Abstracts

Thursday 1st July, 14.00-15.30

<https://stmarys.zoom.us/j/86262155096?pwd=ZFlXWHMweUViWGd1WU5UOEh4dll3dz09>

**Theme 7: Elite Performers and Performance Environments (Session Chair: Jamie North)**

**Talk 1:** **Sam Callaghan:** Not as simple as it seems: Front foot contact kinetics, muscle function and ball release speed in cricket pace bowlers

**Talk 2: Jade Salim & Stacy Winter:**All that glitters is not gold: The perceived long-term impacts of being an elite gymnast

**Talk 3: Carla Meijen:**Walking on thin ice: Exploring demands and means of coping during an extreme expedition

**Talk 4: Mark Glaister:**Caffeine and sprint cycling performance: the influence of torque factor and sprint duration

**Talk 5**: **Hannah Levi**: Coaches’ perceptions working with elite female Athletes: A critical Feminist Approach

Title: Not as simple as it seems: Front foot contact kinetics, muscle function and ball release speed in cricket pace bowlers

Presenter: Sam Callaghan

This study investigated the relationship between front foot contact (FFC) ground reaction forces (GRF) during the delivery stride, lower-limb strength, eccentric strength and power, and ball release speed (BRS) among cricket pace bowlers. Thirteen high-level male pace bowlers performed double and single leg drop landings; isometric mid-thigh pull; countermovement jump; and pace bowling (two-over bowling spell measuring BRS and FFC GRF). The relationship between assessed variables and BRS was determined via frequentist and Bayesian multiple linear regression. The model including peak braking force was the most probable given the data (Bayes Factor=1.713) but provided only weak evidence in comparison to the null model. The results of frequentist and Bayesian modelling were comparable with peak braking force explaining 23.3% of the variance in BRS (F (1, 11)=4.64, P=0.054). Results indicate pace bowlers with greater peak braking GRF during FFC generally elicit higher BRS. However, the weak relationship between peak braking force and BRS, and the lack of a linear relationship between BRS and other variables, highlights the complexities and inter-individual variability inherent to pace bowling at a high-level. A more individual-focused analysis revealed varied strategies within pace bowlers to deliver the outcome (e.g. BRS) and should be considered in future study designs.

Title: All that glitters is not gold: the perceived long-term impacts of being an elite athlete

Presenter: Jade Salim and Stacy Winter

Within elite gymnastic environments, it is not uncommon for gymnasts to experience various forms of coach abuse. Indeed, it was following the exposure of abuse in USA gymnastics that the Whyte Review was commissioned by Sport England and UK Sport to independently examine the physical, psychological, and emotional abuse allegations by numerous British gymnasts. However, to date, no researchers have explored the lasting consequences of this potentially abusive culture. Our aim of this study was therefore to provide an in-depth understanding of the long-term impacts from being an elite gymnast. Semi-structured interviews were conducted with twelve retired international (n=5) and national (n=7) level women’s artistic gymnasts (M age = 29 years, SD = 4.76). At the time of the interview, participants reported being retired from the sport between seven and 20 years (M = 12; SD = 4 years), with career lengths between eight and 15 years (M = 11; SD = 2.1 years). Transcripts were analysed using thematic analysis. Methodological rigor was maximised through the use of member reflections and a critical friend. Four themes were identified: (a) What we went through, (b) Was it worth it? (c) Making sense of it all, and (d) Life lessons. Themes encapsulated the negative long-term impacts of gymnastics (e.g., depression, post-traumatic stress, perfectionism, and weight issues), but encouragingly a number of participants recalled high levels of discipline, resilience, and effective time-management as positive impacts. These findings illustrated that even after 20 years post-retirement, gymnasts can still have lasting impacts from their sport. It would be recommended for organisational policies and coach education to both raise self-awareness and support the safe development of gymnasts not only within their sport, but also beyond their sporting careers.

Title: Walking on thin ice: Exploring demands and means of coping during an extreme expedition

Presenter: Carla Meijen

The present study was undertaken with two experienced explorers in order to examine daily events, perceived demands, coping strategies, and mood during a unique 752 km ‘double solo’ crossing of Lake Baikal, a frozen lake in Siberia. A 59-year-old female explorer and a 49-year-old male explorer completed a daily survey and written diary during the expedition to collect situational data. Two semi-structured interviews were also completed, one within 24-hours and a second within four months of their return. These interviews sought to identify demands and coping efforts perceived as being most pertinent during their expedition. Guided by the work of Skinner et al. (2003), families of coping were organised around three human concerns (autonomy, relatedness, and competence) and two targets of coping (self or context). Findings illustrate two very different expedition experiences as evidenced by demands faced and coping strategies utilised, which influenced perceptions of workload and emotions experienced. Each explorer brought idiosyncrasies, which, when combined with different expedition experiences, bore influence on coping behaviours (focused on the self or context) and outcomes relative to the concerns of autonomy, relatedness, and competency. In discussing the findings, recommendations are offered for those preparing to undertake expeditions in extreme environments. These are focused the idea that coping dispositions can be ineffective in unpredictable and extreme situations and that coping flexibility is beneficial in extreme environments. Furthermore, dyadic coping should account for and support dyadic partners’ coping dispositions.

Title:  Caffeine and sprint cycling performance: the influence of torque factor and sprint duration

Presenter: Mark Glaister

PURPOSE:  The aim of this study was to investigate the influence of torque factor and sprint duration on the effects of caffeine on sprint cycling performance. METHODS: Using a counterbalanced, randomized, placebo-controlled design***,***13 men completed nine trials. In Trial 1, participants completed a series of 6 s sprints at increasing torque factors, to determine the torque factor, for each individual, which elicited the highest (TOPTIMAL) peak power output (PPO). The remaining trials involved all combinations of torque factor (0.8 N∙m∙kg-1 versus TOPTIMAL), sprint duration (10 s versus 30 s), and supplementation (caffeine [5 mg∙kg-1] versus placebo). RESULTS: There was a significant effect of torque factor on PPO, with higher values at TOPTIMAL (mean difference: 168 W; 95% likely range: 142 – 195 W). There was also a significant effect of sprint duration on PPO, with higher values in 10 s sprints (mean difference: 52 W; 95% likely range: 18 – 86 W). However, there was no effect of supplementation on PPO (p = 0.056). Nevertheless, there was a significant torque factor × sprint duration × supplement interaction (p = 0.036), with *post hoc*tests revealing that caffeine produced a higher PPO (mean difference: 76 W; 95% likely range: 19 – 133 W) when the sprint duration was 10 s and the torque factor was TOPTIMAL.

CONCLUSION: The results of this study show that when torque factor and sprint duration are optimized, to allow participants to express their highest PPO, there is a clear effect of caffeine on sprinting performance.

Title: Coaches’ perceptions working with elite female Athletes: A critical Feminist Approach

Presenter: Hannah Levi

 This study explored the experiences of coaches working with elite females within the Great Britain elite sporting system. The aim of the study was to gain understanding of how coaches and sport practitioners could optimize their work with elite females to be more effective helping them realize their performance potential. Data were collected over a period of 18 months via fieldwork observations and semi-structured, in-depth interviews with 10 international elite coaches, from across five different Olympic and professional sports. The research was underpinned by feminist cultural studies and data analysis comprised of a reflexive thematic analysis. Results showed that macro-level factors, such as socio-cultural attitudes around women’s sport inferiority and media coverage focused on the exploitation of female athletes impact the gender norms of sport environments. At the meso-level, the deep structures of sport organizations influence gendered practices that contribute to financial discrepancies, a lack of development pathways and leadership opportunities for women, which together marginalize female athletes. These factors influenced the practices at the micro-level whereby coaches differentiated their practices based on the gender of the athlete. The present study offers a unique holistic approach to understanding how multi-level factors affect how we work with elite female athletes. Identifying macro-, meso-, and micro-level factors that influence coaches’ approaches to working with female athletes could help develop and shape practices to optimize the support elite female athletes receive.