 70, and 90% 1RM. The order in which participants performed these intensities was randomly chosen and counterbalanced and remained the same for both conditions. Pupil diameter and subjective mental fatigue were assessed before, during, and immediately after the intervention. The primary outcome was the number of repetitions to failure. Results: we found a significant condition x time interaction for subjective mental fatigue [F(2 34)=210.90; p=0.001; ES=very large] and pupil diameter [F(2 34)=17.58; p=0.001; ES=large], with higher values for MF compared to control after 15-min and 30-min ($p<0.05$). Regarding the number of repetitions to failure, we found a condition effect for the 50% [t(1, 17)=6.67; p=0.001; ES=large; Δ% difference=12.05] and 70% 1RM [t(1, 17)=6.46; p=0.001; ES=large; Δ% difference=15.08], but no effect for the 90% 1RM [t(1, 17)=1.23; p=0.23; ES=trivial; Δ% difference=7.10]. Conclusion: This study demonstrated that MF reduces the number of repetitions to failure during moderate (50 and 70% 1RM) but not high intensity resistance exercise in trained male adults.

Oral presentations
Topics: Neuroscience

Does an acute bout of soccer heading disrupt the functional connectivity between the brain and the muscles?

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Soccer players head the ball hundreds of times each season and thousands of times throughout a typical professional career. The frequency of these head impacts has led researchers to suggest that repeated heading could expose players to an increased risk of sub concussive trauma that might predispose them to neurodegenerative disorders in later life. It is therefore imperative that the mechanisms behind sub concussion are fully understood in order to aid the decision to the 'return-to-play' and to ensure player welfare in the short and long-term. In this study we examined the impact of an acute bout of soccer heading on brain-muscles communication using corticomuscular coherence analysis between EEG and EMG signals. 15 participants in a control group completed 20 headers in virtual reality and 15 participants in the experimental group headed 20 balls in the real world. Measures of cognitive function (King-Devick test) and CMC were measured pre and post heading. Preliminary results show that the participants who headed soccer balls suffer impairments in cognition (King-Devick score) but those who headed balls in the virtual world did not. Analysis of CMC across groups in on-going.

Oral presentations
Topics: Developmental/ lifespan perspectives

Higher cardiorespiratory fitness at age 18 predicts lower incidence of depression in old age: A prospective study of Swedish men

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Introduction: Previous studies indicate that higher cardiorespiratory fitness (CRF) may have a long-term protective effect against depression. Most previous studies, however, used relatively short follow-up periods and did not account for important variables (e.g., personality) in close proximity to the assessment of depression. The main aim of the current study was to examine the long-term effect of CRF at age 18 on the incidence of depression in old age in men.

Methods: We combined data on CRF at age 18 from the Swedish Military Service Conscription Register with data on depressive symptoms (CES-D 8) collected in the study HEalth, Aging and Retirement Transitions in Sweden (HEARTS), which resulted in a sample of 690 men (age range = 60-65, M = 61). We also included data on education, physical activity, personality (Big Five), and self-rated health from the HEARTS study. Logistic regression and odds ratios (OR) were used to examine the link between CRF and depression.

Results: Compared to low CRF, having medium (OR = 0.325, 95% CI [0.49, 0.712]) or high (OR = 0.325, 95% CI [0.126, 0.834]) CRF at age 18 was related to lower incidence of depression in old age, while controlling for the influence of age, education, physical activity, personality, and self-rated health.

Discussion: Higher CRF at age 18 was related to a decreased risk of depression in old age. These results indicate that there is a cardiovascular contribution to the aetiology of depression and intervention studies focusing on increasing CRF to prevent or treat depression are warranted.

Oral presentations
Topics: Personality

Perfectionism and performance in sport: A multi-study test of non-linear relationships in track and field athletics

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The relationship between perfectionism and athletic performance is currently debated. A potential explanation for this lack of agreement is the assumption that the relationship is linear (e.g., Ivarsson & Johnson, 2014). In two studies, we tested alternative non-linear relationships between perfectionism and performance. To do so, we recruited track and field athletes and employed cross-sectional (Study 1) and longitudinal (Study 2) designs. We measured perfectionism using subscales from three established measures (Dunn et al., 2006; Hill et al., 2016; Stoeber et al., 2006) and obtained performance data from official event results.

In Study 1, we recruited 165 Swedish athletes (57% female; Mage = 16.93 years) at a track and field competition. We found no linear, quadratic, or cubic relationship between performance and either perfectionistic strivings (PS) or perfectionistic concerns (PC).

In Study 2, we recruited 157 British athletes (55% female; Mage = 18.42 years) and tracked their performance over an athletic season. While we found a linear relationship between PS and baseline performance, there were no linear, quadratic or cubic relationships between performance and either PS or PC over time.

Based on these findings, we conclude that being perfectionistic may not have any major impact on track and field performance. When it does the relationship appears to be linear, although its direction warrants further investigation.

Oral presentations
Topics: Any other topic

Impact of training schedule on adolescent athletes' sleep

Clarita Bonamino
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Evidence suggests that early morning and late evening training may impact adolescent athletes sleep-wake cycles by restricting sleep and altering bedtimes. Sub-optimal sleep has been linked with poorer health, recovery, and sport performance. This study investigated the impact of training schedules on the sleeping patterns of adolescent athletes.

Eighty-four elite adolescent athletes (47.6% male) aged 14-21 years (17.05±1.99 years) completed an online survey. Data collected included weekly training schedule and sleeping behaviours, such as time in bed and time awake for every day of the week.

Mixed linear analysis showed main effects for morning training with respect to sleep duration on weekdays ($F=6.24$, $p<005$) and weekends ($F=14.97$, $p<.001$). Sleep time was shorter on nights preceding morning training compared to no morning training (weekdays: 7.64 vs 8.03 hr, $p<.05$; weekends: 8.05 vs 8.91 hr, $p<.001$). Main effects were also found for sleep onset on weekdays ($F=4.836$, $p<.05$), and sleep offset on weekdays ($F=17.116$, $p<.001$) and weekends ($F=22.89$, $p<.01$). Athletes went to sleep earlier before weekday morning training (-14 min, $p<.05$), and woke earlier on weekdays (-36.06, $p<.001$) and weekends (-51.61 min, $p<.001$) compared to no morning training. No effects for evening training on the following night were found.

Earlier wake times due to morning training resulted in restricted sleep. Not training on weekend mornings may help athletes overcome their sleep dept. Given the variability across a training week, findings indicate that weekly average sleep parameters may not adequately reflect adolescent athletes' sleeping behaviours. Measures of sleep-wake consistency may be more appropriate.

Oral presentations
Topics: Cognition

mentalFIT: The effects of exercise on executive functioning - a pilot study

Britta Andrea Seiffer, Sebastian Wolf
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Mental health impairment, which is frequent in college students (Auerbach et al., 2018), appears to be associated with deficits in executive functioning (EF) (Dotson et al., 2020). Regular aerobic exercise seems to be beneficial in improving EF (small effects, Xue et al., 2019). Observational comparisons (de Greeff et al., 2018) and quasi-experimental studies (Gu, Zou, Loprinzi, Quan, & Huang, 2019) indicate that cognitively demanding exercise might be even more efficacious than repetitive forms (such as running, swimming) of exercise. While these studies provide important clues towards associations between the type of exercise and improvement of EF, we cannot assume a causal relationship due to the lack of randomization. Therefore, in this pilot randomized controlled trial, we implemented a randomized, 3 x 3 mixed design, with group assignment (ball sports; endurance sports; passive control group) as the between-subjects variable and measurement time point (pre-intervention, post-intervention, three-month follow-up) as the within-subjects variable. Thirty participants were randomly assigned to either a ball sports or endurance sports intervention or a passive control group (1:1:1). The primary outcome is a difference in core EF (stop-signal-reaction test, n-back test, trail-making test: part B) at the time point post-intervention. Secondary outcomes are symptoms of depression, anxiety, and stress, and subjectively perceived quality of life at the time point post-intervention and follow-up as well as the difference in EF between groups at follow-up. Preliminary results will be presented and discussed and will be used as the basis for a power calculation of a large, multicenter RCT.

Oral presentations
Topics: Research methods (qualitative & quantitative)

The Short-term Relation Between Load and Psychobiological Responses in Team Sports: A Meta-Analysis

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Understanding the short-term relation between training or match stress and the psychobiological responses is important to enhance athlete's resilience to future training stimuli (Kellmann & Kölling, 2019). This particularly holds in team sports, where training includes unstandardized group exercises. Currently, the direction and strength of the relation between training stress and psychobiological responses remains unclear. Therefore, we included 46 articles and estimated 11 meta-analysis models, according to PRISMA-guidelines, to identify whether there is a short-term relation between training stress and the psychobiological responses wellbeing, recovery, and heart rate indicators in team sport athletes. In addition, we applied a meta-regression model to explore the influence of several moderators on the relations between training stress, and fatigue and muscle soreness. Significant short-term relations were found between training stress and overall wellbeing, sleep, fatigue, muscle soreness, and recovery. These results suggest that that these responses could be used to asses changes inflicted by training and match stress and whether an athlete is ready to train or perform. It should be noted, however, that the overall quality of evidence for the relations between training stress and the different psychobiological responses is relatively low. Furthermore, the psychometric properties of questionnaires regularly used in studies in this meta-analysis may be considered as doubtful and intra-individual variation is often neglected (Neumann et al., 2021). Future research should incorporate a dynamic and athlete-specific approach to better understand the psychobiological responses following training and match stress.

Oral presentations
Topics: Perception & attention

Colour vision deficiency: the impact on participation and progression in sport

Adam Bibbey, Daisy Lee, Stuart Whigham, John Jakeman
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Colour vision deficiency (CVD) affects approximately 1 in 12 men and 1 in 200 women (Simunovic, 2010). Despite the prevalence and potential impact, it has received limited attention in sport. Two focus group interviews with eight male sporting individuals (Age M = 34.3, SD = 6.1) with CVD were conducted to discuss their lived experience. Thematic analysis was utilised to examine the sport-specific themes.

Themes indicated that CVD can have a negative impact on sporting participation through difficulties with visual perception such as identifying balls and cones, pitch markings and kits which lead to impaired decision making, poor identification of team-mates and reduced reaction time. In terms of coping with CVD, themes emerged which indicated the use of different cues such as viewing socks rather than shirts and avoidance coping such as not revealing there challenges to coaches due to feelings of embarrassment. Lack of confidence to speak out was also present especially at higher competitive level as this area was more performance focused and an admission of CVD may be viewed as debilitative. Themes regarding practices and recommendations for CVD indicated the use of appropriate colour kits and equipment, raising awareness for coaches and sporting bodies, and formalisation of CVD as a disability/impairment within regulations.

Overall, it is evident that CVD can negatively impact the sports participation, performance and well-being in terms of feeling embarrassed or threatened to disclose. Consequently, awareness should be raised so individuals feel confident to speak out and CVD-friendly provision can be provided.

Oral presentations
Topics: Physical activity

The development of an intervention to promote physical activity for wounded, injured, and sick military veterans.

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Wounded, injured, and sick (WIS) military veterans are less physically active compared to their non-military counterparts (MOD, 2017) and despite the numerous physical and mental health benefits of regular participation in physical activity (PA), many WIS military veterans fail to maintain adequate PA levels (Brittain & Green, 2012; Shirazipour et al., 2017). The purpose of the current study, was to design a theory and evidence-based intervention to stimulate and maintain PA in WIS military veterans. Practically, steps 1-4 of the systematic process of Intervention Mapping (IM; Bartholomew et al., 2016) were used to facilitate the development of a theory- and evidence-based PA promotion intervention for WIS military veterans. The four steps are: (1) needs assessment; (2) identification of outcomes, performance objectives, and change objectives; (3) selection of theory-based intervention methods and practical applications; and (4) organisation of methods and applications into an intervention programme. The rationale for and detailed description of this process will be presented in relation to the developed PA intervention called 'Be Active, be Supported, be In Control' (BASIC). Specifically, the programme comprises six sessions, is delivered over eight weeks, and focuses on helping WIS military veterans to change their PA behaviour. This study is the first to apply the IM process to the development of an intervention to stimulate physical activity in WIS military veterans. Further work should be conducted on the implementation process and evaluation of BASIC, to establish its use as an effective and cost-effective health behaviour change intervention for WIS military veterans.

Oral presentations
Topics: Motor control and learning

Examination of conscious control of movements and decision-making in association with performance breakdown under pressure

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A high propensity for conscious processing of movements and decision-making has been shown to disrupt automated skill execution processes and lead to 'choking' under pressure (Theory of Reinvestment - Masters & Maxwell, 2008). Recently, however, Gottwald et al. (2020) suggested that movements for which importance of proprioceptive information is high and importance of visual information is low for task success, may benefit from conscious processes. We tested this hypothesis and we examined whether the propensity for conscious movement processing and decision-making is associated with 'choking' under pressure across sports that varied in the extent to which proprioceptive and visual information is important for task success.

100 athletes from a variety of sports completed questionnaires that assessed their propensity for conscious processing of movements and decision-making, and likelihood of 'choking' under pressure. Results from multiple regression analysis suggest that a high propensity for conscious movement processing and decision making is predictive of likelihood of 'choking' under pressure in sports high in pertinence of visual information and low in pertinence of proprioceptive information (e.g., rugby, football, volleyball). The propensity for conscious movement processing and decision-making was not related to likelihood of 'choking' in sports high in pertinence of proprioceptive information and low in pertinence of visual information (e.g., powerlifting, dance, gymnastics). These findings indicate that the adverse effects of a high propensity for conscious processing on performance under pressure are limited to those sports that require performers to prioritize visual over proprioceptive information processing. Implications for theory and applied practice will be discussed.

Oral presentations
Topics: Well-being and quality of life

When being an elite athlete conflicts or enriches with being a student and vice-versa: Consequences on student-athletes well-being

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The mental health of student-athletes is an important condition for their success in their Sport-School Dual Career (SSDC). Indeed, resources consumed in meeting the demands of one role (e.g., athlete) are likely to be lacking in overcoming the demands of another role (e.g., student) (Work-Family Conflict, Greenhaus & Beutell, 1985). In contrast, taking on one role can develop resources that can be used in the other role (Work-Family Enrichment, Carlson et al. 2006). In the SSDC context, these Sport ↔ School conflict or enrichment may impair or improve well-being. The purpose of this study is to investigate (1) the validity of role interactions concepts in the SSDC context through the adaptation and French translation of a scale, and (2) the links between role interactions and sport related well-being. French university student-athletes completed a questionnaire (October, N = 371, December 2020, N = 127, and May 2021 N = 73) measuring Sport-School Interactions, Athlete Burnout and Engagement, and Role Identity. Using Confirmatory and Exploratory Analysis, the psychometric validity of Sport-Study Interactions Scale (SSIS) was confirmed. Moreover, latent profile analyses revealed that student-athletes' well-being is higher for participants with a positive profile (i.e., high enrichment and low conflict) in comparison to participants with a negative profile (i.e., low enrichment and high conflict). According to this study, it seems important to manage the role interactions to improve well-being in both contexts.

Oral presentations
Topics: Elite sports and expertise

We're not superhuman, we're human: A description of elite athletes' experiences of return to sport.

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Background: A growing number of athletes return to elite sport following childbirth, despite facing significant barriers to do so safely and successfully. The experiences of elite athletes returning to sport following delivery are notably absent in the research literature, but necessary to support evidence-informed policy (Bø et al., 2017).

Purpose: The purpose of this qualitative description was to describe the experiences of elite athletes as they returned to sport following childbirth, and to identify actionable steps for research, policy and culture-change to support elite athlete mothers.

Methods: Participants were 18 athletes who, within the last five years, had trained or competed at the elite level immediately prior to becoming pregnant. Data were generated via one-on-one semi-structured interviews that were audio-recorded, transcribed verbatim, and analyzed through a process of content analysis (Elo & Kyngäs, 2008).

Results: The findings of this study are represented by one overarching theme: Need for More Time and five main themes: (a) Training "New Bodies" Postpartum, (b) Injuries and Safe Return to Sport, (c) Breastfeeding While Training, (d) Critical Supports for Return to Sport, and (e) Navigating Motherhood and Sport.

Conclusion: Athletes shared detailed stories highlighting the challenges, barriers, and successes elite athletes experience as they return to elite-level sport following childbirth. Participants provided clear recommendations for policy and research to better support the next generation of elite athlete mothers.

Oral presentations
Topics: Well-being and quality of life

Discussing Safe Sport in Digital Spaces: The #GymnastAlliance Movement

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In response to the abuse perpetrated by former US gymnastics team doctor, Larry Nassar, and fueled by toxic gymnastics cultures, the online gymnast alliance movement began in the summer of 2020. Gymnasts from around the world turned to social media, using the hashtag #gymnastalliance, to share their experiences of maltreatment in sport. While social media and other virtual spaces have been regarded as environments where maltreatment can occur (Kavanagh et al., 2019; Litchfield et al., 2018; Sanderson & Weathers, 2020), this research aims to offer new insight on how social networking applications can also be leveraged as platforms for meaningful dialogue about safe sport and disclosures of harm. The purpose of this study was to explore how the gymnast alliance hashtag has been used on Instagram. A qualitative thematic content analysis was conducted examining the text and images included in 557 Instagram posts that employed the hashtag. The generated themes included the nature of experience sharing, comprising the effects of harms, and the inability to speak out in other ways, as well as the perceived purpose of engaging with this hashtag, including eliciting and offering support and calling for action. Findings from the analysis are interpreted using athlete advocacy, maltreatment and safeguarding literature. Questions are posed about the use of social media as a vehicle for disclosures, advocacy and social support, as well as a potential platform for other sport stakeholders to engage in Safe Sport movements.

Oral presentations
Topics: Any other topic

Teammates' Equality-Enhancing Behaviour as a Moderator of the Harassment – Exercise Relationship in Female Exercisers

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Harassment in sport has been typically investigated with an emphasis on negative ramifications of harassing behavior for athletes' and exercisers' mental health and well-being (Kokkonen, 2019; Mountjoy et al., 2016; 2021; Vertommen et al., 2018). This study focused on female exercisers' exercise-related fear, future considerations, and social avoidance resulting from experienced harassment by teammates. The research question was twofold: 1) How are different forms of sexual and gender-based harassment by teammates linked to female exercisers' exercise-related fear, considerations, and social avoidance? and 2) Does teammates' equality-enhancing behavior act as a buffer against the assumed negative effects of harassment? Self-reported, anonymous survey data from 357 female exercisers (aged 10 – 63 years, 62% heterosexual, 91% cisgender, 17% elite athletes) was analysed using Spearman's rank-order correlations and structural equation modelling with multigroup analysis. Positive and statistically significant correlations (r ranging between .13 - .48) between experienced verbal, nonverbal, physical, and undermining forms of harassment by teammates and exercisers' considerations of quitting exercise, changing teams, being afraid of going to training, and avoiding social occasions with teammates outside the training were found. Results supported a buffering hypothesis; there was a weaker linkage from experienced verbal and nonverbal harassment to exercise-related fear, considerations, and social avoidance for those female exercisers whose teammates behaved in equality-enhancing ways ($\chi2(18) = 25.40$, $p = .11$, TLI = .98, CFI = .99, RMSEA = .05). Thus, teammates' equality-enhancing behaviour appeared as a beneficial social resource that should be supported by a coach.

Oral presentations
Topics: Physical activity

Weight stigmatizing experiences in physical activity: A content analysis in adolescent girls

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Weight stigmatizing experiences are theorized to motivate individuals to disengage from contexts where further stigma may occur, such as physical activity. While the extent to which adolescent girls experience weight stigma in physical activity has not been empirically examined, related experiences of weight-based self-devaluation (i.e., shame) have been negatively linked to physical activity in adolescent girls (Pila et al., 2020). The present study aimed to explore the antecedents and outcomes of a recalled weight stigmatizing experience in physical activity. Adolescent girls (N = 215, Mage = 16.95, SDage = 1.24) completed an autobiographical writing task recalling an experience in physical activity where they felt their body was too large and/or weight was too high. Based on an inductive content analysis, weight stigmatizing experiences were indicated in competitive (26.9%) and recreational sport (10.7%), physical education class (15.7%), and structured exercise contexts (26.4%). Antecedents included social comparisons (73%), inadequacy compared to an internal standard (45%), anticipated or experienced negative evaluation (86%), and negative weight-based teasing (45%). Behavioural outcomes included withdrawing from activity (54%), restricting caloric intake (38%), and compensatory increases in frequency and duration of exercise (67%). Based on current findings, research attention should be paid to addressing the potentially harmful consequences social comparisons and negative evaluations of the body may have on adolescent girls in competitive sport and structured exercise contexts. Developing a deeper understanding of weight stigmatizing experiences can guide the creation of specific interventions to enhance adolescent girls' physical activity experiences.

Oral presentations
Topics: Psycho-physiology

Self-control in physical activity: the role of weight stigma

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Experiencing weight stigma in daily life is related to physical activity avoidance (Vartanian & Novak, 2011), which may trigger an intention-behavior gap. However, the processes of this relationship remain unknown. Self-control fatigue, a temporary reduction in self-control resources, willingness, and/or capacity (i.e., the components) leading to a diminished subsequent self-control act (Forestier et al., 2021), may explain this relationship (Rojas-Sánchez et al., 2021). We investigate whether weight stigma negatively predicts physical activity through self-control fatigue. Based on an a-priori power analysis, our within-person study will include 40 participants with weight concerns (Araiza & Wellman, 2017). Participants will randomly experience two experimental sessions (i.e., weight-stigma or control sessions), separated by a week. They will perform an affective go/no-go task (self-control act measure, Forestier et al., 2021), before and after the sessions, responding to physical activity stimuli and inhibiting their responses toward sedentary stimuli. Intention will be measured with a self-reported measure. Self-control resources and willingness will be assessed by self-reported and physiological measures (Laborde et al., 2018). Physical activity will be recorded for the 24h following the experiment with accelerometers. Intention-behavior gap for physical activity will be measured by comparing intended physical activity before the 24h with physical activity actually performed. We expect (1) stigma session to lead to self-control fatigue, and (2) to find a larger physical activity intention-behavior gap in the weight-stigma condition. This first study relating psychological and physiological responses to self-control fatigue induced by weight stigma is running and, will shed light on some intention-behavior gap determinants.

Oral presentations
Topics: Group dynamics

Professional Gridiron Football Players' Perspectives of Coaching and Group Dynamics in Subgroups

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While previous research has investigated how head coaches fostered cohesion in performance coaching contexts, research has yet to specifically delve into the roles of the assistant coach regarding group dynamics, particularly from the athletes' perspective. In some team sports, like gridiron football, research has suggested that assistant coaches interact more often with the athletes than the head coach (Rathwell et al., 2014; Sinotte et al., 2015). Thus, the purpose of this study was to explore professional athletes' perspectives of group dynamics in gridiron football, including the role of the assistant (i.e., offensive line) coach. Six experienced professional offensive linemen participated in semi-structured interviews. Considering the lead researcher's experience as an elite offensive lineman and assistant coach, an interpretative phenomenological analysis was used to understand the participants' lived experiences. Results revealed that while the best assistant coaches influenced their subgroup's identity, they also let the players shape it, often by means of inter-player interactions and strong player leadership. Moreover, the results indicated that conflicting messages sent by the assistant (offensive line) coach and his superiors negatively influenced the subgroup's cohesion, creating severe disagreements that were sometimes unmanageable. Furthermore, the findings suggested that rapid turnover in personnel (coach and player) negatively influenced group dynamics due to the unpredictability of the duration of working relationships. Overall, these results enhance our understanding of effective assistant coaching and provide professional sports teams with strategies about coaching roles to improve group dynamics within their various positional subgroups.

Oral presentations
Topics: Transitions in and out of sport/ dual career

Career termination in elite sport: A mixed retrospective-prospective longitudinal study over 12 years

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The end of their athletic career can be a difficult time for elite athletes, requiring thoughtful preparation and adjustment. We investigated the complex relationships between individual preconditions, transition characteristics, and consequences of athletic career termination. In a retrospective-prospective design, we surveyed 290 (former) elite athletes at two measurement points about the following: satisfaction with their ongoing sporting career (t1), athletic identity (t1), self-esteem (t1, t2), transition characteristics of their career end (t2), sporting success (t2), and emotional reactions, adjustment in terms of duration, quality, and extent of adjustment to career termination (t2). Results of structural equation modelling (SEM) revealed that neither sporting success nor career satisfaction had a direct effect on adjustment. However, retirement planning and athletic identity predicted extent of adjustment, which in turn predicted duration and quality of adjustment, and lastly self-esteem. Timeliness, voluntariness, and perception of gain predicted emotional reactions, which in turn predicted duration of adjustment. Emotional reactions and extent of adjustment mediated between preconditions and characteristics of career termination and self-esteem. While self-esteem after career termination was predominantly predicted by self-esteem 12 years earlier, perceived quality of adjustment to career termination had an influence on it. Compared to more traditional analysis techniques in previous research (e.g., ANOVA), using SEM provides a more valid picture of the interplay between individual preconditions of career termination, transition characteristics, and its consequences. This is particularly true with respect to the role of athletic identity and retirement planning – two aspects that support programs should pay special attention to.

Oral presentations
Topics: Movement

Exploring the usability of the Canadian 24-Hour Movement Guidelines discussion tool for primary care

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Canada's 24-Hour Movement Guidelines (24HMG; CSEP, 2020) offer primary care providers (PCPs) the opportunity to promote movement behaviours to the general population (Wattanapisit et al., 2018). Unfortunately, PCPs have reported low knowledge, skill, confidence, and motivation in discussing physical activity (PA) (Thornton et al., 2021). While tools to facilitate clinical discussions about PA have been developed and used (Smith et al., 2017), few have undergone usability testing and none have integrated PA, sedentary behaviour, and sleep. Following a synthesis of PA, sedentary behaviour, and sleep clinical discussion tools, we developed a 24HMG discussion tool and accompanying user guide that incorporates all three movement behaviours (Morgan et al., in review). The purpose of this study was to explore the usability of the 24HMG tool for PCPs. Twenty-six PCPs were observed and audio-video recorded while using the 24HMG tool in a think-aloud procedure, followed by a simulated encounter with a mock client (Richardson et al., 2017). Finally, PCPs completed a debriefing interview. Interview guides were informed by Normalization Process Theory (May et al., 2009), transcribed verbatim, and analyzed using content analysis and a critical friend to enhance rigour. PCPs valued the tool's visual appeal, structure, user-friendliness, and multi-behaviour focus. Tool elements needing improvement included language, workflow, and clarity. Results have informed revisions to the tool and user guide, the inclusion of a preamble and a handout for adults accessing care (i.e., patients/clients), and added links to the 24HMG website and evidence supporting the 24HMG to enhance the tool's usefulness for PCPs.

Oral presentations
Topics: Youth

Weight stigmatizing experiences in adolescent female athletes and non-athletes

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Females report the highest prevalence of weight stigmatizing experiences during adolescence, compared to any other developmental period (Puhl et al., 2021). These negative experiences may contribute to the disproportionately low levels of participation in organized sport observed among female adolescents (Lucibello et al., 2021). The primary purpose of this study was to examine differences in weight stigmatizing experiences between adolescent female athletes and non-athletes based on perceived weight status. The secondary purpose was to examine differences in weight stigmatizing experiences between athletes in recreational versus competitive sport. Adolescent female (N = 485; Mage=16.14, SDage =1.61; 70.1% average weight) athletes (42.3%) and non-athletes (57.7%) completed surveys assessing perceived weight status, sport participation, and a series of psychological weight stigmatizing experiences (weight-related shame, guilt, and embarrassment, internalized weight bias, and weight-based teasing). Univariate analyses of variance revealed significant main effects whereby athletes reported lower weight-related shame, guilt, and internalized weight bias (ηp2 = 0.01), compared to non-athletes. Additionally, females who perceived themselves to be higher-weight versus average weight reported higher levels of weight-related emotions, internalized weight bias, and weight-based teasing (ηp2 = 0.06 to 0.25). In the athlete sample, females in competitive sport reported lower weight-related guilt and embarrassment (ηp2 = 0.03 to 0.06) compared to athletes in recreational sport. While future experimental research is necessary to establish causal relationships, the results of this study may inform sport promotion strategies to focus on protecting against the harmful effects of weight stigmatizing experiences among adolescent females.

Oral presentations
Topics: Cultural sport psychology

From PhD to Policy: Systemising the Practice of Sport Psychology in Nations with no Education and Training Pathways

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In Schinke et al. (2018), FEPSAC contributors describe the overall progress that sport psychology has made in Europe as well as the continuing challenges for many European nations. Just like Singapore, some European nations do not have the requisite components to establish applied sport psychology as a legitimate profession. Specifically, these shared challenges are the lack of postgraduate education in sport psychology at universities; the unavailability of qualified supervisors, supervised practice, or formal training pathways; no certification system or regulating authorities; and, the scarcity of employment opportunities. In Singapore's case, a key contributor to these challenges is the nation's cultural make-up and the resulting mindsets, as identified in the first author's PhD. Guided by the principles of cultural sport psychology, de Cruz (2022) conducted a sequential transformative mixed-methods exploration of the psychosocial issues entrenching elite sport in Singapore, and the professional identity and practice of sport psychology. In his conclusion, de Cruz (2022) outlines recommendations to advance the practice of sport psychology and to develop a community of professionals centred on a shared identity and culture. This work became a key resource in the Singapore Sport Institute's efforts to systemise the practice of sport psychology. Specifically, the second author formulated strategies to educate, train, endorse, and employ local sport psychology aspirants and current practitioners, to develop a highly specialised, globally recognised, and locally relevant community. In this presentation, we share a roadmap, to conduct research and conceptualise policy, with delegates who experience similar challenges and aspire to similar goals.

Oral presentations
Topics: Clinical issues in sport and physical activity

The Risks of Athletes' Identity "Foreclosure" for Performance, Psychological Adjustment and Post Competition/Career Transition

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Personality theorist Erik Erikson recognized the concept of "identity crisis" while treating soldiers in World War II, who had "combat fatigue," now known as PTSD. Erikson hypothesized that young people needed an "identity crisis" to develop healthy identity (Erikson, 1956). Erikson asserted that a positive identity results when the young person makes a commitment to a value system and an educational/vocational pathway.

What are the implications of Eriksonian identity theory for athletes? Most elite athletes begin specialization in their primary sport in childhood. Recently parents and coaches have "streamed" talented child athletes into a single sport to develop athletic excellence (Atkinson & Goodway, 2021).

Are there psychological risks associated with such streaming? Psychologist James Marcia identified a malignant form of identity development called "Foreclosure" (Marcia, 1980). Foreclosure results when a young person forms a firm commitment to a way of being, but that commitment comes without the necessary experience of a crisis, namely the normal exploration of alternative ways of thinking and being.

Although some coaches (and parents) encourage and reward young athletes for a singular dedication to a specific sport, perhaps such overcommitment creates a precarious adjustment (Padaki et al., 2017). Likely some over-committed athletes have foreclosed identities which render them psychologically vulnerable (Atkinson & Goodway, 2021).

Foreclosure creates challenges for athletes in post competition transitions or given poor performances in crucial competitions such as a championship game or Olympic team qualifying. The presenter will give examples of "foreclosed athletes" and their maladjustment from his psychotherapy with elite athletes.

Oral presentations
Topics: Motor control and learning

Testing of VR technologies to create a training for different skill levels ice hockey players

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In the last few years, virtual reality (VR) technologies have been introduced into the training process in various sports for practicing specific motor skills.

The aim of research was to develop and test VR-PACE technology (VR Technology for training Puck hitting And hoCkey skill Effectiveness) for analysis of the performance in different skill levels ice hockey players. The developed virtual environment simulates a hockey field and sets four levels of difficulty depending on the speed of the puck and the distance to it. In the pilot study took part 20 participants: 13 professional hockey players (Mage=20±2.5) and 7 novices (Mage=20±1.4). It was found that professional hockey players have a significantly lower amplitude of head movements during the reflection of pucks. They understand the position of their body well enough, and they do not need to observe the full trajectory of the puck. Also the results demonstrated the significant differences in the speed of response to the presented pucks in the block with the fastest speed of 2 pucks. The results indicate a better development of technical, tactical and temporal skills of professional hockey players compared to novices. The adequacy of the VR-PACE technology for the analysis of professional skills of hockey players was demonstrated. It was also shown that the skill level of hockey players is determined by the development of some important parameters, such as the automation and the optimization of motor responses. Thus, based on the VR-PACE technology, a training for improving hockey-specific skills may be organized.

Oral presentations
Topics: Personality

THE HEXACO MODEL OF PERSONALITY AND MOTIVATION IN SPORT: A STUDY ON ITALIAN ADOLESCENTS

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Personality and motivation have received a great deal of interest in the field of sports psychology. However, the relationship between personality and motivation to play sports is often unclear (Brinkman, 2013). The aim of this study is to examine the relationships between personality and motivations to participate in sports during adolescence. Our framework for personality is the HEXACO model that assumes the existence of six personality traits: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness to experience. The research involved 714 students (52.7% females) from 7 middle schools of the region of Campania (Italy), aged between 10 and 16 years (M = 11.9, SD = 0.91) who were asked to fill out the HEXACO-Middle School Inventory (Sergi et al., 2019) and a questionnaire evaluating the motivation to play sports. The protocol was administered online using the Qualtrics platform. In order to achieve the aforementioned goal, correlation and multiple regression analyses were executed. The analyses revealed significant relationships between HEXACO personality traits and motivational variables. Specifically, Extraversion and Agreeableness were the strongest predictors of motivation to participate in sports during adolescence. The results suggest that motivation affecting sports participation can be explained by considering specific personality traits. These results have valuable implications for coaches and sport psychology practitioners.

Oral presentations
Topics: Decision making and judgement

Emotions and decision-making in elite athletes

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In elite sports, athletes make decisions in dynamic situations involving intense time pressure, uncertainty and high stakes. Such situations may trigger emotions in athletes that impact decision-making and performance; it is consequently important to study the relationships between emotions, decision-making and performance in top-level competitions. For decades, the Recognition-Primed Decision (RPD) model has been used to account for intuitive decision-making (Klein, 1997) in dynamic situations. However, it did not focus on the relationships between emotions and decision-making (Macquet, 2020). The present study aims to better understand such relationships in elite athletes.

Video replay was used to assist individual self-confrontation interviews with eight elite fencers. Participants were invited to comment on their emotions during a match before they made a decision, as well as on the information they used to make their decision. Data were processed using the comparative method (Corbin & Strauss, 1990). Decision efficacy was assessed from the match score. Results showed that, irrespective of performance (point won or not): (a) negative emotions or no emotions were the most frequent feelings reported; (b) there was no relationship between emotions and external focus (environment) versus internal focus (themselves). Athletes reported more positive emotions before scoring than before not scoring. They reported as many negative emotions in both cases. Results suggest that elite athletes manage their emotions in dynamic situations in order to develop situation awareness based on internal and external information, and to make decisions. A positive emotional state may have a beneficial impact on performance.

Oral presentations
Topics: Personality

Initial Development and Validation of the Football Referee Assertiveness Scale

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Previous research on sport referees investigated the importance of assertiveness without using instruments developed for sport contexts (e.g., Wilson & Mock, 2013; Ekmekci, 2016).This may be because there is no tool available to measure assertiveness and confidence in sport referees and more specifically in football referees. With this in mind, the aim of the current study was to develop a corresponding tool with good metric qualities. Five-hundred and six Italian football referees (males = 72.9 %) completed the questionnaire. The analyses led to the definition of a brief scale composed of a set of seven items, derived from an initial version comprising 35 items, which converge on one factor. CFA showed good indices of fit to data, e.g., Chi-square = 12.711; CFI = 0.998; TLI = 0.996; RMSEA = 0.015 and RMSEA 90% CI [0.000–0.064]. Convergent validity assessment confirmed predictive indications with variables such as Referee Self-efficacy (REFS), the Self-Determination Scale (SDS), the Communication Styles Inventory (CSI-B), and the Scale of Regulatory Modes (SRM). The measurement of invariance confirmed the fit for male and female referees too. An assertive attitude was found to be positively related to self-efficacy, self-determination, goal orientation, and to the control of one's own emotional reactions in the communication, pointing out that higher assertiveness in referee can effectively help to better manage stressful situations like those in the match. We believe that this tool can help to better assess assertiveness in order to develop specific training programmes and to facilitate the processes of referee selection and evaluation.

Oral presentations
Topics: Psycho-physiology

Training decreases Pain Sensitivity in Athletes: a Comparison between Endurance Runners and Powerlifters

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Background. Few studies in the literature illustrated cold hypoalgesia induced by strength training. While scholars already focused on pain perception using endurance running athletes, no studies were conducted with powerlifting athletes. Our hypothesis is that aerobic training in runners and explosive strength training in powerlifters can determine both at baseline and after a bout of activation a different sensitivity to pain. Objectives. Comparing ratings of perceived pain using the Cold Pressor Test (CPT) in endurance running and powerlifting athletes (N = 44) at baseline and after a single bout of 30 minute aerobic/strength training respectively. Methods. A two-way repeated measures ANOVA to examine effects of a training session in endurance runners vs powerlifting athletes on the intensity of perceived pain at CPT. Results. A statistically significant two-way interaction between Group and Training resulted. Simple main effects analysis showed that Pain perception at CPT was not statistically significantly different in Endurance Runners compared to Powerlifters at the beginning (pre-Training) of the trials, but was significantly different at the post-Training trial. In relation to the impact of the Training, this was significant both for the Runners and for the Powerlifters. Results indicated that after the training session the response of decreased perceived pain in the CPT test was particularly robust in the powerlifters (- 31%) when compared to the group of endurance runners (- 6%). Conclusion. As no studies to date have proposed a direct comparison with powerlifting athletes, these results suggest further extensions to delve hypoalgesic induction through the administration of strength training.

Oral presentations
Topics: Social psychology

Exploring the nature of social support during the concussion recoveries of university team-sport student-athletes

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Research has shown that social support can alleviate psychosocial sequelae experienced by concussed athletes (reduce feelings of isolation), however the dynamics of these interactions remain unclear. The purpose of this qualitative study was to better understand interactions between concussed student-athletes and their social support network (SSN; teammates, friends, family). We studied six cases: each consisting of one formerly concussed student-athlete and 2-3 members of their SSN (N=22). Each participant completed a timeline map to document the social support they provided/received, which was then discussed during one-on-one, semi-structured interviews with the lead author. Subsequently, MB led a thematic analysis of interview the data; first within cases and, subsequently, across cases. Overall, student-athletes in this study reported feeling quite isolated during their concussion recovery. Student-athletes said they preferred to discuss their recovery with people outside of their family (friends, physical therapists) to preserve their home environment. Both student-athletes and members of the SSN mentioned that non-verbal communication—particularly in the form of physical proximity (e.g., eating dinner, going for a walk)—was a positive strategy for family members to provide support. Negatively perceived social support interactions often stemmed from a disconnect between expected versus actual support. Additionally, the student-athletes said they would have appreciated more support from their universities (additional time to complete assignments, exams), as the lack of accommodations they experienced created problems with their academic progression. Results of this qualitative study on concussions provides a unique perspective of social support from the perspectives of student-athletes and members their SSN.

Oral presentations
Topics: Cognition

Assessing Decentering Capacity in Athletes: a Comparative Study

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The construct of decentering has recently gained increased attention in the sport literature as this self-regulating component has been shown to be able to strongly limit episodes of mental block in particular sporting situations. Experimental evidence has supported the protective role of decentering in that, even with high levels of rumination, individuals high in decentering produced better task performance when exposed to interpersonal criticism. This contribution illustrates a comparative study conducted with 251 Italian athletes of national and international level. The sports present were archery, swimming, football, martial arts, volleyball, basketball, rowing. The aim was to compare the athletes' decentralisation abilities taking into account the sport discipline, competitive experience, training volume and frequency. The results report significant positive associations with emotional regulation, coping style, the metacognitive processes as meta-awareness, disidentification from internal experience, and reduced reactivity to thought content. An important inverse association emerged with the catastrophic disposition in relation to painful experiences. The study emphasises the importance of assessing and enhancing the ability to decentralise in order to establish specific mechanisms of action, which are decisive for optimal performance and at the same time for the well-being of the athlete.

Oral presentations
Topics: Emotion

Effect of a running intervention on explicit, implicit and neural components of association with running in female novice runners

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Recreational running is an attractive leisure activity associated with many positive effects on mental and physical health (Junior et al., 2015). However, continuation of running behaviour appears to be a problem for many individuals, and to a greater extent for women (Fokkema et al., 2019). Both explicit and implicit processes are considered to be associated with physical activity behaviour (e.g. Brand & Ekkekakis, 2018). We aimed to explore how associations with running change through an eight-weeks running intervention (30 min running sessions 3x/week). 24 women (M = 23.9 years, SD = 3.4) with no or little experience in recreational running participated. Three explicit measures towards running (cognitive attitude, affective attitude, feeling thermometer) and a running-related Single-Target Implicit Association Test (ST-IAT) with concurrent EEG recording were collected before and after the intervention. Implicit associations towards running were quantified by D-Scores and mean target-related (i.e. runner stimuli) reaction time (RT) differences between the positive and negative pairing task condition. Equivalently, mean amplitude differences in the Late Positive Potential (LPP) time range (400-600 ms) at electrode Pz were calculated from EEG data. Pairwise t-tests revealed statistically significant increases for the explicit attitude components ($p < .05$) and the feeling thermometer ($p < .01$). Changes in implicit and neural components showed no statistical significance ($p > .05$), but large individual differences. The implicit-explicit discrepancy might indicate that adoption and continuation of regular running behaviour in female novice runners after an eight-weeks running intervention depend more on explicit than implicit associations towards running.

Oral presentations
Topics: Exercise psychology

Motivational orientations and body image in male and female bodybuilders, power lifters, and fitness lifters

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Fenerbahçe University, Turkey

The goal of this study was to look at how people's motivations and body ideals influenced their decisions to participate in bodybuilding, powerlifting, and fitness lifting. This study included 78 individuals (26 females and 52 males), ranging in age from 19 to 59 (Mfemale = 22.50, Mmale = 30.48 years) (21 bodybuilders, 19 power lifters, and 37 fitness lifters). The researcher conducted online semi-structured interviews, which were transcribed verbatim and assessed. Participants had a 65 percent positive and 35 percent negative response to the satisfaction of relatedness, and a 63 percent positive and 37 percent negative response to the satisfaction of relatedness autonomy in exercise participation. Participants' remarks on competence indicate that they never consider themselves adequate and that they are continually striving to improve. Participants said they exercised to enhance their health, fitness, mental health, physical attractiveness, success, fun, and self-confidence. 70% of the individuals said they were content with their physical appearance, 10% said they were dissatisfied, and 20% said their opinions regarding their physical appearance had changed. It has been noted that women exercise mostly for the sake of esthetic physical appearance and health, whereas men exercise for the sake of being healthy, fit, and powerful. Individuals that participate in bodybuilding and power lifting mostly exercise for the purpose of being stronger, growing self-confidence, being successful, and psychological wellness, whereas fitness lifters exercise for the purpose of being healthy, physical appearance, and being fit.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Prevalence of mental illness symptoms among university student-athletes throughout the COVID-19 pandemic

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The COVID-19 pandemic lockdown has led to the interruption of university sporting seasons and resulted in various negative consequences in the academic and personal life of university student-athletes (Hoyt et al., 2020; Son et al., 2020). These overturning might have led to psychological challenges for them (Graupensperger et al., 2020). This longitudinal study aims to describe the evolution of symptoms of mental illness during the pandemic. 211 university student-athletes across the province of Quebec (Canada), completed an online survey of at least two of three measurement times (fall 2020; spring 2021; fall 2021). Symptoms of depression (PHQ-9), anxiety (GAD-7), problematic alcohol use (AUDIT-C) and eating disorders (EAT-26) were measured. Repeated measures Manova showed significant differences during the pandemic for each mental illness symptom measures ($\eta p2$= .696, p=.001). Depressive and anxiety symptoms gradually decreased over time. Alcohol consumption increased whereas disordered eating had a slight increase in spring 2021, before returning to the baseline. Depressive and anxiety symptoms were higher when university athletes couldn't practice their sport (fall 2020), then improved with the easing of health measures (spring 2021) and the return to their university sports practice (fall 2021). The increase of problematic alcohol use symptoms may be explained by the gradual return of human contacts (drinking opportunities), and the eating disorder symptoms by the return to sport (desire to get back in shape). The pandemic appears to have affected university student-athletes' mental health; now it is time to support them as the pandemic may continue (new variants).

Oral presentations
Topics: Any other topic

The Safe Sport Journey: A Critique of International Safeguarding Initiatives

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In response to high-profile cases of athlete maltreatment globally and the resultant increase in public and scholarly scrutiny of sport, many local, national, and international sport organizations have increased their efforts to develop and implement Safe Sport initiatives (Lang, 2021). Specifically, numerous sport organizations have developed policies and procedures, education and training, mechanisms for reporting, and supports and resources for survivors, to address and prevent maltreatment. This study assessed the extent to which research evidence, including athletes' voices, are reflected in Safe Sport initiatives. A web-based analysis of six national and two international Safe Sport initiatives were examined using the criteria of: definitions and forms of harm addressed; relationships in which maltreatment occurs; intended audiences; focus on prevention and/or intervention, and whether the initiative had been evaluated. The findings indicated a predominant focus on sexual harms despite substantial evidence showing that psychological harms and neglect are far more common. Coaches as perpetrators of harms were emphasized despite the findings that other members of the sport community, particularly peers, are often instigators of harm (Vertommen et al., 2016; Willson et al., 2021). Contrary to recommendations to adopt a systemic approach to preventing maltreatment in sport (David, 2009; Kerr et al., 2019), the initiatives tended to focus on interpersonal relationships. Similar to the 2014 evaluation of child protection in sport initiatives (Kerr et al., 2014), recommendations are made for more attention to constructs of power and oppression, athlete rights, and evaluation.

Oral presentations
Topics: Neuroscience

Rumination: Mechanism of the antidepressant effect of exercise? Development of a decoder based on EEG and fNIRS data

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The reduction of rumination is discussed as a possible mechanism of the antidepressant effect of exercise (e.g. Craft, 2005). In this project, neurophysiological correlates of rumination as distinct from non-ruminative mental states are decoded by machine learning algorithms (decoders) and then used to predict possible changes in rumination during different types of exercise. For this purpose, the hypothesis is tested whether rumination, distraction and positive mood can be differentiated based on neurophysiological correlates. N = 6 depressed patients will be piloted in a randomised within-subject design. Rumination, distraction and positive mood are induced to participants while neurophysiological data using a 64-channel electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS; 8 source and 8 detector optodes) are recorded. The decoder will be trained using a classification model classifying the three mental states based on neurophysiological features. The second part of the project will then investigate the hypothesis, whether moderate exercise or aerobic interval training reduces rumination compared to an inactive control condition. The same patients will complete a single factor (moderate exercise vs. aerobic interval vs. control) within-subject design in randomised order while EEG/fNIRS is recorded and decoded. Additionally, self-reported rumination is assessed pre and post to exercise with the Perseverative Thinking Questionnaire state (PTQ-S; Ehring et al., 2011) as well as during the exercise conditions with visual analogue scales (VAS). Since data collection of the pilot sample will be finished in march ‘22, we then calculate power analyses and present preliminary results concerning neurophysiological decoding of rumination as well as self-report measures

Oral presentations
Topics: Physical activity

Uncovering the dynamics of self-control mechanisms between physical activity and sedentary temptations: a mouse-tracking study

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Engaging in physical activity (PA) requires self-control: individuals must refrain their immediate attraction toward sedentary temptations in order to complete their long-term goal. While self-control was initially conceived as relying upon effortful mechanisms, successful exercisers can also develop effortless self-control strategies to resolve motivational conflicts. Yet, these effortless mechanisms have been rarely examined and were only assessed using discrete measures (e.g., binary choices). Here, we investigated the dynamics of self-control mechanisms in a computerized mouse-tracking task in which participants indicated which of two on-screen behavioral options they would prefer to engage into (e.g., watching TV vs. running). Trajectories of the mouse were recorded to reflect ongoing self-control mechanisms, with faster reactions times and weaker deviations from an ideal straight trajectory (i.e., smaller area under the curve) being indicative of effortless self-control mechanisms. We included 88 individuals, among whom 39 individuals were classified as successful exercisers (≥ 150 minutes of weekly PA) and 49 as unsuccessful exercisers (< 150 minutes). Successful exercisers were more likely to choose PA (vs. sedentary behaviors) than unsuccessful exercisers (62% and 42%, respectively). When choosing PA over sedentary behaviors, reaction times were faster ($b = 91.70$ ms, $p < .001$) and areas under the curve ($b = 0.05$, $p = .03$) were smaller among successful (vs. unsuccessful) exercisers, indicating a smoother resolution of motivational conflicts. Although these findings should be interpreted in light of the limitations of our classification criteria, they suggest that successful exercisers can rely upon effortless self-control mechanisms to resist sedentary temptations and engage in PA.

Oral presentations
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Clean Parasport? A systematic mapping-review of doping and other threats to integrity

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The Erasmus+ funded RESPECT+P project (Clean Sport Alliance, n.d.) aims to bring anti-doping researchers, practitioners, and athletes together to foster high-quality doping research and evidence-informed doping prevention through a multi-angle exploration of a wide spectrum of threats to sport integrity that are unique to elite-level parasports. Firstly, there is a need for sustained use of medication for treatment and maintenance of health capabilities (Mauerberg-DeCastro et al., 2016), which impacts WADA's Therapeutic Use Exemptions scheme. Secondly, the use of technology to perform the sport is often unavoidable, which carries risks of 'tech-doping' (Wolbring, 2018). Thirdly, the ambiguity of the classification of impairment levels can lead to unfair advantages (Marcellini et al., 2012). Fourthly, 'boosting' is a phenomena in athletes with spinal cord injury through a vegetative dysreflex (Mazzeo et al., 2015).

The aim of the sub-project presented here is to overview the current state of research to inform empirical research for creating evidence-base for anti-doping prevention programs. Based on predefined criteria, a database search (k=8) was conducted. Seventy-one studies were included in the systematic mapping-review (PRISMA) and categorized as doping (k = 21), boosting (k = 25), TUE (k = 7), classification-cheating (k = 3), and tech-doping (k = 15). The relatively small number of studies indicates future focus-areas for research. The results are classified for the perspective of athletes, coaches, and other groups in para-sports, and discussed through the lens of trust in and, the trustworthiness of the anti-doping system. Implications for (clean) sport integrity (Petróczi, 2021) will be discussed.

Oral presentations
Topics: Elite sports and expertise

Parental practices and elite athlete's mental health

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The complexities and challenges of being sport parents (Harwood & Knight, 2015) displayed that some parental behaviours have been associated with negative psychosocial outcomes such as anxiety and dropout (e.g., Bois et al., 2009; Crane & Temple, 2015). Therefore, the purpose of the present study was to examine the relationships between athletes' perceptions of father and mother's directive and pressure behaviours with athlete's burnout, emotions, and motivation.

A total of 219 semi and competitive adolescent elite athletes (Swan et al., 2015) completed the adapted French version of the Parental Involvement in Sport Questionnaire, the Athlete Burnout Scale, the Multiple Emotions Measure, and the Behavioural Regulation in Sport Questionnaire. Athletes were assigned into two groups. Group 1 included athletes who reported scores of directive and pressure behaviours from their mother and father equal to or less than three (5-point Likert scale), whereas Group 2 included athletes who reported one or more scores strictly above three.

Analyses of variance (one-way ANOVAs) indicated that there were significant differences between the two groups on motivation ($F(3,215) = 7.87$, $p < .001$) and burnout ($F(3,212) = 3.91$, $p < .01$) but not in emotions ($F(8,210) = .84$, $p = .57$). Athletes from Group 2 reported higher scores for physical exhaustion, reduced sense of accomplishment, negative feelings towards port, controlled motivation and amotivation compared to athletes from Group 1.

The results suggested that limiting athletes' perception of the directive and pressuring parenting behaviours should promote their commitment and well-being.

Oral presentations
Topics: Elite sports and expertise

Anticipation of backcourt throws in handball goalkeeping: Semi-structured interviews with elite coaches and goalkeepers

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High spatio-temporal pressure requires handball goalkeepers to anticipate an opponent's action to be at the right place at the right time to save the goal (Schorer, 2006). In seven-meter penalties, expert goalkeepers utilize kinematic (e.g. Loffing & Hagemann, 2014) and contextual cues (e.g. Mann et al., 2014) to predict throw outcome. Here, we sought to identify the information sources considered relevant for anticipation in handball goalkeeping in more complex and frequent backcourt throw situations and form a basis for research on anticipation of backcourt throws in handball goalkeeping. To this end, we conducted semi-structured qualitative online interviews with N = 6 elite handball goalkeepers and coaches. Data processing and analysis included transcription, detailed coding and categorization as well as a participant check until all researchers and participants established consensus. Results show that anticipation-relevant information emanates from the thrower, the own defense and the own team, the opposing team and the goalkeeper themself. Respondents considered kinematic information (e.g. thrower's wrist bend and rotation, throwing arm posture and stroke, jump height and direction, fall direction) and contextual information (e.g. thrower's field-position, skill level, previous action outcomes, block position) crucial for prediction of backcourt throw outcome. Results demonstrate the complexity of information sources explicitly considered relevant for anticipation of backcourt throws. However, actual in-situ relevance including accuracy and effectiveness as well as integration of these sources for anticipation remain unclear. Future quantitative research should aim to unravel the relative importance of different cues and moderating factors as well as potential interactions between sources.

Oral presentations
Topics: Psycho-physiology

Guided and Self-Produced Imagery – Differences in Skin Conductance Level

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Imagery is a well-known technique that improves motor skills and performance efficiency and can also influence physiological arousal (Cumming et al., 2007; Morris, et al.2005). One of the biomarkers indicating the amount of physiological arousal is skin conductance level (SCL), an index of the activity of the sweat glands that are innervated by the sympathetic branch of the autonomic nervous system (Cacioppo et al. 2007). Our purpose was to evaluate differences in SCL associated with two instructional modalities of imagery (i.e., guided vs self-produced) and six different scripts (e. g. training or competition environment). We recruited thirty participants aged between 14-42 years with sport experience ranging between 2 and 20 years. Participants listened to each previously recorded script taken from two existing questionnaires concerning imagery ability in sport and then they were asked to imagine the scene for a minute. During the task, SCL was monitored using the Biofeedback Expert 2000 System. We calculated means, variance, slope and number of fluctuations in the signal. Next, time-series were clustered and compared using the KShape and dynamic-time-warping methods. Our results showed that in most cases skin conductance level decreased during both guided and self-produced imagery, and the average was slightly lower during the latter one. Moreover, in self-produced imagery the variance was significantly greater. Results likely indicated that the average stress level was slightly higher during guided than during self-produced imagery. Findings suggest that guided or self- produced imagery could be implemented differently to enhance athletes' performance.

Oral presentations
Topics: Talent identification/ development

Interpersonal experiences of coaches and managerial staff within the organizational structures of German football youth academies

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[1]Univeristy of Tübingen, Germany; [2]Florida State University, USA; [3]German Football Association, Germany; [4]Coaching Competence Cooperation – Network, Germany

Talent development environments are often investigated with a focus on the young athlete and their successful progression to an elite performer. Yet, there are many other stakeholders such as coaches, sport directors, and support staff who significantly shape the talent environment and actively contribute to athletes' development (Reeves & Roberts, 2020). To understand the preconditions of (un)successful talent development from an organizational perspective though, it is essential to also investigate the experiences and interactions among these stakeholders (Nielsen et al., 2017). To this date, these remain understudied within sports (Poucher et al., 2021). The current research project aimed to address this gap by exploring managerial staff and coaches' experiences of the organizational structures and interpersonal relationships within 10 German football youth academies. Specifically, 25 coaches and 20 members of the academies' management participated in semi-structured interviews (M = 97,5 min) exploring experiences of interconnectedness, collective emotions, interpersonal conflict, and social support. The results of a directed content analysis (Hsieh & Shannon, 2005) highlight the explicitly shared experiences of conflict and social support within and across organizational levels. Contrarily, collective emotions seemed to be less often experienced – or accessible – to participants. Moreover, the quality of the stakeholders' interpersonal experiences seemed to be closely linked to their perceptions of psychological safety, mutual understanding, and appreciation within the organizational environment. The current findings provide valuable information which can help sport psychology practitioners to facilitate the development of positive talent environments by employing an organizational perspective when working with academy coaches and management.

Oral presentations
Topics: Exercise psychology

Effects of Goal Setting and Vested Interest Messages Depends on Receivers' Body Mass Index

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Previous research showed that goal setting messages (i.e., messages indicating how to pursue a recommended goal) and vested interest messages (i.e., messages on the hedonic relevance of a behaviour) may induce an increase in healthy behaviour. In the present study, we examined whether such messages (and their combination) are effective in promoting regular physical activity, compared to a control condition. We also explored whether message persuasiveness would vary according to receivers' Body Mass Index (BMI). A sample of 448 Italian volunteers participated in a 1-month messaging intervention through the PsyMe app. Results showed that all messages increased physical activity. These effects were still present at follow-up (one month after the end of the intervention). Interestingly, as BMI increased combined (goal setting + vested interest) messages were more persuasive than goal setting or vested interest messages alone, suggesting that receivers with higher body weight need more information on how and why achieving a regular physical activity goal. These results advance our comprehension of the effects of messages aimed at promoting regular physical activity.

Oral presentations
Topics: Exercise psychology

Physical activity intervention targets for supporting student mental health: Therapeutic alliance and social connectedness

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Therapeutic alliance (TA) and social connectedness (SC) may be important intervention targets to optimize physical activity (PA) programs for post-secondary student mental health. The current pre-test post-test study examined: (1) the effectiveness of a PA program in reducing symptoms of anxiety and depression and improving SC; and (2) whether intervention effects differed among students reporting high TA and low baseline SC. Participants (N = 50; M(SD)age = 24.52 (4.62) years) completed self-report questionnaires and engaged in a 6-week structured PA program for mental health. Paired sample t-tests demonstrated significant ($p < .05$) reductions in symptoms of anxiety and depression and improvements in SC. MANCOVAs were conducted to examine the levels of TA and SC on change in mental health. Participants high in TA demonstrated less severe symptoms of anxiety [$F(5, 42) = 3.11$, $p < .05$, $\eta p2 = .27$], and depression [$F(5, 42) = 2.88$, $p < .05$, $\eta p2 = .26$], and higher SC [$F(5, 42) = 8.51$, $p < .001$, $\eta p2 = .50$] at post-program compared to participants low in TA. Participants low in baseline SC demonstrated a greater change in symptom reduction of anxiety [$F(3, 44) = 4.18$, $p < .05$, $\eta p2 = .22$] and depression [$F(3, 44) = 3.70$, $p < .05$, $\eta p2 = .20$] compared to participants high in baseline SC. Future research is needed to understand students low in SC as a unique target population group. Clinical and research implications underscoring TA as a contributor to intervention effectiveness will also be discussed.

Oral presentations
Topics: Well-being and quality of life

Improving athletes' mental health with a virtual coach: A pilot study

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The availability of training and education in the area of mental health is still insufficient for many athletes. For example, 84% of football players believe that there is not enough support for their mental health (FIFPro, 2016). Athletes are also reluctant to ask for help with mental challenges due to the stigma surrounding mental health problems (Castaldelli-Maia et al., 2019). Chatbots using a 1-on-1 conversation mode provide users with a sense of privacy and a reduced possibility of being criticized (Lucas et al., 2014). Therefore, we developed a chatbot app called CATO (Chatbot-Assisted Thriving Optimization) with the aim of 1) improving athletes' mental health, and 2) closing the gap between sport psychology knowledge and its application and accessibility in sports practice. CATO consists of automated conversations through which it shares information and strategies (e.g., cognitive restructuring, mindfulness, and gratitude exercises) that are suitable for coping with a variety of emotions, stressors, and problems. We will present the results of a currently conducted pilot intervention study (2 weeks) in which athletes will either receive the chatbot intervention or are assigned to a 2-week wait-list control group. Outcome measures will include mental health, well-being (i.e., affect, vigor), recovery experiences, and sleep. In addition, outcomes such as adherence and relevant user experiences will be considered.

Oral presentations
Topics: Emotion

Examining the associations among body appearance and fitness self-conscious emotions and exercise modalities in adults

Kristen M. Lucibello, Madison F. Vani, Catherine M. Sabiston
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Accumulating evidence supports that body-related self-conscious emotions are associated with moderate-to-vigorous physical activity in adults (e.g., Sabiston et al., 2020). However, the predominant focused on appearance-related emotions has neglecting the fitness facet of body image that may be especially pertinent to exercise (Castonguay et al., 2016). Furthermore, associations with resistance exercise have yet to be explored. The present study examined the associations among body-related self-conscious emotions (shame, guilt, envy, embarrassment, authentic and hubristic pride) and exercise (moderate, vigorous, resistance). The strength of associations were compared between appearance and fitness emotions. Adults (N = 535, Mage±SD = 28.04±5.91, 66.7% women, 22% meeting physical activity guidelines) completed a cross-sectional self-report online survey. Bivariate correlations and Steiger-z tests were conducted. Overall, appearance and fitness-related emotions were significantly associated with exercise; however, fitness-related emotions were often more strongly associated, and emotions varied across modality. Fitness shame ($z = 3.09$, $p = .0020$), guilt ($z = 3.51$, $p < .001$), authentic pride ($z = -3.82$, $p < .001$), and hubristic pride ($z = -4.89$, $p < .001$) were more strongly associated with resistance exercise than the associated appearance emotion. All fitness emotions were more strongly associated with strenuous exercise than appearance emotions ($p < .001$); only fitness authentic pride was more strongly associated with moderate exercise than appearance authentic pride ($z = -2.72$, $p = .0065$). These findings support the association between fitness-related emotions and exercise, and the importance of targeting specific fitness emotions depending on the exercise intensity/modality. Future research that accounts for the covariation among self-conscious emotions is needed.

Oral presentations
Topics: Emotion

Is Teammate Success Inspirational or Destructive? Displays of Pride, Envy, and Possible Mechanisms Related to Performance

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In collective sports such as swimming, athletes are constantly competing against their teammates, whether for starting position, status-related resources, or external awards. However, they must also be supportive of teammates to achieve team goals (e.g., winning a conference title) (Evans et al., 2012). In this context, the way a teammate displays pride after a victory (i.e., authentic, reflecting a genuine, positive emotion and success attributed to effort, vs. hubristic, a self-aggrandized feeling of pride and success attributed to ability; Dickens & Robins, 2020) can greatly impact the type of emotions felt by a defeated teammate (e.g., benign, reflecting efforts to improve oneself vs. malicious, reflecting efforts to demote the other; Lange & Crusius, 2015). These emotions, in turn, affect athletes' regulatory focus and social behaviors (Lange & Crusius, 2015; Landkammer et al., 2019), which can subsequently impact personal and team performance. Preliminary findings of 75 participants from this study show athletes who see teammates displaying hubristic pride are moderately correlated with malicious envy; $r(75) = .45$, $p < .001$; Likewise, malicious envy was correlated with performance-avoidance goal-setting behaviors, $r(73) = .24$, $p = .041$, compassion towards teammates (i.e., indifference, separation, and disengagement), $r(72) = .31$, $p = .007$, and antisocial behaviors, $r(73) = .40$, $p < .001$. Ultimately, these initial findings suggest that seeing pride and envy as a social-functional unit can assist to better understand and control competitive relationships and provide potential mechanisms related to athletic performance.

Oral presentations
Topics: Coaching

Perfectionism of Children in Relation to Level of Courage and selected individual and performance variables

Erkut Konter
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The exact nature of the perfectionism of children in relation to their level of courage is still unknown. The present study concentrates on this gap. Data were collected from 229 adolescents aged 9 to 12 (M=9.99 ± .82 yrs., 101 Male, 120 Female and 8 unstated). Children were administered validated Sport Courage Scale-28 (SCS-28), Children and Adolescent Perfectionism Scale-CAPS with the personal information form. SCS-28 has five factors consisting of Mastery-MT, Determination-DT, Assertiveness-AT, Venturesome-VS, and Self-Sacrificial Behavior-SB. CAPS has two factors including Self-Oriented Perfectionism-SOP and Socially Prescribed Perfectionism-SPP. Collected data was analyzed by Normality Tests, One-Way Anova, Multivariate Anova, Kruskal-Wallis, Mann-Whitney U, and t-tests. Data revealed a number of significant differences ($p<.05$): 1-Males have higher scores of VS ($p<.019$), SB ($p<.090$) and Total SCS-28 ($p<.044$) than females. 2-Twelwe years old children have significantly higher score of VS than Eleven, Ten and Nine years old children ($p<.05$). 3-There are significantly positive low correlations between SCS-28 and SOP ($r=.135$, $p<.041$), and SPP ($r=.155$, $p<.019$), 4- Children with higher scores of MT have lower points of SPP than children with lower scores of MT ($p<.048$). 5- Children with higher scores of VS have higher points of SPP ($p<.006$) and SOP ($p<.036$) than children with lower scores of VS. Initial results of perfectionism of children in relation to level of courage, selected individual and performance variables revealed a number of significant results. Future research could focus on various psychological skills and personality traits of children with different methods.

Oral presentations
Topics: Emotion

Soccer Refereeing Courage in Relation to Selected Psychosocial and Performance Variables

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Threre is substantial research void in psychology of soccer refereeing. Therefore, purpose of this study was to Soccer Refereeing Courage in Relation to Selected Psychosocial and Performance Variables (Age, Soccer Refereeing and Soccer Playing Experience, Level of Soccer Refereeing, Level of Parent's Education, Growing up Environment, Perception of Childhood Happiness, Introvert-Extravert Perception, and Soccer Refereeing Success). Data were collected from 205 male soccer referees aged 18 to 36 (M=25.5 ± 4.62 yrs.) in İzmir and Aydın cities of Turkey. Particicipants volenteered in this reseach and permission was given by the relevant authorities. Participants were applied validated Soccer Referee Courage Scale-20 (SRCS-20) (Konter & Aksoy, 2021) with the personal information form. SRCS-20 consists of 5 factors including Self-Confidence (SC), Determination (DT), Assertiveness (AT), Venturesome/Coping with Fear (VS), and Sacrife Behavior (SB). Internal consistency of the factors range between .711 and .892. Data were analyzed by Normality Tests, Kruskal Wallis, Mann-Whitney U Tests and Spearman Correlations. Results revealed that: 1-SRCS-20 factors significantly low to good level of positive correlations with the aforementioned psychosocial and performance variables ranging between .156 and .698. 2-Childhood happiness, Growing up Environment (in favour of cities versus slams and rural areas), perception of personality (in favour of extraversion versus introversion), and perception of success appear to be significant related to SRCS-20 factors ($p<.05$). Overall, courage factors related to indicated variables seem to be crucial in soccer refereeing and success. Future research could focus on soccer refereeing courage education, personality factors and psychological skills with the different methods of research.

Oral presentations
Topics: Mental skills training

Nonergodicity in Protective Factors of Resilience in Athletes – Focusing on the Individual in Research and Practice

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Resilience is a key construct to understand when athletes are able continue to perform optimally, or when they break down. The psychological literature points to various factors that can enhance process. However, given the consensus that resilience is a complex process, the question remains whether group-level aggregates adequately represents the individual-level dynamics. This known as the "ergodicity problem". A simple way to assess this problem is comparing the group-level and individual-level statistics the result from tracking the protective factors for a specific period of time. Therefore, we designed a diary study where athletes (n = 62) filled in daily questionnaires on various protective factors (i.e., confidence, motivation, perceived social support, perfectionism, and perceived resilience) for a period of 21 days. Our results indicate a) large difference between the individual-level statistics and the group-level aggregates as well as b) heterogenous slopes of linear mixed models over time. Together, this means that both researchers and practitioners should take the ergodicity problem seriously. That is, while the literature provides a good indication of general tendencies, specific interventions need to be tailored to the individual in order to be successful to increase resilience.

Oral presentations
Topics: Any other topic

Evaluating the Safe Sport Climate Within a National Sport Organization

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University of Toronto, Canada

Globally, sport is being confronted with cases of maltreatment, pressuring sport organizations to create and implement Safe Sport policies, practices, and procedures (Koller, 2018). The purpose of this study was to examine the Safe Sport climate of one large National Sport Organization in Canada. Specifically, we were interested in organization members' awareness of Safe Sport policies and education, experiences of maltreatment, and recommendations for advancing Safe Sport. A mixed-methods approach was used including an anonymous online survey and semi-structured interviews. In total, 96 participants, including athletes (n = 45) and non-athletes (n = 51), such as coaches, administrators, and medical staff, completed the survey. Of these, 85% of athletes and 87% of non-athletes reported being familiar with Safe Sport. Participants most frequently reported experiencing (36% athletes; 34% non-athletes) and/or witnessing (40% athletes; 28% non-athletes) psychological maltreatment. Only 25% of athletes submitted a formal complaint. Using a thematic analysis, 18 interviews (8 athletes and 10 non-athletes) were analyzed; participants discussed experiencing and witnessing maltreatment, particularly psychological maltreatment and neglect. Participants recommended more athlete representation and embedding Safe Sport values throughout the organization. The findings suggest that attention is needed to prevent psychological maltreatment and neglect in this sport. Additionally, the low percentage of athletes who report their experiences may be due to the normalization of maltreatment in this context and/or the lack of safe processes for reporting maltreatment. Recommendations for a rights-based approach to safeguard athletes will be addressed.

Oral presentations
Topics: Well-being and quality of life

Exploring the relationships between psychological harm, athlete satisfaction and mental health indicators among elite athletes

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Psychological harm is the most prevalent form of maltreatment reported among athletes (Parent et al., 2021; Vertommen et al., 2016; Willson et al., 2021) and yet research on the effects of psychological harms, specifically on athlete mental health, is in its infancy (Kerr et al., 2021). The purpose of this research was to build a broader evidence base on the relationships between psychological harms in sport and mental health outcomes and to explore the role of athlete satisfaction on these potential relationships. The specific questions addressed in this study were: (i) are there relationships between psychological harms and the mental health indicators of eating disorders and self-harming behaviours?; (ii) is athlete satisfaction related to psychological harm, mental health indicators and/or the potential relationship between psychological harm and mental health? In total, 995 current and retired Canadian National Team athletes completed an online anonymous survey that included measures of psychologically harmful behaviours, athlete satisfaction, eating disorders and self-harming behaviours. Results indicated that athlete satisfaction is negatively related to psychological harm (-.32, $p<.0001$), eating disorders (-.10, $p<.0001$) and self-harm (-.15, $p<.0001$) indicators. Moreover, athlete satisfaction was a buffer to self-harming behaviours (athlete satisfaction*psych harm interaction = -.42, SE=.16, p=.01), but did not buffer the effects of eating disorder behaviours. Interestingly the relationship between psychological harm and eating disorders was strengthened with increased athlete satisfaction (athlete satisfaction*psych harm interaction = .32, SE=.16, p=.04). Results are interpreted using athlete and child maltreatment literatures and recommendations are made for prevention and intervention.

Oral presentations
Topics: Emotion

Exploring the Impact of Interpersonal Emotion Regulation on the Regulator's Affect, Behavior, and Cognition in Competitive Sports

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Interpersonal Emotion Regulation, IER, is often used by athletes and when done effectively may positively relate to motivation, affect, team performance outcomes, sport commitment, and sport enjoyment (Tamminen et al., 2016; Tamminen & Crocker, 2013). Conversely, minimal research has explored the impact of IER on the regulator, although findings suggest that high regulatory demand can cause less effective support resources and regulation behaviors towards teammates (Pauw et al., 2019). Hence, IER may decrease regulator resources related to ego depletion, emotion regulation, and task effort. Understanding this possible impact is essential to ensure IER is not used to assist teammates at the expense of resources available for personal performance regulation. A minimum of 118 competitive adult dyad teams will complete self-report measures of affect (i.e. emotions of happiness, gratitude, anger, pride, excitement, anxiety, guilt, and frustration), cognition (i.e. ego depletion) behavior (i.e. invested task effort) and 10 frequently reported IER behaviors (e.g. emotional suppression, distraction, comforting) before and after a match. Data collection is ongoing and expected to finish in May 2022. Analysis will include cross-lagged multilevel regression models using IER behaviors to predict changes in cognition, affect, and ego depletion of the regulator and to predict changes in teammate affect, providing evidence for the net effect of IER. The study results will prompt the ability to conduct future experimental studies to determine causation between constructs and for practitioners to use evidence-based practice to advocate for the most effective and least detrimental IER behaviors in sport.

Oral presentations
Topics: Prevention and rehabilitation

Dyadic Coping in sport – a scoping review

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Social relationships become crucial when facing stress and adversity (Feeney & Collins, 2015). While literature on interpersonal emotion regulation in sport is growing (Tamminen & Neely, 2020), less emphasis is placed on dyadic interactions during stress. Dyadic Coping (DC; Bodenmann, 1995) is theorized as an interpersonal emotion regulation process in romantic relationships. To date, knowledge on DC in sport is scarce and theoretical utilizations of DC are suggested to be limited by a lack of intimacy between sport-based dyads (e.g., coach and athlete). The aim of this scoping review thus is (1) to synthesize current evidence on the application and effectiveness of DC in sport, and (2) to outline fruitful trajectories for future research as well as methodological recommendations for the investigation of dyadic processes. A systematic literature search was conducted in six databases (Web of Science, PsycInfo, PubMed, Scopus, SportDiscus, ScienceDirect) following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses checklist (PRISMA; Page et al., 2021) in January 2022. A total of 1755 articles was identified. Data extraction is on-going, and results will be presented at the conference. Findings are expected to allow a unified nomenclature on the theory of DC in sport as well as to promote research on sport-based dyads.

Oral presentations
Topics: Decision making and judgement

Risk-taking in tennis: Proposal of an operational Tool

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Risk-taking is a central skills of tennis players intending to excel. The purpose of this study was to investigate the player's risk taking (assessed through the Risk Taking Scale) directly affects his decision-making process on the court. The Risk Taking Scale assess the measurement invariance across elite players (n =166). In this study, approved by the Italian Tennis Federation, participants completed the risk-taking scale aim to investigate the existence of a correlation between some aspects of the individual's personality and his tactic in the court during tennis sport practice. The analyses were performed on the whole sample and the internal consistency of the scale was tested through an Explorative Factor Analysis for the total scale and relevant subscales, which indicated acceptable levels of stability. The hypothesis that we intend to demonstrate with this research is whether a player's risk taking directly affects his decision-making process on the court. In particular, we expect subjects who demonstrate a strong propensity to risk (risk inclined) to express a game aimed at finding the point with a tactically proactive attitude, on the contrary players who are not very inclined to risk (risk avoider) express a more focused on interpretation of the game and security in decisions.

Oral presentations
Topics: Group dynamics

Do we agree that you block the ball? Virtual reality defence scenarios in Team Handball

Hannah Pauly, Charlotte Raue-Behlau, Dennis Dreiskämper, Bernd Strauss
University of Muenster, Germany

Positive performance in teams is influenced by several team variables, such as structures (e.g., roles) and processes (e.g., Shared Mental Models (SMMs). SMMs are defined as similar understanding of each team member about upcoming actions (Eccles, 2019). A study in handball showed that SMMs and role clarity are correlated (Giske et al., 2015). However, situation-specific approaches for measuring SMMs in sports are called to be developed in order to meet their demands more adequately than post-hoc instruments like questionnaires (McNeese et al., 2017). Recently, a video-based SMMs measurement has been developed (Raue, et al., 2020). Virtual reality (VR) would further advance the empirical validity of such measurements. Thus, the aim of the pilot study is twofold: (1) testing a VR-measurement and (2) replicate the relationship of SMMs and role clarity.

In total, 9 middle block teams (N=18 player, M=25.17 years, SD=3.17) participated. Participants completed two conditions (Self & Partner) with 35 videos each, where they either indicated their own action or their partner's action. Role clarity was measured with the Role Ambiguity Scale (Beauchamp et al., 2002).

The results of SMMs (agreement Self/Partner) for the playing decisions were between 17% - 52% per team (M=34.13%, SD=12.26%). No significant correlation between role clarity and SMMs was found (τ=-.248, p=.167) 95%BCaCI[-.606,.106].

The SMMs are considerably higher than random results, which indicates that this VR-based method seems to be valid for measuring situation-specific SMMs. Next, these results need to be replicated in a second study with a greater sample to increase the power.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Heartbreak in Sports: Isolation of Student-Athletes during the COVID-19 pandemic

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To manage the COVID-19 pandemic, governments worldwide imposed lockdowns that restricted social interactions and physical activities. Among those severely affected are student-athletes whose classes, training routines, and sports competitions were canceled. In this mixed-method research study, 1651 student-athletes from 12 Philippine colleges and universities responded to an online survey examining their experiences during the Extended Community Quarantine (ECQ). Among those who indicated their willingness to be interviewed after responding to the survey, 20 students representing the different schools were interviewed in-depth on their experiences during the pandemic. Paired sample statistics showed that, although most of them continued to do physical activity and exercise during the ECQ, these were predictably much less in quantity and quality than what they used to do before the ECQ. Survey responses revealed they miss their teammates the most, followed by training in their sport, competition, and coach. Thematic analysis of the interview data generated themes of personal struggles, academic and training challenges, and growth opportunities. Athletes who did not complete their sports season due to the ECQ scored highest in feelings of regret, worry, and grief. These findings were presented to the local governing sports organizations of collegiate sports to highlight the importance of mental health care among student-athletes, particularly during forced discontinuity of sport during a pandemic.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Disrupted Lives: COVID-19 Quarantine Measures and Filipino National Athletes

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The purpose of this mixed-method research was to investigate the implications of the government-enforced extended community quarantine (ECQ) to sport-related training routines, competition schedules, and perceptions of Filipino national athletes. A web-based electronic survey was developed and distributed online to national athletes within the first three months of the ECQ. The survey consisted of questions regarding changes in their training routines and access to training resources, disruption of competition schedules, and sentiments during the pandemic. Seven hundred nineteen Filipino athletes representing 56.61% of the national athletes, responded to the survey. Among those who indicated their willingness to participate in an interview after responding to the survey, twenty athletes from the different sports disciplines were interviewed online to elaborate on their subjective experience during the ECQ. Results of paired sample tests revealed that, although most athletes continued their sports skill practice and strength conditioning at home at almost the same frequency before the pandemic, a significant decrease in self-reported training duration was noted during the ECQ. The athletes remained optimistic that the disrupted competitions would resume in time. Although the athletes reported feelings of uncertainty, stress, anxiety, and fear, they also experienced positive emotions, such as being alert, active, and vigorous. Thematic analysis of the interview data revealed four major themes that describe the subjective experiences of the athletes: "socio-spiritual support systems," "personal and professional struggles," "alterations in goals and motivation," and "opportunities for growth and self-development." Recommendations for the overall well-being of athletes in quarantined are discussed.

Oral presentations
Topics: Leadership

The Development of Athlete Leadership: A Systematic Scoping Review of the Evidence in Sport

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There is growing evidence that athlete leaders in sports teams are essential drivers of effective team functioning and their teammates' well-being (Fransen et al., 2020). As the quality of these athlete leaders is vital to yield such effects, the interest in programs aiming to strengthen the leadership qualities of athlete leaders is rapidly increasing (Fransen et al., 2021). However, no comprehensive review of athlete leadership development interventions has been conducted. Therefore, the primary goal of our systematic scoping review was to review the existing literature. Studies were included if they focused on enhancing the leadership qualities of athletes participating in competitive sport. The final protocol for this review was registered prospectively with the Open Science Framework (https://osf.io/b5mqv). The literature search for this study was conducted on Web of Science Core Collection, SportDiscus, PubMed, Embase, Cochrane Library, Open Access Theses and Dissertations and ProQuest Theses and Dissertations. All types of articles (including descriptive, qualitative, quantitative and reviews) were included within the review. References were imported and deduplicated in EndNote (Clarivate Analytics) following the de-duplication guidelines given by Bramer et al. (2016). Titles and abstracts were evaluated by two independent reviewers in accordance with the review's inclusion criteria. Following that, the reviewers extracted data from 35 relevant studies, which were then included in this review. The findings of the study will be presented to researchers and practitioners in order to inform them about the nature, content, type, effectiveness and efficacy of interventions aimed at developing athlete leadership in sport settings.

Oral presentations
Topics: Exercise and COVID-19 Pandemics

Associations of exercise with mental health during the COVID-19 pandemic: A cross-sectional survey in Germany

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COVID-19-related confinement policies pose a threat to mental health (Brooks et al., 2020). We investigated prevalence rates of depressive, generalized anxiety and insomnia disorders in a convenience sample of German adults during the lockdown in Germany (April 2020), explored associations of exercise behavior with disorder-specific symptoms, and assessed whether physical activity (PA)-related affect-regulation skills enhance the effect of exercise on symptom alleviation. 4268 adults (78.8% female) with a mean age of 33.65 years (SD=12.18) completed an online survey including questionnaires on mental health, exercise behavior, and further Covid-related lifestyle factors. The primary outcome was depression, secondary outcomes were generalized anxiety and sleep quality. Results indicated an elevated prevalence of depressive disorder (31.2%), other anxiety disorders (7.5%), and sleeping disorder symptoms (43.0%). Multiple linear regression analyses indicated that a change towards less exercise during the lockdown was significantly associated with higher levels of depression ($t= 5.269$; $\beta= 0.077$; $p< .001$), anxiety ($t= 3.397$; $\beta= 0.055$; $p< .001$) and insomnia ($t= 2.854$; $\beta= -0.049$; $p= .004$). PA-related affect-regulation enhanced the effect of regular exercise on depression ($t= -3.827$; $\beta= -0.071$; $p< .001$), anxiety ($t= -2.291$; $\beta= -0.047$; $p= 0.002$), and insomnia ($t= -2.255$; $\beta= -0.047$; $p= 0.024$). Study results suggest demand for measures that promote the maintenance of exercise and improve PA-related affect-regulation to optimize the effects of exercise on mental health. Given the low-threshold accessibility of exercise and its importance in supporting stable mental health, health interventions targeting physical exercise are vital during the current pandemic.

Oral presentations
Topics: Youth

Defining and Characterising Parental Resilience in Youth Sport

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It has been established in previous literature that parents face numerous stressors within youth sport settings (Harwood et al, 2019; Lienhart et al, 2020) and that they use various strategies to withstand these stressors (Lienhart et al, 2020). Given that parental resilience has yet to be explored in a sport context, the purpose of this study was to construct a definition of parental resilience and to identify associated psychosocial assets and strategies. Fifty-one parents from a range of sports completed an individual interview or participated in a focus group, discussing issues relating to the stressors they face, the definition of parental resilience, and the associated psychosocial assets and strategies that they use to withstand stressors. Parental resilience was defined as “a dynamic process in which parents draw on multiple psychosocial assets and strategies to effectively manage their responsibilities and maintain psychological well-being when encountering a range of stressors.” The psychosocial assets that parents used included maintaining a sense of perspective, perceiving and utilising social support networks, being open to new experiences, and having confidence in their parenting capabilities. Key strategies parents referred to included detachment from the sport, understanding the child’s personality, accepting what they can and cannot control, and planning and organisation. This study extends research in sport psychology by providing greater conceptual clarity of parental resilience in youth sport. Through identifying the key psychosocial assets and strategies that parents draw on, this study provides an important foundation for future research and practice.

Oral presentations
Topics: Cognition

Systematic misjudgment of moving targets: Are successful players perceived as further ahead?

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To predict movement in the environment, moving objects are represented as having representational momentum (RM). This helps overcome neural delay and limits in pursuit eye movement by extrapolating movement trajectories (Anderson et al., 2019). Accordingly, moving objects which are suddenly occluded, are misremembered as being further along their trajectory (Hubbard, 2005). In sports, RM effects could interfere in officiating e.g., line decisions in fast ball sports (Mather, 2008; Whitney et al., 2008) or offside decisions in soccer (Gilis et al., 2008). Novel ecological approaches (see e.g., Shapiro, 2019) emphasize interactions of the physical world and cognition, raising the question if object features unrelated to actual momentum could also modulate the RM effect. Based on the representative link between success and forward movement (Robinson & Fetterman, 2015), we hypothesize that the RM effect can be increased when the target (a running athlete) is perceived as being successful or unsuccessful. In an online experiment, 120 participants watch a video of a football player either scoring (successful) or missing a penalty kick (unsuccessful), followed by a video of this player running. After this video is occluded, participants are asked to indicate the final video frame before occlusion. The RM effect is quantified as the difference between the true and remembered frame. Determining such causes of officiating errors could be the first step in better preventing them (Jin et al., 2017; Tenenbaum et al., 2000). Example stimuli and a video extract of the experiment can be found on https://osf.io/7TBQ5/ .

Oral presentations
Topics: Motor control and learning

Do instructions influence the integration of dual tasks?

Stefan Künzell[1], Harald Ewolds[1], Laura Broeker[2], Rita de Oliveira[3], Markus Raab[2,3]
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Introduction

If two tasks have to be processed at the same time, dual task costs are often observed. However, if there are functional couplings between the two tasks, they could also be consi-dered as one task (Künzell et al., 2018). Here, we manipulate instruction and feedback to suggest a conceptualisation as a single or dual task. We expect lower dual-task costs when conceptualising as a single task.

Method

The participants complete a visual-manual tracking task and an auditory-pedal go-nogo task. The auditory target stimulus is always given just before a turn in the tracking task. In the task-separating condition, the dual-task group (DT, n=20) receives instructions and feedback that clearly separate the two tasks. In the single task group (ST, n=20) instruc-tion, instructions and feedback suggest a single task. The participants complete four prac-tice blocks of 20 runs each, one test block (5 runs tracking only and go-nogo only, 5 runs under practice conditions and 5 runs under practice conditions but without a pairing between the tasks) and one retention block.

Results

No differences could be found between DT and ST. In both groups, performance was best in the coupled simultaneous task, followed by the single task and the uncoupled double task. These differences are significant, $F(2,64)=41.31$, $p<.001$, $\eta p2=.564$.

Discussion

The performance in simultaneous task processing suggests that, independent of the in-struction, task integration has taken place through the coupling of the tasks. In athletic tasks, individual partial movements can presumably be instructed separately without fear of performance losses.

Oral presentations
Topics: Exercise psychology

How to manage Exercise-Induced-Pain during a high intensity task? Psychological strategies used by expert crossfiters

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Exercise-Induced Pain (EIP) occurs naturally when athletes are engaged in an intense and prolonged exercise. It usually decreases or completely disappears shortly when exercise is ceased or intensity reduced (Mauger, 2019), and could occur in the absence of muscle damage. So far, the psychological strategies used by athletes to manage EIP have not been well established. This study explores strategies used to manage EIP during a CrossFit challenge, corresponding to a high intensity performance task.

Eight CrossFit expert athletes (3 men, 5 women, Mage = 25,33) participated in the study. To collect data during the COVID-19 lockdown, the experiment took place remotely. Each participant performed a Workout Of the Day (WOD) including three series of three high-intensity exercises. Video stimulated recall interviews were then conducted. Each participant watched his/her own performance and after each exercise a) they rated their perceptions of effort and pain with the Borg CR10 scale (Borg, 1998) and b) they described the type of pain felt and the strategies used to manage EIP. Qualitative data were analysed inductively and deductively to identify categories of strategies.

Results revealed different strategies used to manage EIP, such as coping strategies (i.e., pain catastrophizing, avoidance of pain) or attentional strategies (i.e., active self-regulation, task focus, monitoring, action on internal sensations). The results also highlighted a dynamic in the use of strategies, depending on the level of EIP. Those findings offer a better understanding of EIP management in an ecological setting and provide new perspectives in mental training interventions.

Oral presentations
Topics: Health

The Effects of Soccer Heading on the Development of Neuropsychological Performance in Female Soccer Players

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Technical University of Munich, Germany

Introduction

Within recent years, the proliferate concern about the consequences of sport-related head impacts has led to an increasing amount of research on soccer heading and its effects on brain function. While current evidence on the actual risk remains inconclusive, female players, despite an increased vulnerability (Rubin et al., 2018), are largely underrepresented in previous approaches. Consequently, our aim was to prospectively investigate the relationship between purposeful heading and changes in neuropsychological performance in female soccer players.

Methods

Before and after one soccer season, 22 female players (22.0 ± 3.9 years) underwent a comprehensive neuropsychological examination (questionnaires, cognitive and sensorimotor assessments). Throughout the season, matches were video-recorded and footage then analyzed to obtain players' individual number of performed headers. Individual heading exposure was predicted by neuropsychological performance changes using one model of multiple linear regression.

Results

Regression (R2adj = 0.65, $p < 0.01$) revealed that players with greater heading exposure performed worse than expected in a postural control task ($p < 0.01$) while exhibiting concomitant changes in working memory performance ($p = 0.03$). Moreover, we found minor changes in fine motor performance indicators as assessed by writing tasks ($p = 0.02$ and $p < 0.01$).

Conclusion

In contrast to previous reports (Lipton et al., 2013), our findings suggest that a greater number of headers is associated with sensorimotor rather than neurocognitive performance changes. Moreover, the present results are the first to point towards a cumulative effect of soccer heading on both postural and fine motor control in female soccer players.

Oral presentations
Topics: Decision making and judgement

Big data meets sport psychology – a project report from Tokyo Olympics data and experiments in elite beach volleyball

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This project report describes how big data meets sport psychology when testing sequential choices in beach volleyball. It illustrates the hot hand phenomenon, that is the belief of a players' higher chance to score after two or three scores compared to two or three misses from a simple heuristic framework. The simple heuristic framework describes and explains fast choices using rule of thumb for instance when deciding as a beach volleyball player whether to serve to player A or B. The project of sports informatics and sport psychologist researchers provides a show case how sport associations and clubs can take advantage of interdisciplinary work. First, analyzing the sequential choices in expert athletes in more than 1,300 matches from the World Series 2012–2018 and the 2012 and 2016 Olympic Games revealed that they were sensitive to base rates and adapted their strategies to the opponent performance when making the decision to whom to serve. Our data describes a threshold at which players change their strategy and use base rates (Link & Raab, 2021). Second, we use the Tokyo data, asked the national coaches about their belief of the hot hand and how to use it in matches to design experiments to test individual athletes' decision strategies. Finally, we conclude that the sequential decision analyses of big data, sport psychology experiments and diagnostic from a simple heuristic perspective can provide simple but valid recommendations for sport choices.

Oral presentations
Topics: Talent identification/ development

Examining cognitive skills and psychological characteristics through sex and developmental stage in artistic gymnastics

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During all TD stages, cognitive skills and psychological characteristics are necessary to successfully overcome TD specific challenges. This cross-sectional study explored executive functions (EF) and psychological characteristics (PCDE), in male and female high-level artistic gymnasts between 9 and 26 years old. First, a variable-centred approach, with a (M)ANOVA comparing a quasi-control and a gymnastics group on age, developmental stage and sex was applied. Second, a person-centred approach, using radar charts, examined intra- and interpersonal differences within a selected group of four high-level gymnasts. In the youngest age group, a general improvement with age for EF was observed, and gymnasts scored higher on several PCDE factors than the control group. The older age group showed that gymnasts had significantly higher scores on inhibition than the quasi-control group. Scores in several PCDE factors were in favour of the gymnasts compared to the quasi-control group. The radar charts showed a more similar profile between all four gymnasts and the quasi-control group for the EF components, but inter-and intra-variation was more pronounced for the PCDE-profiles. This study showed that inhibition, imagery use, and self-directed control and management could be potential performance indicators in gymnastics. The radar charts seemed to indicate that once an athlete scored above a specific threshold on all variables, there is no necessity for trying to maximise each and every of these skills, but rather leave room for individual profile variation. Since individual profiles were indeed observed, we recommend an athlete-centred approach in all TD phases from a young age onwards.

Oral presentations
Topics: Cognition

Professional football players experiences of organizational stressors and cognitive appraisals during a premier league season

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Previous research investigating organizational stressors and related cognitive appraisals in sports has primarily ignored the unique experiences of professional athletes in team sports, especially footballers. The purpose of this study was to investigate how football players appraised organizational stressors they encountered in the 2020/2021 premier league in Ghana. The study sought to particularly examine (1) the prevalence and stressors experienced by football players (2) which stress appraisal mechanisms were adopted and (3) the relationship between organisational stressors and cognitive appraisals encountered.

A descriptive design using census was used to select 424 players who were officially registered from 17 premier league clubs to complete the organisational stressor Indicators for Sport Performers and the Stress Appraisal Measure.

Descriptive statistics (means and standard deviation) and multivariate multiple regression were used to analyse the data. The results revealed selection as the most predominant stressor for players followed by goals and development and team and culture issues. Players appraised the identified organisational stressors through controllable-by-self and challenge with few threat valuations. Goals and development was positively related to centrality and challenge appraisals among football players.

Findings has disclosed that generally, stress is common among football players, particularly, on matters concerning selection, goals and development and team and culture respectively. Controllable-by-self, Challenge and Controllable-by-others were the three most used appraisal mechanisms adopted by the players. League organisers, Sport Psychologists and Managers of clubs should include designed interventions (e g., Cognitive restructuring and appraisal training) to provide sufficient psychological help for players to enhance their well-being.

Oral presentations
Topics: Mental skills training

Psychological skills in esports: Qualitative study in individual and team players

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The present qualitative study aimed to explore the key psychological skills that affect players' performance in esports. A total of ten national and international professional players from different esports (League of Legends, Hearthstone and FIFA), both individual and team, were interviewed. The data analysis was carried out through a CodeBook thematic analysis (Braun & Clarke, 2021). The results obtained suggest that there are three main dimensions, not only psychological, but that also underpin the optimal performance of the players, which are: (a) technical-tactical skills, (b) psychological skills, and (c) healthy habits. Within the psychological skills, eight components were found: (a) Attentional control, (b) Emotional control, (c) Activation control, (d) Communication, (e) Team cohesion, (f) Thought control, (g) Goal control and (h) Behaviour control. In addition, an emerging theme was found to be the careers they have developed within sport, with all participants following a similar pattern. The results suggest the importance of sport psychology as a performance-related activity, the similarity of the psychological skills found with those of traditional sport (Trotter et al., 2021), the importance of working on sustained attention and coping with tilt, understood as a set of negative emotions (frustration, anger, fear, despair, etc.) that has an intense impact on all other areas of performance, and the importance of the careers of esports players.

Oral presentations
Topics: Physical activity

Promoting Physical Activity in sedentary children through Self-Determination Theory: A protocol study

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Objetive: Grounded on human psychology, the adolescent stage is a critical period in terms of the acquisition of patterns of physical activity (PA), which are subsequently maintained during adulthood. Therefore, this research aims to i) implementation of a motivational program, based on the Self-Determination Theory, to promote physical activity in sedentary youth; and ii) improve knowledge of the strategies to be implemented with young people of school age, with the aim of integrating a healthy habit into their lifestyle.

Method: A study will be developed with children (ages 10-12 years old) from the Region of Extremadura (Spain). Youth sedentary behavior, physical activity, motivation, body image, satisfaction of the basic psychological needs, intention to be physically active, anthropometric variables, and academic performance will be measured in order to know psychological, anthropometric and cognitive variables in children. The assessment will be conducted twice, and a quasi-experimental study will be developed during 12 weeks, 3 times a week, with the aim to apply motivational patterns in children based on Self-Determination Theory. Later, children will be tested again to examine the improvements (or not) of the motivational intervention program.

Conclusion: We hope the findings of this study will improve scientific knowledge about the efficiency of multistructural programs, with a motivational impact, that aims to increase PA levels. Furthermore, we also hope that this project will contribute contribute to a better understanding of the factors that are related to sedentary lifestyle, and increase physical activity levels in children.

Oral presentations
Topics: Motivation

Physical activity and intention to be physically active: The mediating role of motivation

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Purpose: Chilhood and adolescence are crucial stages to promote adaptive behaviors. Grounded within Self-Determination Theory, this study aims to i)Examine the relationship between physical activity, intention to be physically active and motivation; ii) Explore the differences between boys and girls in levels of physical activity, motivation and the intention to be physically active, and iii) Test the mediating role of the motivation in the association between physical activity and intention to be physically active.

Method: 457 students ranging in age from 10 to 13 years old belonging to different schools in the city of Cáceres (Spain) participated. Physical activity, intention to be physically active, levels of motivation and basic psychological needs were assessed in order to test the aims of the study. The assessment was developed in the school with the main researcher always presented to resolve any doubt. Descriptive, correlation analysis, analysis of variance and mediation model were conducted.

Results: Relationships between levels of physical activity, intention to be physically active and motivation were found. Moreover, differences between boys and girls in levels of physical activity and motivation appeared in the analysis. Finally, it is important to note that motivation (overall intrinsic motivation and amotivation) had an important role in the association between physical activity and intention to be physically active in the children tested.

Conclusion: Results revealed the importance of motivation towards physical activity in order to promote adaptive behaviors (healthy lifestyle) such as the increase of physical activity or create/promote the intention to be physically active out-of-the-school.

Oral presentations
Topics: Well-being and quality of life

Active breaks: a viable solution to reduce stress and improve wellbeing in office workers

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Evidence suggests that sedentary behaviour is typically associated with poorer mental health. Unfortunately, the Covid-19 pandemic increased physical inactivity and stress worldwide, especially for groups whose daily activities were disrupted, such as office workers. Thus, the present studies aimed to reduce sedentary behaviour and stress in office workers, via a digital behaviour change intervention. In three studies, full-time office workers of different enterprises in Scandinavia were randomly assigned to a 3-to-4-month intervention engaging in active breaks, or a waiting list control group. Randomization was blocked for previous overall physical activity. Univariate repeated-measures mixed ANOVAs and multiple regression models were performed using self-report psychological measures (e.g., perceived stress), physiological and behavioural variables (e.g., resting heart rate, physical activity, measured via a wearable physical activity tracker), as main outcome variables. Overall, the intervention groups, compared to the control groups (time by group effects), were significantly more physically active, improved physiological markers, and reported less stress. We found a viable, agile, and scalable solution to combat sedentary behaviour stress for both in situ and remote office workers. Providing office workers with a pervasive digital solution to empower them to increase their physical activity level by performing active breaks during the workday might be effective in the light of the mental and physical health risks levels that office workers may experience.

Oral presentations
Topics: Perception & attention

An Ecological Dynamics Perspective on Flow in Sport

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While Csikszentmihalyi's concept of flow, defined as a state of complete absorption in the task at hand (Csikszentmihalyi 1975; 1990), has enjoyed wide recognition due to its intuitive appeal, research on flow in sport has stalled recently (Swann et al., 2018). Although many descriptive accounts exist, a lack of explanatory theory for flow has been recognised as a major issue (Jackman, 2019; Schweickle et al., 2017; Swann et al., 2012,). Given these acknowledged issues, meta-theoretical commitments shared by previous explanations of flow should be critically examined. Flow was originally underpinned by a mixture of phenomenology and information theory (Csikszentmihalyi, 1990 p. 26). More recent explanations (Dietrich, 2004; Gold & Ciorciari, 2021; Harris et al., 2017; Weber et al., 2009) have continued to conceptualise flow within a cognitive framework. This presentation will provide a critical overview of current flow research and position the need for an ecological dynamics (Davids et al., 2013) perspective on flow in sport. From this position the presentation will argue for moving away from the currently used internal models and towards an organism-environment scale of analysis (Araujo & Davids, 2009). This scale of analysis has been implicitly suggested in the recognition of flow's relational nature (Csikszentmihalyi, 1975; Nakamura & Csikszentmihalyi, 2014), but has never been fully developed. An ecological dynamics rationale would allow for a precise conceptualisation of flow in sport and provide practitioners with actionable information on facilitating the emergence of flow experiences through the manipulating of constraints on the performer-environment system (Renshaw et al., 2009).

Oral presentations
Topics: Health

Students' Risk Perception and Anxiety during COVID-19 Using Social Media and Professional Platforms as Covid-19 Information Source

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Objectives: The aim of the study was to: 1) establish the relationship between risk perception and anxiety among university students amidst COVID-19; 2) assess how social media platforms moderate the link between COVID-19 risk perception and anxiety; and 3) examine the moderating role of professional platforms in the relationship between risk perception and anxiety.

Methods: Using a cross-sectional design, data were collected from a convenient sample of 778 university students in Ghana using self-developed questionnaire. Descriptive and linear regression analyses were used to analyze the data.

Results: Key results showed that COVID-19 risk perception was found to be positively related to anxiety. Social media platforms significantly moderated the relationship between COVID-19 risk perception and anxiety level. Further, students who utilized social media as COVID-19 information source reported high anxiety level in the amidst of high risk perception as compared to those who did not use social media. Professional platforms usage acted as buffer on the positive link between COVID-19 risk perception and anxiety levels. In the presence of high risk perception, students who use professional platforms, as compared to those who did not use the professional platforms, showed significantly low anxiety levels.

Conclusion: Findings suggest the role of social media and professional platforms could play in shaping students' perceptions about COVID-19. Risk perception should be integral for effective risk communication planning. This approach would guide educational authorities and health professionals to help students adopt preventive and/ or coping behaviors to promote their well-being amidst the ongoing pandemic.

Oral presentations
Topics: Group dynamics

Threat appraisals of upcoming competitions after lost matches

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In the 2018 soccer world cup the German national team were surprisingly eliminated in the preliminary round. Such examples can be labeled as team crises, meaning threatening states of lasting underperformance in sports teams (adapted crisis definition, e.g. from Billings et al., 1980; Pearson & Clair, 1998). Based on stress and crisis theories (e.g., Blascovich & Tomaka, 1996; Jones et al., 2009; Sweeny, 2008), the main goal of the present study was to test which factors contribute to a crisis i.e., if high expectations, high consequences, and uncontrollable cause attributions trigger a crisis by inducing threat for upcoming matches. The relationship between collective efficacy and cohesion to threat appraisal is explored, as well as spillover effects of the three factors from one match to the next.

As preregistered (https://aspredicted.org/NL2_WQX), 396 team athletes (Mage=27.9, SDage=8.1, 178 female) read vignettes, manipulating expectations, consequences and attribution, and answered an online questionnaire on threat appraisal and emotions following the vignette, as well as cohesion and collective efficacy of the athlete's current team.

A 2(expectations)×2(consequences)×2(attribution)-factorial ANOVA revealed no significant main and interaction effects. Other results suggest that perceived controllability was lower for those who received an uncontrollable in comparison to a controllable vignette ($t(385.47)=1.98$, $p<.05$) with a small effect, $d=.2$. Task-related cohesion ($r(394)=-.17$, $p<.05$; $r(394)=-.12$, $p<.05$) and collective efficacy were negatively related to threat appraisal, $r(394)=-.22$ $p<.01$.

Low threat ratings may have led to these non-significant findings. Correlations of threat with team factors highlight the relevance of further looking into threat appraisals within crisis research.

Oral presentations
Topics: Cognition

The dual functions of gaze in sports: the presence of an opponent

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In eye tracking research in sports one important aspect has never been considered so far: the presence of an opponent who is able to interpret someone's gaze behavior. This neglects theories and models from social psychology according to which people change their gaze behavior if their own eye movements can be observed (e.g., Risko, Richardson, & Kingstone, 2016). That is, someone is not able to collect visual information without sending out information about his own interests because gaze is easily observable for others. We analyzed if and how athletes change their gaze in order to leave their opponents in doubt about their intentions while also ensuring a certain level of performance by focusing on necessary target information (in handball 7m throwing). To this end we compared gaze behavior and performance of differently skilled athletes facing a goalkeeper while wearing either an eye tracker with shaded (opponent is not able to see someone's eyes) or normal lenses (opponent is able to see someone's eyes) in counterbalanced order and trying to hit predefined targets in the goal's corners. Results showed that athletes indeed adapted their gaze when their eyes were observable (less focusing on actual target, increased use of a gaze anchor) what was associated with less accurate 7m throwing accuracy. This is probably an attempt to provide the goalkeeper with a minimum of information on target location. Furthermore, it shows that more general recommendations on optimal gaze behavior (e.g., Quiet eye) have to be questioned under at least some circumstances.

Oral presentations
Topics: Exercise psychology

Effects of focused attention on affective experiences, heart rate and speed at different intensities while running

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There is a need for a better understanding of how and why individuals from different exercise levels vary not only in their metabolic processes but also in their affective experiences. According to dual-mode theorizing, the interaction of cognitive processes and interoceptive cues influence the affective response. Hence, adopting a specific attentional focus could lead to different affective responses depending on exercise intensity. This study examines possible interactions between self-selected running intensities (light, somewhat hard and hard) and attentional focus on affect, speed and heart rate in running experts compared to novices. One-hundred seventeen participants (28.53 ± 7.45 years; 41% female; experts: n = 59; novices: n = 58) ran 9 x 3 min outdoors on a circuit around a large pond. While running at three intensities, they were instructed to focus internally on their breathing, externally on the environment, or did not receive any instruction. The study showed, among other findings, that the interaction of attentional focus and intensity has a significant effect on affect independent from group: $F(2.90, 333.44) = 5.66$, $p < .01$, $d = 0.44$, whereby the internal focus resulted in the least positive affect at perceived light intensity and the most positive affect at perceived hard intensity. The opposite effect was seen in the condition with no focus instruction (and the external focus of attention in between both). These findings shed new light on the possibility of using cognitive techniques as conscious attentional control while running to improve the affective experience while running regardless of the experience level.

Oral presentations
Topics: Any other topic

Watch, fight and learn: a phenomenological and exploratory research in Brazilian Jiu-Jitsu

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This study consists of an exploratory research in BJJ (Brazilian Jiu-Jitsu) aiming to develop methodological tools and strategies to understand such practice through a pre-reflexive experience, considering immersion and observation as the main procedures. The theoretical background is an interdisciplinary-oriented approach focusing on perception-action processes, phenomenology, psychology, neurosciences and embodied cognition studies (Andrieu, 2016; Noë, 2009; Raab & Araujo, 2019; Telles, 2018). An immersion has been conducted since June 2020, with 6 weekly sessions (except during lockdown) in Braga, Portugal. Considering observation and immersion to explore BJJ through phenomenology pertains a process of ecologization of the living body, known as emersiology. Such ecological work is based on a specific activity that allows the body to learn something through an embodied practice, redefining oneself from such experience. First we do and then we reflect. To this end, important steps can be highlighted: (1) doing the activity and sharing impressions with other fellows; (2) observing both children and adults; (3) describing the practice after the training; (4) identifying the gaps to develop accurate procedures and strategies. As the main result, specific criteria to monitoring the training were organized as a self-monitoring protocol. The emerged items vary from physiological parameters (e.g. heart rate, body weight), nutritional description, psychological features (emotions, feelings, thoughts, etc.), technical and tactic detailing. This presumption leads to an active research path as the researcher is able to perceive these changes and learnings. Thus, they can be narrated in first person and crossing with others' experiences in the same practice.

Oral presentations
Topics: Physical activity

The relationship between affective states and physical behavior and their moderation by contextual weather factors

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Research findings indicate that there are associations between within-subject affective states and daily physical behavior (PB) (i.e., physical activity and sedentary behavior). Affective states as drivers of PB may influence human health behavior. Whether the relationship is influenced and moderated by other contextual factors is largely unknown. Based on previous studies and theoretical models (Bejarano et al., 2019; Liao et al., 2015; Zheng et al., 2021), this study examined the association of affective states and contextual weather factors on subsequent PB. Additionally, interactions were exploratively considered. Utilizing ambulatory assessment, 79 participants completed electronic diaries about their affective states up to six times/day over five days, while simultaneously recording their PB via accelerometers. The values from the weather station of the Climate Data Center of the German Weather Service were included in the multilevel analysis. Increased valence and energetic arousal were positively associated with physical activity (beta = 0.007; $p < .001$), whereas calmness predicted lower levels of physical activity (beta = -0.006; $p < .001$). Higher levels of calmness showed a positive association with sedentary behavior (beta = 0.054; $p = .003$). Temperature was positively associated with physical activity (beta = 0.025; $p = .015$). Exploratory analyses showed that temperature significantly moderated the relationship between calmness, valence, and PB. The findings suggested that affective states in everyday life were related to PB in adults. Consideration of contextual weather factors referred to the complexity of the relationship. Future studies are warranted to examine associations between affective states, context, and PB to promote a sustainable physical active lifestyle.

Oral presentations
Topics: Neuroscience

External Attentional Focus Induces Expert-like Cortical Activations during Motor Planning: An ERSP Study

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In this experiment, we explored the brain activities under different attentional focus strategies (internal/external). Eighteen novices were recruited for a dart-throwing task, and they were randomly assigned into two learning groups (internal vs. external). Novices in the internal group were instructed to focus their attention on body movements in each shot, while novices in the external group were instructed to focus their attention on the task outcome (e.g. the dartboard) in each shot. During the practice session, novices performed the throwing task following an “S1-S2” paradigm. Novices were instructed to aim after they heard the S1 signal and to shoot as soon as they heard the S2 signal. A retention test was carried out 40 min. after the practice session. EEG signals were recorded by a 64-channel system during the dart aiming and throwing. Behaviorally, compared to the internal group, the performance was better for the novices in the external group, after practice and in the retention sessions. Electrophysiologically, the EEG beta event-related desynchronization (ERD) at the contralateral motor cortex was significantly stronger for the external than for the internal group (in the time window 500 ms before the S2). Moreover, the beta power was also significantly correlated to the mean accuracy score. Taking together, our results suggest that compared to the internal focus strategy, the external focus strategy induces a more expert-like cortical activation during motor planning, and the internal focus strategy seems to interfere with the motor planning, which is consistent with the Constrained Action Hypothesis.

Oral presentations
Topics: Decision making and judgement

Duration Estimation and Intentionality

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The tendency to support referees and judges with video footage is very common in sports. Recent research investigating video footage in sport suggests that video speed influences duration estimation (Schütz et al., 2001). It is also discussed, that changes in video speed (e.g. slow motion) can lead to harsher penalties because the intention is overestimated (Caruso et al., 2016). In four experiments we investigated whether video speed influences time judgement as well as intentionality. Participants (n1 = 98; n2 = 100; n3 = 106, n4 = 45) saw four different videos contexts of stick figures acting (fouls scene in soccer and jockey, assault with an axe and gun) in different video durations (500, 1000, 1500, or 2000 ms). In Study 1, additional video material (shadow videos) was used. In Study 2 and Study 3, video material was modified, integrating bystanders (Study 2) and crowd noise (Study 3). In Study 4, participants saw the video material while cycling for 45 minutes at 15 +/- 2 of their perceived exertion.

Results show main effects of video speed for time estimation, but nor for intention estimation. When bystanders were present, participants perceived the action shown in the video to be more intentional, especially when video speed was low. Crowd noise had no effect but we found main effects of video speed for time estimation and intentionality under physical load. By and large, these studies help to generate a more differentiated picture about the influence of video speed on duration estimation and judgment of intentionality.

Oral presentations
Topics: Elite sports and expertise

Insights on the validity and reliability of a video-based decision-making test performed by female and male water polo players

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This study sought to quantify the validity and the reliability of a water polo video-based decision-making assessment (VBDM). Sixty-seven female and 33 male water polo players participated during their respective National team selection camps. Using a low-cost and time-efficient format, decision-making videos were displayed on a projector screen, with participants submitting their responses using their smartphones. For reliability analyses, a subset of athletes repeated the procedure during a second week. Performance was determined by response accuracy and players were grouped by sex and caliber for analyses. Validity was assessed by comparing performance between groups and by examining associations between performance and team selection outcome and coaches' rating of athletes' water polo decision making. Interrater and test-retest reliability were both quantified, as well. Our preliminary results are consistent with previous studies demonstrating VBDM had less discriminative validity among more homogenous groups; however, our findings also appear to indicate that when differences between groups do exist, these may not necessarily be attributed to sport-specific decision-making ability. Furthermore, despite good interrater and relative test-retest reliability, when the VBDM test was repeated the second week, there were significant differences in performance compared to the first week. All together, this suggests caution in using VBDM for talent identification or for repeated evaluation purposes.

Oral presentations
Topics: Well-being and quality of life

The impact of verbal and physical abuse on mental health and intentions to quit outcomes in sports match officials

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Despite recent interest in mental health disorders and service provision amongst athletes (Breslin et al., 2019; Moesch et al., 2018), the mental health of sports match officials (e.g., referees) has received scant attention (Gorczynski & Webb, 2020). Like athletes, match officials can experience distress from a multitude of sources. Important sport-specific sources include experiences of verbal and physical abuse from players, coaches, and spectators. A primary aim of this study was to examine relationships between experiences of abuse when officiating, distress, mental health outcomes, and intentions to quit as a match official. Survey data were collected from 438 club- and national-level Gaelic Games match officials. We tested three alternative models that proposed the relationship between experiences of verbal and physical abuse and mental health and intentions to quit outcomes to be either (1) direct, (2) fully mediated by distress, or (3) both direct and mediated by distress. Structural equation modelling was used to fit and assess each model. We did not control for other stressors (e.g., family demands) within these models. For verbal abuse, only the direct and mediated model achieved acceptable fit and significantly explained variance in psychological wellbeing (R2=.10), anxiety (R2=.15), depression (R2=.16), and intentions to quit (R2=.19). For physical abuse, though higher distress was associated with poorer mental health and greater intentions to quit, none of the models achieved acceptable fit. These findings demonstrate, for the first time, the impact of abuse and subsequent distress on mental health and intentions to quit amongst sports match officials.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Psychology support before, during and after the Covid Olympics - a Team Ireland perspective.

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The Olympic Games is a unique and often challenging experience. The importance of targeted psychological preparation to increase the readiness and enhance the performance of athletes and staff has been acknowledged (McCann, 2008). Therefore, the aim of this case study was to develop a Team Ireland "Tokyo Ready" curriculum to support Olympic qualifiers, and non-qualifiers, in the pre-, during and post-Games phases.

We utilised a mixed method approach, drawing on relevant published literature (e.g., Arnold & Sarkar, 2015; Collins & Cruikshank, 2015) and on the applied Olympic experience of our team of psychologists to develop this curriculum (see McArdle, Moore & Lyons, 2014). The "Tokyo Ready" programme consisted of both psycho-education materials and practical exercises (e.g., Control Map; Turner, 2019). Group sessions and individual psychology support were delivered remotely and in-person.

The ever-changing circumstances during the Covid-19 pandemic forced us to continually revise our timelines and content, placing a greater emphasis on understanding motivation, dealing with uncertainty and protecting mental health. We developed a five-phase approach to supporting the mental performance and wellbeing of our team, from early 2020 through to late 2021, which included pre- and post-Games mental health screens for athletes and staff (SMHAT-1; Gouttebarge et al., 2021). These five phases were: 1) Pre-Covid, 2) Lockdown, 3) Games preparation, 4) Games experience, 5) Post-Games.

Our findings indicate high levels of engagement and satisfaction with Team Ireland's "Tokyo Ready" curriculum, and confirm the need to provide psychological support to both athletes and staff, before, during and after the Olympics.

Oral presentations
Topics: Youth

Evaluating the implementation success of trauma-sensitive sport programming in a national youth-serving organisation

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Knowledge translation of sport-based youth development approaches can bridge science-to-action gaps in youth sport (Holt et al., 2018). Trauma-sensitive sport programs are a type of youth development intervention where trained staff facilitate safe, structured environments, effectively respond to youth experiencing moments of dysregulation, and promote youth's resilience-building (e.g., emotional regulation and social support skills) to tackle everyday challenges in life (Bergholz et al., 2016; Quarmby et al., 2021). Limited research has evaluated the success of these interventions in achieving their goals and sustaining evidence-based practices. The purpose of this case study was to evaluate the implementation success of a trauma-sensitive sport program in a national youth-serving organisation. Twenty staff from 11 clubs across Canada participated in delivering trauma-sensitive programming from 2017-2021. Data were gathered through semi-structured individual and focus group interviews (n = 11). Analysis was guided by Spencer et al.'s (2013) conceptual framework for planning and improving evidence-based practices, which consists of five elements: effectiveness, reach, feasibility, sustainability, and transferability. The results spanned eight themes: (a) programs fostered positive developmental experiences (e.g., youth receptivity, building social skills), (b) programs reached a critical population of trauma-exposed youth, (c) program structure was feasible to implement and valued by club staff, (d) feasibility was challenged by staff turnover and contextual factors (e.g., limited space/time, diverse age groups), (e) sustainability was challenged by lack of funding and ongoing staff training, (f) principles of trauma-sensitive practices were transferred into other Club activities. Implications are discussed for improving support for program implementation, sustainability, and transferability.

Oral presentations
Topics: Research methods (qualitative & quantitative)

Guided Imagery for Growth Mindset: Sport Performance Enhancement tools for Growth Mindset/Attitude Malleability

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Guided imagery and visualization has been used for psychomotor skill acquisition and improvement in sport, medical surgery skills, and stress management (Asken et al., 2021, Shuster et al., 2011, Toth et al., 2020) . Additionally, growth mindset suggests individuals may be able to adopt a learning growth mindset in lieu of a fixed mindset with training (Dweck, 2006). Acquiring a growth mindset and attitude malleability has been supported in various disciplines, specifically in educational settings ie STEM students, music, stress management, moral behavior, attitude toward ageism and food choices. (Boyet, 2019; Crum et al., 2013; Hacisalihoglu et al., Han et al., 2018, Loucas, 2022.) Some research in education using guided imagery, visualization skill development and rehearsal to enhance a growth mindset has demonstrated some efficacy (Halloway, 2020). This proposal outlines the use of guided imagery and visualization as a process for developing growth mindset attitudes in conceptual constructs, specifically those found in sport and physical activity. Examples include team/coach communication, team building, responding to critical incidents, psychophysiological recovery, mental toughness, sport injury rehabilitation, return to sport after injury and others. Specific exercises may include script writing for growth mindset attitude development using narrative strategies, drawing depictions of self-images, projective images, action images, and outcome images as well as audio recorded guided imagery rehearsals.

Oral presentations
Topics: Cultural sport psychology

How do sports athletes prepare for a game? It might depend on cultures

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According to Heine et al. (1999), in East Asian culture, people show self-improvement by paying attention to their shortcomings while in North American culture, individuals show self-enhancement through seeing the positive side of themselves. However, Takata (2003) revealed that Japanese showed self-enhancement in competitive settings. Based on these previous findings, the current study examined if there are cultural differences between Japanese athletes (representative of East Asian culture) and Canadian athletes (representative of North American culture) in the attention of their strengths and weaknesses as a sports athlete depending on the situation (practices/games).

55 Japanese and 57 Canadian (most European origin) rugby players participated in the study. In an online survey, the participants listed their weaknesses and strengths. Then, they rated the attention to their strengths and weaknesses at practices and games using the Likert scale. A 3-way ANOVA (culture x situation x performance type) was conducted.

The results indicated that both Japanese and Canadian rugby players showed no difference in the attention between their strengths and weaknesses at practices while paying more attention to their strengths compared to their weaknesses at games ($p = .08$ for Japanese). However, from practices to games, Japanese players did not show a difference in attention to their weaknesses, while Canadian players decreased attention to their weaknesses.

These results indicate that the players in both cultures showed self-enhancement at games. However, the transition of the attention to their weaknesses from practices to games was culturally different. This study suggests culturally different preparation for a game.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

"…and the crowd goes wild!" – Performance in elite darts players in presence of spectators and with simulated crowd noise

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The influence of the presence of others on motor-task performances has been studied for more than 100 years (starting with Triplett, 1898). Social-facilitation research displayed mixed results: increased performance for motor-tasks that require condition or effort and mostly decreased performance for motor-tasks requiring coordination or accuracy (see Strauss, 2002; and the recent meta-analysis by van Meurs, Greve, & Strauss, 2021). Similar results are expected when performing in front of larger, active crowds that influence the performer (Wallace, Baumeister, & Vohs, 2005).

Darts can be considered a coordination-based accuracy task. Therefore, we hypothesize that tournament performance of elite darts-players would deteriorate in the presence of active spectators (RA; up to 20,000) in comparison to a no-audience (NA; many tournaments, even before covid-19, were held without spectators) and simulated-audience condition (SA; tournaments with pre-recorded, audiotaped crowd-noise which was played during the COVID-19 pandemic).

Data from all professional darts tournaments from 2018 to 2021 was retrieved from dartsorakel.com. The sample consisted of N=442 players (98.8% male) and N=26,724 individual performances.

The influence of RA, NA and SA on the main performance predictors in darts – checkout percentage (CP) and three-dart average (3DA) – was analyzed using separate multilevel models allowing intercepts to vary between the players (level 2). Year, player's rank, and tournament round were added as predictor variables.

CP was lowest with RA, breal=-3.62,SE=0.33,p<.001,ICC=.015 and highest with NA. 3DA displayed a different pattern with best performances with SA, bsim=2.20,SE=0.39, p<.001,ICC=.26.

Results indicate that playing with RA does not result in highest performances.

Oral presentations
Topics: Performance enhancement (doping, neuro-enhancement etc.)

The benefit of a needs assessment in doping prevention: Looking at young elite athletes

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University of Oldenburg, Germany

Recommendations in anti-doping education encompass consideration of athletes' needs and early onset (e.g., Backhouse et al., 2012). In 2021, the World Anti-Doping Agency published an updated version of the International Standard for Education. Within this framework, the authors extend this advice and recommend a needs assessment before athletes take a doping prevention measure. Regarding athletes from different types of sports as specific target groups, these athletes should differ concerning their prerequisites for doping prevention. A total of 60 young elite athletes took part in an online survey. According to the World Anti-Doping Agency, they represented a type of sports with a generally low (sailors, n = 26) or a generally high doping prevalence (wrestlers, n = 34). Sailors and wrestlers differed concerning the perceived resistance against doping temptations and the estimated actual doping prevalence regarding sports in general and their type of sports. No differences between the two types of sports occurred, referring to doping attitudes, tendency to disengage morally, or topics athletes wish to learn about during doping prevention measures. The results indicated that young elite athletes demonstrate a good baseline for doping prevention. No sports-specific needs profiles occurred at the beginning of the athletic career based on the two distinct groups. However, the data further indicate that considering the gender of athletes could be a reasonable step in the development of tailored doping prevention.

Oral presentations
Topics: Exercise psychology

Affective Responses to Up- and Down-Ramped Resistance Training

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Resistance training (RT) is an often-overlooked aspect of physical activity guidelines, yet strength development and maintenance have many benefits. Previous work has shown that affective responses to a single session of RT can be improved by altering the slope of intensity (Hutchinson et al., 2020). The current study compared the effect of an increasing-intensity (UP) or decreasing-intensity (DOWN) RT protocol on experienced and remembered pleasure across six sessions of circuit-style RT. Previously inactive participants (N = 35; Mage = 43.5 ± 13.7 years) were randomly assigned to UP (n = 18) or DOWN (n = 17). In the UP group, intensity increased from 60% of 1-repetition maximum (1-RM) for the first set to 70% 1-RM for the second and final set. In the DOWN group, this order was reversed. Ratings of affective valence were obtained during each set using the Feeling Scale (FS) and remembered pleasure was assessed following each session. Linear mixed-effects models showed that change in FS score from set 1 to set 2 was significantly moderated by Group ($b = -1.79$, $p < .001$). Simple effects revealed the UP group reported a decline in pleasure during each session ($b = -0.82$, $p < .001$), whereas the DOWN group reported an improvement ($b = 0.97$, $p < .001$). Remembered pleasure was significantly higher in the DOWN group compared to the UP group ($p < .001$). These findings indicate that a novel pattern of decreasing the intensity of RT sessions can elicit increasing pleasure, leading to more positive retrospective affective evaluations of RT.

Oral presentations
Topics: Prevention and rehabilitation

Perceptions of Injury Risk and Turfgrass Properties: Collegiate Club Athlete Sport Injuries and Performance

Francesca Marie Principe[1], Diane Wiese-Bjornstal[2], Brian Neff[2], Chase Straw[3], Kristin Wood[4]
[1]University of Toronto, Canada; [2]University of Minnesota, Twin-Cities; [3]Texas A & M University; [4]St. Cloud State University

Assessing causes and risks of sport injuries to better understand injury prevention is a complex process. Research shows variable playing surfaces may lead to field-sport athletes modifying behaviors based on perceived risks and field conditions to avoid injuries; additionally, athletes with high perceived sport injury susceptibility may actually sustain more injuries (Gnacinski et al., 2017; Straw et al., 2019). Current literature utilizes athlete injury self-reports, lacks implementation of objective field measurements, and insufficiently connects athletes' perceptions of injury susceptibility and field conditions to injury occurrence and performance. This study utilized a modified version of the dynamic model of sport injury etiology (Meeuwisse et al., 2007; Rennie et al., 2016) to provide a template for examining perceptions of injury risks and field conditions related to sport behaviors, performance, and injuries among male collegiate club rugby athletes (n=18) during one season. Data included pre- and post-season interviews, GPS athlete performance tracking during training and competition, questionnaires, objective field measurements on natural and artificial turfgrass, and injury data collection. Injury occurrences (n=29) were recorded and analyzed for contributing factors (e.g., psychological factors and field properties), while GPS location was tagged from tracking devices to compare the field area of injury to surface hardness measurements. Preliminary findings show that athletes modified behaviors based on perceptions of injury risks and field conditions, influencing their performances. Key study implications include understanding athlete health and injury prevention, managing perceptions of injury risk, adapting coaching strategies, developing sport psychology interventions, and improving field conditions to prevent sport-related injuries.

Oral presentations
Topics: Mental skills training

Level Up: A push for holistic practices in esports

Chang-Hyun Ko, Claudio Godoi, Eric LeNorgant
Team Liquid, United States of America

In the last 5 years, the number of teams and pro players in esports have increased along with the fan base (Insider Intelligence, 2021; Venkat, 2021). Traditional structures of training follow a quantity over quality rule, the number of hours playing the game are most important. However, this has potential health risks such as sleep restriction, weight fluctuations, and emotional imbalances (Nagorsky & Wiemeyer, 2020; Wattanapisit et al., 2020). These health risks and restricted training styles are risk factors of increased burnout, degradations in performance, and early retirement (Eckman, 2021; Poulus et al. 2020; Yin et al. 2020). There needs to be a systematic change to training methods driven by evidence based practices. Teams and organizations need to lead the efforts to build and provide better systems and models for developing, training, and sustaining players (Nagorsky & Wiemeyer, 2020; Wattanapisit et al., 2020).

In this presentation, the presenters will share best practices in establishing a sustainable training program within a top tier esports organization that competes globally. The presenters work directly with the players, coaches, and staff to implement and influence training methods that promote growth, well-being, and resilience. The presentation will also serve to dispel common myths surrounding esports. The goal is to provide key insights that will be influential for the future generation of esports. Attendees will gain valuable knowledge on competitive esports and how to adapt traditional athletic models of training to esports populations.

Oral presentations
Topics: Exercise and COVID-19 Pandemics

Relationships Between Psychological Performance and Emotional States of Spanish Rowers during the COVID-19 Confinement

José Carlos Jaenes Sanchez[1], David Alarcón Rubio[2], Dominika Wilzcynska[3], Manuel Trujillo[4], Pablo García-González[5], Pilar Méndez-Sánchez[6], David Moscoso-Sánchez[7], Miriam Costa Agudo[8], Rafael Peñaloza-Gómez[9], Amir Hossein Mehrsafar[10]

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To support the physical and mental watching of athletes during confinement, the REACOVID-19 questionnaire was designed. This instrument aims to measure the impacts on psychological, emotional, and behavioral performance that the pandemic had on Spanish athletes, in the specific case of this study, of national and international rowers; conjointly, the POMS instrument was applied to establish the emotional states of the participants. The sample consisted of 181 rowers (mean age = 20.22, 42% women). Correlation analyzes were performed, the results showed statistically significant relationships of a positive nature ($p < .01$) between motivation and behavior problems, stressful thoughts, and dimensions of the POMS, anger, fatigue, tension, depression, that is, the rowers suffered significant emotional impacts during isolation, which manifested themselves in their emotional states and were aggravated by their inability to concentrate and follow their training programs, also by situations of anxiety associated with the pandemic and sleep problems. Instead, the negative and statistically significant relationships of training workouts showed that the communication with coaches and the adaptation of the training programs to home acted as protectors of the harmful emotional states. These results can serve to guide federations and clubs to design programs and policies aimed at safeguarding the physical and mental health of rowers, in the event of new confinements or the return to what will be the new normal after the pandemic.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Gender Differences in the Emotional Impact Due to COVID-19 Confinement in Spanish Swimmers

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With the goal of providing physical and mental monitoring of athletes during confinement, the REACOVID-19 questionnaire was designed, this instrument attempts to measure the impacts on psychological, emotional, and behavioral performance that confinement had, due to COVID-19, in the specific case of Spanish swimmers with national and international level; also, the POMS that measures emotional states was applied. 492 swimmers participated (mean age = 19.15, 55% women). The results showed that the swimmers had negative impacts in terms of their motivation, anxiety, problems sleeping, and maintaining their training programs. Through a multigroup analysis, differences by gender were established; the data showed that women had more negative impacts on their emotional states (anger, fatigue, tension, depression, and stressful thoughts, and therefore sought more psychological support during confinement, on the other hand, women were also more in contact with their trainers and took cares to adapt their training routines. These results suggest effects of gender in the way of isolation by COVID-19 was experienced and can be used by federations, clubs, and the athletes themselves to suggest programs and policies that can serve to care for the mental health of swimmers and athletes in general in the sport for the current moment and in the long term.

Oral presentations
Topics: Exercise psychology

A comparison of the mental fatigue caused by physical, cognitive or mixed sport trainings

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Purpose: Because the mental fatigue may negative influence the sport performance (Habay et al., 2021), experts have highlighted the needed to know how mentally fatiguing are different sport trainings to avoid the use of mentally fatiguing exercises nearly competitions (Van Cutsem & Marcora, 2021). This study tried to analyze how mentally fatiguing are different sport training protocols.

Method: 23 active subjects visited the lab on three separate times. In a counterbalanced order they performed: a. 30-min cycloergometer (55to70% of Peak Hear Rate), b. 30-min of Incongruent Stroop Task (i.e., subjects read the ink word),and c. 30 min combined these Stropp added to these cycloergometer. Mental fatigue was measured with a Visual Analogue Scale and a Psycomotor Vigilance Task on each pre and post test. The change from pre- to post- was calculated using the Wilcoxon test. The magnitude of change between protocols was calculated using a delta: post - pre and the Kruskal Wallis test.

Results: The data suggested that the cognitive task (i.e., Stroop) caused significant higher increaments in mental fatigue than the physical task. However, the mixed protocol caused the higher impact on the mental fatigue reported (i.e., increaments) and reaction time (i.e., impairmentes) between the protocols designed.

Conclusion: Coaches have the possibility to conciencusly manipulate the mental fatigue of their players using different sport trainings protocolos. They should use this data to a. avoid the presence of the mental fatigue nearly competitions and b. to develop resistence to mental fatigue (Roelands et al., 2021)

Oral presentations
Topics: Exercise psychology

Effects of different constraints on the mental fatigue caused by soccer trainings

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Purpose: It has been demonstrated that mental fatigue may impair soccer performance (Smith et al., 2018). Therefore, experts has highlighted the needed to avoid the presence of mentally fatiguing tasks nearly competitions (Van Cutsem & Marcora, 2021). In soccer, less is known about how mentally fatiguing are different tasks constraints. As such, the present study tried to analyze how mentally fatiguing are different soccer constraints.

Method: 20 soccer practitioners performed different soccer trainings sing different soccer constraints in a counterbalanced order. Different derivations of mental fatigue (i.e., subjective, behavioral and physiological) was recorded.

Results: Results showed that the mental fatigue caused by different soccer constraints is significantly different. Indeed, the effects of different constraints is significantly different between all the players, suggesting a inter-individual effect of each player on the mental fatigue. It has been suggested in previous studies (Pageaux & Lepers, 2018).

Conclusion: The present study summarized the different effect of widely used constraints on the mental fatigue caused by soccer trainings. To our viewpoint, this information is neccesary for coaches a) to avoid the presence of mentally fatiguing tasks nearly competitions and b) to develop the resistance to mental fatigue during the main trainings of the week (i.e., MD+2, MD+3 or MD+4)

Oral presentations
Topics: Coaching

Group Coaching in Healthy Lifestyle for Menopausal Women: a randomized experiment

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Women facing menopause experience an aging-related health decline that can be partly countered with engagement in physical activity. Unfortunately, adherence to physical activity interventions in this target group is low. In this randomized experiment we investigated the effect of a group coaching intervention, in the form of a standalone intervention or as an add-on to a physical activity intervention, on exercise maintenance, stress, anxiety and depression for menopausal women. Participants were menopausal women recruited from a physical activity intervention (n=56) or via an advertisement in a newspaper (n=44) and were randomized into a group coaching intervention group or a waiting list control group. Results showed that 3 months of group coaching (Stelter, 2014, 2016) reduced stress and anxiety in participants who had not previously participated in a physical activity intervention and, critically, it also facilitated the maintenance of reduced stress and anxiety obtained through previous participation in a physical activity intervention. We discuss the implication of group coaching based on the premises of Third Generation Coaching as a suitable tool to enhance social capital (Bourdieu, 1986; Poortinga, 2006) within a group and therefore to empower individuals to achieve their health-related goals (Morisano et al, 2010).

Oral presentations
Topics: Coaching

Athlete-Coach Relationship, Level of Sport Leadership Power Perceptions, Selected Individual and Performance Variables

Erkut Konter
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The exact nature of athlete-coach relationship and level of sport leadership power perceptions with various individual and performance variables (age, gender, experience, education, childhood happiness, attributions to success and failure, good luck and bad luck believes, physical education and sport success) are still uncovered. Therefore, purpose of this study focus on this gap. Data were collected from 228 athletes aged 13 to 32 (M=19.17±3.67, Mean Experience=6.49±4.32 yrs. 149 Male and 78 Female). Participants were administered validated Sport Leadership Power Scale/SLPS-19 (Konter, Yang & Chan, 2015, Konter & Aksoy, 2022) and Athlete-Coach Relationship Scale-ACRS (Altıntaş, Kazak & Aşçı, 2012) with the personal information form. SLPS-19 consists of 5 subscales; Expert Power-EP, Legitimate Power-LP, Coercive Power-CP, Referent Power-RP and Reward Power-RWP. ACRS contains three factors; Closeness, Commitment and Complementarity. Collected data were analyzed by normality tests, spearman correlations, Kruskal-Wallis and Mann-Whitney U tests. Results revealed that: Athletes with high scores of RP, EP and RWP have significantly higher Closeness, Commitment, Complementarity and Total ACRS than athletes with low scores of RP, EP and RWP ($p<.05$). Analyses indicated the same results with good perception of childhood, attributions to effort and ability, and good luck believes as opposed to bad and mediocre perception of childhood, attributions to chance and easy task, and non-good luck believes ($p<.05$). In addition, national athletes with the first and second place achievements have higher scores of LP than others ($p<.85$). Overall, results indicate the importance of SLPS-19 factors regarding indicated variables.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Psychological Responses to COVID19 across amateur, Professional and Olympic Sport in Ireland: A Longitudinal Survey Approach

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With the postponement of, for example, the Tokyo Olympic Games, the 2020-21 sporting seasons will be recalled more readily for the changes in the sporting calendar as a result of the COVID19 pandemic rather than examples of stellar sporting excellence. Restrictions on travel, access to training venues, cancellation of events, and loss of earnings have had major implications for athletes and players. These implications can have commensurate psychological consequences. How athletes and partners in sport can collectively cope with such adversity is useful from a service provision perspective and instructive for elucidating our understanding of many topics including emotion regulation, coping skills, resilience, mental health stigma, and well-being strategies. In a series of longitudinal surveys with three different athlete groups (inter-county Gaelic players, n=605; Olympians, n= 119; Professional Rugby Players, n=85) we sought to assess, not simply the stress response but also the potential for a resilient process, among the participants. This strength-based approach was not unique among the range of surveys conducted during the global pandemic but the findings clearly demonstrated a predominantly adaptive response among athletes.

Oral presentations
Topics: Self

Evaluate oneself in a compassionate way, a difficult path for performers: preliminary results from a study on self-compassion.

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Evaluate oneself in a compassionate way when facing failures or difficulties is still a difficult path for performers. Self-compassion, characterized by the ability to be kind to oneself, to see one's experiences as part of the larger human experience and have a balanced awareness to one's emotions and thoughts, was recently studied as a steppingstone to performance optimization and personal development. Various studies show its benefits for athletes. However, only few studies have studied performers from performing arts (musicians, dancers). Moreover, some questions remain about the role of the social environment that could foster or hinder the development of self-compassion and how to better accompany performers in developing self-compassion.

This study aims to investigate performers self-compassionate skills and the social environment's influences on the development of self-compassionate skills. Fifteen musicians, dancers, and athletes, aged between 14 to 25 years old, participated in semi-structured interviews to deepen the concept of self-compassion and to question the role of the social environment.

The preliminary findings, resulting from thematic analyses, highlight i) how performers act and react during training and especially when facing difficulties ii) how they interact with others (peers, coaches, parents) iii) what kind of support or competencies they would need when going through these difficult times.

This study could provide tips on how to develop self-compassionate skills and recommendations to coaches or parents on how to support performers. It can also address a lack of research evidence on what it means being self-compassionate and how the social environment influences it.

Oral presentations
Topics: Exercise and COVID-19 Pandemics

Physical Activity, Sedentary Behaviour, and Mental Health: Key Learnings from the COVID–19 Pandemic

Costas I. Karageorghis
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When the first UK lockdown was announced in March 2020, I had three experiments in train that had to be immediately abandoned. To date, I have not been able to reinitiate these experiments due to ongoing restrictions. Global events had a profound influence on the type of scientific work that I was able to conduct, as was the case for thousands of other scientists. I diversified my academic portfolio to research and write about aspects of the COVID–19 pandemic. I was involved in four published studies in the period 2020–21 that addressed physical activity, sedentary behaviour, and mental health both pre- and during lockdown. In this presentation, I am going to critically reflect upon key learnings primarily from the studies in which I was involved (Bird et al., 2021; Guérin et al., 2021; Karageorghis et al., 2021; Mullin et al., 2022), but also with reference to several related studies. I will take a Eurocentric perspective with use of data from Australia and the USA a point of comparison. Drawing on relevant theory and through use of empirical evidence, I will offer a series of practical recommendations relating to physical activity, sedentary behaviour, and mental health. It is patent that the global pandemic has shone a cruel searchlight on the inequalities that pervade societies in Europe. What can we as scientists with a background in sport, exercise, and mental health do better—not only in dealing with future pandemics but also in addressing challenges that had surfaced long before March 2020?

Oral presentations
Topics: Physical activity

Occupational functioning among post-secondary students with mental health concerns: Protective effects of physical activity

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Physical activity (PA) has been identified as an important predictor of post-secondary student mental health. Yet, little is known about the potential protective effects of PA for students' occupational functioning (OF). This 2-part study aimed to: (1) identify OF problems among students experiencing mental health challenges, and (2) examine differences in the likelihood of these OF problems based on level of PA engagement. In Part 1, students seeking mental health support at a Canadian University (N = 48; M(SD)age = 24.67 (8.09) years) completed a clinical semi-structured interview to assess OF. Content analysis identified academics, PA, sleep hygiene, eating habits, socialization, and health/stress management as the most important problem areas in their daily OF. In Part 2, these results were mapped onto the 2019 National College Health Assessment II survey to select OF outcomes among students reporting high stress and/or history of mental illness (N = 2080; M(SD)age = 20.39 (2.22) years). Chi-square analyses and bivariate logistic regressions (controlling for age, gender, ethnicity, psychological distress, and campus mental health service use) were conducted. High PA engagement was associated with a reduced likelihood of exhibiting OF difficulties in sleep (OR = 0.82, 95%CI [0.68, 0.98]), diet (OR = 0.49, 95%CI [0.40, 0.59]) and personal health management (OR = 0.81, 95%CI [0.67, 0.98]). There was no significant relationship between PA level and students' academic or social functioning. Future research is warranted to better understand the benefits of PA for enhancing student functioning, and potential mechanisms driving this relationship.

Oral presentations
Topics: Exercise and COVID-19 Pandemics

Exercise and social media during COVID-19: Does following fitness influencers differentially link to exercise motives?

Sabrina Malouka, Kristen Lucibello, Lamia Firasta, Catherine M. Sabiston
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The ongoing COVID-19 pandemic and lockdown restrictions have contributed to the increasing popularity of fitness influencers, with many turning to social media for fitness-related information and at-home workouts (Kim, 2022; Mutz et al., 2021). However, there is little understanding of the associations between following fitness influencers and exercise motivation and behaviour. Drawing on self-determination theory (Ryan et al., 2021), this study examined differences in exercise motivation between those who follow fitness influencers on social media compared to those who do not. Participants (N = 300; 65% women, Mage ± SD = 23.60 ± 3.57) completed self-report questionnaires to assess social media behaviours and exercise motivations. Data were analysed using frequency analyses and univariate and multivariate analysis of variance. One-third of participants (33%) reported following fitness influencers on their personal social media. Of those who follow fitness influencers, 80% perceive following these influencers increased their motivation to exercise. Individuals following fitness influencers reported higher appearance ($p < .001$), fitness ($p = .005$) and stress-related ($p = .044$) motivations for engaging in online workouts [$F(4, 179) = 4.33$, $p = .002$] compared to individuals who do not follow fitness influencers. Individuals who follow fitness influencers report using social media to guide their workouts more often than individuals who do not [$F(1, 298) = 15.10$, $p < .001$], as well as more weekly minutes of moderate intensity exercise [$F(1, 297) = 4.69$, $p = .031$]. These results highlight the link between following fitness influencers and increased motivation, specifically appearance-related motivation to exercise. Implications for exercise maintenance and body image will be discussed.

Oral presentations
Topics: Elite sports and expertise

Psychological profiles of French elite athletes practicing sports involving sprints: a cross sectional study

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In clinical psychology, adaptive and maladaptive profiles tend to be associated with protective cognitive processes or mental disorders (Philippot et al., 2019), while little is known on psychological profiles of elite athletes (Mitic et al., 2021). Psychological protective and risk factors have been related to performance and injury risk reduction (Reardon et al., 2019). The present study aimed to identify psychological profiles of elite athletes practicing sports involving daily repetitions of maximal velocity sprints. French elite athletes among the best track & field athletes, national rugby 7s team, and national bobsleigh team (n=117, 47.9% women) were invited to fill psychometric questionnaires assessing anxiety, eating disorders, difficulties in emotion regulation, self-efficacy, optimism, impulsivity, and sport motivation. Hierarchical cluster analyses and chi-square tests were performed. Cluster analysis showed a four-cluster solution ($\chi^2(21) = 282.59$, $\lambda = 0.08$; $p < 0.001$). Profile "adaptive" (39.3%) was characterized by low anxiety and impulsivity, and high optimism, self-determination and self-efficacy. Profile "impulsive" (35%) showed high impulsivity, low eating disorders and self-efficacy. Profile "eating difficulties" (18%) showed high scores of eating disorders, and low self-determination and optimism. Profile "maladaptive" (7.7%) presented high scores of anxiety, eating disorders and difficulties in emotion regulation, and low scores of optimism, self-efficacy and self-determination. The identification of four profiles showing different protective and risk factors may be of interest for adapting psychological evaluations and support in elite sport. Additional research is needed to test the potential links between psychological profiles and performance or injury risk.

Oral presentations
Topics: Prevention and rehabilitation

Longitudinal trajectories of walking behavior among participants benefiting from a gamified digital intervention

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Gamification is the use of game elements in nongame contexts (Deterding et al., 2011). A recent meta-analysis (Mazeas et al., 2022) showed that gamified interventions are effective to increase physical activity. However, effect sizes were heterogeneous, ranging from 0.00 to 2.41. We conducted a large-scale study aiming to confirm the effectiveness of gamified intervention, and explore interventions' parameters that could explain such heterogeneity. We used data from the Kiplin database which comprises data from individuals who received a gamified intervention. Mixed-effect models were used to examine the associations between intervention parameters and daily steps. Latent class growth analyses (LCGA) are used to capture between-person heterogeneity in change over time and identify different patterns of response. Results from 4,643 participants (N = 695,249 observations) were analyzed. Mixed models revealed (a) that daily steps were significantly higher during the intervention and the follow-up compared to the baseline; (b) that the observance ratio and game type were significantly positively associated with daily steps; and (c) that the total of different games played was not significantly associated with daily steps. Variables considered explained R2 = 0.41 of daily-steps variance. LCGA analyses are undergoing. These preliminary results confirm that gamified interventions could increase daily steps both during and after the intervention. If during it a higher use of the application seems crucial to increase intervention efficacy, a higher quantity of different games may not increase its effect on daily steps. Practical implications, game-type selection, and potential psychological mechanisms will be discussed.

Oral presentations
Topics: Exercise psychology

Vested interest increases long-term engagement in exercise: effects on intentions and marathon performance through self-efficacy

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To helping address the global pandemics of obesity and chronic diseases further research should be conducted on understanding why people (e.g., regular exercisers) participate in and maintain regular exercise over the long term. Past research has shown that vested interest—the perceived hedonic relevance of an attitude object—can promote behaviour change. Critically though, no research to date has explored the role of vested interest in exercise. Thus, we examined the relationship between attitudes, vested interest and exercise intentions and behaviour by exploring the effect of vested interest on exercise engagement (intentions and marathon performance) through self-efficacy. Two studies (N1 = 145; N2 = 53) show that: a) individuals holding high levels of vested interest would exercise even if their attitude toward exercising is negative; b) the effect of vested interest on exercise intentions occurs both directly and indirectly via self-efficacy; and c) the effect of vested interest on exercise engagement and maintenance (marathon performance) occurs indirectly via self-efficacy. According to our novel findings, vested interest represents an overlooked social-psychological dimension that could play an important role in promoting healthier lifestyles and should be investigated more consistently to better understand the psychological, social and behavioural aspects of sport and exercise. Indeed, interventions could target inactive and active people alike by focusing on increasing perceptions of the vested implications of exercising, hence stakeholders might consider using the findings of this research to design and implement prevention campaigns and behaviour change interventions that could target communities' cardiorespiratory and metabolic fitness, health and wellbeing.

Oral presentations
Topics: Exercise psychology

Exercise providers and young women and girls disagree on the barriers for participation

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Despite the widely documented physical, psychological and social benefits associated with exercise, 86% of young females in the UK are insufficiently active (Sport England 2018). In order to improve physical activity levels among women and girls aged 14-25 in a London neighbourhood, the council collaborated with five exercise providers and our research team. Our role in the project was to evaluate its implementation and outcomes, and additionally to identify barriers and facilitators to participation for this population. We wanted to capture the intrapersonal and interpersonal factors that are often described in the literature, but also the relevant environmental, organisational and policy factors; therefore we used an ecological framework to guide our research (Sallis, Owen & Fisher, 2008). We situated this research within a critical realist position framed by ontological realism and epistemological constructivism. We conducted focus groups with young women and girls who had participated in exercise programs to understand what factors they perceived to influence their participation. The focus groups highlighted organisational and environmental factors as primary barriers to physical activity. Such factors are stable features of their lives making them difficult barriers to overcome. However, when we interviewed the exercise providers, the barriers to participation that they perceived were quite different. They identified intrapersonal factors such as self-efficacy and body image as the main barriers to participation. The exercise providers also discussed the influence of organisational, environmental and policy factors. The findings from this qualitative research inform interventions, research and policy (Hull, Zaidell, Mileva, & de Oliveira, 2021).

Oral presentations
Topics: Self

Climbing Self-Efficacy Moderates the Relationship between Experience and Performance in Rock-climbing

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Popularity of 'extreme sports' such as rock-climbing has increased exponentially in the last decade. Following the inclusion of sport climbing to the 2020 Olympics, understanding how self-efficacy may be associated with climbing performance became appealing, though little is known about this specific population. Rock-climbers may attempt harder climbs when they feel confident in their abilities and are high in self-efficacy. The aim of the present investigation was twofold: to identify how self-efficacy is related with various aspects of outdoor sport climbing performance; and to estimate whether general as opposed to sport specific self-efficacy, moderates the relationship between experience and climbing performance. Our sample included adult sport climbing practitioners (N = 272) aged between 16 and 69 (M = 32.13, SD = 10.01). We measured climbing self-efficacy (Llewellyn et al., 2008), core self-evaluations (Judge et al., 2003), and different indicators of outdoor sport climbing performance (IRCRA scale; Draper et al., 2015). Preliminary results indicated that climbing self-efficacy moderates the relationship between experience and various outdoor sport climbing performance for the following indicators: overall climbing performance – the interaction term between climbing self-efficacy and experience accounted for a significant proportion of variance, $b = -.01$, $t(223) = -2.15$, $p < .05$; best three routes – $b = -.01$, $t(187) = -3.01$, $p < .05$; highest redpoint – $b = -.01$, $t(221) = -2.34$, $p < .05$; highest flash – $b = -.01$, $t(217) = -2.41$, $p < .05$; highest onsight – $b = -.01$, $t(215) = -2.49$, $p < .05$. Preliminary findings suggest that specific sport related self-efficacy, rather than general self-efficacy, moderates the relationship between experience and outdoor sport climbing performance.

Oral presentations
Topics: Perception & attention

Visual intervention for basketball jump shooting

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In static far aiming tasks such as rifle shooting, free throw shooting or billiards, the duration of the final fixation on the target before initiating the final movements correlates with expertise (Vickers, 1996). In contrast, research has shown that in tasks that are more dynamic it is not so much the fixation duration that correlates with expertise but rather the timing of that fixation (Oudejans, van de Langenberg & Hutter, 2002; de Oliveira et al, 2006, 2007, 2008). One researcher (Gibson, 1966) proposed that the role of vision (or other sensory organs) is to detect patterns in the ambient array and highlighted the role of action in picking up visual information. Using different techniques, one study found that basketball players use the angle of elevation with which they fixate the basket, calibrated to basket height (de Oliveira et al, 2009). These findings motivated a number of different interventions to train basketball shooting (Oudejans, 2012; Oudejans et al, 2012). Here we present the results of an 8-week intervention with 14 intermediate-level basketball players from different clubs. The intervention consisted of taking 25 jump shoots from behind an adjustable screen that occluded vision of the rim up until the player jumped. We measured late viewing duration using a wireless eye-tracker (Tobii Glasses Pro3), and performance using both a scoring system and shooting percentages. The results will be interpreted in light of Gibsons theory of direct perception (Gibson, 1966).

Oral presentations
Topics: Exercise psychology

Does masculinity moderate the relationship between moderate-to-vigorous physical activity and functional or aesthetic body image?

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Physical activity (PA) participation is related to positive body image and identifying key variables that help understand this relationship is important. Masculinity, defined as traits stereotypically affiliated with males such as dominance and leadership, may influence PA and body image. It is important to understand that everyone embodies elements of masculinity, regardless of gender. Research has demonstrated that women perceive body image consequences of appearing to be overly masculine through PA, whereas men perceive consequences from not appearing masculine enough. The purpose of this study was to examine masculinity as a moderator of the association between moderate-to-vigorous PA (MVPA) and functional (perceptions of body's abilities) and aesthetic (perceived body appearance) body image among adult males and females. Participants included 529 adults (44.23% female; Mean (SD) age = 35.78 (11.19) years) who completed measures of body image, MVPA, and masculinity. Among males, masculinity significantly moderated the association between MVPA and functional body image ($F(1,291)=7.76$, $R2change=.02$, $p<.01$). Specifically, the positive relationship between MVPA and body image was significant for males who reported low masculinity (Johnson-Neyman: $b=.024$, $SE=.006$, 95% CI [.012, .037], $p<.001$). Masculinity was not a significant moderator for the association between MVPA and aesthetic body image ($p>.05$). Among females, masculinity was a significant moderator in the association between MVPA and aesthetic body image ($F(1,230)=3.80$, $R2change=.015$, $p=.052$). The moderating effect was significant for females who reported low masculinity (Johnson-Neyman: $b=.015$, $SE=.007$, 95% CI [.002, .029], $p<.05$). Masculinity did not moderate the association between MVPA and functional body image. These important findings implicate that for individuals who perceive themselves as being less masculine, attaining positive functional and appearance body is possible by engaging in MVPA - perhaps without conforming to masculine societal norms.

Oral presentations
Topics: Well-being and quality of life

Self-Compassion as a protective mechanism against depression: Can athletes master it?

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While physical activity is known to improve mental health, sport is a context that may also perpetuate poor mental health. Self-compassion is defined as an experience of self-kindness, mindfulness, and common humanity, and is often inversely associated with poor mental health. Specifically, self-compassion is particularly low among adults diagnosed with depression, and low self-compassion has been identified as a predictor of depression symptom severity. There is limited research on mental health among older athletes, specifically Masters athletes (e.g., sub-elite athletes ages 35 and up). This study sought to examine the association between self-compassion and depression among Master-level athletes. Masters athletes [N = 130, 40% female, Mage = 54 (SD = 5.37) years (Range = 45 to 66 years), Fitness VO2 max = 46.06 (SD = 9.88) ml/min] completed self-report questionnaires and fitness testing. The main analysis tested self-compassion as a correlate of depression, controlling for sex, fitness level, age, body mass index, and marital status. There were no sex differences on reports of mean self-compassion [male Mean(SD) = 3.64 (.49) and female Mean(SD) = 3.55(.56)] or depression symptoms [male Mean(SD) = 4.30 (3.41) and female Mean(SD) = 4.43 (3.59)]. Self-compassion was a negative correlate of depression symptoms (ß = .59), with the model accounting for 20% of the variance. Based on these findings, self-compassion may be a modifiable protective factor for depression symptoms in sub-elite Masters athletes. Specific to the sport context, self-compassion may be important for performance, and future studies may examine the relationship between self-compassion and depression longitudinally to optimize athlete mental health.

Oral presentations
Topics: Decision making and judgement

The role of the decision threshold in the agreement between referees. The case of professional handball refereeing.

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In double refereeing, agreement between referees is fundamental for the achievement of a consistent and effcient refereeing activity. Agreeement can be affected by many different factors, with a negative impact on the consistency of the refereeing. In this framework, the referee's Decision Treshold (DT) is the limit above which the evidence of a foul results in the call of an infraction by the referee. It represents the individual refereeing style, and it is one of the factors that can contribute to low agreement between the referees. We present an application of a new procedure to estimate referee's DT in a typical hanball refereeing task. A sample of 56 italian professional handball referees were asked to evaluate 96 potential foul plays, belonging to four different infraction types: 7-meter throw, passive play, offensive foul, disciplinary sanctions. The proposed method informs about: (a) referee's DT; (b) the agreement between pairs of referees; (c) the agreement between each referee and all the other referees; (d) the agreement between each referee and a reference referee; (e) the proportion of agreement between the referees and a reference referee for each potential foul play. Fuutre potential applications of this procedure may be: referees' DT, detection of referees with a low agreement with their colleagues or with the reference referee, implementation of a training on specific plays to improve the arbitration class internal consistency.

Oral presentations
Topics: Social and cultural diversity

Sport for Social Development: Immigrants Building Sense of Community and Wellbeing Through Sports Participation

Chiara Corvino, Sara Maria Martinez Damia, Mattia Belluzzi, Chiara D'Angelo, Daniela Marzana
Università Cattolica del Sacro Cuore di Milano, Italy

Sense of community (SOC) can be defined as a shared feeling and belief among a group of people that they are important to each other and to the group and that their needs will be met through the commitment of being together. Despite there are several studies reporting the beneficial role of sports for immigrant health, more research is needed to understand whether and how sport can build psychological sense of community and subjective wellbeing. By assuming sport as a particular form of community participation, the research aims at exploring how sports participation among immigrants contributes to develop their psychological sense of community and subjective wellbeing. Following this purpose, we carried out in-depth interviews with first-generation immigrants (N=17) participating as players or supporters in Balon Mundial (BM), an annual multi-cultural football tournament delivered in Turin (Italy). A thematic theory driven analysis was implemented.

BM developed SOC by providing immigrants with a safe space - based on norms of fair play and accessibility - where-in to mutually share one's traditions, and forming positive and trusty bonds intra and inter teams. All these dimensions of the tournament participation turned into subjective well-being in terms of happiness, self-care and sense of acceptance. The study shows that sport participation can sustain immigrants SOC and subjective well-being under specific conditions : i) development of shared norms and rules (the dimension of trust of psychological sense of community) ii) building of a shared goal and history among participants (the dimension of art of psychological sense of community)

Oral presentations
Topics: Best practice

Sport for employability: insights from the Erasmus + Sport project SPORT4MED

Chiara Corvino[1], Chiara D'Angelo[1], Diletta Gazzaroli[1], Marcelo Moriconi[2], Cátia Miriam Costa[2], Alejandro Garcia Mas[3], Xavier Ponseti[3], Costas Solomoa[5], Katerina Salta[4], Massimiliano Montanari[6], Carol Jimenez[6], Diogo Guia[6], Bojan Mijatović[7], Paolo Bertaccini[1], Carolina Mendonça[8], Edgardo Zanoli[1], Caterina Gozzoli[1]

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Although there are several studies reporting the prominent role of sports in life skills development, the specific understanding of sport as a leverage of employability skills still remain scarce. The present work shows some of the key results of the Erasmus + Sport4MEd project.

Based in action-research methodology, the work investigates the employability skills that can be develeped through sports and how sport coaches can guide employability outcomes. The reserach provides practical insights to structure and deliver training for sport coaches in order to promote their capacity to use sport as a tool for employability skills development.

The work has significant value for sport-based practices and contributes to the current international debate about the usage of sport as a tool for social development.

Oral presentations
Topics: Elite sports and expertise

Handling jetlag and its impact on stress and recovery states during the preparation for the Olympic Games in Tokyo 2021

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Long-distance travel and symptoms of jetlag might challenge a beneficial stress-recovery balance, which was found to play a crucial role in the preparation for an upcoming athletic competition (Brink et al., 2012; Song, Severini, Allada, 2019). The current study aimed to analyze the daily progress of Austrian athletes' stress and recovery states, sleeping quality, and working memory performances three days before departure to Tokyo until seven days after arrival in Tokyo. In a mixed method design the athletes of the Austrian sailing national team (n varied yearly 6 to14) daily rated the Short Recovery and Stress Scale (Nässi et al., 2017), their sleeping quality, conducted a 2-back task measuring working memory, and noted their individual attempts to improve their stress-recovery balance. Data were assessed at competitions at the Olympic venue in 2017, 2018, 2019, as well as at the Olympic Games in Tokyo 2021.

Rm ANOVAs revealed significant changes of all measured variables over the period of ten days, signifying increased stress states as well as declined recovery states, sleeping quality and working memory performance at the first two days after arrival. These effects significantly decreased over the four years analyzed. The most promising individual strategies were reported as starting the outbound flight relaxed, stick to mealtimes, spending time in nature and consciously control working hours during the first days in Tokyo. These findings provide an insight into group specific but also varying individual challenges to handle jetlag and to adopt to the specific circumstances of the Olympic venue.

Oral presentations
Topics: Consulting/ counseling

Integrating a CBT Protocol in Sport Psychology Practice: A Case Study of Elite Swimmers

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Cognitive behavioural therapy (CBT) concerns a psychotherapeutic approach which focuses on cognitions, emotions and behaviour (Beck, 1976). CBT uses a wide spectrum of cognitive and behavioural techniques to investigate, challenge and replace cognitive distortions and maladaptive behaviours (Westbrook, 2012). It is one of the most well-documented psychotherapeutic approaches with its efficiency concerning clinical and non-clinical populations (Hofmann et al, 2012). A CBT-based approach finds theoretical and practical evidence in sport psychology domain (Andersen, 2009). The present study concerns the application of an integrated CBT protocol in a sport psychology setting. More specifically, the case study refers to two teenager swimmers who were competing in the highest national level. The participants reached out to the first author after experiencing a negative psychological state and poor sport performance. Based on the psychodiagnosis it was revealed that the first swimmer experienced high levels of competitive anxiety due to perceived social pressure for performance improvement while the second one experienced high levels of anxiety after her recover from a half-season long injury. The intervention included psycho-education regarding the CBT and performance anxiety, for each athlete, completion of thought diaries, and application of cognitive and behavioural techniques for challenging and replacing the cognitive distortions and maladaptive behaviours. Moreover, the athletes were trained in traditional sport psychology techniques and integrated them in their training routines. The study findings underline the efficiency of a CBT approach in sport psychology settings and highlights its effectiveness when applied in conjunction with sport psychology techniques.

Oral presentations
Topics: Mental skills training

Coaches' Encouragement of Athletes' Mental Skill Use in Practice

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Athletes and coaches tend to use mental skills more during competition than practice (Einarsson et al., 2020; Henderson et al., 2021; Kristjánsdóttir, 2019), despite the potential benefits for both contexts. Moreover, research is limited on coaches' encouragement of their athletes' mental skills use. Thus, this study compared coaches' encouragement to athletes' own use of mental skills during practice, determined if significant differences existed in gender, competitive level, and sport type, and investigated mental skills as predictors of coaching satisfaction and quality of training. Participants were 291 student-athletes (M age=20.40, SD=2.05; males=199, females=92) who completed adapted Test of Performance Strategies (TOPS-2) (Hardy et al., 2010), The Leadership Scale for Sports (LSS) (Chelladurai et al., 1988), and Quality of Training Inventory (QTI) (Woodman et al., 2010) questionnaires. Repeated MANOVAs revealed that automaticity and activation were the most, and relaxation was the least frequently used mental skill by athletes. Similarly, coaches encouraged activation and emotional control the most and relaxation the least. Males and individual athletes reported significantly greater mental skill use, whereas coaches were more likely to encourage athletes at higher competitive levels and individual sport athletes. Separate hierarchical multiple linear regression analyses revealed that goal setting and emotional control were positive and stronger predictors of coaching satisfaction. In contrast, sport type, self-talk, imagery, relaxation, and activation were significant predictors of the quality of training. These findings indicate that higher levels of coaching satisfaction and better training quality may be achieved by encouraging mental skill usage during practice.

Oral presentations
Topics: Coaching

Developing the triad of knowledge in professional academy football coaches in the UK

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The current study aimed to explore the perceptions of football academy coaches on their use of a novel reflective tool (Think Aloud [TA]) and to understand if this can support the development of knowledge within coaches. Eight male coaches (Mage = 36) employed full time at a Category 1 football academy within the United Kingdom took part. All coaches attended a 2-hr workshop on the use of TA as a reflective tool, with the opportunity to practice TA while coaching. Participants were interviewed on their

perceptions of TA as a reflective tool using a semistructured approach. Data were analyzed abductively, which allowed the generation of initial codes and the involvement of the triad of knowledge (professional, interpersonal, and intrapersonal knowledge), which has been adopted within coaching and identified as an approach to developing coaching expertise, within the analysis process. Findings suggest that all three types of knowledge can be developed through the use of TA, with subthemes identified within each type of knowledge: professional knowledge (player and coach development and session design), interpersonal knowledge (communication and relationships), and intrapersonal knowledge (biases, self-awareness, and reflection). This research offers a novel perspective on coach development through the implementation of TA, with potential to support the development of coaching knowledge and expertise.

Oral presentations
Topics: Group dynamics

Mental Health, Coach-Athlete Dynamics, and (In)Congruent Attitudes

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Despite increased resources for addressing mental health concerns, many athletes do not seek help when needed. Recent research indicates that 50% of athletes will not seek help from a coach and 40% will not seek help from a mental health professional (Habeeb et al., 2021). Better understanding the coach-athlete dynamic may encourage more help-seeking because athletes' beliefs about a coach's attitude toward help-seeking outrank teammates, family, and peers (Gulliver et al., 2012). The purpose of this study was to examine the extent (1) athlete and coach help-seeking attitudes are independently associated and (2) congruence of athletes' and coaches' help-seeking attitudes are associated with athlete help-seeking intentions. College athletes from the United States (n = 474) completed online surveys assessing athlete and (perceived) coach help-seeking attitudes and athlete help-seeking intentions from head/assistant coaches and on/off campus mental health professionals. Polynomial regression analyses were used to examine how congruence of help-seeking attitudes was related to help-seeking intentions. Results indicated that athlete help-seeking attitudes were associated with athlete intentions to seek help from mental health professionals ($B = 1.22 - 2.32$, $p < .001$), but not from coaches. Congruence of coach and athlete help-seeking attitudes was associated with athlete intentions to seek help from both head and assistant coaches (incongruence curvature = $-1.5 – 1.7$, $p < .05$), but not mental health professionals. The findings suggest practitioners should support and encourage coaches to communicate about positive help-seeking attitudes. This can be a powerful motivator for athletes to get the help they need.

Oral presentations
Topics: Self

Development and preliminary factor structure of the Physical Self Comparison Scale

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The physical self is a pervasive domain of social comparison, particularly for adolescents and young adults. However, current instruments that assess tendency for body comparisons (e.g., Fitzsimmons-Craft et al., 2012; Laker & Waller, 2020; Mulgrew & Tiggemann, 2018; O'Brien et al., 2009; Schaefer & Thompson, 2014; Tiggemann & McGill, 2004) are limited to physical appearance-related social comparisons and exclude the assessment of comparisons that can occur across other theoretical domains of the physical self (Marsh et al., 1994). As such, the overarching aim of this research was to construct and demonstrate preliminary validity evidence for The Physical Self Comparison Scale (PSCS) – a theory-informed instrument developed to assess tendencies to engage in social comparisons related to aspects of the physical self. An extensive item pool (n = 120) was generated, using deductive and inductive approaches, and refined (n = 89 items) by expert raters. The scale was administered to a sample of young adults (n = 186; mage = 20.07, SD = 1.56). Exploratory factor analysis revealed a 9-factor structure (i.e., facial appearance, body shape, appearance of body fat, appearance of muscularity, physical coordination, physical endurance, physical flexibility, physical strength, sport competence), with extracted factors explaining 65.0% of the total variance, and good model fit (TLI = .90, RMSEA = .05). The development of a theory-informed instrument is necessary to improve knowledge of the various types of social comparisons that exist in relation to the physical self. From these preliminary findings, we recommend further confirmatory structure testing with novel samples and psychometric validation.

Oral presentations
Topics: Paedagogical psychology

An online CPD training to promote secondary schools students' physical activity: A multicentre cluster-randomised controlled trial

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Despite the multiple benefits provided by physical activity (PA), the majority of adolescents are physically inactive (Guthold, 2019). The key-role of Physical Education (PE) teachers in promoting students' PA is well known and the need for specific professional training is strongly recommended (UNESCO, 2015). This paper presents the protocol of the PE4MOVE project, aimed to promote secondary school students' out-of-school PA through an in-service professional training programme offered to PE teachers in the Marche Region, Italy. The theoretical framework relies on the model of the IMPACT project (Papaioannou et al., 2020), consisting of a trans-contextual approach to youths' motivation in PE and the social-ecological model of PA (Bauman et al., 2012). A group of PE Teachers (n=104) and some of their students (n>5000), were randomly allocated to either an intervention group or a waitlist-control group. Teachers' training consists of an online Continuing Professional Development training (CPDt) designed to increase knowledge and competences regarding students' PA promotion, through webinars and online workshops. Teachers are then required to apply training contents with their students during PE classes. Data are collected at pre- and post-trial times. Students' PA levels, fitness (Geiger et al., 2007; FitBack project, 2021) and factors related to PA participation are investigated. Teachers' approach towards PA promotion is also recorded. This study will add knowledge on PA of a large sample of adolescent students and on the effectiveness of a specific CPDt. Results will be useful to design and plan further actions to increase the rate of physically active youths.

Oral presentations
Topics: Cultural sport psychology

Towards a Psychology of Martial Arts and Combat Sports: preliminary empirical-phenomenological results

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Once psychological research on Martial Arts and Combat Sports (MA&CS) is too general and abstract or too singular, avoiding dealing with specificities inherent to corporal fighting experiences, this proposal intends to grasp the lived experiences that constitute specific psychological challenges on fighter practices. Combining classical phenomenology (Barreira, 2017) and empirical-phenomenological research (Serrano Rodrigues et al., 2021) allows looking for these specificities through an essential description of living experiences. These preliminary results are part of a bigger investigation conducted in all 5 regions of a continental country (Brazil): 11 cities are supposed to be the field of the study that interview practitioners of 8 MA&CS (Capoeira, Brazilian Ji-Jitsu, Judô, Karate, Taekwondo, Muay Thai, Wrestling, Box). About 60 deep interviews under suspensive listening were already done in 3 regions of the nation, exploring the sense of practitioners' development and peak experiences on practice. Respondents were men and women aged between 18 and 75 years who practiced one or more modalities for at least 3 years. The interviews were transcribed and compared. The analysis procedure called intentional crossing shows the consistent role of self-control and decontrol transitions experiences in the fighters' attitude development and ethical articulations. They cope whit intimidation and hostility, by one side, and complaisance on the other, opposing the optimum psychological fighting conditions. Understanding this psychological dynamic allows MA&CS masters to modulate the challenge of the practice according to the person, preserving physical and moral integrity and fostering safe development by avoiding violent events.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Locked Down and Locked Out of Sport: Reconstruction of Meaning among Sport Participants

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The lockdown resulting from the COVID-19 pandemic was exceptionally tough on sports participants. Movement, being their primary language of articulation, has been severely restricted. Physical contact, as characteristic of their daily training regimen, has been abruptly constrained. Everyday interactions with fellow players, supporters, and spectators during competition have been significantly curtailed. Suddenly, the sports arena was transported to cyberspace, including consultations with sport psychologists. In this autoethnographic study, I draw insights from the narrative processes that unfolded through my online sessions with twenty-four athletes, coaches, and sports advocates during the first one hundred days of the government-imposed extended community quarantine in the Philippines. In articulating the key themes underlying these storied interactions, I highlight the reconstruction of meaning-making processes in sport psychology consultation during the adverse conditions of the pandemic. In particular, I underscore the value of nurturing personal and collective resources in managing distressing experiences, cultivating mindful living, nourishing interpersonal and spiritual connections, and promoting a sense of coherence. Furthermore, I assert the importance of narrative approaches in sport psychology consultation. Notwithstanding the limitations of autoethnographic research in challenging the honesty and willingness to self-disclose, this study highlights the extraordinary psychological challenges brought about by the pandemic, compelling sport psychology practitioners to consider our client's underlying meaning-making mechanisms.

Oral presentations
Topics: Motor control and learning

Imagery training of motor actions in children: A meta-analysis

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Imagery training is well-established in sports, rehabilitation, and work settings. Both classic and recent meta-analyses confirm that it can improve motor performance and promote motor learning in adults (Driskell et al., 1994; Simonsmeier et al., 2020; Toth et al., 2019). Findings from studies focusing on children and adolescents, however, are ambiguous, and it is not clear whether motor imagery training has an impact on performance and learning in individuals of younger ages. Given that the potential impact of motor imagery training in children and adolescents has yet to be determined, we conducted a meta-analysis to extent knowledge on the effectiveness of imagery training to this population. We included imagery training studies investigating children or adolescents at an age of 6 to 18 and focusing on a motor task, which resulted in 15 studies and 97 effect sizes. Our analysis revealed an overall medium effect for imagery training of Cohen's d = 0.499, 95% CI [0.169, 0.829]. The results demonstrate that imagery training can affect motor performance and motor learning in children and adolescence. Due to the small number of studies included, however, it was not possible to investigate potentially moderating ef-fects. Future research is needed to further differentiate the effects across age, task or developmental aspects, and to provide more elaborate recommendations for applied settings such as physical education, rehabilitation or competitive sports.

Oral presentations
Topics: Elite sports and expertise

How to switch-off? Grounded Theory of Psychological Recovery in Elite Sport

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How to switch-off? Grounded Theory of Psychological Recovery in Elite Sport

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Prof. Dr. Edwin van Hooft

University of Amsterdam

Athletes today are facing more physical and psychological demands both in and outside of training and competing, which highlights the importance of recovery as a process, which enables athletes to stay healthy, engaged, motivated, and performing optimally. However, the question of how athletes recover psychologically remains largely unanswered. While current literature addresses individual aspects of psychological recovery (e.g. rest, detachment, relaxation), an in-depth overview of how athletes experience their own recovery, potential challenges they encounter and how they solve these challenges is limited. The present study was conducted through a series of semi-structured interviews, with questions focusing on athletes lived recovery process, as well as how recovery affects their performance. Thirty-three Slovenian elite athletes (M = 24.21, SD = 4.86) completed the interviews, 19 women and 14 men. We will present a grounded theory of elite athlete's recovery process, giving a full account of the recovery experience of elite athletes. In addition, we will suggest some avenues for future research, and possible practical applications.

Oral presentations
Topics: Talent identification/ development

Searching for the Best - A First Theory-driven Experimental Study of the Information Search in Talent Selections

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In talent selection, coaches make their decisions based on the so-called “coach’s eye” (Roberts et al., 2019). However, the current understanding of the underlying decision-making mechanism of the coach’s eye is limited (Lath et al., 2021). The aim of this study is to investigate coaches’ decision-making processes in talent selections using hypotheses derived from the iCodes model (Jekel et al., 2018). This theory describes decision-making process in dependence of information validity (first hypothesis) and of the attractiveness of the options (second hypothesis: Attraction Search Effect). Sixty-three coaches from multiple sports participated in an online study. Coaches were confronted with option-information matrices in which they could open information regarding the athletes. In each trial, coaches had to select one athlete as “most talented”. Thereafter, coaches had to rank the criteria in accordance with their relevance to talent selection. Usage of Criterion Score was calculated representing how often and in which order the criterion was opened. Additionally, an Attraction Search Score (Scharf et al., 2019) was calculated representing a participant’s tendency to switch to another athlete/option based on the initial information. Medium-to-high correlations for usage and validity of each criterion were computed ($r = .32–.73$, $p < .05$). This may provide support for the first hypothesis of the iCodes model. Results revealed no support for the second hypothesis, as there appeared to be no statistically significant Attraction Search Effect. This study offers new approaches to investigate the underlying processes of coaches’ decision-making in talent selection.

Oral presentations
Topics: Psycho-physiology

Aggression in sport: the influence of neutral exercise on aggression, testosterone, cortisol, and cardiac vagal activity

Uirassu Borges, Fabian Pels, Florian Javelle, Ulrike Hartmann, Jens Kleinert
German Sport University, Germany

Aggression and violence are significant phenomena in sports (Coulomb-Cabagno & Rascle, 2006). Although sport and exercise have been hypothesized to reduce aggressive behavior, it is still unclear whether this causal relationship exists, especially what mechanisms can explain this putative effect (Kleinert & Kleinknecht, 2012). Studies suggest that the way how sport affects aggression depends on various factors, for instance, the type of exercise (Chermette & Pels, 2020). It has already been shown that sports with little or no physical contact with an opponent can reduce aggressive feelings, but aggression was measured subjectively (Pels & Kleinert, 2016). With the aim of further and causally addressing the unclear relationship between exercise and aggression, our study investigates the acute effect of exercise on aggression from a psychophysiological perspective. We expect that a neutral form of exercise, namely exercise on an ergometer, can reduce aggressive tendencies in men compared to a non-exercise activity. Aggressive tendencies are operationalized via increased aggressive feelings on a subjective level as well as increased aggressive behavior, increased testosterone levels, decreased cortisol levels, and decreased cardiac vagal activity on an objective level. Reactive aggression is induced using the point subtraction aggression paradigm (Geniole et al., 2017). The present study spans methods of neuroendocrinology, affective neuroscience, and sports psychology to explore the foundations and mechanisms of aggressive behavior as well as to test a potential intervention method against aggression in sports. Results of this study will be presented at the conference.

Oral presentations
Topics: Research methods (qualitative & quantitative)

Understanding sport competitions from a psychological-diagnostic perspective

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A central task of sport competitions is the comparison of athletic performances with the aim to distinguish between them. Accordingly, it should be ensured that the better performer or team is more likely to win than the weaker performer or team - the "may the best win" (MBW) principle (cf. Appleton, 1995). In addition to MBW, there are some other goals that are pursued with sporting competitions, e.g., audience excitement until the end, a low or high number of single events, and economic organization. However, such goals may conflict with MBW. Now, there are many different competition and tournament formats in sports, so the question should automatically arise to what extent these formats fulfill MBW as well as competing goals. Despite the great importance of competitions in sports, however, sport psychology has dealt with this issue rather sporadically so far. This presentation reviews previous work on MBW in sport and presents a proposal for how it can be used to develop a psychological-diagnostic perspective on sport competitions. "The best" would thus be conceived as a theoretical construct that is "diagnosed" by means of a competition. Accordingly, the quality of sporting competitions and their results could be measured by similar criteria as the quality of psychological tests. Among other things, this is of great importance when testing theories of sport performance by comparing performances across different tournament formats. Overall, this presentation aims to provide an impetus to expand the subject area of sport psychology by including an understanding of sport competitions.

Oral presentations
Topics: Cognition

The cognitive load of physical activity in individuals with high and low tolerance to effort

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University of Lille, France

Performing a physical activity means dealing with the challenges and difficulties occurring during the task. The more a person possesses the cognitive ability to deal with the complexity of the task, the more that person will be able to face the difficulties in activity regulation. However, no studies have been designed to investigate the cognitive dimension of physical activity. In the present study, we present an original in-task methodology that offers the means to assess the cognitive and physical load of a physical activity. Through the application of a dual task paradigm, we report in-task changes in cognitive abilities and physiological experiences in low and high tolerant individuals during the practice of one of two whole-body stepping tasks. The findings confirmed that stepping through space is a physical activity that requires more cognitive resources and is perceived as more cognitively and physically challenging than stepping on the spot. We demonstrated also that the tolerance to effort, which is a psychological factor, plays a non-negligible role in the way the activity sessions were experi- enced. The affective states in low tolerant individuals were always more negative than those reported by high tolerant individuals. Our findings argue for the existence of a cognitive dimension to physical activity with tolerance to effort being a moderator of individuals' affective experience to exercise.

Oral presentations
Topics: Motivation

What contributes to attraction/antipathy to exercise during adulthood? Exploring need satisfaction and thwarting during childhood

Spyridoula Vazou, Jace Leininger, Panteleimon Ekkekakis
Iowa State University, United States of America

Background. According to research on Self-Determination Theory, both the satisfaction and thwarting of the needs for autonomy, competence, and relatedness may influence engagement and participation in sports. Further, based on the Affective-Reflective Theory of physical inactivity and exercise, affective exercise experiences over the life course may uniquely contribute to physical activity (PA) behavior. However, it is unknown whether need satisfaction and need thwarting during youth PA participation may shape affective exercise experiences (e.g., attraction or antipathy towards exercise) during adulthood. Using a retrospective survey, we examined whether memories of need satisfaction and need thwarting during youth PA and sport relate to present-day reports of affective exercise experiences during adulthood.

Methods. An online questionnaire was completed by 1739 adults (1093 women, Mage = 27.15 ±12.65 years). Participants completed the Basic Psychological Needs in Exercise Scale (BPNES; Vlachopoulos & Michailidou, 2006), the Psychological Need Thwarting Scale (PNTS; Bartholomew et al., 2011), and the Sports Climate Questionnaire (SCQ; Deci & Ryan, 2007) regarding their memories from youth PA participation, and the Affective Exercise Experiences (AFFEXX; Ekkekakis et al., 2021) questionnaire.

Results. Hierarchical multiple regression showed that satisfaction of the need for autonomy and competence were the strongest predictors of antecedent cognitive appraisals, core affective experiences, and overall attraction to exercise, whereas, from the psychological need thwarting factors, thwarting of the need for relatedness was the only predictor of most AFFEXX factors.

Conclusions. Results demonstrated the role of perceived need satisfaction and need thwarting in predicting reports of affective exercise experiences during adulthood.

Oral presentations
Topics: Neuroscience

Attention, cognitive effort, and cognitive performance during an acute progressive exercise in three different intensities

Beatriz Hooper[1], Dawit Albieiro Pinheiro Gonçalves[2], Iasmin Oliveira de Souza Viana[1], Andressa Eliza da Silva Cunha[1], Tércio Apolinário-Souza[3], Maicon Rodrigues Albuquerque[1,4]

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Several studies have investigated the interaction between acute physical exercise and cognitive performance. However, more research is required comparing exercise intensities, especially those supra-thresholds (McMorris, 2021). Thus, the present study evaluated attention (ATT), cognitive effort (CE), and executive functions (EFs) performance during a progressive physical exercise in three different intensities [below-lactate threshold (LT), at-LT, and above-LT]. Twenty-one physically active subjects performed two experimental sessions. They were familiar with the EFs test on the first visit and participated in a graded maximal exercise test on a cycle ergometer for calculating the LT. They performed EFs test at rest and during three different intensities in an acute progressive physical exercise on the second visit using a mobile SMI eye-tracking. As expected, our results showed that the psychophysiological measures differed between the conditions. Also, the ATT measures indicated that physical exercise, independently of the intensity, improves the number of fixations with fewer fixation durations when compared to the rest condition. Additionally, we found no significant differences in pupil dilation between conditions. Regarding the cognitive performance, during physical exercise above-LT, the subjects showed a worse accuracy when compared with rest and below-LT. In addition, in exercise, independent of the intensity, the response time (RT) was shorter than in the rest condition. Further, RT was faster in the above-LT than in the below-LT condition. In conclusion, the attention and cognitive performance were changed during physical exercise compared to rest conditions, especially in the above-LT condition. On the other hand, it did not alter cognitive effort.

Oral presentations
Topics: Prevention and rehabilitation

Growth Mindset and Attitude Malleability in Return to Sport from Injury Rehabilitation

Darrell Phillips
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Guided imagery rehearsal as a mental performance psychomotor skill in has been demonstrated as a key element for performance enhancement in all levels of sport and physical activity as well as various other physical performance domains (Asken et al., 2021, Shuster et al., 2011). Growth mindset has demonstrated to be an effective practice for promoting learning and task perseverance in cognitive enhancement for groups and individuals in various cognitive-behavioral attitudes (Boyet, 2019; Crum et al., 2013, Dweck, 2006). As of date, there is limited literature supporting the concept of combining guided imagery rehearsal with growth mindset practices applied to mindset/attitude malleability (Holllaway, 2020). This presentation will focus on the application of a modified guided imagery process/research methodology for developing a growth mindset via attitude malleability for athletes and others returning to sport after sport injury rehabilitation. A detailed model will be presented integrating a Growth Mindset application with a guided imagery skill set. Theoretical support and schematic narrative development will be presented with a focus on developing a return from sport injury mindset/attitude, thus providing long term cognitive-behavioral processes and adoption.

Oral presentations
Topics: Clinical issues in sport and physical activity

Toxic Pursuit of Perfection: Burnout Syndrome in Young Basketball Players

Anna Ussorowska[1], Daniel Krokosz[2], Paweł Atroszko[3]
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Burnout occurs in 1% to 10% of competitive athletes (Cresswell & Eklund, 2007) and negatively affects mental and physical health (Gustafsson et al., 2008). The presented study aims to get to know the specificity and the dynamics of burnout process among young basketball players (both male and female) during the season. Goal of the study is to understand the extent to which perceived stress, perfectionism, perceived support, and mindfulness predict the trajectory of changes in the intensity of burnout symptoms among individual players. The study involved N = 181 (female: n = 89; male: n = 92) competitive basketball players aged 15 – 22 years. The study design was longitudinal and included four measurements. Standardized questionnaires were used, which allowed the measurement of the studied variables: PSS-4 Perceived Stress Scale; ABQ Athlete Burnout Questionnaire; KPS Sports Perfectionism Questionnaire; MSPSS Multidimensional Scale of Perceived Social Support; FFMQ Five-Facet Mindfulness Questionnaire and a questionnaire developed by the author. Perceived stress and burnout during the season increased in every measurement. The greatest increase in perceived stress and burnout occurred between the second and third measurements. Perceived support, mindfulness and negative perfectionism predicted individual parameters of the trajectory of changes in perceived stress and the level of burnout. For more mindful players, the relationship between stress and burnout was weaker, while perceived support did not moderate this relationship.

Oral presentations
Topics: Psycho-physiology

Shooting performance of paintball players under stress

Marie Ottilie Frenkel[1], Laura Voigt[2], Mario Staller[3], Henning Plessner[1]
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In sports, police service and military, actors are required to exert peak performance in cognitive and perceptual motor tasks under uncertain circumstances that are both psychologically and phys-ically challenging. Those situations, that are often characterized by a threat to physical integrity, trigger psychophysiological stress reactions which can impair motor performance (Nieuwenhuys, & Oudejans, 2017). To date, laboratory studies only investigated the effects of stress and physical load on the performance in cognitive-motor tasks separately. Hence, the present study examined the interaction effects of both factors on shooting performance in a standardized paintball game situation.

Sixteen male paintball league players underwent a standardized game situation that included per-ceptual-motor tasks in two conditions (low stress: LS, high stress: HS). Under HS a confederate opponent shot back using paintballs. Physical stress is manipulated as a between-subject factor through a physical exertion task before entering the game situation. Physiological (heart rate varia-bility) and psychological (anxiety, mental effort) variables are measured repeatedly before and after the game situation. Behavioral measures of performance are captured for all tasks in the obstacle course.

Both LS and HS scenarios elicited comparable increases in anxiety and mental effort with paintball players under high physical stress reporting more anxiety and mental effort. 2 x 2 ANOVAs re-vealed no significant main or interaction effects for performance, except that all players hit the dy-namic target faster in the HS game situation.

Surprisingly, the results show that physical load increase anxiety and mental effort in psychological-ly challenging situations, without further impairing performance.

Oral presentations
Topics: Youth

Keeping young people safe in sport

Maita Furusa, Camilla Knight, Tom Love
Swansea University, United Kingdom

The purpose of this study was to examine the safeguarding landscape in youth sport across Wales. Specifically, to explore young athletes' (11-18 years), coaches', and parents' understanding of psychological abuse and bullying and to investigate the frequency and perpetrators of these types of abuse in sport across Wales. In total, 394 participants (athletes, n=139; parents, n=205, and coaches, n=50) participated in this study. An anonymous online survey including items used in previous literature (e.g., Alexander, Stafford, & Lewis, 2011; Vertommen et al., 2016) consisting of demographic questions, experiences of psychological abuse and bullying (i.e., witnessed and/or experienced [i.e., young athletes]), frequency and perpetrators of abuse was administered. Survey results indicated that a significant number of respondents did not recognise what constitutes psychological abuse. Coaches reported more experiences of witnessing psychological abuse and bullying. Being teased/made fun of due to something that happened or how someone looked, as well as being shouted or sworn at angrily by someone because of something that was done, were the most frequently reported types of abuse witnessed across all three surveys. Meanwhile, being ignored on purpose and being criticised about performance, were most frequently experienced by young athletes. Young athletes were indicated as the most common perpetrators of all types of abuse and abuse was experienced most frequently by those aged 13-15 years and taking part at club level. Overall, findings highlight the need for prevention and intervention initiatives, as well as the implementation of safeguarding education for all stakeholders involved in sport.

Oral presentations
Topics: Elite sports and expertise

"Common paths or a personal matter?": Emerging athletes' burnout routes.

Alexandra Markati, Maria Psychountaki, Philia Issari, Konstantinos Karteroliotis
National and Kapodistrian University of Athens, Greece

Athlete burnout experiences are commonly explained through motivational, stress based, overtraining and recovery, sociological or entrapment models. However, researchers have questioned the deficiency of their unilateral use in understanding athlete burnout (Gustafsson et al., 2014). The purpose of the present study was to explore different athlete burnout profiles (ABP) and further understand ABPs' unique and common characteristics, under a through a 3-year Sequential Explanatory Mixed Method Design (Plano-Clark et al., 2014).

In the study participated 74 burned-out athletes and the procedure conducted in two phases. Phase I (quantitative) presents four emerging ABPs (T1) and their transition in time (T2). Specifically, Cluster Analysis revealed four limited-factor ABPs, while, repetitive Cluster Analysis revealed four multifactor ABPs. The above results emphasized the (a) representation of main reasons for each ABP, (b) significance of integrating main reasons to understand the complexity and multidimensionality of burnout and (c) increase of burnout level over time. Phase II (qualitative) presents commonalities and differences on key elements among the 4 ABPs, within and across time. In particular, Qualitative Comparative Analysis revealed five themes: "effects from self", "sporting involvement", "challenges in sports", "sporting world effects" and "unforeseen conditions", emphasizing the evolution of ABP's core antecedents, athlete – environment's stable/unstable characteristics, early or delayed recognition of the problem and quality of response to core negative factors. Moreover, ABPs' comparison preceded intensity, priority, duration, transformation and irreversibility of athlete burnout. In conclusion, results highlight various "burnout routes" with common & unique elements, in trying to explain the evolution of the syndrome.

Oral presentations
Topics: Non-traditional applications (music, dance, military, …)

Using the MARS© Approach When Consulting with Non-traditional Populations: Actors, Musicians, and Firefighters

Jacob Cannon Jensen
California State University, Northridge, United States of America

In this presentation, the presenting author and practitioner will discuss how he has incorporated his consulting approach, the MARS© approach, within his applied work, particularly with non-traditional populations that include actors, musicians, fire fighters, and others. Based off of over 10 years of applied consulting work with diverse populations, the presenter will discuss his own approach to consulting—the MARS© approach—that is structured around the four pillars of Mindfulness, Accountability, Resiliency, and Self-care. The presenter will discuss each pillar and identify important interventions he has used in each area to help non-traditional populations. The first pillar emphasizes the core concepts of mindfulness, including awareness, nonjudgmental thinking, present moment focus, and controlling the controllables (Kaufman, Glass, & Pineau, 2017;(Ravizza, 1998). The accountability pillar involves the core concepts of being accountable to oneself and to others (e.g. coach, boss, colleagues) and creating action plans. The resiliency pillar addresses how to bounce back after disappointment, how to use rejection and failure to move forward, and how to avoid and overcome burnout and performance plateaus. The final pillar focuses on the importance of self-care, including finding balance in life and having creative and artistic outlets. The presenter will address some of the unique characteristics of working with non-traditional populations and factors to consider when consulting outside of traditional sport and exercise contexts. The presenter will also touch on some of the research directions moving forward with non-traditional populations and best practices for working within these settings.

Oral presentations
Topics: Transitions in and out of sport/ dual career

The lived experience horizon of young cycling athletes: empirical-phenomenological research in Brazil.

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This is an empirical-phenomenological study that aims to identify and understand the experiences and psychological challenges experienced by young cyclists in training. Nine athletes between 13 and 17 years old made up the intentional sample and were interviewed under suspensive listening, a dialogic attitude in the field of phenomenological psychology in which the suspension of previous knowledge allows the interviewee's experience to be shown as a narrative (Barreira, 2017). This is qualitative research, based on the phenomenological perspective, with the intention of seeking a descriptive and, at the limit, structural knowledge of the lived experience of these athletes. After transcribing, the reports undergo phenomenological analysis, through a comparison of meanings called intentional crossing. Instead of remaining in the senses of the personal experience of each participant, the intentional crossing apprehends a horizon of experiences common to young cyclists in training on pre-professional teams, moving from the singularity of each subject to the generality of intentional thematic experiences.In this way, six intertwined categories described this horizon: Community on two wheels; Pedal, exceed, recognize and pedal again; Can not stop; The other; Learnings; Satisfaction as a result of effort. These results show the challenges faced by cyclists offering a repertoire for the elaboration of interventions. By considering in advance what will still be experienced as a psychological challenge, these interventions are more attentive both to the requirements of the modality and to the search for personalized goal setting and effective coping for each athlete.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Examining drivers of the home advantage in German volleyball

Edda van Meurs, Jan-Philipp Rehr, Charlotte Raue-Behlau, Bernd Strauss
University of Münster

The magnitude of the home advantage (HA) in team sports depends on e.g., the type of sport, gender and more (cf. Gomez et al., 2021). The few studies on volleyball (overview: Paloa et al., 2021) mainly investigated female leagues (exceptions: Paloa et al., 2015; Pollard & Gomez, 2017) without assessing potential HA drivers and while being methodologically limited (e.g., small samples, neglecting nested structure). The present archival analysis examines HA at the highest level of German volleyball (men and women), including a series of COVID-19 crowd-restricted games. We analyse how audience size (absolute & relative to capacity), travel distances, and COVID-19 induced changes drive HA.

Data from volleyball-bundesliga.de on all matches from 1996 to 2021 (N=6,811, 52.8% female) includes details on match statistics, venue, and audience size. Allowing intercepts to vary between teams (2-level model), which did not improve the fit (Var=0.001, AICdiff=2.2), we found a small HA (53%-60%). The chance of winning increased by OR=2.78, 95% CI [2.29; 3.38] when playing at home, while controlling for team strengths (OR=1.68 [1.64; 1.71]) and gender differences (ORfemale=0.86 [0.72; 1.03]). HA did not increase significantly with more spectators (absolute: OR=0.96 [0.87; 1.06]; relative: OR=0.97 [0.88; 1.07]) nor due to travelled distance (OR=0.92 [0.84; 1.02]) or COVID-19 (OR=0.96 [0.66; 1.39]). HA did not change over time, OR=1.06 [0.89; 1.26]. Similar trends were observed for the number of sets won. These findings indicate that spectators and travelled distance drive HA less than expected (Carron et al., 2005), at least in German volleyball.

Oral presentations
Topics: Mental skills training

Development of emotional competencies for tennis players : Why does an online individualized psychological support matter ?

Guillaume Levillain[1,4], Guillaume Martinent[2], Sylvain Laborde[3], Philippe Vacher[4], Yohan Saby[1], Michel Nicolas[1]
[1]University of Burgundy, France; [2]University of Claude Bernard Lyon 1; [3]German Sport University Cologne; [4]European University of Brittany

The purpose of this study was to assess the effectiveness of an online emotional competencies (EC) training, and more specifically the relationships between adherence, confidence, and alliance and the effects of mental training on EC. A longitudinal four-wave measurement design was used in the present study. An experimental group (n = 20) received a specific EC training intervention, whereas the control group (n = 20) did not receive this intervention program. These two groups completed self-report questionnaires assessing EC across four measurement times. Participants of the intervention group also completed a questionnaire measuring the adherence, confidence, alliance between practitioner and athlete. Results of repeated measure ANOVAs showed that the level of EC increased significantly in the intervention group but not in the control group. Moreover, correlation analyses highlighted significant relationships between the scores of adherence, confidence, alliance and the scores difference of EC between before and after intervention. These outcomes suggest the possibility of improving EC with an online intervention. The online device did not affect the quality of the alliance between the practitioner and the intervention participant. Furthermore, the results showed that a high level of alliance, confidence and adherence was associated with an improvement in emotional intelligence. This online program would serve psychologists and mental trainers to use an intervention to develop EC adapted to the constraints of localization of athletes. In this perspective, an individualized support would make it possible to respond more specifically to the emotional issues of tennis players in order to optimize their adaptation in competition.

Oral presentations
Topics: Exercise psychology

Measuring experiential attitudes to active play and physical activities in preschool children

Aave Hannus[1], Kärolin Kiviste[1], Ave Amor[1], Tiia Tulviste[1], Kenn Konstabel[1,2]
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We aimed to develop instruments to assess preschoolers' attitudes to physical activities. Notably, declines in physical activity appear already in preschool age (Taylor, Williams, Farmer, & Taylor, 2013), in the period when evaluative conditioning starts to shape attitudes (Halbeisen, Walther, & Schneider, 2017). We propose that due to positive associations derived from mastery experiences, motorically more proficient children may enjoy active playing to a greater extent, and pleasant experiences, in turn, motivate them to be more active. To test this prediction, we developed three computerized tasks to target children's attitudes to physically more and less intensive activities by using different assessment paradigms. Ninety-eight 4-5-year-olds completed those tasks along with motor competence tasks and physical activity assessment. Motorically more proficient children preferred physically intense activities over less active and sedentary activities more frequently as compared to children with lower motor competence ($\beta = .266$, $p = .010$). Importantly, attitude scores acquired in three tasks were highly correlated. However, motor proficiency estimates were associated only with the scores of the task that required to indicate which of the two simultaneously presented activities one likes more. On one stimulus picture, a more intensive play (e.g., badminton, bicycling) was presented; on the other picture, a less intense activity (playing with a balloon, rocking a rocking horse) was presented, next to each other. We suggest that such a comparison task might be the most engaging one compared to evaluating the likability of individual stimuli. We expect that novel instruments will allow explaining variations in children's health-related behavior.

Oral presentations
Topics: Any other topic

Advancing Safeguarding Education: Exploring sport stakeholders' understandings of power

Alexia Tam, Dikaia Chatziefstathiou, Philip Hurst
Canterbury Christ Church University, UK

Power, traditionally, is understood as having power over someone or something (Foucault, 1980). The acceptance that the individual with more 'power' is able to dictate and control the actions of another (Markula & Pringle, 2006), is a concept foundational to understanding maltreatment in relationships in sport (Gurgis, 2021). However, this notion of power lacks nuance and has been problematized by several scholars, including Emerson (1962), who proposes that power is not attribute of a person or group and Westwood (2002), who emphasizes that power is constantly reinvented and renegotiated through social interactions. Recent research has also provided insight on how athletes define power, and their awareness of sources of power, notably within peer-based relationships (Tam et al., 2020). Thus, the understanding of power in interpersonal relationships is critical to comprehensive safeguarding education. The purpose of this study was to explore sport stakeholders' understanding of power and how that contributes to their broader understanding of and engagement with safeguarding initiatives. Semi-structured interviews were conducted with 12 sport stakeholders, including administrators, coaches, and parents. Findings are interpreted in relation to existing literature on power, violence in sport, and international safeguarding efforts. This study advances existing literature by emphasizing the need for a more expansive understanding of power and its role in safeguarding, and the implementation of advanced safeguarding education. Recommendations are posed for ways in which safeguarding education and initiatives can better support stakeholders to address and prevent maltreatment in sport by creating healthy, safe, and inclusive sport environments.

Oral presentations
Topics: Sports Psychology and COVID-19 Pandemics

Slow-paced breathing and endurance, well-being, and sleep quality in healthy recreational athletes during the COVID-19 pandemic

Uirassu Borges, Babett Lobinger, Florian Javelle, Sylvain Laborde
German Sport University, Germany

Since the global outbreak of the coronavirus disease 2019 (COVID-19), a major negative impact on the physiological and psychological health of individuals has been observed (Brooks et al., 2020). COVID can negatively impact athletic performance of both elite and recreational athletes. To support this population, it is important to develop “COVID-secure” intervention techniques that aim at strengthening psychophysiological processes that are relevant for athletic performance and are often impaired by COVID-19 (Borges et al., 2021). In our study, we designed an app-based intervention from which athletes with or without a past COVID-19 diagnosis can benefit. This intervention applies slow-paced breathing (SPB), which consists of slowed breathing at a specific frequency, and is performed at home for 30 days (self-administration). We expect SPB to improve sleep quality, emotional well-being, and aerobic performance (Lehrer et al., 2020) in recreational athletes (both genders, between 18 and 40 years, all types of sports) through mechanisms involving increased lung function and cardiac vagal activity, as already shown in previous studies (Laborde et al., 2019). The cost-effectiveness and easy implementation of app-based SPB makes this intervention promising when it comes to counteracting psychological and physical impairments brought on by the corona pandemic. By strengthening psychophysiological processes involved in endurance performance, SPB may contribute to less physiological sequelae in athletes when they are eventually infected. Thus, SPB could become an indispensable part of the sports psychologist's toolbox in times of widespread restrictions and possible performance decrements. Results of this research will be presented at the conference.

Oral presentations
Topics: Youth

How to help coaches meet the psychosocial skill needs of their Generation Z athletes

Julie Patricia Johnston[1], Mustafa Sarkar[1], Chris Saward[1], Chris Harwood[2], Daniel Gould[3], Joseph Stanford[1]
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Generation Z (GenZ) are those individuals born after 1996 and are the first generation to have grown up in a totally digital environment. This has accelerated generational changes and led to changes in their psychosocial skillset such as excellent technology skills yet shorter attention spans, poor communication skills and difficulty dealing with adversity (Twenge, 2017; Gould et al., 2020). These changes likely influence coaching practice yet only one study (Gould et al., 2020) has previously investigated this. Therefore the aim of this study was to explore elite swimming coaches' perceptions of effectively coaching GenZ athletes to meet their psychosocial skill needs. Nineteen swimming coaches took part in interactive focus groups, that explored their perceptions of the psychosocial skillset of GenZ swimmers and effective strategies to enhance psychosocial skills in GenZ swimmers.

Analysis revealed that, coaches noted that GenZ swimmers had good digital communication skills, a high level of sport specific knowledge and were good at sharing their feelings. However, coaches also noted high levels of ego orientation coupled with a lack of both work ethic and personal responsibility. Low levels of resilience were also identified in addition to low self-confidence and indications of perfectionism. Coaches suggested several strategies to enhance deficit areas including structured peer support systems, enhanced monitoring and feedback, and athlete collaboration. This study highlights specific psychosocial assets for coaches to focus on enhancing with GenZ youth along with several suggestions of how to do this. Future research should highlight key strategies for developing these assets more specifically.

Oral presentations
Topics: Physical activity

Subjective perceptions of time spent in movement behaviours and depressive symptoms in young adults: A compositional analysis

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Subjective perceptions of movement behaviours (i.e., physical activity (PA), sedentary behaviours (SB), sleep) significantly relate to depressive symptoms (McKercher et al.,2009). Although movement behaviours are often analyzed as distinct, they are highly inter-dependent (e.g., if an individual increases sleep, then PA or SB must be reduced). These dependencies should be accounted for using compositional analysis (Dumuid et al., 2018). We tested whether perceptions of time spent in movement behaviours (i.e., moderate-to-vigorous intensity PA (MVPA), light physical activity (LPA), SB, and sleep) related to depressive symptoms in young adults using a compositional analysis. We then estimated change in depressive symptoms with reallocation of time across movement behaviours using compositional time-reallocation models. Data were drawn from the longitudinal NDIT dataset. Complete data were available for 799 young adults (Mage = 20.3, 55% females). PA was measured using the IPAQ (Marshall & Bauman, 2001), sleep was calculated using self-reported typical sleep and wake up times. SB was measured as the amount of time spent watching television, on the computer or reading. The proportion of time spent in movement behaviours significantly related to depressive symptoms. Reallocating 15 minutes from MVPA to SB resulted in a significant (0.41 unit) increase in depressive symptoms, while reallocating 15 minutes of MVPA to LPA was associated with a (0.51) increase in depressive symptoms. These preliminary results indicate the importance of subjective perceptions of time spent in movement behaviours to mental health. On-going work is examining whether changes in these perceptions over time relate to changes in depressive symptoms.

Oral presentations
Topics: Clinical issues in sport and physical activity

Physical activity benefits to the mental and physical health of patients within forensic settings: A systematic review

Jessica Hassan[1], Stephen Shannon[1], Mark Tully[2], Claire McCartan[3], Gavin Davidson[3], Richard Bunn[4], Gavin Breslin[5]
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Individuals with severe mental illness (SMI) referred through the criminal justice system may reside in forensic health clinics (Rogers, Papathomas, & Kinnafick, 2021). Given individuals' complex needs, and the physical restrictions inherent within such settings, physical activity behaviours are hindered, and health can deteriorate. The aim of this review is to assess the effectiveness of physical activity programmes on mental and physical health in forensic settings.

A systematic search of six databases and the grey literature was conducted. Studies were included if they: had participants with SMI; were based in a forensic setting; took part in a physical activity programme; and reported physical and mental health outcomes.

The initial search yielded 11,878 articles, once duplicates were removed and screening occurred, four studies were eligible for inclusion. There were 112 participants included with a range of study designs used. One study showed a significant improvement in negative symptom scores in the exercise intervention group compared to treatment as usual group. Two studies reported improvements in psychiatric symptoms with no significant difference between groups, however, statistically significant changes ($p < 0.001$) in weight and waist circumference were evident. No adverse effects were reported.

Few studies met the search criteria for the current review with most studies showing limited research design and quality. This may be in part due to the challenges of conducting and researching physical activity interventions with those with mental illness in forensic clinics. This review highlights the need for further studies to be conducted

Oral presentations
Topics: Mental skills training

Promote the mental health of young athlete through a mindfulness training body-mind awareness

Patrizia Fratini
UISP Unione Italiana Sport per tutti- Comitato Territoriale Savona

The imperative of this study is to promote health education actions in sports contexts through mindfulness programs. (Gardner & Moore , 2004) Mindfulness interventions have been more and more positively related to health and psychological well-being (Brown& Ryan 2003) also for teenagers (Siegel, 2013) and in the context of sport improving performance and reducing sport anxiety. (Gardener & Moore, 2004) In this pilot study were recruited synchronized swimming athletes (n=23) Juniors and Senior Tokyo qualifications 2020/21, the main objective was to determine the effects in terms of increased dispositional mindfulness (FFMQ-15) (Baer 2006; Didonna &Bosio 2012) and the interoceptive accuracy (Calì et al., 2015) (Craig, 2002) (Farb et al. 2015) (Multidimensional Assessment Interoceptive Awareness) (MAIA) (Mehling et al. 2012) after peculiar mindful training sport (MSPE) (Kaufman, Glass & Pineau 2018). The data were analyzed by MANOVA 2x3, (within; pre-test, post-test and follow-up) and the group (between; junior athlete and senior athlete). The multidimensional frame work of MAIA scale is the embodied mind, where mind-body integration is represented by subscales as 'emotional awareness', 'self-regulation', and 'body-listening', in this pilot study improvements were observed in all these macro factors. There were significant interaction effects STAI-X2 (Spielberg, 1983)' self-regulation',and'Trusting' more effective in Junior, and 'describe' improvement trend in Senior maintained in follow-up. Mindfulness training has brought improvement data also 'act to awareness' and 'regolation of attention' a prerequisite for decentralization (Lutz, 2008) and precondition to not react but to welcome and accept body sensations (Holzel et al., 2011).

Oral presentations
Topics: Consulting/ counseling

Mindful Muscles: Development of a third wave psychological intervention to tackle doping use in recreational sport and fitness

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Although doping prevention has largely focused on elite competitive sport, related psycho-educational resources are scarce in amateur sport and fitness, where doping still remains prolific and largely uncontrolled (Henning & Andreasson, 2020). The present research concerns the development of the Mindful Muscles intervention: the first multifaceted, international psycho-educational intervention to tackle doping use among amateur athletes and exercisers. The theoretical foundation of the Mindful Muscles intervention derives from positive and strengths-based approaches to mental health and from third wave psychological interventions, which focus on mindfulness, self-compassion, acceptance, and character strengths (Ashworth et al., 2017; Linardon et al., 2017). The findings from a rapid review of the literature will be discussed, which focused on best practices in the treatment and prevention of body image concerns and drug use. It will also be presented how the rapid review findings informed the content and approach of the Mindful Muscles intervention. Lastly, the key features and content of the Mindful Muscles intervention will be presented, and the implications of using strengths-based and positive approaches to doping prevention will be discussed, in relation to the World Anti-Doping Agency's International Standard for Education.

Oral presentations
Topics: Coaching

Existential coaching as a theoretical framework for sport coaching and an alliance with sport psychology

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For coaches and sport psychologists, the need for theoretical frameworks in which to hang both professional practice and practitioner education is needed (Lyle 2002). There are already several frameworks being used in coaching, e.g. sociological (e.g. Cushion 2011; Piggott 2012), cognitive (e.g. Abraham & Collins 2011), critical realist (e.g. Duffy, North & Muir 2013) and pedagogical (e.g. Light & Harvey 2017), and with those come great strengths, they also carry their inherent biases due to their ontology.

Sport is promoted for its ability to build ‘character’, ‘leadership’ and ‘fair-play’ (morals & ethics). Haskins (2010) challenges coaches to develop the 5 C’s within their athletes. Sport is used as vehicles to develop physical literacy and identity; In fact, it can be argued that developing physical literacy is an existential journey (Morley 2016). The role of the coach is then to enable the individual to ‘find/develop themselves’, to help facilitate the athletic identity and to enable an athlete to fulfil their ‘destiny’; the sport psychologist role is to enhance this journey.

This paper gives practical examples of how existential approaches (including Frankl’s Logotherapy) can enhance personality/identity development (‘finding the self’), recognise anxiety as an essential aspect of existence (and sport performance), the pursuit of ‘destiny’ and finally in moral and ethical development of the athlete. All essential aspects of athlete development, but sadly lacking in current coach education.

Suggestions for collaboration of coach and sport psychologist in a 'Department of Methodology' (Rothwell et al 2020) is also presented

Oral presentations
Topics: Motivation

Motivation profiles towards physical activity: Relationships with emotional regulation and basic psychological needs

Higinio González-García[1], Guillaume Martinent[2]
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This study aimed to identify motivation towards physical activity profiles and examine whether participants from distinct profiles significantly differed on emotional regulation and basic psychological needs. A sample of 808 participants (Mage = 33.90; SD = 12.91; 366 men and 440 women) fulfilled a series of self-report questionnaires. The LPA analysis revealed the existence of three profiles: (a) high scores in external regulation and amotivation; (b) A medium motivation and amotivation profile; and (c) a high motivation and amotivation profile. The results of the covariation analysis revealed significant differences between the (a) high scores in external regulation and amotivation, and the (b) medium motivation and amotivation profile in: competence, autonomy, relationship and adaptive regulation. Furthermore, the results revealed a significant relationship between the (b) medium motivation and amotivation profile, and the (c) high motivation and amotivation profile in: autonomy and adaptive regulation. Finally, the results revealed significant differences between the (b) medium motivation and amotivation profile, and the (c) high motivation and amotivation profile in: competence and relationship. In conclusion, three profiles emerged from the sample with a different combination of motivation levels. In particular, the profiles score support the idea of the coexistence of the different motivation variables altogether.

Oral presentations
Topics: Health

Influence of parenting style on basic psychological needs and physical self-concept in physical activity practitioners

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[1]Universidad Internacional de La Rioja (UNIR), Spain; [2]Université Claude Bernard Lyon 1

The goals of the present study were to examine whether parental educational styles perceived by physical activity practitioners predicted basic psychological needs; and if basic psychological needs predicted physical self-concept. A sample of 808 physical activity practitioners (Mage = 33.90; SD = 12.91; 366 were men and 440 women) fulfilled a series of self-report questionnaires. A partial least square path modelling (PLS-PM) approach was used to examine the relationships between the study variables. The results revealed that mother affect positively significantly predicted relationship and autonomy. Likewise, father affect positively significantly predicted relationship, autonomy and competence. Besides, mother undifferentiated rejection negatively significantly predicted relationship. On the other hand, father undifferentiated rejection negatively significantly predicted relationship. In addition, relationship positively predicted physical condition, strength, physical attractiveness and physical capacity. Moreover, autonomy negatively predicted physical attractiveness. Finally, competence negatively predicted physical condition and positively physical attractiveness. In conclusion, father/mother affect play a crucial role in the adjustment of basic psychological needs. In addition, relationship was the basic psychological need that reported more links with the physical self-concept. These outcomes should be taken by practitioners to enhance the educational practices of parents towards children due to their impact on adulthood.

Oral presentations
Topics: Physical activity

Acute Effects of Cognitively Demanding Physical Activity on Inhibitory and Affective Responses in Children: Online Mixed Method

Ricardo Martins[1], Emiliano Mazzoli[2], Michael Duncan[1], Cain Clark[1], Emma Eyre[1]
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This study investigated the acute effects of a cognitively demanding physical activity (CDPA) vs a simple physical activity (SPA) bout on children's inhibitory and affective responses. Using an online (ZOOM) mixed-method counterbalanced, within subjects' crossover design, thirty-nine participants aged 9-12 years old (29 boys; Mage=11±1 years) performed CDPA and SPA for 15 minutes. Inhibition (Stroop test) was measured at baseline, 1 and 30 mins following the physical activity (PA) bouts and self-report measures of affect, mental and physical exertion were taken prior, during and post PA. Additionally, 31 children took part in a semi-structured focus group to understand their experiences of the two conditions. Quantitative results suggest that there were no significant differences in inhibitory responses, affect and physical exertion (all $p>0.05$). However, CDPA induced more mental effort than SPA ($p<0.05$). In the focus groups, four themes were identified: physical exertion (e.g., tiredness), social (e.g., teams), environment (e.g., outdoors) and emotional (e.g., fun/enjoyment). Participants (n=18) reported that the CDPA confused them and furthermore, suggested activities outdoors (n=15) and in teams (n=19), to make them more enjoyable. The findings suggest no additional benefit of a cognitively enriched physical activity when compared to SPA on inhibitory responses, affect and enjoyment. Given the low cost, easy administration, minimal equipment and time involved, either approach may be used in a diversity of contexts (i.e., online, school or outdoors) to increase PA levels and the effects of these conditions are worth exploring on other aspects of executive function and wellbeing.

Oral presentations
Topics: Health

Mental health in professional football: Findings from an action-research program

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The development of health literacy in mental health or awareness about the signs of mental disorder among athletes seem to be the necessary steps for prevention. Literacy and awareness are needed, but not enough to address the diverse mental health needs of athletes. We invoke a new intervention model and outline a comprehensive framework to promote athletes' mental health and wellbeing and address the needs of footballers who are at risk of developing, or who already experience symptoms of mental disorder. Early detection and intervention in symptoms of mental disorder are essential in the context of sport. In the general population, these types of approaches appear to help build cultures that recognise that an athlete's mental health needs are as important as their physical health needs, and that both can contribute to optimising the athlete's overall wellbeing alongside sport development and performance. The intervention aimed to (i) help athletes develop psychological techniques to manage psychological distress, (ii) equip key stakeholders in the sport environment (e.g., coaches, physicians, physiologists, physiotherapists) to better recognize and respond to concerns regarding athlete mental health, (iii) highlight the need for specialized multidisciplinary teams or qualified mental health professionals to manage athletes with severe or complex mental disorders, (IV) develop more and better research by conducting screening on key indicators of mental disorder in the sport population. Together, these components could ensure that athletes receive the technical support.

Oral presentations
Topics: Elite sports and expertise

Mental Toughness: An Investigation study on Paralympian and Non-Paralympian Throwers of India

Vikas Singh, Mahendra Kumar Singh, Tenzing Norzom Bhutia, Bharat Verma
Lakshmibai National Institute of Physical Education, India

Mental toughness (MT) is widely acknowledged as a key personal resource that underpins high-level athletic performance and sporting success. The substantial increase of MT studies in sport throughout the last past few decades has advanced knowledge of the notion and its consequences for athletes. Studies have focused on the concept of mental toughness as it relates to certain activities and sports in elite athletes; however, there is little research on mental toughness in para-sports. This study built on prior research by looking at what traits were most relevant for identifying mental toughness in para-sports from the perspective of elite para-athletes. The aim of this study was to investigate the mental toughness levels of elite Indian Para-throwers in terms of various subscales of mental toughness. The sample of the present study consists of elite para-throwers; the sample group consists of a total of 10 Para Throwers (5=Paralympian Thrower, 5=Non-Paralympian Thrower), who participated at international level including Paralympic, World Championship. To collect demographic information a Personal Information form developed by the investigator and Psychological Performance Inventory (PPI) developed by Loehr was utilized to determine the Mental Toughness attitudes of the individuals. To analyse the data; the T-test was used to review the connections between variables. Finally, the significance level is accepted as $p<0.05$. According to the findings of the research, there are statistically significant differences ($p<0.05$) in terms of motivation level, whereas Self-confidence, Negative Energy Control, Attention, Visualization, Positive Energy, Attitude Control were the same in both groups. However, Non-Paralympian throwers athletes had significantly and meaningfully higher motivation levels (M =28.60 ± SD =1.14) than Paralympian thrower athletes(M =24.00 ± SD =1.41). Study outcomes suggest that coaches and trainers can work on the mental toughness of para-athletes to prepare for and compete in world-level events such as the Paralympics, Para-world championships, and also at the grassroots level this Psychological domain should be a part of the athlete's training model.

Oral presentations
Topics: Elite sports and expertise

A Comparative Study of Mental Toughness of Elite Para-throwers of India

Nibu R. Krishna, Tenzing Norzom Bhutia, Vikas Singh, Harish Singh
Lakshmibai National Institute of Physical Education, India

In most sports, the psychological aspect is the deciding factor between a victor and a loser. Mental toughness (MT) is one of the most essential psychological attributes associated with top athletic outcomes and performance. Mental toughness has been studied in elite athletes as it applies to certain activities and sports; however, there have been limited studies on mental toughness in Para sports. Because mental toughness is very important in sports, especially Athletics, this article compared the sport mental toughness levels among elite Indian para-throwers in relation to the various subscales of mental toughness. The current study's sample includes elite para-throwers; the sample group includes a total of 9 para-throwers (5 standing throwers, 4 seated throwers) who have represented India at a world stage (Paralympic, World Para Athletics Championships, Para Grand Prix, and Para-Asian games) The participants were between the ages of 18 and 35. The participants were split into two groups. In Group A, standing throwers whereas in Group B seated throwers were placed. The Mental Toughness attitudes of the participants were determined using Loehr's Psychological Performance Inventory (PPI). To analyse the data; the T-test was used and the significance level is accepted as $p<0.05$. According to the findings of the research, there were no statistically significant differences in all subscales of MT. In terms of motivation, Self-confidence, Negative Energy Control, Attention, Visualization, Positive Energy, Attitude Control were the same in both groups (standing throwers and seated throwers).

Oral presentations
Topics: Well-being and quality of life

A case study of psychological empowerment of three children with autism spectrum disorder (ASD) through football coaching

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Autism Spectrum Disorder (ASD) is a group of developmental disorders characterized by deficits in social interaction, communication skills and repetitive behaviors (APA, 2013). Aim of this research is to study the psychological and motor evolution of three children with severe ASD. They participated at a sport program called “Football Together” of 8-month, 2 times a week. The psychosocial abilities have been evaluated pre/post activity through parents' interviews and sport psychologist along the training period. The three children with ASD participated in between 75% and 70% of the training sessions. Andrea was active on 5 of the 7 exercises for more than 5 minutes, while the other two children were active for this time on only 3 of the 7 exercises. The results confirm the difficulties for children with ASD to attend sports training and to be physically active during the session. Regarding the development of attentional and social skills, the three children, while performing the same activity, improved by using different approaches. Andrea, through the imitation of the behaviour of his peers, has improved the interpersonal relationships but he did not play with other children. He has learned to interact with his coach. Mario started with a condition characterised by oppositional behaviors. As Andrea, the coherence of the coach's teaching behavior allowed him to establish a collaborative relationship with Mario, reducing the urge to escape from training. Paolo's learning came through an improved relationship with the coach, allowing him to develop a better relationship with his body and to accept the multi-sensory environmental conditions in which training takes place. Overall, parents said the children were happy to participate in the training program, to be involved in this practice and to wear their AS Roma uniform at school.

Oral presentations
Topics: Clinical issues in sport and physical activity

Eating disorders in taekwondo: The contribution of goal orientation, body satisfaction and coach's behavior

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Taekwondo is a weight-classified combat sport. Taekwondo athletes often incline to restrictive eating behavior and weight reduction, especially before competitions, which is a health and psychological risk factor. The aims of this study were to examine the presence of eating disorders symptoms with regard to gender and age; to examine the correlation and contribution of goal orientation, body satisfaction and coach's behavior to development of eating disorder symptoms in different subgroups and to examine the incidence of eating disorders symptoms in elite Croatian taekwondo athletes in comparison to non-elite. 335 active taekwondo competitors completed Eating attitude test, Figure Rating Scale, Croatian versin of TEOSQ, Negative Coach Behavior Questionnaire and a questionnaire related to taekwondo specificities. Symptoms of eating disorders were more present in female taekwondo athletes than in male, while there was no significant difference among age categories. A significant positive correlation was found between the symptoms of eating disorders and the coach's pressure, task orientation and body dissatisfaction. Body dissatisfaction, coach's insensitivity to well-being and coach's pressure due to diet contributed positively to development of eating disorder symptoms in taekwondo athletes. The presence of eating disorder symptoms was lower in elite than in non-elite taekwondo athletes.

POSTER PRESENTATIONS

FEPSAC

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Poster presentation
Topics: Well-being and quality of life

The impact of sport-related concussion on mental health, cognition, and quality of life

Daniel Walker, Adam Qureshi, David Marchant, Alex Bahrami Balani
Edge Hill University, United Kingdom

Introduction: This project attempts to shed light on how concussion and physical pain impact mental health, cognition, and quality of life.

Problem Statement: Much of the existing concussion literature does not account for physical pain. This is surprising as the two often co-occur and have been found to lead to the same negative consequences. This project aims to identify which factor leads to which outcome.

Methodology: Participants self-report whether they have sustained concussion (control vs. post-concussed). The CESD and STAI record symptoms of depression and anxiety, respectively, while the SF-12 measures quality of life. A cognitive battery assesses areas of memory and executive function.

Results: Study 1 (concussed, n=32 & non-concussed, n=35) revealed that concussion led to higher depressive symptoms whereas pain was responsible for both this and lower quality of life. Study 2 (concussed, n=56 & non-concussed, n=46) further highlighted that pain may be more responsible for poorer mental health and lower quality of life than concussion history. Study 3 (concussed n=45 & non-concussed n=39) suggests that pain may be responsible for poorer mental health and reduced quality of life whereas concussion history explains impaired cognition.

Implications: Much of the literature in this area does not account for physical pain when assessing the effects of concussion, despite the prevalence of them co-occurring. This project reveals that pain is more responsible for poorer mental health and lower quality of life whereas concussion leads to cognitive impairment. Understanding this allows us to better protect sportspeople.

Poster presentation
Topics: Paedagogical psychology

Assertive behavior and its relationship to general sports aggression among football players for some clubs in the central city of

Farhang Mohammed Faraj
Sulaymanya, Iraq

The Research Aims To Identify The Type Of Relationship Between Assertive Behavior And Sports Aggression Among Football Players, And The Researcher Targeted The Descriptive Approach, Which Seeks To Collect All Data And Information From The Members Of The Research Sample To Try To Determine The Current State Of It With A Specific Variable And The Appropriateness Of The Descriptive Approach To Solve The Research Problem. And The Clubs In The Sulaymaniyah Governorate Center They Are The Peshmerga Club, The New Sirwan Club, Nowruz Club, And Baban Club. The Total Number Of The Community Reached (95) Players, And The Sample Amounted To (48) Players, With (12) Players From Each Club, And The Sample Rate For The Community Was (50.53%). The Researcher Used The Two Scales That Their Status (Allawi: 1998) It Has Four Alternatives (Strongly Agree, Agree, Disagree, And Strongly Disagree) As For The Mathematical Aggression Scale. Which Was Developed By (Ramzi: 2012) And It Has Five Alternatives (Always, Often, Sometimes, Rarely, Never), And The Main Experiment Was Carried Out On 12/17/2021 Until 12/24/2021. It Was One Of The Most Important Conclusions Of The Research That There Are No Statistical Differences Between Assertive Behavior And Sports Aggression Among The Players Of The Sulaymaniyah Governorate Center / Iraq, And After It (The Speed Of Excitement Ranked First In The Axes Of Sports Aggression, And One Of The Most Important Recommendations Is The Need To Focus On Performance And Not Aggressive Behavior To Win.other categories

Poster presentation
Topics: Psycho-physiology

Shyness and its relation to the practice of sports activities among the students of some scientific departments at Sulaimaniyah Un

Amal Ali Sabier Ali Sabier
suliamany university, Iraq

The Research Aims To Identify The Type Of Relationship Between Shyness And Sports Activities Among Female Students Of The First Stage For The Academic Year 2021-2022 At The University Of Sulaymaniyah / Iraq. (Kermash 1994), Which Contains (30) Paragraphs. As For The Second Form (Sports Activities), Which Was Prepared By (Jassem Saleh And Others) In 2010, It Contains Four Axes (Administrative, Educational, Mental, Promotional) And The Total Number Of The Community Reached (212) Female Students, While The Sample Their Number Was (50) Female Students, And The Sample Rate For The Community Was (23.58%), And The Main Experiment Was On 2022/4/1 Until 2022/1/10, The Researcher Used The Statistical Bag (Spss) To Analyze And Discuss The Results, And One Of The Most Important Conclusions Was: - The Presence Of Shyness Among First-Year Students In Some Scientific Departments In The Faculties Of The University Of Sulaymaniyah / Iraq During The Practice Of Sports Activities, And The Most Important Recommendations Were The Necessity Of Guidance Education For Students. The First Stage Is The Importance Of Practicing Sports Activities.

Poster presentation
Topics: Social and cultural diversity

Sexual Prejudice, Traditional Masculinity, and Athletic Identity in US Collegiate Athletes

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Historically, sexual prejudice has been endemic to sport (Krane, 2016) and negatively influences the mental health of LGBTQ+ athletes (Kroshus & Davoren, 2016). We examined current levels of sexual prejudice among US college athletes and non-athletes. We also explored the impact of traditional masculinity ideology and exclusivity of athletic identity on sexual prejudice. US Division III college students (N = 451) completed the Attitudes towards Lesbians and Gay Men - short form (Herek & McLemore, 2011), the Masculinity Role Norm Inventory (Levant et al., 2013), and the Athletic Identity Measurement Scale (Brewer & Cornelius, 2001). While no significant multivariate gender x athletic status interaction was found on sexual prejudice, significant main effects occurred for both gender [$\Lambda = .901$, $F(3, 445) = 16.39$, $p < .001$, $\eta p2 = .10$] and athletic status [$\Lambda = .962$, $F(3, 445) = 5.89$, $p = .28$, $\eta p2 = .04$]. Men reported significantly greater sexual prejudice than women and athletes reported significantly greater sexual prejudice than non-athletes. When controlling for traditional masculinity ideology, gender differences were eliminated ($p = .11$, $\eta p2 = .01$). Similarly, when controlling for athletic identity, significant differences between athletes and non-athletes were no longer present ($p = .13$, $\eta p2 = .01$). Levels of sexual prejudice were low, consistent with other research in the US (Mullin, 2016; Mullin et al., 2020), UK (Bush et al., 2012; McGrath et al, 2021), and Australia (Denison et al., 2021) but men and athletes still maintain more negative attitudes. We also confirmed the association of traditional gender norms and exclusivity of athletic identity have on sexual prejudice.

Poster presentation
Topics: Self

Looking through the eyes of others: How perceptions affect collegiate basketball players' sense of self

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College athletics places immense demands on individuals' time commitment, physical conditioning, and expected performance levels. Athletes in this environment are also subject to others' perceptions, which in turn can influence athletes' sense of self. This concept is important because it is known that athletes' identities do not exist in isolation (Yukhymenko-Lescroart, 2018). Through a qualitative survey with 52 Division I collegiate basketball players from 17 distinct universities, the purpose of this work was to examine athletes' thoughts and feelings, as well as further understand their athletic experience based on interactions with others. Specifically, 533 potential participants were contacted, of which 106 initially participated. Responses were coded independently by the authors, followed by a research team until agreement was reached (Saldana, 2015). Utilizing the work of Thomas (2006), an inductive thematic analysis was employed. Regarding overarching perceptions of self, athletes focused on either athletic or non-athletic attributes and characteristics. In contrast, athletes had more wide-ranging responses when discussing professional goals, personality traits, and connections to others. This novel finding is important because previous work has explored athlete beliefs as a binary construct (Sturm et al., 2011) where athletes can only be a combination of high or low in athletic and academic realms – but leave little space to consider other forms self-perceptions may take. As such, designing a wholistic college experience that seeks to understand how each athlete views himself/herself, as well as how those views evolve, would lead to a better collegiate experience for athletes (Stokowski et al., 2019).

Poster presentation
Topics: Mental skills training

Effects of mindfulness-based interventions on the sport performance and psychological skills of athletes: a systematic review

Bianca Andrade de Sousa
Unesp - São Paulo State University

Sport performance is influenced by multiple skills. Aiming to improving psychological skills, interventions has been developed, such as mindfulness-based interventions(MBI). Mindfulness is a mental state of being aware on present-moment experience, in a receptive and non-judging way(Kabat-Zinn, 1994), and influences physiological and psychological states, improving concentration, acceptance of experiences and cognitive defusion(Rothlin et al., 2016). MBIs has been applied in sport, and to evaluate the effects of these interventions is needed. Thus, this study aimed to investigate effects of MBIs on sport performance and psychological skills of athletes.This systematic review followed PRISMA Statement recommendations(Moher et al., 2009).Randomized and non-randomized studies and pre and post interventions were included, which evaluated sport performance and psychological variables through quantitative instruments, with samples composed of professional and amateur athletes, available in Portuguese, Spanish and English, and published between 2010-2020. Searches were conducted in MEDLINE, PsycNet, Scopus, LILACS, WebofScience and SPORTDiscus. Eligibility and study quality (Cochrane risk-of-bias tool for randomized trials (RoB2)(Sterne et al., 2019)were assessed by two independent researchers. Searches identified 1579 articles. After analysis, 32 studies were included. It was possible to identify positive effects of MBIs on different variables: 11 studies found positive effects on sports performance, 14 on mindfulness state, 9 on flow state, 5 on reduction of competitive anxiety, 3 on stress, 4 on general anxiety and 2 on pessimism. Results showed that MBIs must be consider as an important mental training to improve sport performance and psychological skills. However, it is necessary to develop studies with more high-quality.

Poster presentation
Topics: Talent identification/ development

A Multidisciplinary Investigation into the Talent Development Process in an English Premiership Rugby Union Academy

Francesco Dimundo[1,2], Matthew Cole[1], Richard C. Blagrove[3], Kevin Till[4], Adam L. Kelly[1]
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The progression of youth rugby union (RU) players towards senior professional levels can be the result of various different constraints. The aim of this study was to examine characteristics that differentiated playing positions and player rankings in an English Premiership RU academy. Thirty players (mean age = 18.5±2.8 years) were divided by playing positions (forwards = 18, backs = 12) and ranked (one to thirty) by coaches based on their potential to achieve senior professional status. Players were analysed across 32 characteristics from eight overreaching factors (i.e. socioeconomic; socio-identity; anthropometric; physical; psychological; perceptive-cognitive; sport activity; and sport background) based on task, environmental, and performer constraints. MANOVA and ANOVA were used to calculate differences among variables in players' positions (i.e., forwards vs. backs) and ranks (i.e., top-10 vs. bottom-10), with a Welch's t-test applied to identify individual differences amongst groups and effect sizes also calculated. Large effect sizes were found between groups for socioeconomic, sport activity, anthropometric, physical, and psychological factors. Moreover, environmental and performer constraints differentiated playing positions, whereas task and environmental constraints discriminated player ranks. Despite the major limitation of this work concerned the small sample size used, present findings showed that playing positions and player ranks can be distinguished according to specific constraints. These findings can be used by practitioners as initial framework for players' assessment during the identification and development processes in RU academies.

Poster presentation
Topics: Youth

How to build SAFE (Safe and Accountable Futsal Environment for Children)

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Università San Raffaele Roma, Italy

Safeguarding in sport is an important topic nowdays.

To investigate this topic six futsal Academies were involved during season 2019/2020 and 2020/2021 in project SAFE, an EU Commission funded, aimed at promoting new policies around children safety applied to sports.

This global project involved staff members, parents and athletes. The report only shows the results of preliminary qualitative interviews with the staff. According to KCS (Keeping Children Safe, 2014), which establishes international recognized standards for the protection of children, individuals who work with children need to ensure that their organizations protect children from all forms of abuse, neglect, exploitation and violence. For this reason, 25 futsal staff members attended a 25-hour training course focused on the psychological and legal aspect of child abuse in sports.

A qualitative questionnaire was administrated before and after the training. The questionnaire was divided into 2 sections. Section 1 was made of 11 close-ended questions, to be answered with a 5-point Likert scale. Section 2 was made of 2 close-ended and 2 semi close-ended questions.

The questionnaire addressed the following main topics: the awareness of staff members of child abuse, their perception of safety of the sport environment, and their well-being. Due to the pandemic emergency, training activities were carried out through e-learning.

The results show: 1. staff members initially had little expertise on child abuse 2. Staff members gained extensive knowledge on this topic thanks to the training program. They particularly recognized the relevance of emotional abuse and bullying as a major recurring issue.

Poster presentation
Topics: Exercise psychology

The effect of a psychological counseling program on developing self-confidence and the level of performance of the kinetic chain f

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University of Suleiman, Iraq

The aim of the research is to identify the effect of the psychological counseling program on developing self-confidence and the performance level of the kinetic chain (kata) among young karate players.

The researcher used the experimental approach, A sample was selected from the community of karate players, the age group below (21) years old, and it consisted of (16) players. They were divided into a control group (8) experimental players (8) players. Choosing the Robin Felly Scale, which was Arabized by Muhammad Hassan Allawi, which includes 13 items to measure self-confidence. In preparing and applying the counseling program, the researcher relied on the method of lecture and discussion in the manner of group counseling in applying the program to the experimental group. The duration of the application of the program took about (60) days, with two counseling sessions per week, the duration of one session between (30-40) minutes, so that the total counseling sessions were 16 counseling sessions, by giving indicative lectures to the members of the research sample by specialists in sports psychology.

The researcher concluded that the counseling program applied to the experimental sample had a clear impact on the growth of the players' self-confidence, as there were statistically significant differences in favor of the experimental group. There is a noticeable development in the performance level of the kinetic chain (kata) in the effectiveness of Karate among the players.

Poster presentation
Topics: Mental skills training

Maps of Brain Wave Lobes During Measure Thinking skill (case study in Squash)

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Neuropsychology is recently considered as a psychology science according to the American Psychological Association. Which is focused on studying the relationship between brain functions and behavior.

That study depends on many scientific devices, the EEG is the most important one and the brain functional imaging with magnetic ray MRI.

The thinking skill in Squash appears in the player's ability to select motor skills that he masters during different computational situations.

The researcher aims to recognize the brain lobes waves maps while measuring thinking skills.

Using descriptive method(case study). The applying was on a female Squash player under 17 years in 2018-2019. EEG was used in a measure designed by the researcher.

The conclusions clarified that .The brain lobes maps differs according to the electric activity waves.

There is a nervous activity and simulation with Beta waves in both of anterior, temporal ,posterior lobes. There is a nervous sedation of Alfa waves in the posterior lobe of the brain sides during thinking skill performance measure. There is an involvement of three brain lobes activity during a complicated skill performance that requires an integration &coordination among those centers for the best motor performance. The conclusions indicated that there is a possibility of application to understand thinking process by comparing among players in thinking skill. The researcher recommends to utilize brain lobes waves maps as a fair indicator and a tool to measure thinking skill before- during -after applying mental training programs with athletes.

Poster presentation
Topics: Motivation

Linking youth Rugby coaches' goal orientation to the importance they attribute to fairplay towards teammates and opponents

Elisa Bisagno[1], Alessia Cadamuro[1], Loris Vezzali[1], Claudio Robazza[2], Francesca Vitali[3]
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Goal orientations (task vs ego) are fundamental to understanding youth athletes' experiences with sport (Duda, et al., 2014) and are correlated to those of parents, peers, and especially coaches (Atkins et al., 2015) who foster a motivational climate based on their own goal orientation. A strong negative association between task orientation and antisocial behaviour has been consistently found in athletes (e.g., Boardley & Kavussanu, 2010). However, less is known about the relationship between goal orientation and fairplay in coaches. We investigated the relationship between goal orientation, desirability attributed to fairplay towards teammates (e.g., during training) and towards opponents (during competition) in 144 youth Rugby coaches, who were administered a coach-tailored versions of the TEOSQ (Bortoli & Robazza, 2003), and the Prosocial and Antisocial Behavior in Sport Scale (Kavussanu & Boardley, 2009) online. We expected a positive association between coaches' task orientation and the desirability attributed to prosocial behaviors towards teammates and, in turn, toward opponents. We also expected coaches' ego orientation linked to antisocial behaviors towards teammates and opponents. Path analysis using the bias-corrected bootstrap method based on 5000 resamples revealed positive indirect effects from task orientation to desirability of prosocial behaviors towards opponents via desirability of prosocial behaviors towards teammates. Moreover, task orientation was negatively associated with antisocial behaviors towards teammates. Finally, ego-orientation was positively associated with antisocial behaviors and negatively linked to prosocial behaviors towards opponents. Findings suggest that youth Rugby coaches' goal orientation influences fairplay attitudes in training which are then transferred to competition.

Poster presentation
Topics: Youth

Type 2 diabetes mellitus in children and physical exercise

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Background: Many studies in adults with T2DM have demonstrated the effectiveness of a structured exercise intervention program for improving insulin resistance and cardiovascular fitness. Prescribing exercise as a medicine, has been shown to have positive psychological effects in many chronic adult conditions including obesity and diabetes. In the pediatric field, it is usually harder to quantify the amount of exercise since there are many differences in exercise programs in schools, as well as many gaps in family values in adopting exercise activities at home. Methods: A retrospective chart review of 50 children and adolescents diagnosed with T2DM was performed to calculate the rate of their level of participation in any regular physical exercise activities and any sports on a regular basis. Results: Patients ranged in age between 8 to 15 years at diagnosis. Female: male ratio was 1.3:1 with all BMIs were all above the 85th percentile for age and sex. Half of the patients reported at least one physical exercise session at school every week or every other week. None of them reported any regular physical exercise activities and any sports participation outside school. Conclusion: Sedentary lifestyle is a major risk factor Diet and exercise play a major role in developing obesity, insulin resistance and T2DM in all age groups including the pediatric and adolescent population. The role of exercise in pediatric T2DM should be emphasized for its medical and psychological effects

Poster presentation
Topics: Self

Metacognitive Self in Sport Context: Does Gender Matter?

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Metacognitive Self (MCS) refers to the knowledge of psychological mechanisms and insight into one's own behavior. High levels of MCS are associated with better self-regulatory skills (Brycz & Karasiewicz, 2011), and the research shows that women present higher MCS than men (Brycz & Konarski, 2016). Metacognition is important in athletes' self-regulation (Poczwardowski & Siekanska, 2019), but still there is a need to better understand its role in sport development and performance.

The aim of this study was to explore MCS in athletes, while taking gender and sports level into account. The participants (111 females and 82 males; Mage=21) practiced both individual (N=100) and team sports (N=93) and presented different sports level (regional level vs. elite). A demographic survey and the Metacognitive Self Questionnaire (MCSQ-24) were used. The interaction effect of gender and sports level on MCS was found (F1, 189=4.149; p=.043). The results showed that the female elite athletes had higher MCS than the male ones, both the elite (p=.022) and regional level (p=.042) athletes. There were no differences in MCS between female and male athletes in lower sports level groups. The research might suggest that successful female athletes develop their self-regulatory skills based on deeper insight. This may be particularly important in the context of mental training for female athletes and practical programs. Future research should focus on exploring the MCS in sport and adaptation of the MSCQ-24 to the sport context.

Poster presentation
Topics: Exercise psychology

The Psychological Effects of Misogynistic Music Lyrics on Female Exercisers

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This study examined the effect of misogynistic lyrics (ML) in rap music on the psychological experience of female exercisers using the framework of stereotype threat (Steele & Aronson, 1995). Thirty active female participants (27.63 ± 6.88 years) completed two short circuit-style exercise bouts while listening to rap music, either with or without ML (on separate days, in counterbalanced order). Measures of positive and negative affect, attentional focus, and intrinsic motivation were taken immediately following exercise. The Rap Attitudes and Perceptions Scale (Tyson, 2005), was used to divide participants into two groups (positive and negative rap attitude) based upon their self-reported attitudes toward violent, misogynistic (VM) content in rap music. When analyzing a 2 (condition) x 2 (attitude) repeated measures ANOVA, a significant main effect of lyrics was found for negative affect ($p = .036$, $\eta 2p = .148$), where participants reported more negative affect in the ML condition than the non-ML condition. A significant lyric by group interaction was found for the intrinsic motivation components of interest/enjoyment ($p = 0.001$, $\eta 2p = .341$) and effort ($p = .013$, $\eta 2p = .201$). Participants with a negative VM attitude experienced less interest/enjoyment while listening to music with ML and those with a positive VM attitude reported more effort in the ML condition. These findings have implications for exercise adoption and adherence, given that negative affective experiences are associated with decreases in both (Williams, 2008). Individual differences in response to music with ML during exercise warrant further exploration.

Poster presentation
Topics: Elderly

INTERVENTION FOR VIRTUAL PHYSICAL EXERCISE IN ELDERLY

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Virtual reality (VR) is an innovative method in the process of recovery and motivation of the elderly, in addition to the measures adopted and in the practice of physical exercises (PE). Here we evaluate in the pilot project 2 healthy elderly (80-85 years and of both sexes) which practice PE and VR intervention from gestural interaction with the computer system. This study followed the evolution of executive function, mobility, balance, strength of lower limbs and life satisfaction during five months of the project. The instruments utilized were: the Short Physical Performance Battery to rate mobility, balance, strength of lower limbs; the Stroop Test to estimate executive function; Life Satisfaction Scale to rate life satisfaction and Bioecological Questionnaire to evaluate the individual's relationship with technology. We used the Gesturemaps Software (virtual gait controlled by gesture interaction, partnership with street view), three times a week. In the final of intervention (5 months later), subjects were re-evaluated using the same instruments and the preliminary results highlight the following points: the VR and PE improved the executive function by 38,5%, the mobility, balance, strength of lower limbs in 20,55%, life satisfaction in 12,5% and relationship with technology in 13,5%. The values found with VR intervention suggest efficiency in prevention and improvement of physical, cognitive and psychological abilities during healthy aging, as well as in rehabilitation process. Approved by Ethics Committee of UNICAMP.

Poster presentation
Topics: Psycho-physiology

Effects of a Cognitive Motor-Training on Anticipatory Brain Functions and Sport Performance in Semi-Elite Basketball Players

Stefania Lucia[1], Valentina Bianco[2], Luca Boccacci[3], Francesco Di Russo[1,4]
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The improvement of athletic performance in sport sciences involves interdisciplinary training methodologies such as cognitive motor-training (CMT) (Walsh, 2014; Yarrow et al., 2009). This research aimed to test the possible effects of CMT on athletes' performance and cognitive functions. Namely, specific athletic tests, brain processes associated with anticipatory event-related potential (ERP) components and behavioral performance during a cognitive discrimination response task (DRT) were evaluated pre- and post-training. Twenty-four young male semi-professional basketball players were recruited for the study and randomly assigned into an experimental (Exp) group executing the CMT and control (Con) group performing standard motor training. The CMT protocol included exercises in which participants used interactive devices that emitted visual and auditory stimuli to perform cognitive tasks while dribbling. According to the mixed 2x2 ANOVAs analysis, the Exp group improved in all sport-specific tests (17%) compared to the Con group, as well as in response accuracy during the DRT (88% vs %60). ERP analysis indicated that the Exp group demonstrated earlier and heighted post-training anticipatory cognitive processes in the prefrontal cortex (PfC) associated with proactive inhibition and top-down attention. The findings confirmed previous research showing CMT protocols improve sports performance and cognition when compared to motor-exercise-only training, but extend the literature by demonstrating that these effects could be explained by increased anticipatory brain processing in the PfC. As shown by this study, the brain adapts cognitive functions through neuroplasticity processes in order to achieve specific athletic goals.

Poster presentation
Topics: Elite sports and expertise

Ruminative Thoughts in Competitive Sports Context: An Initial Validation of the Sports Competition Rumination Scale (SCRS)

Alena Michel-Kröhler[1], Sabrina Krys[2], Stefan Berti[1]
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Thoughts like “That already went wrong the last time.” are often perceived as limiting by athletes. These thoughts can be triggered by one’s athletic performance or goal setbacks, and can be intrusive and repetitive, which is why this type of thinking referred to as rumination (Martin & Tesser, 1996). Although there is a variety of different measures, general or clinical rumination scales hardly allow tapping thoughts that are specific to competitive sports. Therefore, we developed the 8-item Sports Competition Rumination Scale (SCRS), which captures ruminative thoughts regarding competition-related problems, and validated it for future research and application in coaching.

Overall, we collected data of 355 athletes from different disciplines within an online survey. Here, we focus our analyses on athletes who are within the typical competitive age of 15 and 40 years (M = 23.59; SD = 5.42; N = 311). The validity of the SCRS was examined using a confirmatory factor analysis (CFA) and a nomological network with established rumination and anxiety measures. The CFA revealed a good model-fit and the SCRS is internally consistent. Correlations with different rumination measures from general and clinical psychology, and relations with sport specific anxiety measures support the nomological network. Interestingly, an additional analysis showed that athletes’ age has a different effect of sports-specific rumination for women and men.

The SCRS provides a useful, reliable, and short measure of sport-specific rumination about competition-related problems and offers a wide range of potential applications such as in talent scouting and evaluation, and sports psychological coaching.

Poster presentation
Topics: Transitions in and out of sport/ dual career

Looking for "the Golden mean": Dual career development of elite tennis players

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The purpose of the study was: (a) to determine the process of dual career development; (b) to investigate the relationships between environmental determinants and the type of dual career pathway.

Although there is a lot of opportunities enabling athletes to develop sport career and education simultaneously (e.g., sport schools, scholarships), ca. 60% of elite athletes representing different sports do not feel any need to plan their dual career development (North & Lavallee, 2004; Park, Lavallee & Tod, 2013) for a smooth transition to the post-career life (Sakowicz-Kostecka, 2020). Both the paucity of studies and the specificity of tennis led us to address the issue in this particular context.

The participants were retired elite tennis players (competing at international level, Mage=40.69 ± 5.37), 11 female and 15 male. The data was collected using a semi-structured interview based on the DMSP (Côté, Baker & Abernethy, 2007). The questions pertained to sports career (e.g., age started tennis, phases of development) and education (e.g., obstacles encountered, suspension of education).

Content analysis showed that 69% of tennis players chose their school profile in order to combine sport and educational development. Only a few reported difficulties during the educational process and were forced to suspend their education. It did not, however, affect their eventual educational level.

The study contributes to deeper understanding of dual career experiences of elite tennis players, which is particularly important for practitioners (e.g., coaches) and for professionals providing effective psychological dual career support services.

Poster presentation
Topics: Elite sports and expertise

Exploring the psychological well-being of Female Italian and British athletes in the build up to the Tokyo Olympics

Viola Paoletti, Tristan Mayglothling, John Mills
University of Essex, United Kingdom

The severe mental and physical demands imposed on elite athletes are a distinctive element of their careers. This may make elite athletes more vulnerable to mental health issues and health-damaging behaviours more broadly (Hughes & Leavey, 2012). According to these considerations, the current study aimed to analyse the influence that training environments have on female athletes in the build up to the Tokyo Olympic Games. A cross-cultural qualitative study was conducted on a sample of six world-class female athletes (three Italian and three British). Findings revealed eight higher-order themes: (1) positive aspects to the training environment, (2) negative aspects to the training environment, (3) Impact of Covid-19, (4) Relationships with coach and performance director, (5) Relationships with other athletes and team-mates, (6) Well-being support, (7) Positive aspects to organisational environment, and (8) Negative aspects to organisational environment. These higher-order themes were then categorized into the following three general dimensions: training environments, relationships' influence on well-being, and organizational environments. The results are presented demonstrate that there are several obstacles that elite athletes may face, one of which is the rising awareness about mental health issues. These obstacles may last many months and present long-term challenges to athletes mental health. The study offers a significant contribution to the sport psychological literature by providing a unique insight into the dynamic nature of well-being in Olympic athletes. Limitations of the study are discussed and recommendations are made for future research.

Poster presentation
Topics: Coaching

How does score influence the coaches' behaviour?: Assessing their communication style, motivational climate and leadership.

Lídia Ordeix, Saül Alcaraz, Carme Viladrich
Universitat Autònoma de Barcelona, Spain

Coaches' behaviour has been studied from different approaches, but few studies have compared those perspectives to study how their behaviour is affected by competition' events (e.g., score). The aim of this study is to evaluate and compare football coaches' behaviour in the minutes following a goal, using three different observational tools. We assessed two women coaches' behaviour in three games using three systematic observation tools: The Coaching Behaviour Assessment System (CBAS), based on the cognitive-mediational model; the Multidimensional Motivational Climate Observation System (MMCOS), based on the empowering motivational climate; and the Coach Leadership Assessment System (CLAS), based on the full-range leadership model. The results obtained with the CBAS show that when the goal is relevant to the score, the coaches' interventions increase but the communication style remains stable despite the score' variation. The MMCOS shows that coaches are more active when the goal is relevant and foster a more empowering climate when it is in their favour and a more disempowering climate when it is against. The CLAS shows that when the goal is relevant, coaches show a more transformational leadership style, when it is against show more toxic leadership style, and when it is not relevant, a neutral style. These results show that different conclusions can be reached from different theoretical approaches. Therefore, evaluating coaches using different tools provides a more detailed understanding to optimize coaches' behaviour and contribute more positively to player's development. This research has been carried out thanks to the HeDuCa project Application Nr.: MINECO/ RTI2018-095468-B-I0.

Poster presentation
Topics: Well-being and quality of life

Exploring Coaches' Well-Being as Processual Framework: Constructivist Grounded Theory Approach

Marketa Simova
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Several recent position statements comment on well-being challenges of high-performance (HP) sport athletes (e.g., Breslin et al., 2019). Given the reciprocity of a coach-athlete relationship (Davis & Jowett, 2014), it is surprising that coaches received a minimal attention. Even more so, as coaches are performers in their own right, with unique needs and stressors that significantly impact their well-being (e.g., work/home interreference, job insecurity, isolation, multiplicity of roles; Gould et al., 2002). With this in mind, it is puzzling that research into coaches' well-being is scarce; with the existent literature primarily exploring stress and burnout (Neil et al., 2016; cf. McNeill et al., 2018). This narrow focus limits our understanding of well-being and prevents us from comprehending the concept holistically. This study aimed to conceptualise coaches' experiences and perceptions of well-being by utilising constructivist grounded theory (CGTM; Charmaz, 2005). Semi-structured interviews with 10 HP sport coaches were conducted (6 men, 4 women; of various nationalities and sporting backgrounds; who coach nationally and/or internationally). Analysis of the interviews resulted in the development of a processual framework of well-being. This framework included core concepts of well-being such as the nature of psychological well-being (e.g., happiness and purpose in life, identity), social well-being (e.g., coaches' own value), facilitators of well-being (e.g., self-awareness, support networks, resilience) and barriers (e.g., stressors, mask of invincibility). This study extends our current knowledge and understanding of well-being from a coaching perspective and might also inform evidence-based support and feed to relevant organisational policies around coaches' well-being.

Poster presentation
Topics: Talent identification/ development

An Examination of the Experiences of Sport Psychologists Working in English Premier League Soccer Academies

Francesca Sylvia Dean, Tim Rees, Amanda Wilding Pickney, Emma Kavanagh
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Successful performance in sport requires the execution of advanced psychological skills in both training and competition. Although the importance of sport psychology is now widely acknowledged, there is a need for greater clarity regarding (a) what is actually delivered under the banner of sport psychology, and (b) the needs of those receiving psychological support. One sport which is increasingly focusing on the role of psychological development is football—this is occurring via the English Premier League's Elite Player Performance Plan. As the first stage of a PhD programme, this study aimed to examine the current knowledge and provision of sport psychology services delivered to youth performers within professional football academies in England. Semi-structured interviews were conducted with seven sport psychology practitioners working within professional academies in order to gain insight into their understanding of their role, their perception of (sport) psychology, and their experience of delivering psychology services at the academy level.

Poster presentation
Topics: Perception & attention

I Can See Clearly Now! Exploring the Interplay Between Sport Modality and Visual Search Skill, Visual Working Memory and Reasoning

Gabriele Russo[1], Marcelo Bigliassi[2], Luca Cifaldi[1], Andrea Ceciliani[1], Alessia Tessari[3]
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The ability to select and recall information is an essential cognitive function relevant to roughly every situation in our daily lives (Brand & Schiebener, 2013).

The present investigation sought to further understanding of the influence of sport modality (i.e., open- and closed-skill sports) on different aspects of cognitive function such as visual search ability, visual working memory, and reasoning.

Given the several cognitive demands imposed by open- and closed-skill sports, it appears reasonable to hypothesize that cognitive function may vary as a function of sport modality (Gu et al., 2019).

Thirty-seven open-skill athletes (Mage = 27.30, SD =7.49 years), 32 closed-skill athletes (Mage = 29.97, SD = 9.73 years) and 26 non-athletes (Mage = 29.04, SD = 8.25 years) were recruited.

Open-skill athletes came from different sport disciplines (e.g., basketball and tennis) and closed-skill athletes came from sports such as running, and swimming.

Participants' visual search abilities, visual working memory (Corsi Span -Backwards), and reasoning abilities (Cognitive Reflection Task) were investigated and the PsyToolkit platform was used to create and administer the tasks (Stoet, 2010; Stoet, 2017).

Only visual search abilities were superior in open-skill athletes when compared to both closed-skill athletes and non-athletes.

Furthermore, the findings revealed nonsignificant differences between closed-skills athletes and non-athletes for all tasks.

Accordingly, sport practice appears to be beneficial for some aspects of cognitive function. However, the present results must be interpreted with due caution, given that pre-existent differences in cognitive function could lead participants to become more successful in one sport than another.

Poster presentation
Topics: Non-traditional applications (music, dance, military, …)

Assessing The Feasibility And Initial Effectiveness Of Dance-Based Exergame For Enhancing Autistic Children's Social Skills

Phoebe Morris, John Mills, Edward Hope, Tom Foulsham
University of Essex, United Kingdom

Autistic children display prevalent social-communicative challenges that can affect various aspects of daily living and reduce quality of life. Creating naturalistic and accessible social-communication interventions is one of the autistic community's top research priorities (Autistica, 2016). Therefore, we explore the feasibility and potential effectiveness of a home-based exergame for enhancing autistic children's social-communication skills. Five autistic children (Mage = 8.60, SD = 0.89) and their parents participated. A within-subject, pre-post-test design was employed; with parents completing the Emotional Regulation and Social Skills Questionnaire (ERSSQ; Beaumont & Sofronoff, 2008) for their child and recording in-home play-based behavioural observations. The intervention comprised six bi-weekly Just Dance sessions; dancing to five songs each session. Parents and their children also reported their level of enjoyment and adherence to the intervention. A final semi-structured interview was conducted to obtain parental views of the project. A large effect but statistically non-significant improvement in children's ERSSQ score was noted ($t(2) = 2.411$, $p = 0.137$; $d = 0.893$). Overall, the majority of the group reported the highest level of enjoyment. Interestingly, the most common number of songs completed each session was three; suggesting our proposed five songs per session was too high. Thematic analysis of parental interviews reinforced this. Results indicate that with minor improvements to the protocol, the current intervention is feasible, enjoyable, and could enhance social communication skills. A larger randomised control trial to confirm the effectiveness of an in-home, dance-based exergame for enhancing autistic children's social communication skills is warranted.

Poster presentation
Topics: Motor control and learning

Birds of a feather excel together? The impact of dyadic motives on performance in a joint action task

Norman Hüttner, Florian Müller, Rouwen Cañal-Bruland
Friedrich Schiller University Jena, Germany

In many sports two or more individuals have to coordinate their actions to perform successfully. Here, we examined whether performance in such "joint action" scenarios (Sebanz et al., 2006) is mediated by the congruence/ incongruence of individuals' motive dispositions (Müller & Cañal-Bruland, 2020). To this end, 27 dyads performed a cooperative game in which participants jointly maneuvered a virtual ball as fast as possible through a labyrinth into a target area. The task could only be solved together as one participant controlled ball movements in the x-axis and the other in the y-axis, each using their own joystick. First, dyads' baseline performance was assessed. Subsequently, dyads ostensibly competed against other dyads. The competition manipulation aimed at triggering the power motive. Next to performance, we assessed speaking times during task performance and implicit and explicit motive measures (including the power and affiliation motives). We predicted, among others, that dyads with incongruent power motives were likely to outperform congruent dyads. However, dyadic response surface analyses (Schönbrodt et al., 2018) did not confirm an effect of explicit power motives on performance. By contrast, congruence of explicit affiliation motives had a negative linear effect on performance times, and incongruence a negative curvilinear effect on performance errors. There was no relationship between implicit motives and performance. Congruent dyadic implicit and explicit power motives and the explicit affiliation motive were all positively associated with speaking time. Together, our findings provide initial partial evidence that congruence/ incongruence of individuals' motive dispositions may impact joint action performance.

Poster presentation
Topics: Physical activity

Do goal setting interventions promote physical activity and psychological outcomes in insufficiently active adults?

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Early findings demonstrated that goals are effective when used for physical activity (PA; McEwan et al., 2016), however research has yet to synthesise this relationship in insufficiently active adults. Recent evidence also suggests vague goals may be more pleasurable and enjoyable than specific goals for insufficiently active adults (Hawkins et al., 2020). With the aim to develop a better understanding of the impact of goal types on insufficiently active adults, a systematic review and meta-analysis, including 14 studies (43 effect sizes; n = 1307), was conducted to analyse the effects of goals on PA and psychological outcomes in insufficiently active adults (PROSPERO:CRD42021243970). Specific goals were compared to no goal/baseline conditions in all studies; goals had a positive, large effect on PA levels (g[SMD] = 1.08, 95% CI 0.75-1.40, I2 = 91%, [p < .00001]), yet non-significant effects on psychological outcomes (e.g., motivation and mood; g[SMD] = 0.24, 95% CI 0.11-0.37, I2 = 79%, [p < .00001]). Daily step count (k = 11) and self-efficacy (k = 10) were the most studied variables. Subgroup analyses were conducted for study characteristics, sample characteristics, goal content, and goal related behaviour change techniques; no reward (g = 1.27) presented as the only moderating variable of goal success for increasing PA, compared to when rewards were given (g = 0.54). Only specific goals have been studied in this context, future research should analyse different goal types effect on PA. Additionally, research is lacking on the effects of goals on psychological outcomes in insufficiently active adults.

Poster presentation
Topics: Coaching

A daily diary study of primary appraisals, emotional exhaustion, and turnover intentions in sport coaches

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This daily diary study examined the relationships between primary appraisals of organizational events, momentary emotional exhaustion, and job turnover intentions in sport coaches. Following institutional ethics approval, 44 sport coaches (61% male; Mage = 34.98 years) operating in full-time (61%) and part-time (39%) roles completed an online questionnaire twice per day for a total period of five days. The diary asked questions relating to coaches' hourly primary appraisals of organizational events (challenge and threat), their momentary perceptions of emotional exhaustion, and their current intentions to leave the sport organization that they coach for. The findings of multilevel path analysis indicated that hourly threat appraisals positively predicted momentary emotional exhaustion over the diary period at the within- ($B = 0.40$, $p < .05$) and between-person ($B = 0.67$, $p < .05$) levels. Emotional exhaustion also positively predicted coaches' job turnover intentions at the within- ($B = 0.18$, $p < .05$) and between-person ($B = 0.39$, $p < .05$) levels. The findings offer unique insight into the cognitive-motivational-relational theory of stress and emotion (Lazarus, 1991) by illustrating how exhaustion and turnover intentions may be aggravated as a function of primary appraisals felt during the working day. This has implications for psychologists when developing interventions to optimise sport coaches' job satisfaction and prevent burnout. In particular, the findings emphasize the importance of tailoring interventions to coaches' primary appraisals of organizational events in sport.

Poster presentation
Topics: Sports Psychology and COVID-19 Pandemics

Relation between athletes' intrinsic motivation for training and basic need satisfaction and need frustration during Covid-19 lock

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According to the SDT, perception of satisfaction of basic psychological needs (BN) and intrinsic motivation (IM) is important for optimal human functioning (Ryan & Deci 2017). The aim of this research was to explore the relationship between BN and IM during the Covid-19 lockdown since it was potentially thwarting social context. The convenient sample included 150 athletes, 68 male, 82 female, age 15-36 years, members of the Olympic (4,7%) or national team (54%) or compete at the first (34%) or the second league in their sports (7,3%). One month after the total first lockdown due to the Covid19 pandemic, athletes were asked to participate in this research on a voluntary basis. The applied instruments were IMI (Deci et al, 1994) and the BPNSNF in Sport Scale (Aelterman et al, 2016). English versions of the scales were translated and adapted to the sports training context. Pearson's correlation was conducted in IBM SPSS version 22. Results showed significant correlations. The highest value of the correlation coefficient is between the perceived competence subscale of IMI and competence satisfaction (r=0.730), and autonomy satisfaction (0.675). On the contrary, the pressure/tension subscale of IMI showed significant and positive correlations with basic needs frustration subscales (highest correlation with autonomy frustration r= 0.521), while is negatively correlated with basic needs satisfaction subscales (highest correlation with autonomy frustration r=-0.462). Nurturing perception of intrinsic motivation and improvement of basic need satisfaction might help athletes to adhere to specific training contexts such as the covid-19 lockdown (Morbée et al, 2021).

Poster presentation
Topics: Youth

Interaction of Coach and Teammate Social Support on Youth Athlete Engagement

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Social support from significant others can enhance athletes' experiences (e.g., engagement), especially in youth sport contexts. Teammates and coaches can serve as key providers of support for young people. Yet, it remains unclear how support from various agents interacts to influence perceptions of engagement. Therefore, the purpose of the current study was to examine the moderating effect of provider on the relationship between athletes' perceptions of support and engagement (i.e., confidence, dedication, enthusiasm, and vigor). Female athletes (N = 126) between 13-19 years of age (M = 15.71, SD = 1.83) completed established survey measures of teammate and coach social support and athlete engagement. Hierarchical multiple regression analyses were used. Coach support (β = 0.23, 0.31, 0.29, 0.19) and teammate support (β = 0.35, 0.36, 0.39, 0.39) significantly predicted confidence, dedication, enthusiasm, and vigor, respectively. Provider of support was a significant moderator for vigor (β = -0.18). Examination of the simple slopes indicated the slope for low teammate support (t = 3.10, p = 0.002) was significant but the slope for high teammate support (t = 1.51, p = 0.133) was not. Thus, when teammate support is low in conjunction with high coach support, perceptions of vigor are higher than when teammate and coach support are low. Results suggest that coach support may buffer the effects of low teammate support on perceptions of vigor. The results contribute to a greater understanding of how the multiple relationships young people hold can enhance or reduce the quality of their sport experiences.

Poster presentation
Topics: Social and cultural diversity

The moderator effect of cultural diversity on team performance across 45 professional football leagues

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The research investigated the moderating effect of cultural diversity on team performance in professional football through the lens of ecological dynamics and cross-cultural psychology. Based a sample of 23,186 matches played by 728 teams across 45 leagues during the 2020/21 season, moderated regression analyses were conducted to examine the effect on the interaction between teams' cultural diversity and their dominant playing style on their sporting performance (i.e., goals scored minus goals conceded by teams). A new theoretical model, the Integrative Categorization-Intentionality Model (ICIM), was proposed to explain four key findings. CDI's role as a statistically significant cross-cultural moderator was confirmed in relation to all three styles of play: possession-based (ß=-.08, p<.05), constructive attacking (ß=-.30, p<.01), and defensive (ß=.28, p<.05), the respective models explaining 35.6%, 34% and 35% of the variance. Results showed that cultural heterogeneity contributes to goal scoring in teams reliant on the first two styles, whilst defensively-oriented teams were more likely to improve performance with increasing cultural homogeneity. Finally, empirical evidence revealed a link between enhanced performance and a higher proportion of domestic defensive players in defensively oriented teams (ß=-.11, p<.05), and, similarly, between a higher proportion of foreign offensive players in offensively-oriented teams (ß=-.27, p<.01. The study has practical implications for scouting/recruitment of players when strategizing on team cultural and functional composition, as well as for coaches in terms of designing suitable training practices gauged to match and develop individual and collective skills, or more generally, in relation to managing multicultural teams.

Poster presentation
Topics: Research methods (qualitative & quantitative)

The Self-Regulated Learning for Sport Practice Short survey in Polish athletes: Further Evidence of Validity

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Scholars have iteratively developed self-report measures of self-regulated learning (SRL) in sport practice, which show promising associations with expertise development criteria (Jonker et al., 2010; Reverberi et al., 2021; Toering et al., 2009; Wilson et al., 2021). A corresponding Short version of the SRL for Sport Practice survey (SRL-SP; Wilson et al., 2019) has been developed, but requires further validation. 324 Polish athletes (Mage=21.4, nfemales=144, nmales=180) from four sport levels (amateur; regional; national selected to represent nation; international elite), individual and team sports, completed the Polish Short SRL-SP (Siekańska et al., 2020), General Self-Efficacy Scale (GSES; Juczyński, 2008), Metacognitive-Self Scale (MS-24; Brycz et al., 2011), and Action Control Scale (ACS-90; Kuhl, 1994). Confirmatory factor analysis on the Short SRL-SP with metacognitive and motivational subscales resulted in fit indices (RMSEA=.082, SRMR=.057, CFI=.89, TLI=.87). Metacognitive (10 items, loadings .52 - .66, α=.85) and motivational (4 items, loadings .64 - .70, α=.77) subscales correlated at r=.74. Elite athletes scored higher than all other groups. Post-hoc tests showed almost complete correspondence: with each increasing performance level, there was significantly higher report of metacognitive and motivational SRL use. Female and male athletes did not differ (pmeta = .06; pmotiv = .58). SRL-SP Short scores were associated with GSES (rmeta=.41, rmotiv.48), MS-24 (rmeta=.39, rmotiv=.24), and ACS-90 (AOF subscale: rmotiv=.26) variables, $p < .001$. Overall, the Short SRL-SP scores discriminated more strongly among sport levels compared to prior work, and we recommend this Polish Short SRL-SP survey for measuring self-reported SRL among competitive athletes.

Poster presentation
Topics: Decision making and judgement

Coping with external stressors in handball and football elite refereeing: The relationship with referee efficacy

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Introduction

Referees' self-efficacy (refficacy) is suggested to improve referees' decision-making processes (see Samuel et al., 2020), and thus contributes to correct decisions and impartial refereeing in the face of external stressors. The relationship between refficacy and coping with external stressors remains unexplored and, therefore, the aim of this study was to investigate this association among elite handball and football referees.

Methods

The participants were 224 Norwegian elite referees of handball (n = 111, m age = 35.3 years, 13.5% females) and football (113, m age = 30.8 years, 8% females) who had been referees for an average of 14.4 years (sd = 7.77 years; min: 4, max: 37) and a referee at the present level for 6.8 years (sd = 6.20 years, min: 1, max: 32). Referee self-efficacy was measured using the Norwegian version of the Referee Self-Efficacy Scale (Johansen et al., 2018). Self-reported coping with external stressors was measured using responses to statements related to the referee's self-perceived decision-making process in the presence of several sources of external stressors.

Results

Referee self-efficacy was positively associated with coping with external stressors (□ = .24 (se = .11), p = .021). Football referees reported higher levels of coping with external stressors (□ = .28 (se = .08), p = .001) than handball referees, and the number of years of elite refereeing was positively related to coping with external stressors.

Discussion

The findings provide evidence of a positive relationship between refficacy and refereeing experience and coping with external stressors when making decisions.

Poster presentation
Topics: Well-being and quality of life

Interventions for improving mental health in athletes: A scoping review

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Despite the growing interest in athletes' mental health and increased awareness about mental health problems in athletes, research on effective interventions for improving mental health in athletes is scarce. In particular, there seems to be a lack of studies involving athletes suffering from mental health problems or disorders (e.g., Stillman et al., 2019; Reardon et al., 2019). Thus, there is a gap in the current knowledge related to prevention and treatment of mental health problems and disorders in athletes. The main objective of this scoping review is to examine the extent of the research evidence for interventions focused on improving mental health (including treatment of mental health problems and disorders) in athletes as well as identify knowledge gaps to facilitate new research questions. In addition, this study will provide an overview of characteristics of the interventions (e.g., theoretical framework, mode of delivery, length, individual or group-based), definitions and operationalizations of mental health, mediators, and most commonly researched athlete populations. Following the methodological framework of Arksey and O'Malley (2005), relevant studies will be identified through a literature search, studies selected, data charted, and finally, results will be summarized and reported. This review will contribute to compile existing knowledge while also serving as mean for generating new research questions to be able to guide future intervention research that is needed for mental health problems among athletes. The review is planned to be conducted in the spring of 2022 and the results will be presented at the conference.

Poster presentation
Topics: Human factors

Relationships between risk perception and self-reported risk-taking behaviours among French sport climbers

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Sport climbing is considered as a high-risk sport; mistakes and risk-taking behaviours can lead to injuries of different degrees, even death (Brymer et al., 2020). Little is known about the relationship between risk perception (RP) – defined as the riskiness assessment of specific situations (Weber et al., 2002) – and sport climbing specific risk-taking behaviours (SCRTB). The purpose of the present study was to examine such relationship between RP and SCRTB, considering different climbing expertise levels. A total of 3919 sport climbers (Mean age = 36.6 ± 12.6 years) completed a web-based questionnaire pack measuring the frequency of adoption of 12 different SCRTB (ranging between 1 (never) to 7 (always)), and rated their respective RP, for each of them (ranging between 1 (not at all dangerous) to 7 (extremely dangerous)). Climbing expertise was based upon the five levels established by International Rock Climbing Research Association (Draper et al., 2015). Findings showed that RP were negatively related to all listed SCRTB (rho (3918) > -.55 and < -.44, $p < .001$). There were differences for all listed RP, considering the different expertise levels (Kruskal-Wallis H(3918) > 22.18 and < 463.71, $p < .001$); that is, climbers with higher expertise levels reported lower risk perceptions. Moreover, there were differences for 9 SCRTB, considering the different expertise level (Kruskal-Wallis H(3918) > 10.20 and < 536.14, $p < .05$); that is, climbers with higher expertise levels reported more risk-taking behaviours. Applied interventions to prevent injuries and accidents should target climbers' risk perception, particularly among most experienced sport climbers.

Poster presentation
Topics: Psycho-physiology

Exercise-Emotional Support Intervention for Stress-Reduction and Improved Mental Health

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Regular exercise is a well-established stress-prevention strategy (e.g., Warburton, & Bredin, 2017). Recent studies suggest that exercise buffers stress by modifying the up-or down-regulation of circulating microRNAs (Silva et al., 2017), small molecules involved in important biological functions (e.g., Baggish et al., 2011). While the stress-reduction benefits of exercise are well-known, most people remain sedentary (Fuller et al., 2015), struggling to overcome mental exercise barriers. The current case-study examined the stress-reduction effects of a 4-week (3d/w) exercise-emotional support (EES, N=4) intervention integrating both exercise and emotional-support compared with a 4-week (3d/w) exercise training (ET, N=3) intervention focusing exclusively on exercise. The role of salivary miRNAs as molecular biomarkers of stress was also explored. A mixed-method design was adopted, comprising of both psychological (i.e., self-report inventories; semi-structured interviews) and biological (i.e., salivary miRNAs) components. While the quantitative data yielded almost no significant condition differences, the in-depth qualitative data pointed to the superior stress-reduction and mental health benefits of the EES over the ET intervention. Differential expression analysis of miRNA levels across ET and EES interventions demonstrated 22 and 240 differentially expressed miRNAs, respectively. Of these, one miRNA (hsa-let-7b-5p), a stress-related miRNA (Saliva et al., 2017), was present in both sets emphasizing the stress-buffering effects of exercise in both groups. Our preliminary results point to the importance of emotional support through the process of exercise adoption, as well as the potential feasibility of salivary microRNAs as stress biomarkers. These findings can contribute to the development of stress-prevention interventions to improve public health.

Poster presentation
Topics: Motor development

A pilot study on the benefits of Baby-swimming

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According to the “Embodied Cognition” perspective, motor development should not be considered distant from cognitive and language processes. Motor development is essential in the first 1000 days of life, as the child explores and learns new information from the environment. Among motor activities, baby swimming allows infants to make movements that they are not able to perform on solid ground. Since movements in water becomes slower, the sensory perception is amplified. However, the relationship between early swimming experience and motor development has not been yet investigated. Therefore, this is a pilot study with the aim of exploring this relationship for the first time. To that end 32 infants aged 6 to 10 months were recruited. The Peabody Developmental Motor Scale-2 was used to assess motor abilities in healthy children who regularly carried out aquaticity courses, compared to children who never attended swimming practice. Independent-sample t-test showed significant differences in favor of the group that performs baby swimming activities on measures of reflex ($t=-2.2$, $p<.05$), grasping ($t=-3.8$, $p<.001$), fine-motor quotient ($t=-3.4$, $p<.01$) and total-motor quotient ($t=-2.4$, $p<.05$). Overall, in line with the embodied cognition perspective, these preliminary results are encouraging and allow to investigate how motor development bootstraps later language development.

Poster presentation
Topics: Paedagogical psychology

"Fake it or hide it till you make it": A qualitative analysis of hiding techniques in physical education among students in PE

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Introduction

Meaningful experiences in physical education (PE) are of key value to ensure students' engagement (Beni et al., 2017). However, not all students have meaningful and positive experiences in PE. Some students even find it demanding and difficult to the extent that they use different strategies to avoid participation referred to as hiding techniques (Lyngstad et al., 2016). The purpose of this study is two-fold; (a) to investigate how hiding techniques are expressed by different students in PE and (b) to elucidate motives for why students use these techniques.

Methods

Ten ninth grade students (six girls and four boys, all aged 14 years) within PE subject participated in this study. Using a semi-structured interview guide, we performed in-depth interviews separately with all the respondents. The analysis process is based on a thematic analysis approach (Braun & Clarke, 2021).

Results

Using different hiding techniques fell into two different main themes describing the students' roles. In an active student role, we separated them into avoid the ball, reduce effort, and social dizziness. While for the passive student role, we separated them into forgotten gym clothing, faking soreness, and bench warming. Motives for using hiding techniques were low self-esteem, fear of failure, expectation, and exposure. The hiding techniques can be both situational and activity related.

Conclusion

Findings from this study could supply new knowledge in the field and, perhaps, contribute to reflection on which activities should be organized by the teacher in what way for preventing use of hiding techniques in PE.

Poster presentation
Topics: Sports Psychology and COVID-19 Pandemics

Rebooting in Sport Training and Competitions: Athletes' Perceived Stress Levels and the Role of Interoceptive Awareness

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Discussant: **Selenia di Fronso** (Department of Medicine and Aging Sciences, BIND-Behavioral Imaging and Neural Dynamics Center, University "G. d'Annunzio" of Chieti-Pescara, Italy)

The psychological consequences of the lockdown in the sport context have been well studied (Reardon et al., 2021; di Fronso et al., 2020). However, few studies investigated athletes' perceived stress during the rebooting in sport training and competitions; moreover, no investigations examined the relationship between perceived stress and interoceptive awareness. To mind this gap and support the enactment of appropriate behaviors for practicing sports in a unique situation, we compared athletes' perceived stress data collected during the rebooting in sport activities with normative data and with those collected during the first Italian lockdown. Furthermore, we examined the impact of interoceptive awareness towards positive and negative stress by means of regression analyses. The IPSS-10 and the MAIA questionnaire were administered to 220 athletes. Findings suggest that athletes were experiencing a detrimental situation despite the resumption of sport activities (Guicciardi & Pazzona, 2020) but when comparing rebooting phase with the lockdown, female athletes began to feel greater financial security thereby reducing their perceived stress. Athletes who scored high especially for body trusting – the experience of one's body as safe and trustworthy (Mehling et al., 2012) – could regulate their perceived stress levels by increasing positive and reducing negative stress. Athletes could engage in mindful activities related to the body to reduce their perceived stress levels and better deal with an unprecedented situation (e.g., di Fronso & Bertollo, 2021).

Poster presentation
Topics: Well-being and quality of life

Exploring the Psychological Reasons Behind Playing Through A Serious Injury in Elite Sports Performers

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Elite athletes often continue training and competing in sport after suffering serious injuries, with little regard given to the long-term physical and mental effects it could have on themselves. This paper aims to discover their reasons for competing specifically in elite level team sports. This was discovered through a series of semi-structured interviews of eight elite athletes. The athletes were current professionals, ex professionals or current academy players for professional football and rugby clubs. A thematic analysis was carried out on the information elicited.

Contractual pressure was the most common explanation for continuing to compete. Other collective responses were: i) worrying about missing opportunities to showcase their talents, ii) their lack of injury understanding, and iii) the mental impact of rehabilitation.

Continuing to train and compete through injury poses serious consequences to the physical and mental wellbeing of an athlete. These consequences include recurring injury, permanent, long-term damage, depression etc. Previous research has found athletes continue on as a result of contracts, social pressures such as parents, financial gain etc, however, there is a lack of detail in these findings, especially when athletes are asked exactly why they continued on. The purpose of this study was to help athletes provide more detail needed to start closing this gap. Therefore, the findings of this study, along with those from previous research, are important for combatting these issues in the future, to help educate athletes on the long-term risks of the short-term gain when failing to adhere to rehabilitation procedures.

Poster presentation
Topics: Motor control and learning

Coaching actions from a distance? On the influence of individualized, verbal feedback during action observation training at home

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Action observation (AO) is essential during early stages of learning (Ste-Marie et al., 2020). Observing one's own performance together with a skilled performance has proven beneficial (Hülsmann et al., 2019), especially when verbal feedback guides a novice's at-tention (Ong & Hodges, 2020). It is unclear, however, whether this holds for distance learning. The aim of the online experiment was to examine the impact of individualized feedback during AO training (AOT) in novices practicing squats at home without a coach being present. Using a pre-post-retention-test design, we assigned novices to one of three groups: individualized AOT (AOT-IND), standardized AOT (AOT-STD) and AOT without verbal feedback (AOT). All participants observed recordings of their own performance next to a skilled performance (AOT) for 6 blocks of 10 trials during intervention. In contrast to the control group, participants received verbal feedback in the beginning of each block, ei-ther on their two main errors (AOT-IND) or on two randomly chosen errors (AOT-STD). We assessed movement quality of 10 squats during test phases via expert ratings. Re-sults revealed improvements over time for AOT-IND and AOT, but not for AOT-STD. Find-ings indicate that one session of AOT at home without the presence of a coach can im-prove movement quality of the squat in novices. The mere observation of one's own per-formance together with a skilled performance as well as additional individualized feedback seems to be effective. Future research should investigate long-term effects and different activities and settings such as physical education.

Poster presentation
Topics: Research methods (qualitative & quantitative)

Evidence Base of the Mindfulness-Acceptance-Commitment Approach in Applied Sport Psychology and Future Directions

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The presented poster evaluates the current evidence base supporting the use of the Mindfulness-Acceptance-Commitment approach (MAC: Gardner & Moore, 2007) in applied sport psychology. To assess the effectiveness of the MAC protocol, we conducted a meta-analysis of studies adopting randomized and non-randomized controlled trials. In total, seven studies published in English in peer-reviewed journals were included in the meta-analysis. Results show a moderate, statistically significant within-group effect for improving mindfulness, a small, statistically significant within-group effect for improving psychological flexibility, and a large, statistically significant within-group effect for improving performance. In addition, we found a small, statistically nonsignificant within-group effect for improving experiential acceptance. Furthermore, we include an overview of the effects for other dependent variables included in the research. In addition, we discuss methodological issues of randomized and non-randomized controlled trials resulting in lower ecological validity of the experiment testing the effectiveness of an intervention. Issues we identified are (i) intervention situation, (ii) motivation, and eligibility of participants, and (iii) rigidity of the timeline. And finally, we propose and discuss an alternative methodological approach adopting a set of multiple single-case studies as an experimental design (idiographic methodology), and growth curve modeling within a multi-level modeling framework as a statistical approach to data analysis (nomothetic methodology). The alternative methodological approach brings the experimental settings closer to the real-life scenario which improves the ecological validity of an experiment and simultaneously controls for interval validity, and procedural reliability which enables generalization of results and provides a valid evidence base for applied practice.

Poster presentation
Topics: Professional development and mentoring

A systematic review of self-care in sport psychology practitioners

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Self-care has been identified by psychology and mental health scholars to be important for promoting personal and professional well-being among psychology professionals as well as being an ethical imperative for practitioners who are bound to ethical codes of conduct and who wish to provide ethical and effective service delivery to clients (Barnett et al., 2007; Dorociak et al., 2017). Nevertheless, the value of self-care for sport psychology practitioners (SPPs) has only received limited research attention (Quartiroli et al., 2019; 2021). In this study, we conducted a systematic review of the literature with the aim of developing an understanding of existing sport psychology knowledge focused on self-care. Using PRISMA guidelines, initial database searches identified 1,834 research records. Following the removal of duplicate studies, screening by title and abstract and the assessment of full-text article eligibility, 15 articles were selected for inclusion. Analyses of these included studies revealed four prevailing themes: (a) elements of self-care; (b) influences on self-care; (c) self-care's influences; and (d) relationship between self-care and professional experiences. These findings serve to synthesise the current knowledge of self-care's importance for SPPs' personal and professional experience and provide professional bodies and educational programs with clear considerations for how to best align training routes and professional CPD with the extant literature on self-care. Moreover, the findings might inform future research, which may include the development and validation of assessment tools to support reflective engagement in self-care as well as interventions to promote SPPs' self-care engagement.

Poster presentation
Topics: Professional development and mentoring

Predictably unpredictable: Sport psychologists' experiences of precarity in elite sport organizations

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A growing body of literature indicates that elite sport organizations present a volatile professional domain characterized by high levels of intentional change and widespread uncertainty. Working within an interpretivist paradigm, and using a semi-structured interview guide, we conducted interviews with 12 sport psychologists (SPs) working in elite sport organizations. We aimed to construct a robust account of the professional precarity among SPs who had and had not been retained after 6 months in their role in an elite sport organization. The interviewees had an average of 8 years of professional experience (SD = 2.59) and were aged between 28 and 45 (Mage = 34.08; SD age = 5.46). We developed five higher order themes encompassing 16 lower order themes. The higher order themes were: (a) organizational change, (b) role clarity, (c) professional threat, (d) personal sacrifice, and (e) top-down influence. The insights offered by these data have the potential to significantly advance scholarly understanding of the challenges faced by SPs practicing in elite sport organizations while highlighting salient educational and training needs. As such, these results have important implications for professional societies, regulatory bodies, and education and training institutions responsible for supporting and safeguarding SPs' work in such environments. For example, these societies, bodies, and institutions must do more to support and protect those they have a duty of care toward. We also consider how sport psychologists may act as recipients and key social agents for these changes.

Poster presentation
Topics: Performance enhancement (doping, neuro-enhancement etc.)

One mile at a time: the relationship between mindfulness and the wellness and performance of collegiate cross country runners

Kayla Sliz, Edson Filho
Boston University, United States of America

Long distance runners typically experience boredom, fatigue, pain, and negative thinking due to the repetitive nature of running (De Petrillo et al., 2009; Pageaux & Lepers, 2018). To this extent, previous research in sport psychology has revealed that mindfulness-based interventions can help athletes cope with negative cognitive and affective states in endurance sports (Bondár et al., 2021; Garland & Howard, 2012). Accordingly, in the present study we sought to examine the relationship between mindfulness tendencies and state and trait anxiety, perceived pain, exertion, performance satisfaction, attention, self-efficacy, and negative thinking. Thirteen collegiate cross-country athletes (9 males, 4 females; Mean Age = 20.54; SD = .97) took part in the study. First, participants completed the Mindful Attention Awareness Scale, the Sport Anxiety Scale-2, and the Competitive State Anxiety Inventory. Subsequently, participants were asked to perform a three or five km race, depending on their main competitive event. At the end of the race, participants reported their levels of perceived exertion, pain, performance, attention, and self-efficacy. Correlational analysis revealed a moderate relationship between perceived pain and exertion ($r = .61$, $p < .05$), perceived pain and mindfulness ($r = .61$, $p < .05$), and perceived pain and confidence ($r = .72$, $p < .05$). From an applied standpoint, these findings suggest that sport psychology consultants should facilitate discussions regarding the appraisal of pain with athletes and create workshops and other resources centered around finding productive ways of managing pain in distance events.

Poster presentation
Topics: Exercise psychology

Is COMT Val158Met(rs4680) polymorphism associated with executive functions performance at rest and during physical exercise?

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Executive functions (EFs) encompass a wide array of cognitive processes, which appear to be influenced by genetics. The catechol-O-methyltransferase (COMT) enzyme is related to the regulation of dopamine in the prefrontal cortex by the degradation of dopamine released (e.g., Savitz et al., 2006). Also, previous studies have shown a significant increase in the dopamine circulating during moderate physical exercise (e.g., Meeusen & De Meirleir, 1995). Broadly speaking, COMT polymorphism, as well as, moderate physical exercise appears to modulate the release of the dopaminergic system that acutely potentiates neural function and induces a cascade of events that are related to cognitive functions (e.g., Gibbs et al., 2014). The present study aimed to investigate whether COMT (rs4680) polymorphism was associated with EFs assessed at rest and during physical exercise. Sixty physically active individuals underwent four laboratory visits. First, they filled the pre-exercise survey, researchers collected their anthropometric measurements, and then they performed a maximal cardiopulmonary exercise test. In the second and third sessions, participants performed the EFs test in a randomized order: at the rest and during physical exercise condition. On the fourth day, blood samples were drawn. Our results showed that the response time of the COMT Val homozygotes group was significantly shorter than the COMT Met-carrier group [$t(39.78) = 2.13$, $p = .039$, $d = 0.56$] at rest condition but not during exercising. In conclusion, the present study suggests that COMT polymorphisms may be associated with EFs at rest condition. In addition, it is suggested that future investigations need to be conducted with other polymorphisms.

Poster presentation
Topics: Any other topic

A Grounded Theory of Parental Support in Female Youth Golf

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Parental support in youth sport has been associated with positive and adaptive athlete outcomes, such as sport enjoyment, self-esteem, and coping skills (Leff & Hoyle, 1995; Tamminen et al., 2016). While research has demonstrated the significant and influential role parents play in the context of youth sport, there remains an absence of empirical research examining parental support across athletic development stages and across sports and cultures. To reach a broader understanding of the parent–athlete relationship in youth sport, the present study examined specialising and investment stage female youth golfers' perceptions of parental support, across a variety of cultures and countries. The Straussian variant of grounded theory (Corbin & Strauss, 2015) was the chosen methodology. Sixty-one female youth golfers in the specialising (12–15 years) and investment stages (16–19 years) of their golf development were purposefully and theoretically sampled from Australia, New Zealand, Ireland, England, Scotland, Finland, and Canada. Data was collected using online focus groups. Data analysis included three phases: open-coding, axial coding, and theoretical integration. A substantive grounded theory of parental support in female youth golf was developed. Four categories of parental support were evident across development stages, which included instrumental, informational, emotional, and autonomy support. Participants detailed individual preferences for support across these four categories, which were influenced by a host of personal and social factors. Regular bidirectional communication between parents and youth athletes, was essential for open communication of individual preferences for support.This research highlights the need to move beyond prescribing universal guidelines for parenting in youth sport.

Poster presentation
Topics: Personality

Personality Traits of Special Forces Operators: Comparing Commandos, Candidates and Controls

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Special forces operators, also known as commandos, perform in mentally and physically tough environments. An important question for recruitment and selection of commandos is whether they have particular personality traits (Jackson et al., 2021). We therefore aimed to examine whether Big Five personality traits differ between 1) commandos and normal young men, and 2) candidates that make it through the Special Forces selection program and those that dropout. For these aims, we first distributed a NEO personality inventory across 110 experienced Dutch male commandos and a control sample of 275 male civilians in the same age range. Second, we provided the inventory to Special Forces candidates at the start of the special forces selection program. Out of this group, 53 ultimately graduated, whereas 138 dropped out. Multilevel Bayesian models and t-tests revealed that commandos were less neurotic (d = -0.58), more conscientious (d = 0.45), and markedly less open to experiences (d = -1.13) than the matched civilian group. Furthermore, there was a tendency for graduates to be less neurotic (d = -0.27) and more conscientious (d = 0.24) than dropouts. Taken together, personality traits do not appear discriminative enough for selection purposes in the Special Forces program. On the other hand, these results provide interesting clues for using personality traits to recruit people for the special forces program.

Poster presentation
Topics: Perception & attention

Anticipating the rotation speed of table tennis serve with a stomp in adolescent players

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Adult table tennis players could anticipate the rotation type and speed of ball correctly by extracting the crucial visual information from movement kinematics of the opponent player. While most players, even at the early stage of expertise, stomp when they serve, the current study further investigated whether the stomping movement would influence the receivers' anticipation of the ball rotation speed in adolescent players. To this end, 10 adolescent table tennis players (11.2±0.7 years, 4.0±1.2 years of experience) were asked to anticipate whether the ball rotation speed was high or low when viewing a series of soundless videos showing forehand backspin serves from the server with and without stomping. A 2 (low vs. high rotation speed) x 2 (with vs. without stomping movement) within-subjects repeated measures ANOVA was used to compare players' accuracy across different conditions. The results showed that their accuracy for each condition was higher than chance level (50%), indicating that adolescent players, like adult players, could anticipate the result of the action of the opponent by reading the movement kinematics. However, this perceptual anticipation ability was impaired if the opponent served a low rotation ball with a stomp, possibly related to players' prior knowledge about a greater ball rotation resulting from a stomp. These findings contributed to our understanding about action anticipation ability in adolescent players, and specifically for the effect of a stomping movement interacted with the ball rotation speed in table tennis.

Poster presentation
Topics: Consulting/ counseling

What does mindfulness mean to athletes? A consensual qualitative research study

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West Virginia University, United States of America

Mindfulness based interventions (MBIs) with athletes continue to grow, however authors of a recent review (Noetel et al., 2019) note that the evidence is of low to moderate quality. Authors from other fields also suggest the application is ahead of the science (Van Dam et al., 2018). Additionally, little is known about the actual experiences of athletes using mindfulness on their own. The current study aimed to explore athletes' understanding of and experience with mindfulness using the Consensual Qualitative Research framework (CQR; Hill, 1997). Convenience and purposeful sampling techniques following a mixed method survey project yielded 15 semi-structured interviews with college level athletes from a variety of sports. After transcription, four researchers followed the steps of CQR to generate a code book with domains, categories, and sub-categories within the data. This process proceeded using an iterative approach until consensus was reached. The results indicate that nearly all participants viewed mindfulness as a form of self-regulation, specifically as a means to focus attention or calm down. Of the core concepts of mindfulness (Zizzi & Andersen, 2017), interviewees expressed familiarity with present-focused awareness but less so with the qualities of that awareness (e.g., non-judging, openness, non-striving). Participants typically engaged informally or infrequently, and often expressed unrealistic ideas or expectations about mindfulness as a quick fix to their problems. One athlete was engaged in a long-term journey of self-growth. The implications of these findings will be discussed as it relates to future research endeavors and applied consulting.

Poster presentation
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Slow-paced breathing: investigating the influence of inhalation/exhalation ratio and of respiratory pauses

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German Sport University Cologne, Germany

To effectively cope with stress, athletes are required to regulate their emotions. Among the strategies addressing emotional regulation, slow-paced breathing (SPB) has been increasingly used in the sport setting (Gross et al., 2016; You et al., 2021). SPB has been shown to enhance self-regulation abilities through its influence on cardiac vagal activity (CVA), an indicator for self-regulation mechanisms (Laborde et al., 2018). Nevertheless, the role of certain parameters, such as the inhalation/exhalation ratio and the presence of a respiratory pause between respiratory phases, remains to be clarified. Consequently, the present study aimed to investigate the influence of these respiratory parameters on the effects of SPB on CVA. Overall, 64 athletes (27 female; Mage = 22) participated in this within-subject design experiment. They were instructed to perform six different 5-min respiratory conditions, each comprising 30 respiratory cycles of 10 s, within a single session. The respiratory conditions differed based on the inhalation/exhalation ratios of 0.8, 1.0, or 1.2 and the inclusion or absence of respiratory pauses (0.4 s) between the respiratory phases. Results indicated that the root mean square of successive differences between normal heartbeats (RMSSD), a marker of CVA, was higher when exhalation was longer. Adopting a respiratory pattern with a longer exhalation phase triggers higher CVA compared to respiratory patterns with longer inhalation, or equal durations of both phases. The presence of a post-inhalation and post-exhalation resting period did not further influence RMSSD. Therefore, athletes practicing SPB are recommended to apply a longer exhalation phase than the inhalation phase.

Poster presentation
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Integrating a Brief Slow-Paced Breathing Exercise to Emotional Intelligence Training

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German Sport University Cologne, Germany

Emotional intelligence (EI) plays an important role in sport performance, and hence its training is of high relevance for athletes. EI has been associated with adaptive psychological states and enhanced executive functions, such as working memory and decision making. To design emotional intelligence training programs, techniques included in such protocols must be tested for their effectiveness in enhancing EI. Slow-paced breathing (SPB) has been found to positively influence emotion regulation, and may therefore present a potential strategy as part of an EI training program. This study aimed to investigate the effects of a brief SPB exercise on psychophysiological variables linked to emotion regulation, namely cardiac vagal activity (CVA), as well as perceived stress intensity, emotional arousal, and emotional valence. A total of 61 participants completed a five minute SPB exercise and a control condition of a five minute rest measurement. CVA was indexed with the root mean square of successive differences (RMSSD). Participants were asked to rate their perceived stress intensity, emotional arousal, and emotional valence. Results showed that CVA was higher during SPB in comparison to the control condition. Contrary to our hypothesis, perceived stress intensity and emotional arousal increased after SPB, and perceived emotional valence was less positive after SPB. This could be explained by experiencing breathing discomfort, and the need to get acclimatized to SPB. Consequently, although physiological benefits of SPB on CVA are immediate, training may be required in order to perceive psychological benefits.

Poster presentation
Topics: Leadership

The influence of social and task peer-leaders on collective efficacy: A meta-analytical review

Piotr Piasecki, Edson Filho
Boston University, Performance Recovery & Optimization Laboratory, U.S.A.

Effective peer-leadership is paramount to team functioning, as peer-leaders help to facilitate the development of myriad team processes, including collective-efficacy (Loughead, Munroe-Chandler, Boisvert, & Hirsh, 2021). In the present study we examined the influence of social leadership and task leadership on collective efficacy. To this extent, social and task leadership have been among the most studied approaches to peer leadership thus far (Cotterill & Fransen, 2016). We adhered to the PRISMA guidelines (Page et al., 2021) and searched for relevant papers across six databases: ProQuest Central, PsycArticles, PsycINFO, SportDISCUS, MEDLINE, and SCOPUS. A total of 136 paper were screened. Four studies, representing 2674 participants and nine different sports, met our inclusion/exclusion criteria. We calculated r family effect-sizes for the variables of interest using the Comprehensive Meta-Analysis Program Version 3.0. We observed a statistically significant relationship between task leadership and collective efficacy ($r = 0.21$, $p < 0.01$), and a marginally significant effect for the relationship between social leadership and collective efficacy ($r = .16$, $p = .06$). These results suggest that developing task leaders will enhance collective efficacy, likely because task-leaders are skilled in facilitating division of labor in team settings (Filho & Tenenbaum, 2020). Moreover, these results suggest that social leaders also positively influence teammates' shared efficacy beliefs. Therefore, practitioners should develop peer-leadership programs that equip athletes with both task and social leadership skills. Future research examining the influence of different types of peer-leadership (e.g., motivational and external; see Fransen et al., 2020) on collective efficacy and other team processes is warranted.

Poster presentation
Topics: Perception & attention

Effects of Virtual Reality and Extrinsic Feedback on Collegiate Rowers' Performance and Psychological States

Ashlyn Elizabeth Fesperman, Natalie Ariana Robb, Edson Filho
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In this poster presentation we will discuss findings from our ongoing research on the effects of virtual reality and live feedback on rowers' performance output, physiological measures, motivation, and attentional states. To this extent, previous research has shown that rowers who use virtual reality do not perceive themselves to be exerting as much physical effort with respect to a control condition (Murray et al., 2016). Our within-subjects experimental design includes four conditions: no feedback/no virtual reality, feedback/no virtual reality, no feedback/virtual reality, feedback/virtual reality. Twenty-five participants have taken part and completed each condition in a randomized order to account for learning and motivation effects. We have observed trends in the hypothesized direction, namely higher performance, physiological output, motivation, and dissociative attentional states linked to the feedback/virtual reality condition. These preliminary trends coincide with research suggesting that (a) virtual reality training enhances athletic performance as it provides athletes with an immersive multi-sensorial experience that helps to regulate their attentional focus, see Filho, 2015; and (b) feedback facilitates performance and boosts motivation likely because of its enhancing efficacy belief effects, see Chiviacowsky, 2020. Therefore, coaches and sport psychology consultants should consider integrating virtual-reality training and concomitant feedback to their intervention strategies.

Poster presentation
Topics: Youth

A Systematic Review of Parental Support and Stressors in Youth Sport

Anna Victoria McIlmoyle, Lee-Ann Sharp, David Woods, Kyle Paradis
Ulster University, United Kingdom

Introduction: Burgess et al. (2016) emphasised the importance of parental support in youth sport as they offer essential financial, informational, and emotional support to their youth athletes. More recently, numerous parental stressors that come with supporting their youth athlete are reported to include; athlete disappointment, injury, balancing between commitment and enjoyment, and lack of family time (Clarke & Harwood, 2014; Knight & Holt, 2013a; 2013b; Wiersma & Fifer, 2008). To date, there has been no systematic review exploring parental support and stressors in youth sport.

Purpose: This systematic review was conducted to examine the following: (1) What are the components of parental support within the youth sport context? (2) How do parents support their child-athlete? (3) What stressors do parents of youth athletes face? (4) What, if any, coping mechanisms do parents employ?

Methodology: The current review was conducted in line with the updated 'Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Page et al., 2021). An electronic database adjacency search was conducted using six electronic databases. Seventeen studies met the inclusion criteria, 13 qualitative studies, 3 quantitative studies and 1 mixed methods study.

Results: Parents provided key supportive behaviours including financial, emotional, and practical support. Parents experienced a variety of stressors such as emotional, competitive, financial, and organisational related ones. Results showed limited coping strategies employed by parents to deal with the stressors associated with supporting their child athlete.

Poster presentation
Topics: Paedagogical psychology

A social media analysis of the use of 360o videos in sport and physical education

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The COVID-19 pandemic created new challenges for physical educators who were asked to teach practical courses in an online setting. In order to satisfy the new requirements in sport education new technologies arose and were implemented within the education and training domains. In this context, 360° videos are becoming more popular as they can be utilized in a variety of areas and contexts. 360° videos provide a spherical view with multiple viewing angles and perspectives allowing, thus, users to view everything within the camera range. As a result, more interactive and immersive experiences that absorb and engage users can be generated. Additionally, 360° videos align with existing pedagogical approaches and can positively affect users' emotional response and psychological state. Still, there is only scarce evidence on users' experiences with 360° videos. The present study was designed to analyze and comprehend the public's viewpoints and attitudes towards 360° videos. Based on the data collected from the Twitter social media platform during the last 10 years, the general public acknowledges 360° videos positively regarding their use as an educational tool and express mainly anticipation, trust and joy when referring to them. Moreover, they are considered as effective tools that can meet the new educational and training needs and promote users' engagement and motivation enriching, thus, the overall teaching, learning and training activities.

Poster presentation
Topics: Ethics in applied settings

A qualitative evaluation of athletes beliefs about whistleblowing against doping

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Whistleblowing has been suggested as an important means in the fight against doping. Since 2021 the WADA Code considers actions to discourage or retaliate whistleblowing as an anti-doping rule violation. However, the research on athletes beliefs about whistleblowing against doping is rather limited. To address this gap the present study was designed to qualitatively evaluate the beliefs and intentions of athletes towards whistleblowing about doping. The sample consisted of nine athletes (5 from individual sports, 2 females) who participated in two focus groups. Following the description of a scenario about a teammate admitting doping, athletes presented their beliefs and intentions about whistleblowing. The results of a thematic analysis three main themes. The first theme described negative intentions towards whistleblowing with only two athletes would unconditionally report the case. The second theme involved team cohesion, where athletes reported that they wouldn't do something harm their team and they would prefer to resolve the problem within the team. The third theme involved organizational support, where athletes reported that the support from their coach, teammates, and/or club administrators would influence their decision to report the doping incident. The findings of the present study provide preliminary evidence on the psychological process underlying the decision to blow the whistle against doping irregularities.

Poster presentation
Topics: Physical activity

A whole school approach towards physical activity: An analysis of school teachers' needs.

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Research has well documented the positive effects of physical activity on physical and mental health. Still, the majority of European citizens adopt a sedentary lifestyle and do not meet the physical activity recommendations. The development of physical activity habits from childhood are considered as an effective way to promote physical activity. In this sense, schools are the ideal settings for the promotion of physical activity. However, school teachers are not fully aware of the joint actions a school can implement to promote physical activity. The present study was set out to record school teachers' needs for education on the adoption of a whole school approach in promoting physical activity. School teachers from Greece and Cyprus completed a survey with questions about the content and delivery mode of education towards a whole school approach in the promotion of physical activity. The descriptive analyses indicated that school teachers would prefer a short educational course between three and six sessions, with each session lasting 45-60 minutes. The majority of the participants preferred a combination of synchronous and asynchronous online education with sufficient time to work on their own pace. With respect to the content of the educational course they requested for theory-based evidence on the benefits of a whole school approach and guidelines and tips for its implementation. These findings provide valuable information for the development of educational material that will empower school teachers in the implementation of a whole school approach in promoting physical activity.

Poster presentation
Topics: Any other topic

Translating and validating the Sport Motivation Scale-II: Potentialities and Limitations

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The Sport Motivation Scale-II (SMS-II) has already been translated and validated for different languages and has been widely used around the world. The original study of the scale showed good psychometric properties for its six dimensions. However, recent studies have indicated possible limitations in the reliability of the introjected regulation factor when translated into other languages. Therefore, the aim of this study was to analyze the parameters of validity and reliability of the SMS-II scale based on a systematic review. Using the PRISMA guidelines for systematic review, this review is based on 19 studies that translated, validated or used the SMS-II as an instrument for data collection. We consider articles published only in English, Spanish and Portuguese, in scientific journals indexed in PubMed, Web of Science, Scielo, Lilacs and CAPES databases. We found four translation and validation studies with satisfactory psychometric properties. However, the Spanish version proposed a scale with only five factors, since the introjected dimension did not reach a satisfactory index of internal consistency. Among the studies that used the instrument for data collection, nine studies calculated and reported the Cronbach's alpha for each dimension. We found that most of the dimension presents an alpha above 0.7. However, most of the studies (75%) showed alpha below 0.7 for the introject regulation. These results indicate the need for special attention in the process of translating the introjected regulation factor.

Poster presentation
Topics: Motivation

May coach-athlete relationship predict student-athletes' motivation?

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The aims of this study were to investigate the motivational profile and coach-athlete relationship (CAR) in a sample of college student-athletes from team sports. Additionally, we analysed CAR as a motivational predictor. In our cross-section and descriptive study, we analyzed 441 college student-athletes categorized into sex, age, time of practice, sport level, team sports and area of knowledge. The instruments used were the sport motivation score-II (SMS-II) and the coach-athlete relationship questionnaire (CART-Q). The results showed that CART-Q three factors (commitment, autonomy, complementary) presented a positive association with intrinsic motivation, integrated and identified regulations, and a negative association with external regulation and amotivation. Soccer student-athletes presented lower amotivation score than others team sports, and biological sciences student-athletes presented higher amotivation compared to exact sciences. Finally, the CART-Q's commitment factor predicted significantly all motivation factors. Our findings show a distinct motivational profile within student-athletes and highlight the coach needs to adopt a proper approach for each student-athletes group.

Poster presentation
Topics: Coaching

Match Analysis of 2021 FIVB Volleyball Women's Nations League using Principal Component Analysis

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This study investigated the match statistical differences between the top 4 and bottom 4 performing teams during the preliminary round of the 2021 FIVB Volleyball Women's Nations League (VWNL) using correlation method principal component analysis (PCA). Match statistics for the 54 matches pertaining to the top 4 and bottom 4 teams respectively were retrieved from the official FIVB VWNL website. To best describe the match conditions, certain statistical values were converted into percentage rates. Eventually, the match statistics explored included: Attack Points (Ap), Attack Point Rate (Ap%), Attack Error Rate (Ae%), Block Points (Bp), Block Point Rate (Bp%), Block Errors (Be), Serve Points (Srp), Serve Error Rate (Sre%), Serve Attempts Rate (Sra%), Reception Success Rate (Rs%), Reception Errors (Re), Reception Attempts (Ra), Digs (D), Dig Totals (Dt), Set Points (Stp), Set Error Rate (Ste%), Set Attempts (Sta). Results revealed that 5 principal components (PCs) could account for 75% of variance for both groups. Moreover, the main variables within the first PC were the same for both groups, including the D, Dt, Ap, Ra, Re, Bp, Be, Srp, Stp and Sta, suggesting the core skills are highly similar regardless of the rank. The main variables in the second PC differed between the two groups, with Rs% and Ap%, and Sre% and Sra% for the top 4 and bottom 4, respectively. The significant difference in Rs% and Ap% between the two groups from t-test comparison further suggested that these skill variables may be determining factors in ranking at the VWNL.

Poster presentation
Topics: Cognition

Effects of moderate hypoxia on cognitive functions in athletes during exercise

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"Acute moderate-intensity exercise has been shown to improve cognitive performances (Lambourne and Tomporowski, 2010), whereas moderate hypoxia is believed to impair them (McMorris et al., 2017; Ando et al., 2019). The role of the combined effect of exercise and hypoxia is unclear (Ando et al. 2013): during exposure to moderate or severe hypoxia, moderate exercise can improve cognitive functions (Lei et al. 2019; Sun et al. 2019), or impair its (Bouak et al., 2018; Morrison et al., 2019). However, most studies involved inactive, sedentary or amateur athletes (Komiyama et al. 2015; Morrison et al. 2019). Little is known about the effects of hypoxia during exercise in highly trained athletes. Fourteen male athletes (age:18-45) who have been doing regular endurance training for at least 3 years and for at least 8 hours/week were involved in the study. Two different sessions of exercise in normoxia and hypoxia (FiO2 13%), each lasting 18 minutes, were randomly assigned in a counterbalanced order and administered to athletes. During exercise bouts, athletes performed a mental task (BST) aimed to produce cognitive interference and suppression. Reaction times and accuracy of responses were recorded. The repeated measures ANOVA showed that the hypoxia impairs cognitive performance, increasing the reaction times. Results suggest that exercise in hypoxic conditions negatively affects the cognitive performance of athletes and stimulates an in-depth analysis of the mediators involved in this relationship.

Poster presentation
Topics: Elderly

Turntable: a platform supporting cognitive functions of elderly during COVID-19 pandemic

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The public health measures established to limit the spread of the COVID-19 have increased the isolation of the elderly and indirectly contributed to worsening their everyday life, limiting social relationships, and interrupting physical activities carried out outdoors in the presence of others (Sepúlveda-Loyola et al., 2020; Vahia et al., 2020; Sayin Kasar and Karaman, 2021; Zaninotto et al., 2021). However, in a condition of protracted physical isolation, it has been highlighted how information technologies can support social relationships, the physical and mental health of the elderly (von Humboldt et al., 2020; Yepuganti et al., 2021). Moreover, modern technologies provide valuable support to encourage leisure activities promoting an active lifestyle, like gardening (Lekjaroen et al., 2016; Szakonyi et al., 2021). The present study aims to evaluate the effects of a gardening intervention in a mixed sample of twenty-three participants aged over 60 years, supported by a digital platform, during the COVID-19 pandemic. An expert administered the Montreal Cognitive Assessment (MoCA) by Nasreddine et al. (2005) by phone, before and after the intervention. A significant increase in scores was observed, that supports the power of gardening to counteract the Covid-19 pandemic. Gardening, like exercise and outdoor walks, can represent a protective factor against COVID-19 stress (Lades et al., 2020). Moreover, new technologies, in conditions of physical distancing, in addition to facilitating the monitoring of plants, can support the maintenance of relationships and leisure activities of the elderly, contributing to their physical and mental health.

Poster presentation
Topics: Social psychology

Fitspiration – Inspiration or threat for adolescent girls?

Anika Frühauf, Merle Roth, Martin Kopp
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Fitspiration is a social media trend promoting a health enhancing lifestyle. It includes fitness content, dieting and objectifying images of males and females, showing a negative relationship with mental health (Carrotte et al., 2017). This study aimed to get a deeper understanding of fitspiration users by qualitatively assessing health-related behavior and well-being in adolescent girls following fitspiration content on social media. 13 female students (14-19 years) were interviewed using semi-structured interviews. Interviews were transcribed verbatim and analyzed using a thematic-content approach (Braun et al. 2016).

Four main themes emerged from the analysis namely exercise, physical education, body image and effects of influencers. Results showed that participants named both positive effects such as motivation for exercise and a healthy lifestyle and negative effects, such as negative mood when following fitspiration content. Most participants wanted to change at least certain parts about their body and were not satisfied with their body image. Social comparison with fitness influencers was mentioned. None of the students reported to have talked about social media in physical education. Fitness influencers were seen as role models by the interviewed participants.

Positive effects in health behavior such as a higher reported physical activity and healthy eating with potential negative consequences to mental health, especially related to self-comparison were reported from adolescent girls using fitspiration content. Including or adapting a critical media pedagogy in physical education should be considered to enhance awareness of negative effects of social media but use the positive influence on health behavior (Azzarito, 2010).

Poster presentation
Topics: Elite sports and expertise

The need for new paradigms on the mental health of elite athletes: a scoping review

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The aim of this study was to analyze the concepts of mental health as well as the instruments used to measure it in elite sport. The scoping review was conducted using PubMed SPORTDiscus, PsycINFO and Scielo databases. The keywords “mental health” AND “sport” AND “athlete” were used to find studies in peer-reviewed scientific journals published in English, Spanish, and Portuguese. Studies were analyzed according to PRISMA guidelines. A total of 179 records were included in this review. Recent studies suggest that health and illness should not be recognized as deviations from the norm, but as a changing construct, varying on a continuum, where, at one extreme, we have health; and, at the other, we have illness even coexisting in an orthogonal way. Between the two extremes, there are degrees of psychological well-being and distress, leading from reduced functioning to effective functioning. This indicates the need for psychological support for both the maintenance and enhancement of mental health. An alarming result was that, although most of the studies investigated mental health, they used primarily instruments focused on illness. This new perspective of health-illness brings the need for the development of new instruments that encompass protective factors and symptom screening. We reinforce the need for a paradigm shift in relation to mental health of elite athlete understanding it as a changing construct that should be constantly improved and/or maintained. This change led to the need for broader assessment instruments that encompass protective factors and illness symptom of elite athletes.

Poster presentation
Topics: Perception & attention

Where is the flag and when do I have to turn? Visual Strategies in alpin skiing

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Gaze strategies do not only play a role when it comes to darting, golfing, handball or tennis, but also in alpine skiing. Compared to other types of sport, gaze strategies in alpine skiing are marginal scrutinized (Schlaeppi et al., 2016). Speed and technique are crucial for the goal achievement but the collection and analysis of information seems to be ignored in skiing (Jendrusch, 2011). This study was conducted in order to generate hints concerning their role and to reveal prospective fields of research.

30 sports students (Mage = 22 years, SD = 2.7 years) have been assigned into two groups, novices and experts. The classification was based on the skiing frequency and their experience (years). Randomized slalom-videos – 2 × 2 scenarios from the own perspective using a head mounted GoPro HD action camera – presented on a video wall. The first scenario included 12 turns without any further visual assistance. In second scenario, a flag marked the turn-point (also 12 turns). Amount of fixations, as well points of interest (distance) were evaluated. Participants' visual behavior was captured using an SMI® eye-tracking device (120Hz).

The analysis shows significant differences regarding the gaze behavior between the groups in both scenarios a) number of fixations with $t = 8.34$, $p < .001$; b) spotted distance $t = 6.97$, $p < .001$.

The results reveal that experts generally used foresighted and anticipatory gaze strategies (more fixations and foresighted spotting). From this point of view, the adaption of experts' gaze could help practitioners' enhance their performance.

Poster presentation
Topics: Professional development and mentoring

A Qualitative Analysis of Swedish Sport Psychology Practitioners' Experiences of a Continuing Education Program

Johanna Belz[1], Göran Kenttä[2,3], Jelena Muetstege[2], Hayley McEwan[4], David Tod[5]
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Introduction

Although sport psychology practitioners acknowledge the benefits of continued professional development (CPD), few studies have explored the influence of such activities on the practitioners' practice and thinking (Quarteroli et al., 2021). This study aimed to examine qualified sport psychology practitioners' experiences engaging in a CPD program and how it impacted their professional development.

Methods

The Swedish Sports Confederation offers a CPD programme that targets performance enhancement services and psychotherapy for sport psychology practitioners. We explored the influence of this CPD program on the professional development of thirteen graduates (five female; age in years: M = 41.2, SD = 8.3) via semi-structured interviews. Our stance involved a realist ontology and constructionist epistemology (Elder-Vass, 2012). We followed the six-step reflexive thematic analysis procedures to analyze data (Braun et al., 2019).

Results

Four themes of CPD emerged: (1) Critique (participants decided to do the CPD course because of perceived gaps in their knowledge and skills), (2) Change (participants discussed changes they experienced as a result of the course), (3) Context (participants discussed the aspects of the CPD course that helped them change), and (4) Challenge (participants mentioned issues related to having completed the course).

Discussion

The study provides insights into the value of CPD education for sport psychology practitioners, helps bolster confidence in current knowledge on practitioner maturation and illustrates how CPD fits within a practitioner's lifelong learning. Future research could investigate the professional development of other mid-career sport psychology practitioners to confirm or extend this work.

Poster presentation
Topics: Research methods (qualitative & quantitative)

A Confirmatory Factor Analysis of the Cognitive and Affective Mindfulness Scale-Revised with American College Student-Athletes

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Interest in mindfulness has grown, though some have proposed the application is ahead of the science, citing measurement concerns (Van Dam et al., 2018). The Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman et al., 2007) is one assessment that has been used in research with diverse populations, including athletes (Aherne et al., 2011). While the initial validation by Feldman et al. (2007) was completed with university students, the internal structure has not been explored with student-athletes specifically. Therefore, the purpose of the present study was to evaluate validity evidence of the CAMS-R for use with athletes by examining its internal structure.

As part of a larger survey of athlete experiences with mindfulness, 205 American college student-athletes (Mage=19.90, SD=1.38) from fourteen sports completed the 12-item CAMS-R. A confirmatory factor analysis was conducted to evaluate the measure's factor structure.

The original four-factor model proposed by Feldman et al. (2007)—including first-order factors of attention, present-focus, awareness, and acceptance—indicated marginal fit, $\chi2(48)=172.56$, $p<.05$, RMSEA=.11, CFI=.91, SRMR=.07. An improved eight-item solution, three-factor solution (without present-focus) was retained, $\chi2(17) = 62.86$, $p<.05$, RMSEA=.12, CFI=.95, SRMR=.05. These findings suggest the original model proposed by Feldman et al. (2007) may not sufficiently measure mindfulness as originally conceptualized, which is not unexpected as researchers in other fields have reported better fitting three-factor solutions (Huang et al., 2021). Findings indicate the need to continue refining methods of assessing mindfulness. Future research could replicate this study with larger, more ethnically diverse samples, which is a limitation in this study.

Poster presentation
Topics: Prevention and rehabilitation

Motivation for sport injury prevention and injury-preventive behaviors in youth floorball players

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Introduction: Autonomous motivation has been related to injury-preventive behaviors in athletes (Lee et al., 2021). However, the relation between different types of motivation and injury-preventive behaviors and the role of injury history, injury status, and other important demographic variables has not been explored in previous research. The aim of this study was to investigate relations between different types of motivation and injury-preventive behaviors, while accounting for athletes' injury history, injury status, age, and sex.

Methods: A cross-sectional survey design was used in the current study. Participants were 672 youth elite floorball players (age: 15-19, female=331). Motivation was measured by the Swedish version of the 15-item Treatment Self-Regulation Questionnaire for Sport Injury Prevention and frequency of injury-preventive behaviors with the Self-Reported Injury Prevention Adherence Scale (Chan et al., 2015). Injury history and current injury status were self-reported. Structural equation modeling was used to analyze the data.

Results: Autonomous motivation (b = 0.114, p = .174), controlled motivation (b = 0.126, p = .043), and amotivation (b = -0.050, p = .643) were weakly related to injury-preventive behaviors. The strongest predictors of injury-preventive behaviors were current injury status (b = 0.663, p = < .001) and injury history (b = 0.486, p = < .001). Age and sex were not significant predictors of preventive behaviors.

Discussion: These results indicate that the different types of motivation were weakly related to frequency of injury-preventive behaviors when accounting for injury history and injury status. Future research on the impact of injury history and injury status for motivation and injury-preventive behaviors is warranted.

Poster presentation
Topics: Cognition

The influence of skill level on cognitive performance and soccer shooting accuracy in a dual-task situation

Sabine Schaefer, Jan Stoll, Felix Decker, Tom Weirig
Saarland University, Germany

Executive control may influence the performance of soccer players (Beavan, Chin et al., 2020a, Beavan, Spielmann et al., 2020, Huijgen et al., 2015).

We argue that complex cognitive-motor dual-task situations may be used to reveal interindividual differences in executive control tasks. For the current study, participants performed a spatial working memory task, N-back, by shooting at one out of 10 segments of a soccer goal. Cognitive load was increased by asking participants to shoot at the target that was illuminated earlier in the sequence, instead of the current target. Task- difficulties ranged from 0-back (single-task shooting) to 3-back, and N-back performances were also measured by pointing at the target location instead of shooting (single-task). Based on a power analysis, participants were 19 male medium-level soccer players ("Verbandsliga", tier six in the German system) and 19 male medium- to high-level teenage players (U17 Junioren). We expected younger players to suffer more from the dual-task manipulation.

In N-back, both groups showed pronounced performance decrements when shooting instead of pointing at the target locations. Shooting accuracies for the correct N-back location also showed strong decrements. However, when analyzing the shooting accuracy to the target location that a participant aimed at, there was no performance decrement from 0-back to 3-back in either group. This indicates that medium level soccer players continue to successfully perform overlearned motor skills on the soccer field, even under high cognitive load. However, the accuracy of strategic decisions seems to suffer in challenging situations.

Poster presentation
Topics: Youth

Assessment of the status quo and challenges on sleep in German youth competitive swimmers

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Adequate sleep is of great importance for athletes' performance, well-being and health (Walsh et al., 2021). Daily routines of youth athletes are determined by training and academic demands which potentially interfere with sleep (Riederer, 2020). This study aimed to investigate the status quo of sleep in 16 (14.88 ± 1.02 years, female = 62%) German youth competitive swimmers during normal training conditions and during training camp (TC). Data were collected pre and post a 14-day TC (i.e., different vs. comparable sleeping conditions). Online screenings included German versions of the Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989), the Epworth Sleepiness Scale (ESS; Johns, 1991) and the Athlete Sleep Behavior Questionnaire (ASBQ; Driller et al., 2018). The PSQI global score pre-TC (5.67 ± 1.66) was slightly higher than post-TC (4.78 ± 1.92). The mean ESS score pre-TC (9.77 ± 2.55) exceeded the post-TC score (8.54 ± 2.57). ASBQ scores amounted to 39.46 ± 5.55 pre-TC and 39 ± 4.22 post-TC. Single ASBQ items descriptively showed pre to post TC differences, e.g. concerning sleep environments, which could indicate need for action. Paired t-tests indicated no significant differences, which was anticipated since there was no intervention. The overall sleep quality and sleep behavior can be interpreted between ‘good’ and ’poor’, the daytime sleepiness was ‘higher normal’. This study could serve as a starting point and reference value for future studies on sleep hygiene interventions addressing the optimization of sleep and sleep behavior in youth competitive swimmers.

Poster presentation
Topics: Motivation

Motivational Climate Correlates in Sport: A Meta-Analysis

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The Achievement Goal Theory (AGT; Elliot, 1999; Nicholls, 1984) literature in sport has continued to grow over the last four decades and has improved our understanding of how task and ego goals relate to adaptive or maladaptive affective, behavioral, and cognitive outcomes. Within AGT, the motivational climate refers to perceptions of the social situation as created by significant others (e.g., coaches, peers, and parents). To date, two quantitative and three qualitative studies have synthesized the achievement goal literature. However, the broad literature base is unclear on which variables are most influential to achievement outcomes. Therefore, a comprehensive Systematic Review and Meta-Analysis was conducted to examine the motivational climate correlates in sport contexts. The study methodology employed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The literature search process used key word combinations from eight databases to identify, locate, and screen the relevant literature for over 300 studies at full paper stage. Inclusion criteria for the study were: 1) research conducted in a sports context on athletes; 2) studies used an established psychometric measure of motivational climate; 3) studies reported relevant statistics to compute an effect size, and; 4) studies were conducted after 1984 in the English or Spanish language. Distiller SR was used for the screening and reporting process and Comprehensive Meta-Analysis software was used to complete the analyses. Results outline the relationships between specific variables and Mastery and Performance Climates, as well as moderating variables for each climate. Recommendations for future research are provided.

Poster presentation
Topics: Professional development and mentoring

Modern Leadership, Welfare and Psychological Capital for High Performance Coaches –Development Program #PEAK21

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Sport Institute of Finland, Finland

According to Research Institute for Olympic Sports (Blomqvist et al., 2019), high performance coaching is described to be constant, interpersonal work under pressure in hectic environment. Therefore, there is a need for individual development of the coaching competence of high-performance coaches. Recently, numerous scholars (Milistedt et al., 2018; Rodrigues, & Brasil, 2021) pointed out key design principles for organizing an education process for high-performance coaches, which include semi-structured, idiosyncratic, and learner-centered methods.

#Peak21 was constructed in cooperation with the Finnish Ice Hockey Association (FIHA) national team coaches. The leading theme of the coach development process was based on the FIHA's needs for the development of expertise regarding modern leadership in order to ensure the efficient team action. Psychological Capital (Hope, Efficacy, Resilience, Optimism) (Luthans et al., 2007) was selected to be the leading theme. Overall, the program was developed to be an ice hockey season-long education programme for head coaches and managers (n=10) from FIHA. The process included eight sessions that consisted of four group and four individual meetings. #Peak21 aimed at enhancing the Psychological Capital, communication, presence, and attendees' own personal learning goals. The mentoring style was Solution-Focused (de Shazer, 1985).

According to the pilot findings, the participants have experienced a possibility to share tacit knowledge and learn from the experiences of others. The process has also provided bringing up for difficult issues as well as exploring them together in a safe environment. As a result, #Peak21 program will be further developed and expanded to other sports.

Poster presentation
Topics: Personality

Validation of a Chinese Brief Self-Control Scale in combat sport athletes

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The Brief Self-Control Scale (BSCS) (Tangney et al., 2004) is used to investigate trait self-control in sports, but its dimensions are controversial. The aim of the study was to examine the factorial structure and test the validity of a Chinese version of the BSCS. Therefore, Chinese combat sport athletes (N=210, 115 female) filled out Chinese versions of the 13 item BSCS (Li et al., 2018) and of the 10 item Rosenberg Scale (Wang et al., 2017), measuring self-esteem. Athletes' mean age was 20.39 years (SD = 3.83) and they competed at the international master-level (n=5), national first-level (48), national second-level (69) and national third-level (88). A Confirmatory factor analysis (CFA) tested the two-factor model (self-discipline and impulse control) by Ferrari et al. (2009), correlations and Cronbach's α coefficient were computed. CFA supported the 2-factor solution ($\chi 2/df=1.905$, CFI = .907, TLI = .875, GFI = .927, RMSEA = .066, SRMR = .065). Standardized factor loadings ranged between .345 and .698. Self-discipline and impulse control scales showed high Cronbach's α (r=.80, r=.60), and were positively correlated with self-esteem. A one-way ANOVA found no significant differences in self-control between the levels of competition. The findings provided further evidence for the two dimensions of the BSCS and supported previous evidence of a relation between self-control and self-esteem. The BSCS thus appears to be suitable for investigating the effects of combat sports on attitudinal self-control, an area of research neglected so far.

Poster presentation
Topics: Talent identification/ development

An investigation into the stress process of female national level swimmers.

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Within swimming, athletes are expected to produce their best performances at the end of season 'target competition' i.e. Nationals. This requires swimmers to improve their times between qualifying trials and target competition. Monitoring data suggests that a large percentage of young female swimmers in Britain have been unable to meet this expectation. Participating in sport can be a stressful experience (Neil, Hanton, Mellalieu, & Fletcher, 2011) and young athletes have the added stress of education (Granz, Schnell, Mayer, & Thiel, 2019). Well-developed coping strategies are essential for young athletes to overcome negative stress effects and maximise their performance (Haney & Long, 1995). Therefore, the purpose of this study was to understand and evaluate young female swimmers' perceptions of stress and their related coping strategies at various time-points across the swimming season. Sixteen female national level swimmers (Mage = 18.38, SD = 2.58) participated in a single semi-structured retrospective interview. Swimmers were asked to reflect upon three different time points during the previous season. Data was analysed through thematic analysis. Four higher-order themes emerged. Participants reported encountering numerous stressors, particularly relating to exams, pressure on themselves, competing demands, and swimming performance. Furthermore, participants appeared to demonstrate perfectionistic tendencies; signaling a need for future research to investigate the role that perfectionism plays in swimming. Participants' paramount coping strategies were social support and time management. The need for social support increased when stress levels increased. Overall, results indicate coach and athlete education programmes focused on increasing awareness of performance lifestyle skills would be beneficial.

Poster presentation
Topics: Youth

An exploratory investigation on the relationships among kids, parents and coaches during two international tennis tournaments U12

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The present study, approved by the "Roberto Lombardi" Institute of the Italian Tennis Federation, was aimed to promote an exploratory investigation on the relationships that exist among kids, parents, coaches during two international tournaments U12: the Nation Cup Lampo Trophy and the Tennis Europe Nations Challenge by Head, which took place in Brescia (Italy) in the summer of 2021. It is known how attitudes of parents and coaches can affect the well-being in the kids' tennis activity. Although this topic is very contemporary, it has been little explored from a scientific point of view. In the Italian context only one study has been conducted that found some dissonant and dysfunctional behaviors for the kids' growth. The study involved 14 coaches, 12 parents and 14 kids from 12 countries around the world. A self-report questionnaire was used to assess the attitude of coaches and parents towards kids. To evaluate the relationships among kids, parents and coaches, some observations were carried out before, during and after the match, using a checklists created ad hoc. Results showed differences between coaches and parents in the areas of support, values, roles and advices. The coaches stated that an ideal parent should have emotional intelligence. For parents the most important features were the ability to manage the emotions, and make their son/daughter independent. This last aspect was also confirmed by the kids. The results of this project have given rise to further initiatives aimed at helping parents to better understand and manage their role and the sporting context.

Poster presentation
Topics: Neuroscience

Effects of transcranial direct current stimulation on the athletes' performance in countermovement jump

Iasmin Oliveira de Sousa Viana[1], Alicia Drumond Carvalho Rojas[1], Amanda Isadora Santos Ribeiro[1], Flávia Adriana de Paula[1], Márcio Vidigal Miranda Júnior[1], Maicon Rodrigues Albuquerque[1,2]

[1]Neurosciences of Physical Activity and Sports Research Group, Universidade Federal de Minas Gerais - UFMG – Brazil; [2]This study was financed by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Pró-Reitoria de Pesquisa da Universidade Federal de Minas Gerais.

Transcranial Direct Current Stimulation (tDCS) is a non-invasive brain stimulation technique that has been considered a potential approach to enhance sports performance. Due to the large use of the countermovement jump (CMJ) to assess neuromuscular status in different kinds of sports, previous studies investigated the effects of anodal tDCS (a-tDCS) on the CMJ. However, there are heterogeneity and divergent results in the available studies. Therefore, further well-designed investigations are necessary to investigate it better. Thus, a preliminary investigation can be beneficial to generate data for sample size calculations, retention rates (RR), experimental safety, and others. This study aimed to conduct a preliminary investigation of the effects of a-tDCS on the CMJ performance in athletes. Eight well-trained Taekwondo athletes performed CMJ before and after active or sham a-tDCS in random order on the CZ and cathodal on the Fp1. Also, they filled a scale of the adverse effects (AE) associated with tDCS. In summary, our results can be applied to different kinds of sports that use CMJ frequently and did not show significant differences in CMJ performance between both conditions. Moreover, we found a RR of 72% that was affected by the impedance. In addition, the AE did not indicate any unsafe procedures and indicate an effective blinded. Furthermore, the estimated sample size was 403 athletes. In conclusion, for well-trained athletes, our preliminary investigation indicated that very large sample size is required, the protocol used was safe, and the participants were blinded by the conditions.

Poster presentation
Topics: Clinical issues in sport and physical activity

The Relationship between Mental Toughness and Depressive Symptoms: Mediating Effects of Brooding and Reflective Rumination

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Recent research has suggested that higher mental toughness predicts lower depressive symptoms in athletes (Gerber et al., 2018). However, less is known about the underlying psychological variables that could potentially explain this relationship. In this regard, rumination may be a relevant concept to be explored as it has been identified as an important underlying cognitive process in depression (DeJong et al., 2019). The aim of this cross-sectional study was to test whether brooding and/or reflective rumination mediated the relationship between mental toughness (consisting of sub-scales confidence/constancy/control) and depressive symptoms. Participants were 113 Icelandic elite/national team athletes (70.8% women, 18-37 years old). Assessment was conducted using the Sports Mental Toughness Questionnaire (SMTQ), Patient Health Questionnaire (PHQ-9) and Ruminative Response Scale (RRS). Both mental toughness total scale and sub-scales were negatively correlated with depressive symptoms (direct effects). A negative indirect effect via brooding rumination was observed for the relationship between the sub-scale control and depressive symptoms. However, a positive indirect effect via reflective rumination was observed between confidence and depressive symptoms. Neither brooding or reflective rumination mediated the relationship between constancy and depressive symptoms. The results indicated that mental toughness dimensions may differ in their relationship with depressive symptoms. Mental toughness interventions aimed at promoting mental health in athletes may, hence, benefit from targeting specific dimensions of mental toughness. Further research is, however, needed to better understand the type of conditions under which, if any, dimensions of mental toughness such as confidence may in fact contribute to less beneficial mental health outcomes.

Poster presentation
Topics: Youth

Finding the Optimal Balance in Academics & Athletics During the Pre- & Post-Competition Periods of Youth Student-Athletes

Maile Virginia Sapp, **Edson Filho**
Boston University, United States of America

Background

Extant previous research suggests that the balance between an individual's recovery and stress states influence their performance and likelihood of experiencing burnout (Kellmann et al., 2018). However, these findings have been centralized in the realms of collegiate and professional athletics (Filho & Butterworth, 2020).

Aims

Accordingly, in the present study we examined youth student-athletes' levels of recovery-stress balance factors, anxiety, performance, and burnout experienced between the pre- and post-competition periods.

Methods

Fifteen high-school athletes (4 males, 11 females; Mean Age = 15 years; SD = 1.5) completed the Recovery-Stress Questionnaire during their pre-competition and post-competition periods as well as the: Generalized Anxiety Disorder-7, Athletic Burnout Questionnaire, Maslach Burnout Inventory- Student Survey, and both objective (e.g., GPA, athlete rankings, play time) and subjective (e.g., perceived performances) academic and athletic performance metrics.

Results

Mann-Whitney non-parametric tests revealed that student-athletes reported higher levels of "disturbed breaks" during the pre-competition period. No other significant effects were observed.

Conclusions

These findings suggest that student-athletes and coaches should be educated about the importance of different recovery strategies (e.g., physical recovery and social recovery) during the pre-competition period, as appropriate recovery during this period might prevent burnout later in the season.

Poster presentation
Topics: Sports Psychology and COVID-19 Pandemics

Sleep behavior and training load in German adolescent elite basketball players during COVID-19 pandemic development

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The COVID-19 pandemic represents a special circumstance which caused a lockdown in 2020 including restrictions in private life, school operation, and organized sports. Especially adolescent athletes, whose daily routine is usually determined by school and practice schedules (Riederer, 2020), experienced a sudden lifestyle change. Since athlete sleep is a sensitive issue (Walsh et al., 2021), this study aimed to examine sleep and training patterns of German elite adolescent basketball players (N = 115, 15.70 ± 1.22 years, female = 32.17%) during different phases of the 2021 COVID-19 lockdown. Sleep and training behavior were documented via daily online monitoring over ten days at three phases in February, April, and June 2021. The phases were chosen following stepwise adjustments of the governmental policies.

Linear mixed models were implemented to assess the mean differences over time. The results revealed that sleep duration and time in bed decreased significantly between phase 1 (prohibition of organized sports) and phase 3 (normal training conditions). However, sleep efficiency increased between the first and the third phase. The athletes showed no change in training duration over time, but in training intensity, which was higher in the third phase.

This study represents a comprehensive overview of the lockdown-related return to practice process, which has been a unique situation. The results show that athletes were able to compensate training load with alternative training protocols. Although athletes slept less under normal conditions, they reported a better sleep quality. These findings may contain meaningful evidence to appraise how athletes deal with pandemic associated stressors.

Poster presentation
Topics: Mental skills training

Mindfulness training improved the sense of control, but not putting performance and EEG indicators

Eric Hung, Yu-kai Chang, Tsung-Min Hung
National Taiwan Normal University, Taiwan

Past research has found that mindfulness training based on the Mindfulness-Acceptance-Commitment (MAC) approach can not only improve athletic performance, but also improve subjective awareness and control through observation of performance, interviews, and questionnaires. Although research suggests that increased awareness and control can improve awareness, attention, and actual motor performance. However, the cortical mechanisms underlying this mental skill training are still unclear. Some research has suggested that several EEG parameters, such as frontal midline theta (Fmθ), may serve as cortical signature for optimal performance. Specifically, the reducing of Fmθpower has been associated with less conscious control, which is related to the tenet of mindfulness training – acceptance, without changing it. In view of the above, the hypothesis was golfers' performance would be improved and Fmθpower would be decreased after 8 mindfulness sessions. Twelve skilled golfers were assigned to either an experimental (N = 7, mean age = 41.75 years, mean handicap = 12) group or a passive control group (N = 5, mean age = 28.8 years, mean handicap = 6). Participants performed 60 putts while EEG were recorded before and after the mindfulness intervention. The results showed that despite the experimental group indicated an improvement in their sense of control and aware ability during the post-training feedback, there were no differences in putting performance and Fmθpower between two groups. Possible reasons are that the sample size is rather small and there is too much heterogeneity among participants.

Poster presentation
Topics: Decision making and judgement

Comparison of situational factors and psychological characteristics in the context of decisions of basketball coaches.

Iwona Janas[1], Małgorzata Siekańska[2], Joanna Basiaga-Pasternak[2]
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The research in sport decision-making most often concerns emotions (Tenenbaum et al., 2009), cognition or the situational context (Rohrbaugh and Shanteau, 1999).

The aim of the study was: (1) to demonstrate the relationship between situational factors, psychological characteristics and selected decisions made by basketball coaches during a match;

(2) to investigate which factors (individual or situational) are more influential in decision making.

The participants were 47 coaches of Polish senior women's basketball with at least 3 years of professional experience.

In the study the following tools were administered: Directiveness Scale, D-15 (Brzozowski, 1997), the Generalized Self-Efficacy Scale (Juczyński, 2000), and I-E Scale at Work (Gliszczyńska, 1990).

Moreover, an observation sheet was used to examine number and circumstances of coach's decisions about time-outs and substitution of the players. It was analyzed whether factors such as the score, team efficiency or the coach's receipt of a technical offense were related to these decisions in a particular match. These results were compared with coaches' directiveness, self-efficacy and locus of control.

Results showed the strongest relationship between decisions about time-outs and the internal locus of control ($r = .488$; $p = .001$) and self-efficacy ($r = .471$; $p = .001$). There was no significant correlation between decisions and situational factors such as: the match score and the team efficiency (i.e. total team point percentage).

The results showed that the examined psychological characteristics are related to the decisions made by basketball coaches and may determine the final phase of the decision-making process.

Poster presentation
Topics: Elite sports and expertise

Analysis of the Relationship Between the Goal Orientation and the Factors Hindering the Performance of Elite Athletes

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Outstanding athletic performance is unthinkable without strong goal motivation, but at the same time, performance can be affected by a variety of challenges and distractions during an athlete's career.

This study aimed to understand the relationship between the type of goal orientation and factors that interfere with sports performance in competition and training processes.

This study involved 43 athletes with successful performance experience in international competitions in 12 various summer sports. The Perception of Success Questionnaire (Roberts, Treasure & Balagué, 1998) and Sport Interference Checklist (Donohue, Silver, et al., 2007) for athletes’ self-assessment was used.

In the study, elite athletes had higher task goal orientation than ego goal orientation, and problems that hindered athletes' sports performance were more common during competitions than in training. The results showed a correlation between performance problems in competitions and task goal orientation. And athletes' performance in competitions was mainly interfered by dysfunctional thoughts and stress, lack of motivation, and pain intolerance.

These issues should also be comprehensively addressed in the professional training programs for psychologists working with competing athletes.

Poster presentation
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Development of a virtual reality program against doping

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Recent evidence suggested that young athletes are not interested in participating in standard anti-doping education (Skoufa et al., 2022). This calls for a shift in anti-doping education from traditional teaching approaches to innovative and technology based educational material. In this respect, TARGET, a serious game against doping has been developed. Furthermore, European-funded project VIRAL aims to develop a virtual reality program against doping. This presentation aims to describe the steps in developing the didactical scenarios of such a virtual reality program. The themes of the program was decided based on a review of existing literature on the determinants of doping use and existing technology-based interventions in the context of doping (Bingham et al., 2021). Based on this review four themes emerged as representatives of the experiences and dilemmas athletes and exercisers face with respect to doping. For each theme a game script was designed and contextualized in different perspectives related to the lived experiences of people involved in sports and anti-doping. The scenarios had a nested structure with one scenario addressing simultaneously different determinants of the decision to dope, such as attitudes to doping, peer pressure, and resistance to temptation. The prototype of the virtual reality program was developed with an emphasis on creating immersion, realism, and identification of the user with the situation. The technical validation and expert evaluation of the virtual reality program supported the usability of the program. The abovementioned procedure resulted in the development of a user-friendly and usable virtual reality program against doping.

Poster presentation
Topics: Perception & attention

No Evidence of Unilateral Dynamic Handgrip on Reaction Time Performance

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The evidence from EEG studies shows that upper limb muscle contractions lead to changes in brain oscillations associated with changes in mental states and behavioral outcomes (Harmon-Jones, 2006). Much research has been conducted on whether muscle contractions of a particular hand have a greater effect on a perceptual-motor ability, as a trigger to facilitate cortical processes (a mediator) for skilled motor performance. While previous studies have shown that left- (vs. right-) hand contractions can lead to greater alpha activation (Mirifar et al., 2020), we hypothesized that left dynamic handgrip (LDH) impacts motor performance, reflected by simple reaction time (SRT) and choice RT (CRT). As alpha activation might influence perception and the underlying internal motor-cognitive processes–notably attentive sensory-motor mapping and response selection–in response time tasks. We recruited 64 right-handers, for a within/between-subjects experiment consisting of performance measurements in SRT and CRT tasks after the intervention (either right or left dynamic handgrip approximately twice a second for 30 seconds for each hand) or assignment to paired passive control groups. LDH affected neither SRT [$F(1, 30) = 0.01$, $p = .91$, $\eta < .001$] nor CRT [$F(1, 30) < 0.001$, $p = .97$, $\eta < .001$]. Further, we did not find LDH to improve response accuracy in RT tasks. The findings indicate that the effects of dynamic handgrip are smaller on behavioral outcomes such as RTs than what can be inferred from published studies assessing [gross motor/other] behavior/action. More research is needed to establish the effect of dynamic handgrip on optimizing performance.

Poster presentation
Topics: Elite sports and expertise

An Exploration of the Role of Character in the Identification of Talent Across Tier One Rugby Nations

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Character is a complex concept which has been discussed by scholars for millennia. Whilst 'character' is often discussed in sport and cited as a key factor in talent identification and development, supporting research has been limited. Further, there is considerable ambiguity around how the concept of character is understood and applied within sport. For example, since its conception, rugby union's ability to build character has been widely accepted. Most notably, World Rugby has coined the phrase 'Building character since 1886'. However, little is known about stakeholders' (e.g., coaches, scouts, recruitment and support staff) conceptualizations of character and how it is applied when selecting players within talent identification. To examine the understanding of character within rugby union and identify the key aspects relevant to the talent identification process. A multiple case study design was used and interviews were conducted with nine rugby union talent identification experts from eight of the ten tier-one nations. Thematic analysis was used to analyse the data. No consistent understanding of character existed within the sample, however, themes suggest a neo-Aristotelian approach may provide a useful framework. Performance character virtues were valued most and included: industriousness, resilience, and perseverance. Moral character was second most valued by participants including; self-regulation, self-awareness, and honesty. Civic and intellectual aspects of character were mentioned but not as frequently. Given the applied importance placed on character by senior figures within rugby, more needs to be done to clarify the concept and understand the implications of character on development through to performance.

Poster presentation
Topics: Well-being and quality of life

A two-part study exploring the use of virtual reality as a coping aid for coaches and athletes

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Stressors for coaches and athletes occur during all stages of training and competition (Gustafsson et al., 2017) and sources can be multitudinous (e.g., teammates, unfamiliar environments; Crocker et al, 2017). Lazarus and Folkman (1984) theorised that coping effectiveness can be optimised by increasing an individual's ability to appraise the controllability of stressors and match personally appropriate coping methods. Coping is fundamental to preventing negative outcomes in sport (e.g., underperformance, burnout), and it has been suggested that virtual reality (VR) technology might help develop coping skills (Bird, 2020). This two-part study explored coaches' and athletes' experiences of coping, and whether VR could help improve their ability to cope. In part 1, three focus groups were conducted with coaches (n = 12) from a range of team and individual sports. Content analysis revealed numerous coping strategies (e.g., rumination, venting) employed to manage stressors (e.g., coach/parent conflict, managing athlete expectations). Specific recommendations were offered to improve coping education using VR (e.g., conflict management), and some coaches felt that the technology would be effective for supporting athletes to cope with competition stress. In part 2, three focus groups were conducted to explore the perceptions of competitive athletes (n = 10) from a variety of team and individual sports. Findings highlighted that VR could help create immersive competition environments, replicate stressful game situations, and help athletes to cope with isolation during injury. This study offers preliminary insight into how VR could enhance coping in sport and offers several practical applications of such technology.

Poster presentation
Topics: Physical activity

A review of methodological approaches to studying young people's physical activity and mental health across the lifespan

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Physical activity has been recognised as an accessible, cost-effective way to support mental health by reducing symptoms of common mental disorders and improving wellbeing (Dishman et al., 2021). Alas, a paucity of research exists studying the lagged effects of engagement in physical activity in youth for mental health outcomes across the lifespan. The existing research is heterogeneous, alluding to methodological inconsistencies across studies. A systematic review was conducted with two main aims; (1) synthesise the evidence for a longitudinal association between engaging in physical activity in youth, and mental health outcomes across the lifespan; and (2) contribute to the development of an evidence-based framework for studying physical activity as a predictor of future mental health outcomes. Included studies had prospective, quantitative designs with physical activity measured aged 5-17 years and follow-up measures of depression, anxiety, and/or well-being recorded at least 12-months later. A total of 92 studies were included in the analysis. Evidence for a beneficial effect of youth physical activity on later depressive symptoms was most consistent, although studies availed of 17 different artifacts of measurement. The existence of a similar association with anxiety or wellbeing remains unclear. Over-reliance on observational designs (93%) and non-validated physical activity measures (54%) gave rise to low quality evidence. Methods of physical activity measurement should be adapted to facilitate sub-group categorisation by way of adherence to World Health Organisation guidelines. Consensus must be reached on mental health measures used. Findings may inform longitudinal research methodologies in exercise psychology with future directions also discussed.

Poster presentation
Topics: Well-being and quality of life

Quality of life during Covid-19 pandemic

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The COVID-19 pandemic changed severely the routine of people around the world, producing a potential risk in the quality of life (Nobari et al., 2021). The objective of the present study was to investigate the quality of life during the COVID-19 pandemic. Participants (N=206, M=27.5±9,34 years old) answered the quality-of-life questionnaire short version (WHOQOL-bref) adapted to the Google Forms platform. The results showed that women presented lower quality of life in the psychological domain than men (p=0.002, d=-0.506). Non-white participants had lower scores in the environment domain (p=0.021, d=0.329) and social relationships (p=0.089, d=0.242) than white participants. Participants of different educational levels differed statistically in the environment domain (p=0.05, η_p^2=0.029), Tukey's post hoc test showed that postgraduate participants tended to have higher scores than high school (p=0.061) and undergraduates (p=0.72) participants. Marital status also differed significantly (p=0.002, η_p^2=0.061) in the psychological domain, married achieving higher score than singles (p=0.02). Finally, participants more physically active (≥ 300 minutes/week) had higher scores in the physical domain (p<0.001, d=-0.798), psychological (p<0.001, d=-0.614), environment (p=0.034, d=-0.315) and trend in social relationships (p=0.07, d =-0.268) than participants less active. Our findings are in line with the current literature showing that women and people non-white are the main risk group. Social support and physical activity are import protective factors in the COVID 19 pandemic scenario.

Poster presentation
Topics: Performance enhancement (doping, neuro-enhancement etc.)

Perfectionism, Exercise Dependence and Supplements Use: An Investigation among Italian University Athletes

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Supplementation is considered a risk factor that may co-occur with doping use (Lucidi et al., 2008). Empirical evidence suggests that perfectionism may explain individual differences contributing to substance use in sport contexts (Madigan et al., 2016). Furthermore, since perfectionist athletes might be vulnerable to increased exercise dependence (Hill et al., 2015), the present study hypothesizes that exercise dependence might contribute to the consumption of supplements by perfectionist athletes. The current study examines the relations of the two perfectionism dimensions of strivings (PS) and concerns (PC) with athletes' supplement use via the intervening mediating relations with exercise dependence. Italian university athletes (N=256, 21±2 years, 62.9% male) completed an online survey measuring PS, PC, exercise dependence and supplementation. The hypothesized relations were tested applying a variance-based structural modeling equation-partial least square (VB-SEM). VB-SEM analyses showed a good fit with the data (GoF=.37; APC=.18, p<.001; ARS=.19, p<.001; AFVIF=1.28). PS and PC were significantly and positively related to exercise dependence (β=.26 and β=.46). In turn, exercise dependence significantly and positively influenced supplementation (β=.14). Although no direct effects emerged for perfectionistic dimensions, PS and PC had positive and significant indirect effects via exercise dependence on supplementation (β=.04 and β=.06). This investigation is novel in linking exercise dependence and supplementation, and its findings suggest that the key dimensions of perfectionism influence supplementation through their intervening effects on university athletes' exercise dependence. The findings raise the possibility that anti-doping educational programs might benefit from considering perfectionism among the key factors affecting athletes' decisions about substances.

Poster presentation
Topics: Physical activity

Impact factors on global symptom severity: Study Protocol for a cross-sectional study among outpatients with mental disorders

Anna Katharina Frei[1], Thomas Studnitz[1], Britta Seiffer[1], Stefan Peters[2], Nadja El-Kurd[3], Lena Zwanzleitner[4], Leonie Sundmacher[5], Ander Ramos-Murguialday[6], Martin Hautzinger[7], Thomas Ehring[8], Gorden Sudeck[1], Sebastian Wolf[1]

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Zeibig et al. (2021) demonstrated that exercise might be a transdiagnostic treatment approach, confirming the efficacy of a group exercise intervention among outpatients suffering from depressive disorders, anxiety disorders, insomnia, and ADHD. Indeed, there is evidence that anxious and depressive patients or patients suffering from insomnia or PTSD are less engaged in physical activity (PA) and, at the same time, show more sedentary behavior (SB; Allen et al., 2019; Schuch et al., 2017; van den Berk-Clark et al., 2018; Yang et al., 2016). However, little is known about the relative impact of PA/SB on global symptom severity (GSS) in a transdiagnostic sample including the aforementioned disorders compared to other known impact factors. Therefore, this cross-sectional study aims to evaluate the impact of self-reported PA/SB in comparison to the impact of sociodemographic data as age, gender, socioeconomic status, place of residence, employment, relationship, fear of COVID-19 as well as self-reported health related quality of life and emotional regulation on GSS among 375 German outpatients with heterogenous mental disorders (i.e., depressive disorders, insomnia, panic disorder, agoraphobia and PTSD). The outpatients are recruited via e.g., psychotherapists, health insurance companies and social media and are diagnosed by trained psychologists using the SCID-5-CV (Beesdo-Baum et al., 2019). Primary outcome will be GSS measured by the Global Severity Index of the self-reported questionnaire SCL-90-R (Derogatis, 1994). The data will be analyzed using multiple regression. The results could provide important insights regarding the relative impact of PA/SB within clinical samples suffering from heterogenous disorders.

Poster presentation
Topics: Health

Get active! Tracking and enhancing physical activity in people with and without type-2 diabetes - the ActiVAtE_Prevention project

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Physical activity (PA) is associated with numerous health benefits such as reduced blood pressure, weight loss (Piercy & Troiano, 2018) as well as a lower risk for obesity or severe conditions, including but not limited to coronary heart disease and type 2 diabetes (T2D) (Cleven, Krell-Roesch, Nigg & Woll, 2020). In order to increase PA, mobile health interventions have proven to be effective tools (Carroll, Moorhead, Bond, LeBlanc, Petrella, & Fiscella, 2017). “ActiVAtE_Prevention“, funded by the Ministry for Science and Culture of Lower Saxony, is a research project that aims to objectively measure as well as enhance PA in people with and without T2D by tracking their activity with wearable devices and providing them with a specially developed smartphone app which helps to set and monitor individual activity goals. N=200 subjects with and without T2D will be included in a randomized controlled trial with a 6-months intervention and a 3-months follow-up period until fall 2022. Subjects are assigned to one of two intervention groups or the control group. Every three months, we assess subjects‘ medical parameters such as BMI, blood glucose level (HbA1c) and blood pressure, and psychological parameters including but not limited to motivation and volition to engage in PA, affect towards PA, and life satisfaction. PA is recorded continuously by the smartwatch „Bangle.js“ (intervention groups) and the BSA-F questionnaire (Fuchs, Klaperski, Gerber & Seelig, 2015). First results on PA, medical and psychological parameters will be available in spring 2022 and presented and discussed at the FEPSAC congress 2022.

Poster presentation
Topics: Cognition

Diagnosing executive functions under a soccer-specific psychophysiological stress condition

Simon Knöbel[1], Lisa Musculus[2], Robin Schrader[3], Andy Borchert[3], Nils Gatzmaga[3], Anne-Marie Elbe[1], Franziska Lautenbach[4]
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While researchers and practitioners attribute an important role to executive functions for soccer performance, the usefulness and predictive value of related diagnostics remain unclear (Beavan et al., 2020). One crucial limitation that restricts the transfer of diagnostic results to actual game performance is the insufficient inclusion of competition-specific conditions in cognitive diagnostics (Lautenbach et al., 2016). Physiological and psychological stress experienced during a soccer match, which leads to mental and physical fatigue, might impair performance and so far is disregarded in soccer diagnostics (Smith et al., 2016; Walton et al., 2018). Thus, the aim of this study was to conduct cognitive diagnostics in a soccer-specific setting under a psychophysiological stress condition and thereby achieve increased ecological validity. A total of 92 (Mage = 15.17, SDage= 1.45) youth elite players performed validated tests of inhibition or cognitive flexibility with a soccer-related motor response (i.e., flanker task or number-letter task; Musculus, Lautenbach et al., submitted) in the SoccerBot360. After a pre-test in a neutral condition, players were randomly assigned to a control (moderate soccer-specific load) or a stress condition (Hoff Parcours for physical stress [Hoff et al., 2016] and competitive instructions as well as filming for psychological stress [Lautenbach et al., 2016]). Objective (i.e., cortisol, heart rate variability) and subjective stress measures (i.e., self-assessment manikin) were assessed six times (i.e., baseline, after warm-up, after cognitive task pre-test, after stress vs. control induction, after cognitive task post-test, after cool down). Data collection is completed, results and practical implications will be presented at the conference.

Poster presentation
Topics: Neuroscience

Meta-analytic maps of brain activity evoked by cognitive function diverge from resting state networks

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Spontaneous human brain activity is organized into resting state networks (RSN), complex patterns of synchronized activity that account for the majority of brain metabolism. The correspondence between these patterns and those elicited by task performance suggests that spontaneous brain activity originates from the stream of ongoing cognitive processing. Here we investigate a large number of meta-analytic activation maps obtained from Neurosynth (Yarkoni, 2011) to establish that task-rest similarity can be inflated by two potential sources of bias. Applying a hierarchical module detection algorithm to a network representation of activation map similarity, we showed that the correspondence between RSN and task-evoked activity tends to hold only for the largest spatial scales. Second, we established that this correspondence is biased by the inclusion of maps related to neuroanatomical terms (e.g. "parietal", "occipital", "cingulate", etc.). Our results challenge the cognitive origin of spontaneous brain activity, suggesting that anatomically-constrained homeostatic processes could also play an important role in the inception and shaping of human resting state activity fluctuations.

Poster presentation
Topics: Youth

The effects of parents' and their children's characteristics on parental stressors in sport

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Introductions: The roles and tasks of parents in sport are well researched but there have been only a Relatively few studies that mention effects influencing parents' stressors in their child's sports socialisation. The present study explored factors potentially influencing parental stressors in sport. Methods: A total of 1260 parents (Mage = 43.54, SD = 5.10) completed an online form including demographic questions, questions on their children's sports participation, and four self-report measures: the Parental Stressors Scale in Sport (PSSS, Kovács et al, 2021), the Parental Involvement in Sport Questionnaire (PISQ, Lee & McLean, 1997) the Competitive State Anxiety Inventory-2 (CSAI-2, Martens et al, 1990), and the Perceived Autonomy Support Scale for Exercise Settings (PASSES, Hagger et al, 2007). Possible predictors of the four assessed types of parental stressors were tested with linear regression models. Results: The significant predictors were the education level of parents, the child's current stage of sport participation (as defined by Côte & Hay, 2002) and his/her previous injury (or the lack thereof) ($R2=0,033$ $R2adj= 0,030$ $F(4,1236)=10,511$, $p<0,001$). Furthermore, the stressors perceived by parents were positively associated with trait anxiety, parental direct behaviour and parental pressure ($r = .13 - .55$), and negatively associated with self-confidence ($r = -.12 - -.42$). There were no significant differences between the groups based on the gender of parents and their children, controlling for their ages. Discussions: The obtained results expand the existing knowledge of the complexity of parents' importance in children's sports careers.

Poster presentation
Topics: Exercise and COVID-19 Pandemics

Adolescents' physical activity levels and well-being during the COVID-19 era

Nikolaos Digelidis, Alexandros Lazaridis, Ioannis Syrmpas, Charalampos Krommidas, Athanasios Papaioannou
University of Thessaly, Greece

The purpose of the study was to examine the effect of social distancing measures due to the COVID-19 pandemic on adolescents' physical activity (PA) levels and well-being. Participants were 438 adolescents (207 boys and 231 girls) and they fill out online questionnaires three times (December 2020, February 2021, and June 2021). Cantril's (1965) life satisfaction ladder and a short version of the Subjective vitality scale (Ryan & Frederick, 1997) were used to capture adolescents' well-being. Adolescents' PA was assessed through two items (Booth et al., 2001). Separate one-way repeated measures ANOVA's were conducted to examine possible differences in adolescents' moderate to vigorous physical activity (MVPA) levels and well-being (life-satisfaction and vitality). The findings indicated that adolescents reported significantly higher levels of well-being and MVPA ($p < .001$). During the third measure, adolescents could participate in PE lessons and structured or unstructured PA even though there were some limitations (i.e., a small number of participants in structured PA). While, the lowest levels of adolescents' well-being and MVPA were reported during the first measure ($p < .001$). During this period, more severe restriction measures were implemented (e.g., closure of schools, transportation was allowed only for certain reasons, PA outdoors was allowed individually or a group of two people and structured PA and mass gatherings were restricted). Restrictions on COVID-19 have been shown to adversely affect adolescents' PA and well-being. Planning future measures for preventing the spread of the virus, policymakers should not restrict the participation of adolescents in PA for the benefit of their well-being.

Poster presentation
Topics: Clinical issues in sport and physical activity

Stress, QOL and physical activity: Study protocol for cross-sectional differences between a transdiagnostic and a healthy sample

Thomas Studnitz[1], Anna Katharina Frei[1], Britta Seiffer[1], Eva Herzog[2], Stefan Peters[3], Nadja El-Kurd[4], Lena Zwanzleitner[5], Leonie Sundmacher[6], Ander Ramos-Murguialday[7], Martin Hautzinger[8], Gorden Sudeck[1], Thomas Ehring[2], Sebastian Wolf[1]

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Quality of life (QOL) is a multidimensional construct referring to a person's well-being. People suffering from increased levels of perceived stress show lower QOL (Silva et al., 2017). Chronic but high acute stress often leads to stress-related disorders (SRD) such as anxiety disorder, PTSD or depression (Smoller, 2016). Additionally, suffering from a mental disorder continues to lower QOL (Phyo et al., 2020). In healthy people stress is reduced by physical activity (PA), maintaining QOL through a moderation effect (Gerber & Fuchs, 2019). However, there is no evidence whether PA also moderates the influence of stress on QOL in a transdiagnostic sample of SRD patients. We aim to show more stress and less QOL in patients with SRD compared to healthy controls. Furthermore, the aim is to evaluate whether PA lowers the influence of stress on QOL by a moderation effect in people with SRD.

In a cross-sectional study, 375 subjects with at least one of the diagnoses of anxiety disorder, agoraphobia, PTSD, depression, or primary insomnia will be compared to a matched group of 375 subjects without these disorders. Subjects are aged between 18 and 65 and diagnosed by trained psychologists using structured clinical interviews (SCID-V CV). QOL, stress and PA will be evaluated using subjective measures (EQ-5D-5L, PSS, BSA-F). Group comparisons will be analyzed with t-tests; multiple linear regression will be applied to test the moderation of PA on stress and QOL.

The results will show whether PA also has a stress-buffering effect in a transdiagnostic sample with SRD.

Poster presentation
Topics: Coaching

Physical activity coaching at the workplace - a systematic review

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Introduction

Studies show that about 60 minutes of moderate physical activity (PA) per day compensates for continuous daily sitting at work (Ekelund et al., 2020). However, the workplace offers an ideal setting for health-promoting interventions (WHO & Burton, 2010) such as physical activity coaching as a person-centered intervention aimed at achieving sustainable behavior change (Wolever et al., 2013). Given a good evidence base of health coaching studies in general (e.g., Oliveira et al., 2017), this review aims to provide an overview of specific workplace PA coaching interventions.

Methods

The review was conducted with the following inclusion criteria: (1) longitudinal studies, (2) analysis of PA at work (subjective/objective), (3) inactive/sedentary employees, (4) PA coaching at workplace as intervention, (5) increasing PA at work.

Results

Of the 15 studies included, eight studies showed a significant increase in a measure of PA within group or against a control group. The study quality of the included studies showed a moderate to high risk of bias. There is a high variation of conceptualization as well as different communication channels, such as face-to-face only, telephone or electronic contact (via an app or messaging), or a combination of face-to-face/telephone and electronic.

Discussion

While some of the studies included show evidence on the effectiveness of workplace PA coaching, the overall results are inconsistent. This could be due to the high variation in coaching concepts. Therefore, there is still a need for more high-quality studies to be able to identify which coaching concepts demonstrate the most promising effects.

Poster presentation
Topics: Well-being and quality of life

Mental health during the COVID-19 pandemic compared to the years before – a cohort study on sports students

Jonas Lüdemann, Jens Kleinert
German Sport University Cologne, Germany

Within the student population, sports students represent a special cohort that struggles with specific academic and developmental challenges. Therefore, it is reasonable to assume that sports students are particularly affected by the COVID-19 pandemic in terms of their mental health. Therefore, this study examines whether the mental health of sports students changed during the COVID-19 pandemic compared to pre-COVID-19 pandemic data.

We compared 907 students before the COVID-19 pandemic to 1124 students during the COVID-19 pandemic (55.7% BA, 13.3% MA, and 29.4% PE students). Mental health was assessed with the PHQ-2 (risk for depression) and the WHO-5 (well-being). Both are screening instruments with acceptable sensitivity and specificity. To identify students at risk, a cut-off score of ≥ 3 (PHQ-2) or of ≤ 12 (WHO-5) was used.

Results show that risk for depression was significantly higher (M = 2.42, SD = 1.47 vs. M = 1.32, SD = 1.11) and well-being was significantly lower (M = 11.38, SD = 4.99 vs. M = 15.04, SD = 4.36) during COVID-19 compared with pre-pandemic. In addition, significantly more students were at high risk for depression (11.1% vs. 38.3%) or showed severely reduced well-being (24.6% vs. 57.3%) during COVID-19 compared with pre-pandemic.

The results are comparable to studies of other study programs. It remains to be examined to what extent this impairment also affects the further personality development of the students after the pandemic.

Poster presentation
Topics: Group dynamics

Intragroup conflict in sports - a scoping review

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Intragroup conflicts are a part of competitive sports groups (Holt et al., 2012; LaVoi, 2007). Thus, knowledge on intragroup conflict can help athletes, coaches and sport psychologists to improve performance and well-being in sports groups. In the literature, intragroup conflict is defined as the experience of incompatibilities or opposition between interdependent parties (Barki & Hartwick, 2004; Korsgaard et al., 2008). To date, there is no uniform understanding of intragroup conflict in sports (Paradis et al., 2014) and the research has been conducted rather unsystematically until now. The objective of this review is to provide an overview of the literature in order to identify potential opportunities for practice and research.

A systematic database search was conducted via multiple databases. Titles and abstracts of 6830 publications were screened against eligibility criteria.

Of these, 36 publications specifically address intragroup conflict in sports. Primary research (quantitative, qualitative, cross-sectional, longitudinal, case studies) took place in the different contexts of amateur, college, professional and youth sports. The papers indicate links between intragroup conflict and cohesion, communication, collective efficacy, performance and team development. Intragroup conflict in sports can have both positive and negative effects. Furthermore, instruments were developed to measure intragroup conflict in sports that may be used in future research.

The existing research on intragroup conflict in sports reflects the complexity of the topic itself. Future research is necessary to establish a consistent and systematic understanding of intragroup conflict in sports. This research will also strengthen the empirical basis for group dynamic work in the field.

Poster presentation
Topics: Perception & attention

Motor performance and visual perception – Two replication studies

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Studies have shown effects of motor performance on size perception of objects (Witt et al., 2008; Witt & Proffitt, 2005). Following a call for joint replication of previous studies in this area of embodied perception (Cañal-Bruland & van der Kamp, 2015), in two studies we aimed at replicating the above-mentioned studies in baseball and golf, with the recommended > 2.5 times the original sample size. We hypothesized that a good day's performance would be associated with perceiving the baseball/golf hole to be larger. Post competition, 134 baseball players (age: mean = 25.16, SD = 6.51) were asked to estimate which of the eight circles presented on a poster, best corresponded to ball size. The results of the original study in baseball that successful players (better game batting average) perceive the ball as bigger compared to less successful players, were replicated, $r = .184$, $p = .037$. After a golf tournament, 157 players (age mean = 50.26, SD = 17.73) were asked to select one of nine circles presented on a poster, estimating correspondence to golf hole size. Better day performance (number of puts after 18 holes) was associated with the golf hole being perceived smaller, $r = .178$, $p = .037$, contradicting the original study. The difference between studies 1 and 2 could be the opposing flight or rolling direction of the ball, also changing visual perception. Overall, day performance seems to be associated with perception, however, our two studies only partly confirm the original studies, further contributing to the critical discussion of the embodied perception research field.

Poster presentation
Topics: Research methods (qualitative & quantitative)

Agreeing and performing on court - Methodological implications of Shared Mental Models in sport

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Shared Mental Models (SMMs) are knowledge structures held by team members to facilitate coordination and adapt the behavior at hand (e.g., Cannon-Bowers et al., 1993). While many researchers agree on the importance of such a team construct (e.g., Filho & Tenenbaum, 2020), empirical validation is scarce. So far, measurements mostly use questionnaires (e.g., Raue, Dreiskämper, Strauss, 2021; Filho et al., 2015) similar to many other team constructs (e.g., Ohlert & Zepp, 2020). However, questionnaires cannot account for all dynamic situations in sports and thus, calls for new, more dynamic measurement methods are made (McNeese et al., 2017). Video-based measurements narrow this gap (e.g., Raue, Dreiskämper, Strauss, 2020), however, virtual reality scenarios outperform computer screen tasks in unkown situations (Pagé et al., 2019). Thus, virtual reality measurements are the future for SMMs, because they have several advantages. First, they allow for generating realistic sporting scenarios and heighten the ecological validity. Second, the same scenarios can be applied to a variety of players and increase power while controlling for situational differences. Third, the actual behavior can be measured and thereby testing the influence in situ. Fourth, in the controlled lab setting measurements can be combined with physiological and/or neurological measures as tested in a juggling paradigm (Filho et al., 2016). The aim of this contribution is discussing and calling for using virtual reality to increase the ecological validity of measurements on SMMs. Hereby, we refer to the VEDUM framework (Harenberg et al., 2021), which guides design decisions to conceptualize experiments on SMMs.

Poster presentation
Topics: Cognition

Theoretically, it's all about joy! – Does joy mediate or moderate the positive effect of physical exercise on executive functions?

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There is an ongoing debate whether acute physical exercise has a positive impact on executive functions (EF; Diamond, 2016; Hillman et al., 2019), potentially through the enhancement of functional connectivity in the brain (Moore et al., 2022). However, the latest meta-analysis revealed inconsistent results (Diamond & Ling, 2020).

We propose that these inconsistencies might be explained by psychological factors such as joy. We define joy in terms of the broaden- and build theory of positive emotions (Fredrickson, 2004) which posits that joy broadens the scopes of attention, cognition and action (for empirical evidence see Isen, 2000). During exercise, joy has been suggested to be crucial to improve EF (Diamond, 2016; Moreau & Conway, 2013; Pesce, 2012). For instance, on a neural level, exercise-induced increases in functional connectivity responsible for cognitive improvements were correlated with changes in positive affect (Schmitt et al., 2020). However, the mechanism behind the positive impact of joy in the exercise-EF relationship has not been theoretically specified yet. We aim to clarify the role of joy by theorizing whether joy moderates or mediates the positive effect of exercise on EFs.

Additionally, we present a study design formalized in a pre-registration allowing to test the moderation vs. mediation hypotheses. Thus, this study allows to extend current physiological explanations and specify them through an emotional embodied approach. Together, our theoretical and empirical work will add to the existing debate by providing insights into emotional mechanisms that might explain the inconsistent findings and show whether it's (really) all about joy.

Poster presentation
Topics: Health

An update of the KIDMED questionnaire in Children and Adolescents

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Aim: Globalization and social changes have modified the nutritional patterns of children and adolescents. As a consequence, Altavilla et al. (2019) proposed a modification of the KIDMED to measure adherence to the Mediterranean diet. However, they did not test the psychometric properties of this questionnaire. Therefore, this research aims to update the 2019 KIDMED questionnaire and test the psychometric properties in a group of Spanish children and adolescents.

Method: A study was conducted with children and adolescents in southwestern Spain (2021). The new version of the KIDMED measures adherence to the Mediterranean diet through 16 items, which 12 are positive and 4 are negative. Content validation involved consultation with nutritionists and experts to assess whether the questionnaire was clear and reliable regarding dietary patterns associated with the Mediterranean diet. The expert assessment provided content validity indices for the clarity and representativeness of the questionnaire. 419 students, who 208 (12.13±.90, 53.84% girls) were children and 211 (15.45±1.04, 57.81 % girls), responded to the KIDMED twice (one week apart), and an anecdotal record with the aim to verify reliability and validity. To examine the T-retest of these KIDMED items, a 2 x 2 (time x group) chi-square test was performed.

Results: Test-retest reliability and validity were assessed with 419 students. Significant test-retest kappa statistics values were found for all items ($p<.001$). Respecting validity, results show a moderate agreement for 10 questions (ranging between .21 and .47) among the items of the KIDMED and the 7-days dairy record. Furthermore, with regard to the question 3,4,5, and 6 the agreement was slight (ranging between .08 and .17), whereas the agreement for question 8 was poor.

Conclusion: The new version of the KIDMED was shown to be a valid and reliable instrument to measure adherence to the Mediterranean diet in children and adolescents.

Poster presentation
Topics: Cultural sport psychology

Coaches' cultural intelligence: How coaches rate themselves and what are their cultural training needs?

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Coaches and players are interacting with people from different cultures and backgrounds more than ever before, and whilst this cultural diversity can inspire creativity and drive innovation, it also poses some additional challenges (Borges et al., 2015). The ability to function effectively in different cultural contexts, called Cultural Intelligence (Earley & Ang, 2003), has never been more relevant for coaches. Participants were 209 football coaches (38.8±10.4 years) either with international experience (n=88) or without (n=121), and different levels of education and coaching certification. The independent variables were migration experience, education level and certification level. The dependent variables were cultural intelligence and cross-cultural training needs assessed through the survey. We used a One-Way ANOVA for comparisons across independent variables and deductive thematic analysis for open-ended questions. Coaches with international experience rated themselves with higher cultural intelligence than coaches with no international experience on its cognitive, motivational, and metacognitive aspects. Coaches with no international experience or with lower coaching qualifications also rated themselves with more training needs. Coaches showed divergent views on the need for cultural intelligence training, either seeing it as an opportunity for professional development or as unnecessary given the universal language of sport. The present research represents the first attempt, to our knowledge, to examine the football coaches' needs for cultural intelligence training. In this research, we found that there is a general need to further enhance the cross-cultural education of coaches to better prepare them for the cultural nuances of the modern world.

Poster presentation
Topics: Clinical issues in sport and physical activity

More than Body Appearance (MBA): A randomized controlled trial aimed to promote a positive body image in female dancers

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Objective: Dance might represents a risk factor for the development of body dissatisfaction and Body Image Disorders (BIDs), in particular among females (Dantas et al., 2018); in fact, performance success in dance is closely related to low body weight and thinness (Bratland-Sanda & Sundgot-Borgen, 2013). The aim of the current study was to test the efficacy of an online psychological intervention (More Than Body Appearance, MBA) focused on body functionality in promoting a positive body image in female dancers.

Method: Thirty-seven female dancers without BIDs were randomized into two groups: experimental group (n = 20) and waiting-list control group (n = 17). The experimental group started the MBA intervention at baseline (T0) for 15 consecutive days (until T1). The waiting-list control group waited for 15 days before starting the MBA intervention (T1 to T2). Participants completed questionnaires about positive body image (i.e., Functionality Appreciation Scale, FAS; Body Appreciation Scale-2, BAS-2; Body Esteem Scale, BES) at baseline (T0), 15 days from baseline (T1), and 30 days from baseline (T2).

Results: Repeated measure Analyses of Variance (ANOVAs) showed a Group (experimental vs. waiting-list control) × Time (T0 vs. T1) significant interaction on both FAS ($p = .01$) and BES ($p = .02$), indicating an increase in the experimental group compared to the waiting-list group at T1. Furthermore, both groups showed increases in BAS-2 from T0 to T1 ($p = .01$).

Discussion: A 15 days online psychological intervention focused on body functionality may enhance positive body image in female dancers.

Poster presentation
Topics: Youth

Crossing The Line: Conceptualising and Rationalising Bullying and Banter in Male Adolescent Community Football.

Robert Booth, Ed Cope, Daniel Rhind
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Young people in sport reported that psychological violence was the most prevalent form of abuse, including ambiguous acts such as humiliation, criticism about appearance, and initiation games (Hartill et al., 2021). Although, these categories could also fall under banter or bullying behaviours depending on how one defines them. Recent research has suggested that bullying acts may be disguised as banter in football (Newman et al., 2021). This study examines how bullying and banter are conceptualised and rationalised by those in adolescent community football in the UK. The study employs qualitative, semi-structured interviews to explore the meanings behind the perceptions and experiences of players (N=8) and coaches (N=4). Evidence demonstrated that intent was not synonymous with bullying and that bullying and banter behaviours are highly ambiguous depending on the shared understanding of learned barriers despite participants concurring with most aspects of the definitions. Moreover, banter and bullying behaviours in community football have been experienced by participants, with acts being rationalised through moral disengagement and gendered hypermasculinity. This research indicates that although bullying and banter are conceptualised similarly to popular definitions, concrete definitions may be limited due to the fluid nature of the terms and the influence of shared social understandings. Additionally, the study shows bullying and banter being experienced and rationalised in male youth community sport through moral disengagement and masculinity. The implications of these findings provide young people with a voice to contribute to safeguarding those in community football by creating awareness of hidden abuse and practically impacting football education.

Poster presentation
Topics: Paedagogical psychology

Development and evaluation of the stress lab – A tool for prospective physical education teachers

Ulrike Hartmann[1], Jens Kleinert[1], Daniel Pantleon[2], Manfred Wegner[2], Fabian Pels[1]
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Physical education (PE) teachers often experience stress (Alsalhe et al., 2021). To prepare prospective PE teachers for dealing with stressful situations, the stress lab was developed for university education. It consists of an e-learning unit to provide knowledge about stress and a video-based unit to practice dealing with real-life teaching situations. The aim of the present research was to test the feasibility of the stress lab by evaluating both units in three sub-studies.

In study (1), the e-learning unit was presented and 24 PE students were surveyed on subjective acceptance (0 = very bad to 10 = very good), among other factors. In study (2), after presenting the real-life teaching situations by video 34 PE students, 22 PE pre-service teachers and 27 PE teachers were asked to rate the stress level (0 = no stress to 10 = very much stress). In study (3), eight PE students tested the practical unit and were surveyed on subjective acceptance.

Descriptive results showed (1) high acceptance of the e-learning unit (M = 7.12, SD = 1.73). (2) Some of the videos were perceived as more stressful than others (e.g., video “pupils complain” M = 5.27, SD = 2.12 compared to “pupils lack attention” M = 3.67, SD = 2.33). (3) The practical unit was highly accepted (M = 7.75, SD = 1.49).

Results reveal that the stress lab appears to be suitable for preparing PE students for stressful situations. The stress lab will be integrated into university training of future PE teachers.

Poster presentation
Topics: Elite sports and expertise

Individualism, Collectivism, and sports result

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Individualism, Collectivism, and sports result

In the last years the issue concerning individualism and collectivism in sport has attracted researchers' attention much more often. Individualism and collectivism are constructs which we can trace both in individual and team sports.

The aim of this study was to examine individualism and collectivism and their relation to goal orientation among athletes with different level of qualification practicing six different kinds of sport. The research was done among 160 athletes practicing six kinds of sports – 3 team sports (football, basketball, volleyball) and 3 individual sports (tennis, swimming, rowing), from 8 clubs and 1 national team.

In order to fulfil the aim of the research, we used: 1. Scale for measuring the horizontal and vertical individualism and collectivism INDCOL of Singelis, Triandism Bhawuk, & Gelfand, 1995; 2. Task and Ego Orientation in Sport Questionnaire – TEOSQ, Duda & Nicholls; 3. Psychological Collectivism Measure – Jackson et al., 2006.

We established significant differences among competitors practicing individual and team sports along horizontal collectivism, degree of collectivism in the team, and task orientation. There were significant gender differences along all scales of collectivism. Men have a more strongly expressed aspiration for affiliation, dependence, and success on the team, regardless of the kind of sport they practice.

The analysis regarding the relation among individualism, collectivism and goal orientation in sport make us assume that individualism and collectivism affect goal orientation. Horizontal individualism stimulates ego orientation. Horizontal and vertical collectivism can forecast task orientation, the degree of collectivism, and task orientation.

Poster presentation
Topics: Exercise and COVID-19 Pandemics

Psychological capital, and Coping strategies of Athletes in conditions of COVID-19

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Psychological capital, and coping strategies of athletes in conditions of COVID-19

The pandemic COVID 19 has posed unprecedented ordeals before the field of sport and education in the last two years.

The aim of this study was to investigate the Psychological Capital, Need for Security and their relation to the preferred Coping Strategies during the pandemic COVID-19 among sports students from Bulgaria and to outline their specificity depending on gender, kind of sport, and level of qualification.

The research was done among 106 sports students aged between 18 and 34 years, divided into groups according to their gender (50 men and 56 women), kind of sport (rhythmic gymnastics, athletics, football, tennis, taekwondo, basketball, volleyball), level of qualification.

The research methods included: 1) Psychological capital Questionnere (Luthans, Youssef, Avolio, 2007); 2) Methods of researching the Need for security in human behaviour (Velichkov, Radoslavova, Vasileva, Todorov, 1998); 3) Approach to Coping in sport Questionnaire (ACSQ-1; Kim 1999; Kim & Duda, 1997).

The results revealed significant relations between Hope and the strategies Emotional calming and Cognitive restructuring. The athletes with high level of hope prefer positive strategies for coping with the situation. They restructure their goals, try to block their negative thoughts, and concentrate on the important things. We established significant correlations between self-efficacy, optimism, and the strategies Emotional calming and Behavioral risk. There were significant differences among the factors gender. The women had significantly higher values for Emotional calming, and Cognitive restructuring, positive strategies for coping with the pandemic.

Poster presentation
Topics: Neuroscience

The Quiet Brain: A Meta-Analytical Review on the Association between T7-Fz Coherence and Sports Performance

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Expert athletes' neural states have been primarily studied by use of EEG methods, including brain coherence analysis (Bertollo et al., 2020; Filho et al., 2021). Coherence refers to the degree to which cortical areas communicate with each other (Tan et al., 2016). In this meta-analysis, we examined how EEG coherence is related to sport performance. Specifically, we focused on alpha band coherence between T7-Fz (earlier T3-Fz), which indexes the degree of co-activation between the language and the motor areas of the brain (Parr et al., 2021). We searched for related papers across eight databases: ProQuest Central, Pro-Quest Psychology Journals, PsycARTICLES, PsycINFO, SPORTDiscus, MEDLINE, Scopus, and Web of Science using relevant keywords (i.e., EEG AND sports AND coherence). Six studies, with a total of 152 participants, met our inclusion/exclusion criteria and were shortlisted for statistical analysis. We compared EEG coherence data between better and worse performances for both within-subject and between-subject experimental designs. Results indicated that athletes showed lower coherence in T7-Fz for the alpha band ($g = .59$, $p = .04$) when performing better. Theoretically, these results corroborate the notion that athletes become more "neurally efficient" as the verbal and motor areas of their brains function more independently (i.e., the neural efficiency hypothesis; see Hatfield, 2018). Accordingly, athletes who can limit verbal interference are more likely to perform a sporting task successfully (Mesagno et al., 2021). Future research might examine neurofeedback interventions to assist athletes in achieving lower T7-Fz coherence.

Poster presentation
Topics: Research methods (qualitative & quantitative)

Temporal and spectral electrooculographic features in an aiming task

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Electrooculography (EOG) studies in sport have focused on temporal oculomotor features such as the duration of the quiet eye (QE) period—the final fixation on the action's visual target. On the one hand, it is unclear whether EOG can provide valid QE measurements due to its poor spatial resolution relative to eye tracking (ET). On the other hand, due to its high temporal resolution, the EOG is better suited for time-frequency spectral decomposition. In this study, we aimed to (1) examine which EOG signal processing options and algorithm (based on EOG-position or EOG-velocity) yield the most valid QE measurements, (2) introduce a novel method—the EOG spectrogram—that describes both temporal and spectral oculomotor features, and (3) rank the utility of four oculomotor measures (QE-ET, QE-EOG-position, QE-EOG-velocity, EOG spectrogram) for predicting motor performance on unseen data. We co-recorded EOG and ET while 16 participants with varying expertise putted golf balls to a 4-m distance target on a flat surface. Concurrent validity and temporal discrepancy analyses revealed that QE-EOG-position and QE-EOG-velocity are valid and accurate for certain processing options (channel, filter, thresholds). The EOG spectrogram—obtained through multitaper Fast-Fourier-Transform—distinguished lower-frequency activity (saccades) and higher-frequency activity (fixational activity) before and during movement execution. Nested cross-validation estimated that the EOG spectrogram yielded the lowest generalization error and the greatest stability on unseen data, followed by a tie between QE-ET and QE-EOG-velocity, and then by QE-EOG-position. Correlational analyses suggested a monotonic association between better motor performance and greater EOG high-frequency fixational activity (> 25 Hz) during movement execution.

Poster presentation
Topics: Perception & attention

Quiet Eye Facilitates Processing Complex Information in Elite Table Tennis Players

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Quiet Eye (QE) consists of an ocular fixation that precedes specific athletic movements, supporting their accuracy. Evidence extensively supports the role of QE in performance in various sports (e.g., golf, shooting) and shows that a main function of QE is to facilitate the processing of information and calibrate the movements relevant to hitting the target. Nevertheless, little is known about the functions of QE in interceptive timing sports, such as table tennis, where athletes have to both accurately intercept a moving ball and to hit it on a specific target.

This study investigated the role of QE in processing information relevant for athletic performance by having elite table tennis players (N=12) undergo an exercise in which they received a succession of 100 balls in two experimental conditions, where they have to hit the balls: (a) on the entire opponent's half (simple condition) or (b) on two narrow spots on the table (complex condition). We hypothesized that in hit shots, as opposed to missed shots, athletes extend their QE durations more in the complex condition.

Results indicate that hit balls were preceded by longer QE than missed balls. Moreover, in the complex condition athletes extended the duration of QE more for scoring a hit. Finally, athletes increased the duration of QE more after a missed ball than after a hit ball.

This study shows that QE sustains performance in an interceptive timing sport, by helping athletes to process and respond to complex information, and helps them to recover after missed shots.

Poster presentation
Topics: Cultural sport psychology

Development and Validation of the Malaysian Mood Scale

Philip C. F. Lew[1,2], Renee L. Parsons-Smith[2,3], Andrea Lamont-Mills[2], Alessandro Quartiroli[4,5], Peter C. Terry[2]
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Mood measures have been used with athletic populations over several decades for a multitude of purposes. In the present study, we sought to develop and validate a Malay-language version of the Brunel Mood Scale (Terry et al., 1999, 2003), referred to as the Malaysian Mood Scale (MASMS). Following a thorough translation-back translation process, the 24-item MASMS was completed by 4,923 Malay-speaking participants (male = 2,706, female = 2,217; athletes = 2,559, nonathletes = 2,364) ranging from 17–75 yr. (M = 28.2 ± 9.4 yr.). Structural equation modelling supported the six-factor MASMS measurement model without modification (CFI = .949, TLI = .941, RMSEA = .067). Reliability coefficients ranged from .86–.92. Concurrent validity of the MASMS was supported via correlations with measures of depression, anxiety, and stress among a subsample of 143 participants. Athletes reported significantly more positive moods than nonathletes on all subscales, accounting for 14.1% of variance. Team sport athletes reported significantly more positive moods than individual sport athletes. Significant group differences in mood scores were found for sex, age, education, ethnicity, and geographic spread, although in each case the explained variance did not exceed 3%. Overall, the psychometric characteristics of the MASMS supported its validity as a measure of six mood dimensions: tension, depression, anger, vigour, fatigue, and confusion. Tables of normative data for athletes and nonathletes were generated. The development and validation of the MASMS paves the way for sport and exercise interventions that require mood assessment and facilitates future mood-related research in a Malaysian context.

Poster presentation
Topics: Cultural sport psychology

Mood Profile Clusters Among Malaysian Athletes and Nonathletes

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Mood profiling is frequently used among athletes and several distinct mood profile clusters have been identified in the literature (Parsons-Smith et al., 2017). In our study, we investigated whether previously identified clusters were evident in a Malaysian population. The 24-item Malaysian Mood Scale (MASMS; Lew et al., 2022) was completed by 4,923 Malay-speaking participants (male = 2,706, female = 2,217; athletes = 2,559, nonathlete = 2,364) ranging from 17–75 yr. (M = 28.2 ± 9.4 yr.). Seeded k-means cluster analysis identified six distinct mood profiles, termed the iceberg, inverse iceberg, inverse Everest, shark fin, surface, and submerged profiles, closely resembling those reported in other cultural contexts (Parsons-Smith et al., 2017; Quartiroli et al., 2018; Terry et al., 2021). Prevalence rates of specific profiles varied significantly between athletes and nonathletes. Notably, among athletes, the prevalence of the inverse Everest profile, associated with increased risk of mental health disorders, was lower (1.6% vs 9.5% for nonathletes), whereas the prevalence of the iceberg profile, associated with positive mental health and superior athletic performance, was higher (33.8% vs 18.2% for nonathletes). Significant differences were found in the distribution of specific mood profiles across sex, age group, and type of sport. Generally, negative profiles were more prevalent among females, younger participants, and individual sport athletes, and less prevalent among males, older participants, and team sport athletes. Findings confirmed the existence of six distinct mood profiles in a Malaysian population, facilitating future research into their antecedents, correlates, and behavioral consequences.

Poster presentation
Topics: Social and cultural diversity

Advocating for gender equity in sport: A content analysis of the Canadian Women and Sport She's Got It All campaign

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Despite increasing access to sport and exercise opportunities, women and girls in Canada continue to face gender disparity in sport participation (Statistics Canada 2012). Several media campaigns have emerged to address this disparity and advocate for gender equity in sport. However, there is little understanding of the content of these media campaigns and the sport psychology messages they convey. Drawing on sport participation research, the Canadian Women and Sport She's Got It All campaign highlights the challenges and intersecting disadvantages girls, and women face in sport (Canadian Women and Sport, 2020). The purpose of the current study was to assess the visual and textual content of this campaign. Drawing on existing evaluation practices for media (Lucibello et al., 2021; Lazuka et al., 2020; Wick and Harriger, 2018), the girl's and women's visual features were assessed, and the themes presented in the posters' textual content were coded. The posters (N = 48) were collected, and content analysis was conducted, centering a quantitative exploration of the posters' descriptive elements and themes (Drisko & Maschi, 2016). Seven main themes pertaining to girls and women's barriers to sport participation were identified: physiology, gendered social behaviors, intrapersonal beliefs, environmental contexts, stereotypes, female representation, and interpersonal support. The results reveal the public messaging conveyed about girls' and women's sport experiences.

Poster presentation
Topics: Exercise psychology

Self-reported physical activity and mental health among refugee-camp residents in Greece.

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A high rise in global forced displacement has been evidenced since 2015 as a result of wars, conflicts, natural disasters, and human rights abuses. Forcibly displaced people are often exposed to physical and mental strain, which causes traumatic experiences and poor mental health. Physical activity has been linked with better mental health, though such evidence is scarce for refugees. The purpose of the study was to examine the relationship between physical activity and mental health indices among refugees. Participants were 152 individuals (76 women, 76 men; mean age 29.19) displaced from their homes for an average of 32.03 months. Among them, 67% were from Afghanistan and the Middle East and 33% from sub-Saharan countries. Participants completed self-report measures assessing physical activity, post-traumatic stress disorder (PTSD), depression, anxiety, and well-being. As expected, participants displayed poor mental health status. Physical activity was linked with better well-being ($r= .30$ $p < .01$), but not related with PTSD, depression, and anxiety. Analysis of variance revealed that females reported worse levels of PTSD, depression, anxiety, and well-being than males; in addition, it was shown that participants with family scored worse on PTSD, depression, and anxiety than participants without family. No differences were recorded for physical activity between the different groups. The findings provide useful evidence regarding the link between well-being and physical activity; nevertheless, further research examining objectively measured physical activity is warranted to complement this data and further explore the associations between physical activity and mental health.

Poster presentation
Topics: Professional development and mentoring

Pedagogical Practices for Performance Psychology

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This poster will present innovative practices developed over the past 15 years in the pursuit of developing and best preparing Master's students for performance psychology service delivery. In particular, three elements will be highlighted: signature assignment, applied training and supervision models, and Master's Project.

The signature assignment provides students an opportunity to articulate their consulting philosophy in one comprehensive document. The centerpiece of the signature assignment is the Theoretical Orientation to Performance Excellence (TOPE; Aoyagi, 2013), which itself is built upon the foundation of the Theoretical Orientation to Human Behavior (TOHB; Foss et al., 2016). In addition to the TOHB and TOPE the signature assignment captures students' approach to performance psychology interventions, counseling/clinical conceptualizations, consulting methods, theoretical orientation to team/group dynamics, and multicultural considerations.

Our applied training features a progression from first-year students initially shadowing second-year consultants (Gunter et al., 2016). After theoretical, applied, and ethical coursework has been completed, the first-year students begin to transition into a co-consulting role, and by spring of year one they take over as lead consultants as second-years begin to transition out. We utilize a layered supervision model that involves alumni as lead supervisors with their supervision supervised by a faculty member (Marsh et al., 2016).

The Master's Project is a capstone experience in the form of a reflective practice project. Utilizing practices from Anderson et al., 2004 and Knowles et al., 2007, students compile their reflections from two years of applied practice and culminate with a reflection upon the two years of consulting.

Poster presentation
Topics: Mental skills training

Effect of Imagery training on football players

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The purpose of this study is to examine the influence of imagery training on children's soccer skills. There is a growing number of studies concerning imagery training among children and adolescents (Li Wei et al. 1992, Chandler-Munroe 2005, 2007), but the number of studies is much smaller than research in adults. A sample of 35 subjects, aged between 10 and 14 years, was divided into an experimental condition (18 players) and a control condition (17 players). Each person completed the Sports Imagery Ability Measure (SIAM), the Movement Imagery Questionnaire-3 (MIQ-3), and undertook a performance test at pre-test and post-test. Imagery training began with a workshop concerning methods of imagery creation, relaxation techniques and videos showing "perfect execution" of the exercise. Then, the children performed 20 repetitions of the imagery training program 4 times a week for 6 weeks, which involved imagery of shooting through a hula hoop and football goal shot imagery, but also listening to a recorded script. Participants in the control condition only performed the shooting pre- and post-tests. At post-test, players in the imagery condition, compared to the control condition, obtained significantly superior results in shooting at the hula hoop. No statistically significant difference was observed between the conditions for football goal shooting, but a clear upward trend was noted. At post-test, there were no significant changes in either imagery test. The results supported the hypothesis, especially because the intervention, apart from the workshop, was conducted during the Covid lockdown.

Poster presentation
Topics: Coaching

Coaching when needed most – Messenger Coaching as a concept for bridging the intention-action gap

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The challenge: People wanting to change their physical activity (PA) tend to face volitional barriers in everyday life, resulting in the intention-action gap. It is at such moments that coaching is needed most. The solution: When a volitional barrier occurs, a digital coach can be crucial and turn the tide. The digital coach allows for immediate, informative and emotional support.

Coaching through messenger is a fairly new area of research. There are few studies on the use of messengers in advisory teams, lacking the examination of client-professional-communication. Further studies examined the benefits of Messenger Coaching compared to Face-to-Face Coaching. Overall, there is a lack of research evidence. Existing studies are rather weak in terms of theoretical conceptualization of the Messenger Coaching process.

The goal of this project was to develop a theory-driven conceptualization of Messenger Coaching to overcome volitional barriers. The concept bases on Rubicon theory (Heckhausen & Gollwitzer, 1987) and its further development, the Health Action Process Approach (HAPA; Schwarzer et al., 2008). Based on this, Messenger Coaching aims to help people remember and meet their PA goals, follow their PA plans, initiate, and sustain PA. This is accomplished by assessing communication through responsive push and pull messages to improve emotional state, answer questions, remind, or provide background information.

The concept was already tested in a feasibility study in stroke patients. Future work needs to show to what extent and how Messenger Coaching influences self-efficacy, motivation, and behavior. Social support and the coaching relationship are assumed to be moderators.

Poster presentation
Topics: Talent identification/ development

Psychosocial and Physiological Factors Affecting Selection to Regional Age-Grade Rugby Union Squads: A Machine Learning Approach

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Talent selection programs choose athletes for talent development pathways. Currently, the set of psychosocial variables that determine talent selection in youth Rugby Union are unknown, with literature almost exclusively focusing on physiological variables. The purpose of this study was to use a novel machine learning approach to identify the physiological and psychosocial models that predict selection to a regional age-grade rugby union team. Age-grade club rugby players (N = 104; age, 15.47 ± 0.80; U16, n = 62; U18, n = 42) were assessed for physiological and psychosocial factors during regional talent selection days. Predictive models (selected vs non-selected) were created for forwards, backs, and across all players using Bayesian machine learning. The generated physiological models correctly classified 67.55% of all players, 70.09% of forwards, and 62.50% of backs. Greater hand-grip strength, faster 10m and 40m sprint, and power were common features for selection. The generated psychosocial models correctly classified 62.26% of all players, 73.66% of forwards, and 60.42% of backs. Reduced burnout, reduced emotional exhaustion, and lower reduced sense of accomplishment, were common features for selection. Selection appears to be predominantly based on greater strength, speed, and power, as well as lower athlete burnout.

Poster presentation
Topics: Coaching

Can participative coach behavior be perceived as controlling? The role of athletes' expectations

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Coach-rated participative behaviors have already been related to both positive and negative outcomes, as well as increased controlling perceptions among athletes (Katz & Assor, 2006; Van de Pol, Kavussanu & Kompier, 2015). Building on implicit leadership theory (Epitropaki & Martin, 2005), this study investigated the importance of the alignment between the extend athletes expect participative coach behavior and coach-rated participation in developing psychologically controlling perceptions in athletes. This is of particular interest for coaches as controlling perceptions in athletes are negatively related to athletes' autonomous motivation, need-satisfaction, and satisfaction with the coach. A subgoal of this study was to further explore these relations in higher-level and lower-level teams separately. Athletes' expectations for participative coach behavior, coach-rated participative behavior, and athletes' perceptions of controlling behaviors were measured in 61 team sport coaches (Mage = 42.11; SDage = 8.32) and 654 athletes (Mage = 22.62; SDage = 5.08) competing in football, volleyball, basketball, and handball competitions. Data analysis was conducted using polynomial regression with response surface analysis. Results showed that a discrepancy between coach-rated participation and athletes' expectations for participation was related with increased domineering perceptions in athletes. Interestingly, these results were significant within high-level team sports, but not in low-level team sports. Our results indicate that coaches, and more specifically team coaches at higher competitive levels, should be aware that their participative behavior can be perceived as controlling by athletes when it is not aligned with their athletes' expectations for participation.

Poster presentation
Topics: Any other topic

Climbing across Self-Efficacy, Mindfulness, Motivation, Emotional Intelligence, and Flow: an Exploratory Study

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According to the Mental Health Model of sport performance, positive aspects of mental health should be associated with greater success in sport. Recent findings show that rock climbers would develop advantageous perceptual and cognitive skills as a function of their expertise. However, climbers experience and the way climbing influences well-being have received little attention in literature. The aim of this exploratory study was twofold: to investigate several psychological constructs, that might be involved in climbing (as Self-Efficacy, Mindfulness, Sport Motivation, Emotional Intelligence, and Flow Experience), and to find out if more experienced athletes gain better scores on these scales. One hundred and five volunteer Italian climbers (females=42) aged 18-58 years (M=32; SD=±10.35) were selected. All participants completed an online cross-sectional survey based on the Climbing Self-Efficacy Scale (CSES), Mindfulness Awareness-Attention Scale (MAAS), Sport Motivation Scale (SMS), Trait Emotional Intelligence Scale (TEIQue-SF), and Dispositional-Flow Scale (DFS). An independent sample t-test showed that athletes with high training frequency exhibit significantly higher levels of mindfulness ($t(103)=2.12$, $p=<.03$) and intrinsic motivation (IM to know $t(103)=2.066$,$p=<.05$); IM to accomplish $t(103)=3.636$,$p=<.001$; IM to experience stimulation $t(103)=2.266$,$p=<.03$). A Spearman's r correlation analysis revealed that higher levels of competence were positively correlated with MAAS ($r=.271$, $p=<.01$), SMS (IM to accomplish $r=.218$, $p<.05$; IM to experience stimulation $r=.245$, $p<.05$), DFS ($r=.273$, $p=<.01$), and CSES ($r=.435$, $p=<.005$) scores. In addition, findings showed a positive correlation between TEIQue and DFS ($r=.55$, $p=<.01$). Developing self-efficacy, flow, and mindfulness could be useful for improving performance in climbing. Higher experience levels could finally influence self-awareness.

Poster presentation
Topics: Consulting/ counseling

On Developing Practitioner's Theoretical Orientation to Performance Excellence: "improve-Prepare-Perform-Recover" (iPPR)

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In sport psychology service delivery, theory-to-practice applications play a fundamental role (Andersen, 2002; Poczwardowski & Sherman, 2011). Beyond the utility of classical psychological theories, a careful delineation of a practitioner's own theoretical orientation to performance excellence (TOPE; Aoyagi & Poczwardowski, 2012) necessarily expands understanding of performance behavior (Aoyagi et al., 2017). The purpose of this presentation is to describe "improve-Prepare-Perform-Recover" (iPPR; as an example of TOPE as used in two Paralympic quadrennia) and to identify both sound and incomplete aspects of the presented TOPE. iPPR leans on sport science (Bompa, 1999) and centers on improving focus as the essential asset in execution of motor skills. Based on the cyclical nature of sport preparation (task, training unit, season, career), the ongoing improvement also includes the ways an athlete prepares, performs, and recovers. Secondly, iPPR builds on both psychological skills training and person-centered (holistic) approaches as an integrative paradigm (Prochaska & Norcross, 2018) to fully maximize impact in the areas of mental performance and mental health; and can be viewed as theoretical and practical strengths. iPPR does not, however, explore motivation for improving, which is an example of its limitations. Recommendations for developing and clarifying TOPEs will be offered and will build on the authors' shared experience with professionals willing to present their TOPEs in a scholarly fashion (Poczwardowski & Aoyagi 2022). For example, both spoken and written presentations of one's TOPE have a potential to increase its clarity, consistency, comprehensiveness, and parsimony (Hall & Lindzey, 1957).

Poster presentation
Topics: Talent identification/ development

Talent Selection, Decision Making, and Big-Data Analytics

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Talent identification and development (TID) in sport requires ongoing selections, which often involve the judgment and decision making (JDM) of experts. Recently, Schorer and Buesch (2021) presented a number of significant challenges to TID and JDM. Traditionally, in order to cope with these challenges attempts have been made to improve predictions (i.e., with regard to a talented athlete's future success) by optimizing the selection process. Schorer and Buesch (2021) suggested using Gigerenzer's (2004) concept of "Fast and Frugal Heuristics (FFH)", which reflects Simon's (1987) "Bounded Rationality", as an alternative. This notion is based on the principle of "less is more", according to which simple FFH enable experts to better cope with complexity when applying JDM processes to TID. In this presentation, we argue that optimization models are not yet "out" – on the contrary, big-data analytics may provide fascinating possibilities of "more is more". That is, they can improve the accuracy of prediction by (a) capturing a consistently increasing number of relevant variables, (b) enhancing the efficiency of acquiring all these variables in the limited time we have with the athletes, (c) using more advanced yet less expensive computers which will make the end result worth the investment. We use Gerrard's (2017) approach to Big-Data Analytics to demonstrate how the power of data analysis can be harnessed to improve the effectiveness of JDM processes as applied to TID.

Poster presentation
Topics: Elite sports and expertise

Psychological strain and coping skills in individual versus team sports

Bianca Andrade de Sousa, Rodrigo Scialfa Falcão, Cristiane Marconi Costa, Manoella Fiochi Marques
SESI - Social Service of Industry, Brazil

Individual and team sports have peculiar characteristics that can have different impacts on athletes' mental health and coping skills. Therefore, it is important to identify these differences to act, prevent and promote mental health and coping strategies among athletes from different sports. The main purpose of this study was to identify and compare the levels of psychological strain and coping of athletes practicing individual and team sports. The study included 122 athletes, 67.2% male, with an average age of 18.6 years. Team sports (TS) included volleyball and water polo (n=50). Individual sports (IS) included triathlon, swimming, judo and athletics (n=72). Psychological strain was measured by Athlete Psychological Strain Questionnaire (APSQ) and coping skills by Athletic Coping Skills Inventory-28 (ACSI-28). Statistical analysis was performed using Jamovi. Independent t-tests were used to assess differences between TS and IS ($p<0.05$). There where statistically significant differences between TS and IS in psychological strain and goals from coping skills ($p<0.05$). TS presented higher level of psychological strain (23.74±5.78) and lower level of goals (8.22±2.40), compared respectively to IS (21.51±6.09) (8.22±2.40). These findings indicate that, overall, participants have a high level of psychological strain, especially in TS, and athletes in IS have greater ability to set goals. These findings indicate that athletes in this sample need actions related to mental health, as well as TS athletes may need greater support in setting goals, as many variables are out of their control.

Poster presentation
Topics: Exercise and COVID-19 Pandemics

The effects of the COVID-19 pandemic on psychological well-being and sport commitment of student-athletes

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The SARS-CoV-2 pandemic has impacted several areas, including sports and academia. Few research studies have looked at the effects of COVID-19 on student-athletes' careers, especially considering élite athletes. This study aimed to investigate the consequences of Coronavirus-19 on the psychological well-being of students practicing sport at any level. In study 1, an online questionnaire was administered before the sport and academic restart (August 2021) to 118 Italian dual-career university students aged between 19 and 27 who played different sports and had been contacted through social media alerts. The questionnaire included sport and university information, measures of psychological distress, resilience, optimism, life satisfaction, academic self-efficacy, intrinsic motivation to play sports, and risk of sport drop-out. Results showed that individuals had decreased hours of physical activity and study and increased depressive symptoms compared to the pre-COVID-19 period. Moreover, those who played individual sports had higher levels of stress and anxiety. In study 2, a follow-up questionnaire was provided to 81 subjects after the sports and college season (October 2021) together with six semi-structured interviews. One-third of the dual-career students had dropped out of their sport. Furthermore, a decrease in intrinsic motivation and increased stress and anxiety were also reported in those who continued their sport careers. Thematic analysis identified lack of time and motivation as causes of dropout. Given these results and the qualitative insights from the follow-up phase, it is essential to implement initiatives to guarantee the continuation of the dual career trajectories and ensure the psychological wellness of student-athletes.

Poster presentation
Topics: Transitions in and out of sport/ dual career

Promoting dual-career trajectories of élite athletes. A novel program at the University of Milano-Bicocca

Patrizia Steca, Lucia Aceti, Giovanni Belmonte, Francesco Bigotto, Adriano Gervasoni, Greta Gschwentner, Lucia Visconti Parisio
University of Milano-Bicocca, Italy

A Dual Career (DC) may provide advantages to athletes especially after their transition out of the sport. However, a good balance between the two commitments is significantly challenging. Balancing sport and education is particularly difficult for university students, due to increased pressure and stressful situations. The influence of the institutional approach in establishing a supportive environment is critical. The current contribution presents an innovative program that the University of Milano-Bicocca has recently launched to support DC students. The program involves 25 élite athletes enrolled in bachelor's or master's degrees and selected for their sports merits. The students have been assigned to five tutors with sport psychology expertise. The program relies on social-cognitive, goal setting, and flow theories and aims to sustain students to develop relevant competencies such as DC management, goals setting, career planning, and adaptability. The program's first stage seeks to identify barriers/challenges students face to balance sport and education. The following phases are aimed: to create performance profiles where students are asked to define their strengths and weaknesses; to identify personal and social resources available to cope with barriers/challenges; to work on setting 'smart' (no conflict, addressable) goals. Students are also supported in the interaction with their professors and group meetings are promoted to build social resources. Academic and sports performance is constantly monitored throughout the academic year. Compared to programs offering administrative assistance or economic support, the proposed program aims to develop students' life skills. Long-lasting and successful outcomes are expected in both academic and sports careers.

Poster presentation
Topics: Perception & attention

Performance errors: the result of weak concentration or ineffective coping with mistakes?

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Concentration is an essential component of sport and exercise. Energy, precision and function are the variables of concentration according to the theoretical model of Reulecke (1991) on which the standardized concentration test “Cognitrone” is based (Schuhfried, 1995, 2017). However, the relationship between concentration and reacting to mistakes (e.g., coping with mistakes) is not researched. The purpose of this research is to determine if the impossible to process yet understandable tasks (IPUTs) increased the overall number of mistakes. The research consisted of control and experimental groups of sports aviators (N = 46, age 18 - 40). Control group completed a standardized concentration test “Cognitrone” with a fixed 2 s processing time, version S4 - S5 and had 100 tasks. Experimental group completed the same test but 33 of the 100 tasks were replaced with IPUTs - tasks with a fixed 0.5 s time. This IPUT is like an “ace” in tennis - a serve that is not touched by the receiver and loses him a point. Answers to the IPUTs were not evaluated. The results of both groups were compared based on an incorrect / correct answer ratio. The results: M (control) = 0.1795 vs. M (experimental) = 1.4281, SD = 0.127 and SD = 1.28, $p<0.001$. Conclusion: the impossible to process yet understandable tasks significantly increased the overall number of mistakes.

Poster presentation
Topics: Elite sports and expertise

Different sport, different traits and different needs in building a consistent coach-athlete relationship

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The purpose of this study is to define the approach of the coach in building consistent relationship with the athlete, considering the sport discipline. In this sense we applied the Big Five personality model with the use of NEO Five-Factor Inventory Questionnaire. The subjects of the research are Romanian athletes from the Olympic teams (N = 250) from 13 sport disciplines (judo, swimming, free wrestling, table tennis, basketball 3X3, rugby, triathlon, artistic gymnastics, epee, sabre, fleuret, weightlifting, tennis). As the study revealed statistically significant differences between athletes practicing different sports in four personality traits: neuroticism, extraversion, agreeableness, and conscientiousness, we looked forward at the correlative aspects of the traits focusing on: style of interaction (Extraversion-Agreeableness), decision style (Agreeableness-Openness), learning style (Openness- Conscientiousness), task orientation (Extraversion- Conscientiousness), psychological wellbeing (Extraversion-Neuroticism), impulse control (Conscientiousness-Neuroticism), defense style (Neuroticism-Openness), and fury control (Neuroticism- Agreeableness), all these giving us information on the elements that facilitate building a consistent and effective coach-athlete relationship. In this sense, an important role must be assigned to the techniques and curriculum design in training that favor building trust in the training process, in own abilities, in the information provided by the coach and team communication, triggering readiness for high athletic performance.

Poster presentation
Topics: Leadership

The role transformaıonal leadershıp ın the effect of coach-athlete's relationshıp on team resilience:A study on football players

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In today's sports environment, leadership characteristics have many effects on athlete behaviors. The purpose of the research is to examine the role of transformational leadership in the effect of coach-athlete relationship on team resilience. The participants of the experiment are 210 professional footballers playing in the 1st.; 2nd.; 3rd.; and The Super Leagues of 2020-2021 T.F.F. Data were collected by 11 item Coach-Athlete Relationship (CART-Q) developed by Jowett and Noumanis (2004) and adapted to Turkish by Altintas, Cetinkalp and Asci (2012). 20 item Team Resilience Inventory (TRI) developed by Decroos et all.,(2017), also adapted to Turkish by Görgülü et all., (2018) and 27 item Differentiated Transformational Leadership Inventory (DTLI) developed by Callow et all.,(2009), translated into Turkish by Görgülü et all., (2020).Mediation analyzes were performed with the AMOS program.The football player's commitment to the coach, which is the sub-dimension of CART, has a significant effect on the resilience characteristics, which is the sub-dimension of TR (ß=0.437, p<0.01). A positive (path a) path coefficient and a regression coefficient were obtained between their commitment to their coaches and their inspiring motivation (ß=0.36, p<0.01). The indirect effect between the football players' commitment to their trainers and their resilience characteristics was 0.076, and the 95% confidence interval was 0.002-0.187, and the indirect effect was statistically significant (p=0.04). When football players have a perception of commitment to their coaches, their resilience characteristics increase. In addition, it was revealed that when the football players have a perception of inspirational motivation from the leadership characteristics of the coach, there is a mediating effect between the characteristics of commitment and team resistance.

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Poster presentation
Topics: Elite sports and expertise

Does Cognitive Exertion Affect Elite Performance? A Systematic Review

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Cognitive exertion can be experienced in a twofold way, as a state of either mental fatigue or ego-depletion (Brown et al., 2020). Mental fatigue concerns a psychobiological state of tiredness or exertion together with low levels of commitment in the given task as a result of prolonged demanding cognitive activity (Boksem & Tops, 2008). Ego-depletion concerns the state of depleted levels of self-control strength as a result of engagement in activities requiring self-control (Baumeister & Vohs, 2007). The present research presents a systematic review regarding the effects of cognitive exertion in elite performance. The research conducted in databases revealed few studies examining the effects of cognitive exertion in elite performance with, notwithstanding, some important evidence. Previous research findings agree that cognitive exertion leads to higher levels of perceived effort and lower levels of exercise tolerance (Marcora, Staiano & Manning, 2009; Otani, Kaya, Tamaki, & Watson, 2017). Impairment of physical performance is documented but needs to be further examined (Habay et al., 2021) while the findings are not clear in elite performance (Englert, Dziuba, Giboin & Wolff, 2021; Jordalen, Lemyre & Durand-Bush, 2016). Although cognitive exertion does not seem to affect physiological parameters, the effects in psychological state can better explain the decline in psychomotor performance. Literature suggests a number of potential mediators including methodological approach or individual sport talent. The contribution of the study is to further shed light at the existing bibliography and to become the sparking for further research in the effects of cognitive exertion in sport performance.

Poster presentation
Topics: Built environment

Psychological Correlates of Indoor and Outdoor Physical Activity

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It is widely known that physical activity improves both physiological and psychological well-being, but we still a need to understand deeper how different environments influence the connection between them. Our objective was to compare mental and physical wellbeing, motivation and mindfulness when participating in physical activity outdoors or indoors. N=96 non-competitive, regurarly exercising, sports university students took part in an online survey (51 male, 45 female, mean age is 28.26), 23 of them is exercising outdoors, 50 indoors, 17 both. We adminsitered Physical Activity and Leisure Motivation Scale (Zach et al, 2012), Subjective Vitality Measure (Ryan & Frederick, 1997), Subjective Exercise Experinces Scale, McAuley & Courneya, 1994), and State Mindfulness Scale for Physical Activity (Cox, Ullrich-French & French, 2015). Regarding the place of the last physical activity we did not find any difference between indoor and outdoor activities on state mindfulness (body and mind subscales), experienced emotions and vitality. Regarding the place of the regular acitvity, none of the measures showed significant differences between the three groups, likely because of the different sample sizes. Due to the low sample size, we cound not measure the differences between exercising in green or built environments. Contrary to many previous studies, this study did not find differences between indoor and outdoor exercise motivations and vitality, maybe due to the sports university sample.

Poster presentation
Topics: Best practice

Sport Psychological Preparation of The Hungarian Paralympic Team For Tokyo

Ágota Lénárt, Judit Boda-Ujlaky
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The preparation of the Hungarian Paralympic Team was carried out in several stages and levels for athletes, coaches and sports professionals. The aim was to develop a mental preparation for peak performance, according to the needs and requirements of the athletes and the demands of the sport. They had different levels of prior knowledge and experience. Services offered included individual and group sessions, assessment, counselling, condition monitoring, optimization and on-site consultation.

In the first phase, optional joint group sessions were held for athletes and para-athletes on a weekly basis.

The sports associations were also informed, needs were assessed, and a personalized programme was built for each sport and individual.

The duration was about 20-25 hours. Athletes were practicing the techniques individually.

The programme included training and competition visits, consultations in training camps in athletics, table tennis, swimming, kayaking, shooting and fencing.

Special consultations were also carried out, e.g. preparation for "last chance" competitions, using psychotherapeutic elements in addition to classical methods.

During the Paralympics, continuous sports psychology service was provided on site.

Our athletes achieved the second best result of all the Paralympics under the current system (16 medals, 7 gold).

The systematic preparation, the programme organised with the support of the Hungarian Paralympic Committee and the cooperation of the medical staff made possible a versatile and effective preparation. We would like to increase the level of technical assistance (video analysis, feedback, motion analysis systems, bio-information technology). We will place greater emphasis on team building and training of sports professionals.

Poster presentation
Topics: Exercise psychology

Benefits of Tai Chi Chuan and yoga classes at work: Perceived mental and physical benefits in employees of the University of Padua

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OBJECTIVE: Extensive research evidenced that physical exercise and yoga may have beneficial effects in reducing stress, anxiety, and related symptoms (Penedo & Dahn, 2005; Li & Goldsmith, 2012). These activities were also found to be effective in decreasing work-related stress in employees (De Bruin et al., 2017). We aimed at investigating whether a physical exercise program in a work context may have a positive impact in reducing state anxiety, somatic anxiety symptoms, and worry, while improving perceived physical and mental health.

METHODS: Study participants were 529 employees of the University of Padua who participated in Tai Chi Chuan and yoga program (10 sessions each). Data were collected from self-report questionnaires (Beck Anxiety Inventory, BAI; Penn State Worry Questionnaire, PSWQ; Short Form Health Survey-12, SF-12) before and after the program. In addition, we assessed state anxiety (State-Trait Anxiety Inventory, STAI-Y1) at the beginning and at the end of the second and second to last lesson.

RESULTS: Data showed a significant reduction in somatic anxiety symptoms ($p < .001$), worry ($p = .01$), and a greater perceived physical health state ($p = .01$) at the end of the program. Findings also showed that 1-hour Tai Chi Chuan and yoga class was effective in reducing state anxiety both at the second ($p < .001$) and the second to last ($p < .001$) lesson.

DISCUSSION: Despite the absence of a control group, preliminary results support the benefits of physical exercise on the general perceived wellbeing and endorse the importance of introducing physical exercise programs in the workplace.

Poster presentation
Topics: Any other topic

Needs assessment in Italian Paralympic Sport Clubs

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The purpose of this study is to highlight the needs that Italian Paralympic sport clubs must face to carry out their activities. The project is in collaboration with the Italian Paralympic Committee of Veneto (CIP), which promotes and manages competitive and amateur sports activities for disabled people on the national territory, according to criteria aimed at ensuring the right to participate in sports activities under conditions of equality and equal opportunity (Vilnai,2020). An online questionnaire was constructed and sent to all Paralympic Sport Clubs members of the CIP (CIP,2020). One hundred and four Italian Paralympic sport clubs answered a series of demographic and specific questions about the Paralympic sport club (sports disciplines practiced) and about their needs related to human, economic, social, and technical resources (within your club do you think there is a problem of lack of human resources?). Descriptive analysis shows that the sample pf participating clubs provide activities for physical disability (52%), intellectual-relational disability (28%), visual sensory disability (16%), auditory sensory disability (4%) for children (11%), teenagers (19%) and adults (70%). Seventy-seven percent of sports clubs have resource shortages: including volunteers (42%), instructors (33%), physical therapists (11%), and mechanics (10%). Sixty-one percent of participants report that they have difficulty finding spaces/gymnasiums (45%), facilities (26%), apparel (13). In conclusion, the sports clubs participating in the research have reported some general considerations that allow to complete the picture with respect to the needs detected that can support the design of services and supports aimed at Italian Paralympic sport clubs.

Poster presentation
Topics: Neuroscience

Effects of Motor Pace on Frontal Haemodynamic Activity during Whole-Body Movements

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Human beings perform routine locomotion behaviour at ~2 Hz. Nonetheless, individuals periodically need to accelerate or slow down the spontaneous pace of their actions to accommodate environmental constraints. While the production of fast movements would rely on motor processes, the ability to slow down the pace of motor behaviours may be underpinned by cognitive control (i.e., motor inhibition). Yet, the brain correlates of temporal motor control is still largely unknown. The general aim of the present study was to examine prefrontal and motor activity during the execution of a walking task performed under different time constraints. A circle-drawing control condition was also included in the experimental design. Brain activity was recorded using functional near-infrared spectroscopy (fNIRS) over the bilateral primary motor and prefrontal cortices (i.e., orbitofrontal and dorsolateral regions) because of their involvement in inhibitory control. The two motor tasks were implemented in a sensorimotor synchronisation paradigm, with trials performed at fast (i.e., 300 ms), close-to-spontaneous (i.e., 600 ms), and slow paces (i.e., 1200 ms). Results showed that the walking task led to greater bilateral primary motor oxygenation than the circle-drawing task. Action production at slow pace yielded more bilateral orbitofrontal and left dorsolateral activation when compared to action production at close-to-spontaneous and faster paces; this pattern was observed in the walking task only. These findings support the key role of prefrontal cognitive control in the production of slow movements. In addition, the brain mechanisms for inhibiting spontaneous motor pacing are particularly salient in phylogenetically old movements such as walking.

Poster presentation
Topics: Motivation

Reversal theory: Differences in athletes' goal orientation and competitive state anxiety

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The telic (serious minded/arousal-avoidant) and paratelic (playful/arousal seeking) state have been studied in the light of reversal theory, which refers to the transition from one metamotivational state to another (boredom, relaxation, anxiety, excitement), (Apter, 1989). If the athletes' subjective metamotivational state is fulfilled they experience positive emotions; if not, negative emotions may emerge. The purpose of the study was to examine the relation as well as the differences in the telic/paratelic state in athletes' level of competitive state anxiety and goal orientation. Three hundred and eighty-five athletes (57.7% men) volunteered to participate in the study (MAge=19.73 years, SD=4.17). The athletes completed the Telic/Paratelic State Instrument, the Competitive State Anxiety Inventory-2 (based on how they feel before and during their competition), and the Task and Ego Sport Orientation Questionnaire. Negative to null correlation revealed between ego and task orientation with telic and paratelic dominance, respectively. The telic athletes showed a facilitative evaluation of competitive anxiety. Based on reversal theory orthogonal model, significant differences revealed in athletes' anxiety and self-confidence intensity and directions. The athletes in the boredom and relaxation states revealed higher self-confidence compared to the athletes in the intensity and excitement state. Cross-tabulation analysis showed that athletes' goal orientation and reversal theory orthogonal models are related. The research findings indicated that athletes' metamotivational state can increase their positive emotions, thus improving their overall performance during sport participation. Simultaneously it provides significant information to coaches and sport psychologists to assist them in constructing relevant psychological preparation programs.

Poster presentation
Topics: Elite sports and expertise

Elite Esports performance: understanding fatigue in a cognitive performance framework.

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Professional competitive video game players train between three and ten hours a day. They must react at rapid visual and adaptat in an unstable context against other players. According to Baumeister resource's theory in traditional sport, performing an exhausting cognitive task depletes brain resources that negatively affect the next performance. In sports science, the stress-recovery 'scissor model' argued that each state of fatigue requires an equivalent recovery time to return to the baseline state. Considering performance characteristics in esport, we investigate the links that exists since mental fatigue and performance in an esport context with the goal to develop specific strategies that aims to increase performance.

Five professional players in contract for more than three years (20,8 ± 1,47 years) in the European league that prepares for the Mondial tournament "Six Invitational" participates to this study. The tests take place over three ten-day training periods (P1;P2;P3). Cognitive performance was measured each day 45 minutes (T1) and 15 minutes (T2) before training. Cognitive tests measured reaction time and hand-eye coordination. Perceived workload was measured each day at the end of training using the NASA-TLX.

In the third period (P3), a specific warm-up block is implemented between T1 and T2 to measure its influence on cognitive performance and perceived fatigue.

First results tend to show decline in performance on cognitive tests and the perception of fatigue experienced the day before (day -1).This work will help to support players in understanding the link between perceived fatigue and performance.

Poster presentation
Topics: Exercise psychology

Exploring experiences of exercise in young people with cancer: Is there a role for virtual reality?

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Physical inactivity has been shown to exacerbate negative side effects experienced by young patients undergoing cancer treatment (Rustler et al., 2017). Less than 50% of young people with cancer achieve the recommendations for physical activity (e.g., Stolley et al., 2010). It has been shown that enjoyable exercise experiences lead to better adherence, and there is renewed focus on how pleasant exercise experiences can increase levels of activity (Jones & Zenko, 2021). This study sought to explore young people (13-18 years) with cancer's attitudes and experiences of exercise, and how virtual reality (VR) could be utilized with exercise. Interviews were conducted pre-and post-VR demonstration. The first interview explored patients' attitudes towards exercise while undergoing treatment for cancer. The demonstration of VR included 360° videos, computer games, and an exercise-based platform. The second interview explored patients' reflections about VR and the possible role it could play as part of exercise within their cancer journey. Participants held positive attitudes towards exercise as it was regarded as a way to "get back to normal" following cancer. Barriers relating to cancer treatment disturbing previous routines, lack of mental and physical capability, and negative mood were raised. Patients suggested that VR could provide an "escape" and a way to connect with others while isolated. Patients' prior experience of gaming linked to gamification of VR to promote enjoyable exercise. This study offers detailed insight into experiences of young people with cancer and how VR could be a positive adjunct to exercise.

Poster presentation
Topics: Motivation

LONG-TERM MOTIVATION, LEADERSHIP STYLE AND MOTIVATIONAL CLIMATE OF ATHLETES

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Long-term motivation, perceived motivational climate and leadership style are factors related to endurance of load, resistance to stress and sports results. The aim of this study was to reveal the relationships between leadership style, motivational climate and long-term motivation of athletes differentiated by sex, kind of sport, sports result. The research was done among 101 athletes, practicing team sports (70 men, 31 women) with mean age 20.3 years (±5.4). We used the following questionnaires: Leadership Scale for Sport (LSS), Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ - 2) and the Test for the study of long-term motivation assessing the long-term goals and prospects. The mastery motivational climate is strengthened by the application of democratic behaviour (β = 0.229 *) and structuring of team actions through training and instruction (β = 0.435 **). The performance motivational climate is strengthened by applying an autocratic behaviour (β = 0.426 ***) and avoiding: a democratic behaviour (β = -0.459 **) and giving positive feedback (β = -0.236 *). Long-term motivation increases with the dominance of the mastery motivational climate (β = 0.310 **) and decreases with the performance motivational climate (β = -0.202 *). The obtained results give grounds to assume that the leadership style of the coach plays a significant role in shaping the perceived motivational climate, which determines the level of athles' long-term motivation.

Poster presentation
Topics: Exercise and COVID-19 Pandemics

The pandemic dilemma: obligatory exercises or eating disorders? Sociocultural mediators of appearance.

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Introduction: A strong sociocultural context could affect an individual's aesthetic standards. In order to achieve a socially recognized ideal appearance, obligatory exercisers might increase dieting behavior when exercise actions are disturbed, thereby placing the individual at risk of eating disorders.

Aim of study: The current study mainly examined the relationship between obligatory exercise and eating attitudes during the COVID-19 pandemic, and considered the mediating role of externalized sociocultural attitudes towards appearance between the two.

Study procedure: A total of 342 participants (175 females, 167 males) from various regions of China were invited to fill out the questionnaires including the Obligatory Exercise Questionnaire, the Sociocultural Attitudes Toward Appearance Questionnaire-3, and the Eating Attitudes Test.

Results: In total, 51.5% of the participants presented symptoms of an obligatory exercise behavior. Among them, males, young adults, and the participants with lower BMI had higher OEQ scores, whereas females and young adults had higher EAT-26 scores. Meanwhile, 9.4% of the participants might have had an eating disorder. Externalized sociocultural attitudes towards appearance served as a mediator between obligatory exercise behavior and eating attitudes, and the mediation effect accounted for 56.82% of the total effect.

Obligatory exercise behavior may have an indirect effect on eating attitudes through sociocultural attitudes towards appearance. Given the sociocultural information and pressures, in order to maintain or pursue an ideal appearance, many people tend to keep a pathological diet.

Poster presentation
Topics: Exercise psychology

Effect of Hypoxic Training on Emotional Responses in Normoxic Conditions

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Different hypoxic training protocols have been used aiming to maximize performance in normoxic conditions (Wilber, 2007). The purpose of the study was to examine the effect of two hypoxic training protocols ("sleep high – train low" & "sleep low – train high") on participants' emotional responses. The simulated altitude in the "sleep high – train low" training protocol was 2800-3500m. Twenty physically active males (Mage= 22.6±3.5) performed a V ̇O2max protocol in normoxic conditions before (pre-test), in the middle (middle-test), and in the end (post-test) of the hypoxic training protocols. The Activation Deactivation Adjective Check List and the Multidimensional Fatigue Inventory were used to evaluate participants' emotional responses. Repeated analysis of variance was applied to examine the differences in emotional responses before, in the middle and after hypoxic training protocol of V ̇O2max. The results showed statistically significant interactions in tiredness, tension, calmness and energy. Specifically, in the "sleep high – train low" training protocol statistically significant reduce was noticed in tiredness and calmness. On the other hand, in the "sleep low – train high" training protocol statistically significant reduce was identified in energy and statistically significant changes in tension (tension decreased from pre- to middle-test and, increased in the post-test). Hypoxic training could affect in either negative (Bolmont et al., 2000) and/or positive way (Piehl et al.,1998). The "sleep high – train low" training protocol than "sleep low – train high" seems to be more effective in participants' emotional adaptation. Further studies will be needed to examine the influence of the hypoxic training on athletes' emotional responses.

Poster presentation
Topics: Perception & attention

The interdependence of mental skills and choice reaction time in young biathletes

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The ability to react quickly is an important element in preparing a player for competitions. Athletes reaction time plays a crucial role in sport and it can determine the process of a competition where the attending athletes have reached the same level of physical training. The aim of the study was to identify whether mental skills like coping with anxiety, mental toughness, self confidence and mindfulness are linked to the choice reaction time performance.

Thirty six junior biathletes completed the battery of paper tests: Mindfulness Inventory in Sports (MIS, Thienot et al., 2014), Sport Anxiety Scale-2 (SAS-2, Smith et al., 2006), Sport Mental Toughness Questionnaire (SMTQ-P, Sheard et al., 2009) and The Revised Competitive State Anxiety Inventory-2 (CSAI-2R, Cox e al., 2003). The reaction time performance was measured by CHORT test (a part of the TEST2DRIVE system), a computerized simulation in which subjects were to respond to the images on the screen by pressing the appropriate key.

Pearson correlations indicated significant negative associations between awareness as the component of mindfulness, self confidence and constancy as the component of mental toughness and reaction time (from r = -0,31 to r = - 0,43). Significant positive associations were obtained in between worry, concentration disruption, and somatic anxiety and reaction time (from r = 0,35 to r = 0,47). The analyzed variables of mental skills were also significantly related to the percentage of correct answers and percentage of errors made in choice reaction time test.

Poster presentation
Topics: Sports Psychology and COVID-19 Pandemics

Student-athletes' mental health during the COVID-19 pandemic: Evidence from two European Faculties

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COVID-19 has physical, nutritional and psychological consequences that may impact on the safe return to sports and general health of athletes (Pillay et al., 2020; Toresdahl & Asif, 2020). For student-athletes there is an imminent need to analyze the multiple impacts that the COVID-19 pandemic has on their mental health to develop psychosocial support initiatives for this subpopulation. Thus, the aim of this study was to examine wellbeing, stress, anxiety, and resilience levels of student-athletes during the COVID-19 pandemic.

Two hundred fifty student-athletes (56.4% females; 22.06±5.07 years) from two European Physical Education Faculties (Athens and Cork), of which 74 were non-elite collegiate athletes, 143 pre-elite athletes, and 33 elite competitors, completed online five questionnaires: International Physical Activity Questionnaire, Warwick-Edinburgh Mental Wellbeing Scale, Perceived Stress Scale, Generalized Anxiety Disorder Scale, and Brief Resilience Scale. Statistical analysis included descriptive and inferential [i.e., MANCOVA with vigorous physical activity (VPA) as covariate] statistics.

A statistically significant difference on mental wellbeing was observed between student-athletes of different athletic level ($F=11.19$, $p<.001$, $\eta2=.083$), while VPA adjusted this association ($F=6.84$, $p=.009$, $\eta2=.027$). Elite competitors (54.76±1.44) had higher mental wellbeing levels than pre-elite athletes (50.42±.68) and non-elite collegiate athletes (46.19±.95). No further significant differences were observed for stress, anxiety, and resilience ($p>.05$).

The results indicate that COVID-19 restrictions did not negatively affect elite student-athletes' mental wellbeing, while non-elite collegiate athletes showed the lowest levels of mental wellbeing. These differences were mediated by VPA, providing evidence that increased VPA had a positive effect on student-athletes' wellbeing.

Poster presentation
Topics: Sports Psychology and COVID-19 Pandemics

The role of exercise on emotional responses during the COVID-19 pandemic

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The coronavirus (COVID-19) has spread in several countries, causing not only the risk of death from the viral infection but also unbearable psychological pressure to people. As a consequence, the Covid-19 pandemic lead to a significant psychological effects on humans, such elevated anxiety symptoms and depression. The purpose of the study was to examine the effect of exercise on participants' emotional responses during quarantine. One thousand one hundred and thirty seven (1137) people (401 males, 736 females) volunteered to participate in the study (Mage=35.80, SD=13.02) (228 athletes, 630 exercise participants, 279 non-exercise participants). The participants filled in a series of demographic characteristics, the International Physical Activity Questionnaire, and the Activation Deactivation Adjective Check List based on how they felt during the quarantine period because of the COVID-19. The results showed that athletes experienced the most positive mental state, followed by exercise participants, whereas non-exercise participants showed the most negative mental state. In addition, the participants who exercised either before or during quarantine more frequent showed lower tension and fatigue, and higher calmness. Frequent weekly exercise activity contributed to improved emotional state during quarantine. Participants who were rarely exercised revealed a significant reduction in their working time and daily activities that those who exercised more frequent during quarantine. Finally, participants who exercised for a longer period before quarantine (over 12 months) showed better adjustment and emotional responses during quarantine. The results may provide evidence for public health policies on exercise and mental health before and during a future pandemic.

Poster presentation
Topics: Motivation

The relation among athletes' anxiety symptoms and motivation

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Motivation, is widely studied in sports, and is defined as the reason of a behavior, which operates within the individual and determines the execution of an activity. Additionally, competitive anxiety refers to a debiliatative emotional state which negatively affects performance. The purpose of the study to examine the relationship between athletes' anxiety and their motivation. One hundred and forty five athletes (111 males, 34 females) (Mage=16.57, SD=4.62) with an average of approximately 6 years of competitive experience participated in the study. The athletes filled in the Sport Anxiety Scale-II, the Sport Motivation Scale-II, the Basic Psychological Needs in Exercise Scale, and the Flow State Scale-2, based on how they usually felt when they participated in sports. The results showed negative correlations between athletes anxiety and flow experience, as well basic psychological needs, and intrinsic types of motivation. The regression analysis results showed that flow experience characteristics appeared as negative predictors of athletes' anxiety symptoms [concentration disruption (R2 adj =.50, F=7.65, p<.001), somatic anxiety: (R2 adj =.24, F=3.08, p<.001), cognitive anxiety: (R2 adj =.37, F=4.96, p<.001)], as well as, competence, autonomy (basic psychological needs), and intrinsic motivation. The results indicated that amotivation was a positive predictor of athletes anxiety symptoms. The results suggest that basic psychological needs satisfaction, such as the need for autonomy and competence, might reveal anxiety symptoms reduction. It also seems that the increase and enhancement of athletes' internal motivation is related to lower levels of anxiety symptoms, which important information to coaches, athletes, and sport psychology consultants.

Poster presentation
Topics: Motivation

Comparisons between motocross and enduro motorcycle disciplines on motivation and sensation seeking.

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Participation in extreme sports, like motocross and enduro motorcycle racing, is predicted by sensation seeking (Weishaas et al., 2021). Since researchers described differences in physiological features related to these disciplines (Gobbi et al., 2005), this study aims to investigate differences in psychological dimensions and to identify associations between motivation and sensation seeking in Italian motocross and enduro riders.

Data from 40 motocross riders (age: M = 32.52; SD = 11.50) and 31 enduro riders (age: M = 44.03; SD = 14.13) enrolled in the Federazione Motociclistica Italiana was collected. Sensation seeking was assessed with the Brief Sensation Seeking Scale (Primi et al., 2011), while motivation was assessed with the Sport Motivation Scale (Candela et al., 2014) and the Task-Ego Orientations in Sport Questionnaire (Bortoli & Robazza, 2003). Groups were compared on age, years of motorcycle practice, number of riders that have competed and higher level of competition performed, motivation, and sensation seeking. Correlations were computed.

Motocross riders were younger than enduro riders ($p < .001$). No other differences emerged (all ps > .05). Among motocross riders, sensation seeking was associated with age ($r = -.56$; $p < .001$), ego-oriented motivation ($r = .37$; $p = .02$), and externally regulated motivation ($r = .33$; $p = .04$). Among enduro riders, sensation seeking was associated with intrinsic motivation to accomplish ($r = .41$; $p = .02$).

Young individuals could prefer motocross over enduro. Moreover, despite differences in physiological aspects of these disciplines, motocross and enduro motorcycle riders demonstrated similar levels of motivation and sensation seeking.

Poster presentation
Topics: Perception & attention

The impact of anxiety on visual search and working memory in basketball defensive scenarios

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In basketball, multiple players must be monitored simultaneously using peripheral vision. In high-pressure contexts, athletes exhibit a narrowed visual field which can reduce information extraction. According to Attentional Control Theory, worrisome thoughts consume working memory which is necessary for visual perception. Consequently, we investigated the effects of anxiety and peripheral vision demands on working memory, gaze, and decision-making in basketball. We used a head-mounted display (HMD) to simulate 4v4 defensive scenarios from the center's perspective. Twelve players (mean age = 21.8 ± 3.5) stepped towards opponents cutting to the basket from graded distances (eccentricities) to the ball-carrier under low and high anxiety. Players completed a concurrent counting task to further tax working memory. Gaze data (number of fixations, fixation duration, gaze distance from ball-carrier) were collected using the HMD. We measured movement response time (RT) and accuracy (RA), counting performance, and mental effort. Players had longer RTs and lower RA when responding to opponents further from the ball-carrier (p's < .001, $\eta 2$'s > .31). Under high anxiety, participants increased mental effort ($p = .016$, $\eta 2 = .42$) and improved counting performance ($p < .001$, $\eta 2 = .70$). Anxiety had no effect on RT ($p = .067$, $\eta 2 = .27$), RA ($p = .773$, $\eta 2 < .01$), or gaze measures (p's > .103, $\eta 2$'s < .22). Results suggest anxiety does not necessarily alter gaze behavior in dynamic basketball scenarios, but greater eccentricities can challenge visual information extraction. These findings underscore the importance of an eccentricity-optimized gaze anchoring strategy during cognitively-demanding decision-making tasks.

Poster presentation
Topics: Mental skills training

Can the quiet eye period be trained?

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The “quiet eye” (QE) period in a motor task is defined as the amount of time interval of the final fixation on a specific target (Vickers,1996). The purpose of the study was to present through systematic review the different ways (mental, physical or combination) of training and the effects that might cause on QE period. The search of the studies conducted in sport databases (Scopus, PubMed, Scholar Google) using the key words of “quiet eye”, “physical training”, “mental training”, “fixation”. A longer period of “quiet eye” characterizes more skilful and experienced athletes than less experienced ones, which leads to successful performance in various sport activities (Vine & Wilson, 2011). The results of the selected studies applied interventions, using mental, physical or both types of training in the “quiet eye” period revealed that is a property of the gaze that can be trained. Experimental studies supported the notion that experienced athletes compared to less experienced ones in various sports activities have shown to be able to improve their performance by physically training QE periods compared to control group participants (Causer et al., 2011). Although mental training as a self-contained process can lead to improved QE period, however this improvement it cannot be argued that leads to a longer period than the one achieved by physical training. The combination of physical and mental training leads to longer QE periods (Frank et al., 2016). The findings provided important information to athletes, coaches, and sport psychology consultants for the improvement of QE training.

Poster presentation
Topics: Human factors

Odors with Evolutionary Value Influence Postural Sway and Physiological Responses and trigger the urge to move

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Imagine smelling a decomposing corpse on your next getaway-trip to the woods. Such a smell will start your heart pumping and make you want to run away. In this work, we present in lab data obtained in twenty female adults revealing the influence of odor valence on postural sway and physiology. A total of three positively and three negatively-valenced odors were presented in random order through odorant speakers in blocks of three 5s-trials. We employed a Nintendo Wii Balance Board to record postural sway ; the Empatica E4 wristband to record heart-rate and heart-rate variability. The adult volunteers were requested to stand still on the platform, with their eyes closed while smelling an odor. Our hypotheses were that negatively-valenced odors would induce a backwards shift, an increase in heart-rate and a decrease in heart-rate variability (stress phenomenon). We made reversed hypotheses for positevely-valenced odors.

Results revealed that positively-valenced odors did not trigger a forward shift but did impact physiological responses as predicted. The stronger of the negatively-valenced odors were associated with a backward shift (butyric acid) and a significant decrease in heart-rate variability (iso-valeric acid). All effects were systematically stronger when using odors that had evolutionary meaning. Overall, we show the importance of the evolutionary sense of odors in studies on human factors. Behavioral measures are more informative than declarative questionnaires as they resist to autobiographical heterogeneity. The non-invasive methodology reported here can be applied to physical activity protocoles to facilitate the urge to move.

Poster presentation
Topics: Health

Perceived physical self-concept profiles: influence on the intention to be physically active and emotional regulation

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The objectives of the study were to identify physical self-concept profiles and examine whether the participants differed significantly in their intention to be physically active and emotional regulation. A sample of 606 participants (Mage = 34.19; SD = 13.05; 300 men and 304 women), completed a series of self-report measures. Cluster analyzes revealed three profiles of participants (Wilk's Lambda = .18, F (8) = 203.28, p <.001, η 2 = .575), labelled as: (a) Athletes with high scores in ability; (b) Athletes with low scores in ability; (c) Athletes with high scores in strenght. The MANOVA results indicated significant differences between self-concept and the variables analyzed (Wilk's Lambda = .66, F (20) = 13.39, p <.001, η2 = .000). In particular, self-concept profiles with high levels of ability showed significant differences in emotional regulation in acceptance, rumination and catastrophization. The profiles with high scores in attractive, strength and condition revealed significant differences in positive reassessment. The profiles with low scores in self-concept experienced marginal differences in blaming others. The profile approach offered a holistic way of examining self-concept, since the three registered profiles emerged from group analyzes.

Poster presentation
Topics: Personality

Temperamental Traits, Stress Appraisal and Interoceptive Awareness in Italian Athletes and Non-Athletes: A Preliminary Study

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Personality traits are commonly used to assess individual differences among athletes (O'Connor & Webb, 1976; Rhodes & Smith, 2006). However, adopting a temperamental traits perspective is considered another useful approach. Temperament 'refers to formal characteristics of behaviour' (Strelau, 1995, p. 4) and is divided into two dimensions: energy (Sensory sensitivity, Endurance, Emotional reactivity and Activity) and time (Briskness and Perseverance). Zawadzki and Strelau (1997) showed that, compared to the general population, athletes are characterized by higher levels of Briskness, Endurance, Activity and lower level of Emotional Reactivity. The purpose of this study was to investigate individual differences in terms of temperamental traits, different components of stress appraisal and interoceptive awareness between Italian athletes and non-athletes. Fifteen participants (Mage = 25,73; SD = 6,48; athletes = 8) completed the Italian versions of the The Formal Characteristics of Behaviour - Temperament Inventory (De Pascalis, Zawadzki & Strelau, 2000), the Challenge and Threat Measure (Adie et al., 2008), the Multidimensional Assessment of Interoceptive Awareness Questionnaire (Calì et al., 2015) and the Perceived Stress Scale (Mondo et al., 2019). Preliminary between-subjects (M)ANOVAs showed no significant results. However, we could still observe that athletes compared to non-athletes were characterized by higher levels of endurance, challenge appraisal, attention regulation and lower level of body listening. Future research involving larger sample size is needed to confirm that practicing sports enables people to better evaluate stressful situations and pay attention to their body.

Poster presentation
Topics: Professional development and mentoring

Safe Place Safe Play: Building safe environments for playing sports

Massimiliano Di Liborio[2], Melissa D'Ettorre[1], Lilybeth Fontanesi[1], Sonia Di Benedetto[1], Daniela Marchetti[1], Maria Cristina Verrocchio[1]
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Safe Place Safe Play is a project funded by the Italian Ministry of Equal Opportunities, managed by the Clinical Psychology Lab of the G. d'Annunzio University in collaboration with the Department of Medicine and Aging Sciences and two charity associations. The project aiming to counter the psychological, physical, and sexual abuse of minors in sport, is divided into 7 work packages (WP), of which 5 targeted at stakeholders as coaches, educators, young athletes, and parents. The WPs aim to foster awareness of the need for change and transformation of mentality towards the exposure of minors to the various forms of violence and of the negative effects that can affect a harmonious psychological development. First, we will create an interinstitutional network including politicians and researchers which will produce a policy and best practice document; then specific modules will be offered to the staff of sports associations, parents, and sports psychologists, aiming to raise awareness and build capacities to prevent, recognize and intervene in case of abuse. Afterward, we will activate empowerment courses for young athletes, involving them in laboratories on emotional processing, recognition, and regulation. The results of these WP, along with documents on abuses in sport, will be shared through a dedicated website and an app, where all the figures involved in the project and the general audience will find information and instruction on how to promote children's well-being in sports and keep them safe. The innovative methodologies, the specific actions, and socio-educational implications of the project will be discussed.

Poster presentation
Topics: Leadership

Cognitive Toughness for Paratrooper Leaders

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Many leadership tactics of previous generations are proving to be ineffective in today's military environment. As a result, leadership strategies must change. The United States Army must possess both mental and physical toughness (e.g., grit) to function in the next large-scale conflict in multi-domain operations. "Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress" (Duckworth, 2007). While working to overcome inherent military challenges (e.g., ineffective communication, unilateral leadership, generational nuances), the company selected one platoon (n=32) to collaborate with an R2 Performance Expert delivering research-based education focused on mental toughness. The hypothesis is that with this training, leaders who provide expectations and coping skills with exposure to complex tasks develop toughness in their subordinates and that soldiers will adapt to situations and develop a growth mindset through coaching, teaching, and mentoring by leaders. The platoon initiated two weeks of the education phase where the R2 Performance Expert taught six courses intermixed with observations of the platoon each day. The company evaluated a control and an experimental group during a two-week field training exercise that included a variety of measures. The results of this study show the experimental group increased its performance by 25% going from bottom third to top half, the most improved squad leaders, increased in willingness to endure challenges, increased in humility and will. Recommendations are to determine the scalability of this initiative for a brigade and then the US Army.

Poster presentation
Topics: Motor control and learning

The effect of a Mindfulness Intervention in optimizing Executive Inhibition via Stroop Task

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Mindfulness meditation has referred as the awareness that exists from paying attention on purpose at the moment with non-judgementally (Kabat-Zinn, 2003).The rationale behind this research was to ascertain whether the cognitive function of executive inhibition could be enhanced via adoption of a mindfulness intervention. The study aimed to detect whether the mindfulness intervention could improve executive functions or not. The study focused on understanding how mindfulness that has been well known technique to improve cognition, emotions, physical, and even behaviour in recent times. The research of hypothesis was that mindfulness improved executive inhibition. Hence, we expected whether mindfulness group performed well compared the control group. The study had total (N=32) participants' age range was between 18-35 years old, who were 14 male and 19 female. The research had two experimental phases, which included ''pre and post-test''.The mindfulness group completed te pre-task section, then completed the mindfulness intervention via Headspace free app, which included three min. daily basic meditation sessions, during ten days. In contrast, the control group only did complete the pre-test section, and they did not do mindfulness sesssios, anly completed post-test after that time. The measure of the study was ''Mindfulness Attention Awareness Scale'' (MAAS), and the experiment conducted in Psytoolkit, which is used to conducting cognitive-psychological experiments. The results were conducted via Repeated measure ANOVA-between subject design. Results did not show a significant interaction between MAAS pre and post-test scores for both the treatment and control group (df (1,30), F=.197, p>0.05).

Poster presentation
Topics: Group dynamics

Team Dynamics in Soccer: The Role of Emotional Intelligence

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According to the Team Dynamics Theory (TDT; Filho, 2019), in the sports context, investigating the team dynamics is important to understand how a team can reach the best performance. Moreover, TDT aims to explain part of team dynamics variability and predict Team Outcome (TO) using four inputs: Cohesion (CO), Team Mental Models (TMMs), Coordination (CD), and Collective Efficacy (CE). The purpose of this study was to explore the mediation effect of CO, TMMs and CE on the relationship between Emotional Intelligence (EI) and TO. Two hundred and two Italian soccer players (Mage = 22.718 ± 5.440) coming from nine different teams voluntarily participated in the study. They completed the 15-item adapted version of Team Assessment Diagnostic Measure (TADM; Sikorski, 2012), the Team Outcome Questionnaire (TOQ; Coleman, 2011), the Collective Efficacy Questionnaire for Sport (CEQS; Santi et al., 2021), the Italian adaptation of the Group Environment Questionnaire (GEQ; Andreaggi & Robazza, 2000), and the Short Form of Trait Emotional Intelligence Questionnaire (TEIQue-SF; Cooper & Petrides, 2010) within the two hours before one of their competitions. Path Analysis using maximum likelihood estimator revealed a significant positive indirect effect of CO on TO via CE and TMMs, a positive indirect effect of EI on TO via CO, TMMs and CE. Moreover, a negative direct effect was observed between EI and TO.

Findings corroborate the notion that Team Dynamics is a non-linear process and, from an applied perspective, to improve team outcome professionals should work on cohesion, collective efficacy, and team mental models.

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