Monday 12 December (in timetable order)

**Keynote**

**Endurance Psychology: So what from 5 Olympic Games with the same sport?**

Dr Chris Shambrook, K2 Performance Systems (UK) Limited

The keynote will provide an insight into the lessons learned from a long-term role within a high performance environment. Having supported the Great Britain Rowing team since 1997, some valuable lessons about seeking to deliver impact in the role of psychology support have been gathered. As well as a detailed understanding of the psychology of an endurance sport, there has also been some important knowledge gained about how to keep focused upon the challenge of delivering high impact psychology over 5 Olympic cycles.

The keynote will outline the personal development that has taken place within this period, as well as highlighting the personal approaches taken to remaining confident and delivering value within an environment that has changed, and remained the same, in equal measure. Some key relationships that have existed over this period will be used to outline some of the conclusions that have been drawn, as well as to illustrate the key delivery requirements associated with this 19-year period. Suggestions will be made for practitioners to consider their own requirements for mindset and psychological skills to help maximise impact and value for those that we support within performance environments.

**Phd Award Presentation**

**Swimming upstream: growth in elite swimming, a PhD challenge**

Karen Howells, The Open University

The purpose of this research was to explore the phenomenon of adversarial growth in elite sport. The concept of growth has been studied by scholars who have explored the positive outcomes that emerge from experiences of a diverse range of traumas including those that are experienced by elite athletes.

Informed by a background in psychology and an ongoing passion for sport, crystallisation was central to this PhD research. The use of multiple data sources (autobiographies, Olympic swimmers, swimming coaches, published research), different theoretical models of growth (Affective Cognitive Processing Model, two–component model), different methods (autobiographical research, semi–structured interviews, meta–synthesis), different analyses across the studies (narrative analysis, interpretative phenomenological analysis, qualitative content analysis, translation synthesis), and the use of collaborative accounts of growth (elite coaches), were utilised not to provide a valid “truth” but to allow different aspects of adversarial growth to be explored.

This research offered unique understanding into athletes’ adversarial growth in elite competitive sport. In synthesising the findings from the four studies it is apparent that: (1) the majority of positive aspects that are associated with adversity are interpreted as growth, (2) elite athletes conform to a cultural script of growth which is often manifested in the form of illusory growth or positive coping, (3) there is a temporal aspect to growth, and (4) there are specific aspects to constructive growth or transformational change that includes a change in actions, a new awareness of the body, and superior performance.

Ref: 6709 Oral

**Reflections of a Team Psychologist on Stage 2: Early Experiences & Lessons Learnt**

Jon Marzetti, Changing Minds UK

**Performance Excellence**

**Purpose:** To explore lessons learnt from the early experiences of a Stage 2 candidate working within a semi-professional football club.

**Background:** The case study provides a reflective account of a trainee’s very first experiences of applied practice and the unique challenges of working as part of a team across a whole season.

**Methods:** The paper utilises an autoethnography approach that draws upon the experiences of the author for the purpose of extending understanding. Narratives are a fundamental method of personal growth and supplement empirical studies by revealing how theoretical ideas look in action. The reflective process helps practitioners shape
their own philosophy of practice and better understand the reasoning behind their decisions. It is hoped that by sharing early experiences, reflection will be provoked in the audience.

Conclusions:

KR1:

- Taking the time to mutually agree on ethical and professional standards between trainee and the club before any work is undertaken can help guide decision making further down the line.

- Utilising the support of supervisor(s) when you feel your adherence to the code of ethics is being challenged is invaluable.

KR 2:

- The environment within a club is dynamic and consultancy may not be as structured as anticipated. Be prepared to re-conceptualise

KR 4:

- Don’t go it alone. Communicating psychological principles via the culture/coaches can be more powerful and have a greater impact than from a single voice.

Limitations: Narratives are only generalisable to the extent to which others empathise with the experiences that are presented.

Ref: 6715 Symposium
“Think Aloud” - Using and testing a novel protocol to explore cognition in action.
Amy Whitehead, Liverpool John Moores University

Performance Excellence

Think Aloud protocol has been scarcely used within sport performance and coaching research. This novel method of data collection, originally introduced by Ericsson and Simon in 1980, requires participants to verbalise their thoughts whilst performing a task. It allows researchers to capture in event cognition and thought process as the task is being conducted. This symposium presents original research within sport and coaching, that has used Think Aloud to capture in event cognition in different settings. In addition, it looks further into the training of Think Aloud to inform future researchers who may wish to adopt method.

Ref: 6716 Paper 1
What are you thinking? Using think aloud protocol to collect thought processes of cyclists during a 16.1km time trial event.
Amy Whitehead, Liverpool John Moores University; Chris Dowling, Liverpool John Moores University; David Morley, Liverpool John Moores University; Remco Polman, Bournemouth University

Performance Excellence

Aim: This study aimed to investigate cognition's of cyclists over a 16.1km time trial (TT) using Think Aloud (TA) protocol analysis.

Design: Think Aloud protocol was used to capture in event thoughts that were verbalised throughout a 16.1km competitive TT.

Method: 20 cyclists participated a 16.1km TT event and were asked to TA all thoughts throughout their performance. Participants wore iVue Horizon 1080P camera glasses, which recorded all verbalisations. Data was transcribed verbatim, analysed using deductive content analysis and grouped into themes: (i) pain and discomfort (fatigue and pain), (ii) external performance thoughts (time, speed, heart rate), (iii) environment (surroundings, cars and other cyclists), (iv) pace and distance (pace related, distance). Time trials were analysed over four quartiles to identify cognitions across distances.

Results: Findings revealed how associative themes focussing on fatigue were verbalised more frequently in the earlier stages of the performance and the third stage. Verbalisations about distance significantly increased in the last stage. Differences over time were found for the following themes, distance, speed, pain and discomfort, cars and other cyclists.
**Conclusion:** This study has been able to demonstrate how a novel data collection method (TA) can capture in event cognition of endurance performers and provide significant contributions to previously physiological literature to support findings of how individuals may process and attend to different information over different time points in an exercise bout.

Ref: 6717 Paper 2


Laura Quayle, Liverpool John Moores University; Jamie Taylor, University of Central Lancashire; Zoe Knowles, Liverpool John Moores University; Amy Whitehead, Liverpool John Moores University

**Performance Excellence**

**Objectives:** The study aimed to identify differences in the decision making process of UKCC Level 2 and UKCC Level 4 rugby league coaches using a novel methodology of the Think Aloud (TA) Protocol.

**Method:** Participants were selected based on predetermined national governing body criteria for coaching qualifications. Two participant groups consisted of four UKCC level 4 coaches who had completed a UK University Elite Coaching Practice postgraduate degree programme and awarded the UKCC Level 4. The second were four UKCC Level 2 coaches who coached within amateur rugby league clubs. Participants were instructed to TA throughout three coaching sessions and were instructed to verbalise everything they were thinking, which was recorded via a Dictaphone. All audio was transcribed verbatim and was thematically analysed via deductive coding, which were based on ‘gathering information’, ‘planning’ and ‘evaluation and reflection’

**Results:** Level 4 coaches verbalised more around ‘planning’, and ‘evaluation and reflection’. Level 2 coaches were found to verbalise more on ‘gathering information’ specifically within ‘observation and awareness of the athlete’.

Key differences between levels of expertise identify that lower level coaches form decisions on direct observation in-event. However, Level 4 coaches may not consciously focus on gathering information, and instead look to plan and use observation as a facilitative tool within reflective decision processing.

**Conclusion:** This study demonstrated how TA can elicit differences between applied sport coaches with different levels of expertise. Study findings can be used to educate coaches and develop practice by providing evidence of thought processes throughout a task

Ref: 6718 Paper 3

“Think Aloud” – Examining the suitability of traditional and task specific training for Think Aloud protocol.

Phil Birch, University of Chichester; Chris Dowrick, University of Chichester; Amy Whitehead, Liverpool John Moores University

**Performance Excellence**

**Objectives:** The study aimed to examine the utility of a traditional think aloud (TA) training package versus a golf specific TA training package.

**Design:** Social validation interviews were used to assess participant’s perceptions and satisfaction of traditional TA training methods and task specific TA training methods.

**Methods:** Skilled (n = 10; handicap ≤ 5) and low skilled (n = 10; handicap ≥ 18 handicap) golfers were trained to use TA, then required to TA whilst completing a short game challenge on a golf practice green. Prior to performing, participants were allocated to their TA training treatment; traditional TA training or golf specific TA training. Specifically, the traditional training video incorporated alphabetical problems solving, mental arithmetic, general problem solving tasks and required participants to TA during these tasks. The golf specific training video incorporated three golf scenarios which required participants to verbalise their thoughts again whilst engaging in these tasks. Social validation interviews were conducted immediately following the short game challenge to explore each participant’s perceptions regarding the adequacy of the training they received. A deductive thematic analysis to identify satisfaction and evaluations of the training provided was conducted.

**Results:** Although both groups reported positive responses from the TA training they had received, the golf specific TA training group did provide more positive responses towards this type of training.

**Conclusions:** This study provides evidence that task specific training may be more appropriate for studies that employ TA methodology and that researchers should consider this for future research within this area.

Ref: 6719 Paper 4

“Think Aloud”: Investigating the relationship between cognition, external physiological and performance feedback in 16.1km time trial cyclists.
Aim: This study aimed to investigate the relationship between the cognition's of trained and untrained cyclists over a 16.1km time trial (TT) using Think Aloud (TA) protocol analysis.

Design: Think Aloud protocol was used to capture in event thoughts that were verbalised throughout a 16.1km competitive TT and each time trial was conducted using a CompuTrainer cycle ergometer.

Method: Ten trained and ten untrained cyclists participated a 16.1km TT and were asked to TA throughout their performance. Data was transcribed verbatim, analysed using deductive content analysis and grouped into themes: (i) internal monitoring, (ii) active self-regulation, (iii) external association (iv) internal dissociation, (v) external dissociation. Heart rate, distance, time, power and speed and cognition's were analysed over four quartiles.

Results: With each kilometre normalised to average trial speed, the untrained group performed a faster than average initial km in comparison to the trained group, but slower than average speeds between 6-9 km. Untrained participants verbalised more External Associative thoughts than trained participants in the first (U = 21.0, p = 0.028) and second quartiles (U = 21.5, p = 0.030) of the TT, and more Internal Dissociative thoughts in the second quartile (U = 15.0, p = 0.007). The increased frequency of these thoughts in the second quartile corresponded with a slower than average pace.

Conclusion: This novel study demonstrates differences in cognition between trained and untrained participants, which also correspond with differences in pacing strategy. These findings could be useful for understanding pacing decisions during cycling performance.

Ref: 6624 Workshop
How will I know I am a Chartered Psychologist?
Colin Ford, Seajay Sport Psychology; Stephen Pack, University of Hertfordshire

When I started my QSEP Stage 2 training the first thing I wanted to know was “How will I know that I am a Chartered Sport and Exercise Psychologist (CSEP)?” I know that I will be assessed and if found satisfactory I will be conferred with the title. My question was really about two things. Firstly, to satisfy my own moral conscience, so that I could feel I am worthy of being an independent practitioner. So that I could believe that I am able do deliver a service for my clients that is going to be meaningful and effective for them.

Secondly, for my training to be effective, what skills and experience do I need to develop to be a competent practitioner? To know that, we have to know what is it that makes a person capable of being a CSEP and how are those capabilities can be developed by the individual candidates. What should the QSEP training programme be aiming to achieve?

In the workshop session I will present an overview of theories of expertise and how these might relate to being an expert of chartered status in the sport discipline. Participants will be given the opportunity to discuss their own views of what makes a CSEP an expert in their field. The session will finish with some thoughts about the implications for the QSEP training process and what it is that candidates really need to know.

Ref: 6650 Oral
Burnout and Depression in High Level Young Athletes
Juergen Beckmann, Technical University of Munich

Objectives: Main objective was to identify determinants of burnout and depression in elite athletes. Methods: Two cross-sectional study with 162 elite and 199 junior elite athletes and a longitudinal study (N=246) were conducted. These 3 studies were complemented by a qualitative study. Results: The cross-sectional studies found depression scores to be associated with high levels of sport-specific stress combined with insufficient recovery. Athletes in individual sports showed significant higher scores in depression than athletes in team sports. Attribution after failure accounted for a mediation with a significant indirect effect and significant coefficients with sport discipline and to the dependent variable depression. In the longitudinal study
dysfunctional attitudes and resignative coping style was a significant predictor for both burnout and depression scores. Perfectionism and chronic stress significantly predicted burnout but not depression. Depression was significantly predicted by lack of recovery. The qualitative study revealed double burden, sport specific disequilibrium of stress and recovery as major sources of stress.

**Conclusions:** Several sport specific factors associated with depression in elite athletes were identified. Athletes in individual sports are more prone for developing depressive symptoms than athletes in team sports. Determinants of depression and burnout in athletes differ. Prevalence of depressive symptoms is especially high in young athletes. A burnout and depression screening instrument for junior athletes is developed. An Internet Site that informing young athletes on stress and psychological problems is launched.

Ref: 6657 Oral

**Which Comes First as a Neophyte: a Reflective Model or Practitioner Philosophy?**

*Charlotte Murphy, Hartpury College; Sally McGinn, Headforawin*

**Performance Excellence**

**Background:** Applied practice literature and case study accounts are guiding neophytes through their training to get their Sport Psychologist ‘wings’; we are advised to employ a reflection model and we are required to develop a practitioner philosophy to be deemed a competent professional. We have the ability to evaluate appropriate models and philosophies yet have great difficulty deciding on one.

**Key Points:** Your individual attributes, thoughts, and feelings could or will affect your approach as a Sport Psychologist. With the purpose of reflection allowing the possibility of growth, learning, and perspective through experience; how do you work out what your reflective model should look like? If we are developing such a personal, individualised process to help us develop professionally, should this not be based upon your beliefs, values, and philosophy of approach?

Your values provide a guiding principle to your approach; effectively your philosophy, which is typically based on personal experience combined with theoretical evidence. With every approach taken with your clients being unique and dependent on their needs, is your philosophy adaptable? Your philosophy may stay the same but your approach will change. How do you decide on your approach and philosophy? We have to then question whether our reflection on the use of these approaches is suitable for our choice of philosophy.

**Conclusions:** We should consider these implications as a neophyte to prevent any applied professional conflict between the expectations, requirements, and processes of the BPS Stage 2 QSEP and our own values, beliefs, and philosophies.

Ref: 6665 Oral

**Elite athlete perceptions and experiences of the relationship between well-being and sport performance: A thematic narrative analysis**

*Hannah Clowes, Liverpool John Moores University*

**Mental Health & Wellbeing**

**Objectives:** The study examined elite athletes’ narratives of the well-being and sport performance relationship.

**Design:** Qualitative thematic narrative analysis to explore in-depth athletes’ examples and experiences.

**Methods:** 10 elite athletes (Mage=24.6 years, 5 male/5 female) from 8 sports, recruited through purposeful sampling, participated in semi-structured interviews. Data were analysed via thematic narrative analysis.

**Results:** The majority of athletes drew upon a narrative of ‘balance’ within their lives to interpret their well-being and performance experiences, indicating performing well was often perceived to be associated with positive/high well-being (e.g. being happy with life outside sport) and performing poorly was associated with negative/low well-being (e.g. injury, distracted thoughts). Athletes reported managing their sporting and nonsporting commitments, utilising personal and organisational support networks, and developing a multidimensional identity as being important to maintain the life balance needed for performance. Where performance did not coincide with well-being, athletes drew on the alternative ‘mind-set’ narrative where controlling distractions and self-generating an optimal mind-set were deemed significant for successful performance independent from well-being state.

**Conclusions:** The study highlights that athletes believe the well-being and performance relationship to be complex and requires the development of high confidence levels, coping skills, and resilience to increase the probability of optimal performance. Findings may inform elite athlete lifestyle support interventions and associated practitioner training.
Purpose: The purpose of this presentation is to communicate strategies developed by a trainee psychologist in addition to psychological skills training. The aim is to highlight the overly simplistic approach that trainees are advised to adopt, and demonstrate the value of reflective practice in mastering new, more holistic ways of working.

Background: At the beginning of the Stage 2 process it is suggested that trainees should adopt a cognitive behavioural therapy (CBT) based, psychological skills training approach. However, this only enables a practitioner to cover a small part of the complex psychological aspects of sport. Therefore, this trainee used reflections on the transfer of theory to practice to develop a more holistic approach to working with athletes.

Key points: The key points made in this presentation will highlight the limitations of a purely psychological-skills training approach. An argument will be made for more trainees to consider a more holistic approach to their work with athletes. Finally, the benefits of the reflective aspect of the Stage 2 process will be offered. Professional and ethical boundaries are considered.

Conclusions: Sport psychology has developed beyond a basic psychological skills training approach. Due to the increasing prevalence of sport psychology concepts in coaching qualifications, most coaches believe they can deliver techniques that, for example, enhance confidence or reduce performance-related anxiety. Therefore, sport psychologists must have a more diverse and holistic skill set if they are to add value to the programme of an athlete or team.

Objectives: This study characterised the mental health profile of elite athletes, longitudinally examined four outcomes and their interrelations, and explored potential moderators.

Design: This study adopted a longitudinal, quantitative design in order to facilitate the ongoing monitoring of participants’ mental health.

Methods: Elite team sport athletes (N=188) aged 22.80±4.35 years with an average of 12.68±5.27 years sport experience were assessed using psychometric inventories over 13 weeks in pre-season/early competitive season (compliance = ~91%). Outcomes included the Profile of Mood States-Brief and Quick Inventory of Depressive Symptomatology (QIDS), administered weekly, and the Pittsburgh Sleep Quality Index (PSQI) and the trait subscale of the State-Trait Anxiety Inventory (STAI-Y2), administered monthly. Analyses were conducted using SPSS.

Results: The average Total Mood Disturbance was 4.4±9.2. 11.7% of athletes were classed as having mild depression (QIDS≥6). 41.0% and 7.4% of athletes were categorised as poor quality sleepers (PSQI>5) and highly trait anxious (STAI-Y2>50), respectively. However, all four outcomes improved across the 13 weeks. Thirteen of the 14 athletes who were highly trait anxious and 17/22 athletes with mild depressive symptoms were also poor sleepers.

Conclusions: Although depressive symptoms, poor sleep quality and trait anxiety appear to affect elite athletes, these outcomes, as well as mood, improve during a 13-week period spanning pre-season/early competitive season. Subjective measures of mental health outcomes are easy to administer and may prove useful to guide training load adjustments and indicate future performance among team sport athletes. Practitioners could consider adopting such measures with athletes on a long-term basis.

A range of variables such as motivation can influence endurance performance, and psychological skills strategies such as imagery, goal-setting, and self-talk can benefit endurance performance, as established by a recent review. There are, however, other strategies and variables that have not yet been explored extensively in endurance performance. This symposium will cover the potential influence of these variables and strategies on endurance performance. We will also share our experiences of providing sport psychology services to the public. The first
presentation discusses the role of sources of self-efficacy in endurance performance. Following on from this, the second presentation focuses on pacing and discusses the effect of pace makers in running. The third presentation then shares findings of the effects of mental fatigue on half-marathon performance. This is followed by the presentation of a study applying the facial feedback hypothesis to endurance performance, where the effects of intentionally frowning during cycling were measured. The final presentation critically discusses how to set up a psyching team in the UK, where mental support is provided to endurance athletes pre, during, and post endurance events.

Ref: 6631  Paper 1
The role of sources of self-efficacy in endurance performance
Paul Anstiss, University of Kent; Carla Meijen, University of Kent

Objectives: Self-efficacy is believed to be a key psychological construct underlying endurance performance, but few studies have investigated the sources of self-efficacy in endurance athletes. Self-efficacy theory has suggested there are five sources of efficacy beliefs – mastery experiences, vicarious influences, verbal persuasion, physiological states and emotional states but little is known about how athletes utilise these sources to construct efficacy beliefs. Greater understanding of the sources of self-efficacy will help shape the delivery of research informed self-efficacy interventions.

Design: Qualitative semi-structured interviews.

Methods: Twelve endurance athletes were interviewed about what informs their efficacy beliefs. Athletes were asked to give a rating of their confidence in their own abilities, and subsequent questions focused on the proposed five sources of self-efficacy. Probing questions attempted to investigate these in more detail as well as how the sources may interact with each other.

Results: Primary deductive analysis has indicated that endurance athletes make use of a wide variety of sources. Physiological states appears to be the most prevalent source, particularly during competition. A relationship between mastery experiences and physiological states, with each source affecting the other, was also indicated. Differences exist between experienced and less experienced athletes, particularly how they allow positive and negative experiences to influence their efficacy.

Conclusion: Endurance athletes appear to base their efficacy beliefs on a wide range of sources, with particular emphasis on physiological states. Interventions which set out to improve perceptions of physiological states, such as through reappraisal or self-talk, could lead to improvements in self-efficacy.

Ref: 6632  Paper 2
Effect of a Pacemaker on 1600m Time Trial Running Performance
Chris Fullerton, University of Kent; Andy Lane, University of Wolverhampton; Tracey Devonport, University of Wolverhampton

Objectives: The aim of this study was to investigate mechanisms through which a pacemaker might be helpful during a 1600m time trial through examining the effects on self-set goals, goal-confidence, emotions and performance.

Design: Mixed-design repeated measures between-subjects study.

Method: 19 well-trained runners completed two 1600m time trials: 10 runners had a designated pacemaker who supported their individual pacing strategy to attain self-set goals, and 9 runners self-paced. Lap times, overall performance time, emotion, and perceived difficulty of goals were recorded for each trial. In addition, a self-referenced measure was assessed by comparing finish time with goal time.

Results: There was no significant difference in 1600m performance between the paced and self-paced groups. The paced group reported higher anxiety and lower happiness, and ran a slower first lap than the self-paced group. There were no differences in perceived exertion or goal-confidence.

Conclusions: Although there was no significant difference in performance, the significance of the present study is that casts light on the nature of self-regulation, and illustrates the importance of building practice when introducing new tactics to influence performance, such as following a personally designed pacing strategy. We suggest that the self-paced group learned to pace the 1600m run over the two trials, whereas the paced group reported increased anxiety and reduced happiness. We suggest future research investigates factors to promote effective pacing strategies including learning how to self-pace and using a pacemaker.
**Ref: 6633 Paper 3**
The effects of mental fatigue on long-term endurance performance  
Chiara Gattoni, *University of Kent*; Samuele Marcora, *University of Kent*; Barry O’Neill, *GSK Human Performance Lab*  

**Endurance**

**Objectives:** The effects of mental fatigue on long-term endurance performance have not yet been tested in a field setting. This study investigated the effects of mental fatigue on performance during a simulated half-marathon race in amateur runners. We hypothesized that mental fatigue has a detrimental effect on half-marathon performance.

**Design:** Randomised post-test only controlled experiment.

**Methods:** Thirty-one amateur marathon runners were randomly allocated to either a group performing a 50-min mentally-fatiguing task before the half-marathon, or a control group (reading magazines for 50 min before the half-marathon). All subjects completed psychological questionnaires and fatigue visual analogue scales before and after experimental treatment, and after the half-marathon. Performance time, speed, heart rate and rating of perceived exertion were measured during the simulated race.

**Results:** Runners who performed the mentally-fatiguing task completed the half-marathon approximately five minutes slower (6,546 ± 757 s) than the control group (6,235 ± 611 s) (Cohen’s d = 0.454; p = 0.201). Practically, the true effect size at the population level is possibly harmful (76.5% probability), unlikely trivial (20.0% probability) and unlikely beneficial (3.5% probability).

**Conclusions:** Although the mentally-fatiguing task possibly produced a performance decrement that might be harmful to half-marathon runners, additional data are required to draw firmer conclusions. As these results are consistent with experimental research in controlled settings, endurance performers are encouraged to avoid mentally-draining activities before they compete.

**Ref: 6634 Paper 4**
Application of the Facial Feedback Hypothesis to Endurance Performance— Does Frowning Modulate Perception of Effort?  
Alister McCormick, *University of St Mark & St John*; Carla Meijen, *University of Kent*; Benjamin Pageaux, *Univ. Bourgogne-Franche Comté*; Samuele Marcora, *University of Kent*  

**Endurance**

**Objectives:** People frown during strenuous exercise. Research on the facial feedback hypothesis raises the intriguing possibility that frowning may modulate (i.e., amplify/soften) perception of effort during endurance performance and therefore play a causal role in endurance performance. This study examined whether intentionally frowning throughout a cycling time-to-exhaustion test increased perception of effort and, consequently, reduced time to exhaustion. This study also examined the effects of frowning on affective states experienced during performance and after exhaustion.

**Design:** A randomised, controlled, crossover experimental design was used to compare (within-subjects) the effects of frowning with control conditions.

**Methods:** Ten recreational endurance athletes performed cycling time-to-exhaustion tests in three conditions. In a frowning condition, participants frowned throughout the time-to-exhaustion test. In a matched-workload control condition, participants pressed their thumb against the ergometer handlebar throughout the test. Electromyography biofeedback was used to deliver these interventions. There was also a no-intervention control condition. Perception of effort and exercise-related affect were measured throughout the time-to-exhaustion test, and positive and negative affective states were measured before and after the test.

**Results:** Intentionally frowning did not affect perception of effort, affective states experienced while cycling or after exhaustion, or time to exhaustion.

**Conclusions:** Frowning may not modulate perception of effort or affective responses during endurance exercise to exhaustion. Although additional research using different methods would allow firmer conclusions to be drawn, these findings suggest that interventions that target the expression of a frown would be unlikely to offer an efficacious method of improving endurance performance.

**Ref: 6635 Paper 5**
Running a Psyching Team: The introduction of mental support at endurance events in England  
Carla Meijen, *University of Kent*  

**Endurance**
**Purpose:** To share and reflect on setting up and running a ‘Psyching Team’, where mental support is provided to endurance runners, in the United Kingdom.

**Background:** Participating in long-distance running events can be mentally demanding, particularly for first-time runners. Psyching teams provide brief psychological support to participants before, during, and after long-distance running events such as marathons. This is a concept that is developed and refined in America over the past 30 years, and in addition to potential benefits to runners, it also provides mental skills training and hands-on experience to team members, and helps to demystify sport psychology to those who do not normally have access to this service.

**Methods:** This presentation will focus on the development of a UK-based model of psyching teams. Strategies that have been used, such as mantras and anchoring where participants draw on their positive experiences, will be discussed. There will be a critical reflection of the potential benefits of a psyching team and an evaluation of the effectiveness of using brief, non-traditional interventions. In addition, areas of growth will be identified.

**Conclusions:** Psyching teams are becoming part of more endurance events across America and Europe. Although there are difficulties with evaluating the effectiveness, anecdotal evidence such as self-reported feedback points to psyching teams adding value. When setting up a psyching team, organisers need to carefully consider their philosophy, identify funding sources, ensure that race directors are on board, understand clinical issues, and provide training opportunities for psyching team members.

**Ref:** 6760 Workshop

**Elephant Spotting: The importance of shared formulation in working more effectively with athletes.**

**Andrew Rogers, Changing Minds UK; James Bickley, Changing Minds UK; James Bell, RFU; Matt Thombs, Changing Minds UK**

**Mental Health & Wellbeing**

The workshop is designed for applied psychologists plus other practitioners and coaches who work with athletes in complex systems. More specifically, the workshop will explore the use of multi-factorial psychological formulation as a process to help practitioners develop a shared understanding of their athletes’ challenges (and successes). The team formulation process or ‘elephant spotting’ (Bickley et al., 2016), incorporates the integration of psychological knowledge from a broad range of models and theories to develop an understanding of the athlete’s experience, their wider support system, and the broader environment and is used to inform a coherent, consistent and holistic intervention plan that is open to testing and review. The workshop will use a series of case examples from the authors’ experience in elite sport to bring the team formulation process to life and will use interactive discussion to outline the key principles of effective ‘elephant spotting’.

By the end of the workshop, delegates can expect to feel more confident using the principles of effective ‘elephant spotting’ and its wider utility in the systems they currently operate in.

**Ref:** 6683 Oral

**Antecedents and Consequences of Fixed and Growth Mindsets in Elite Swimmers**

**Kate Lord, Loughborough University; Christopher Spray, Loughborough University**

**Skills Acquisition**

**Objective:** The present study offers an in-depth exploration of the key characteristics of fixed and growth mindsets in elite swimmers, and the possible antecedents and consequences of these mindsets.

**Design:** A qualitative approach was adopted because it can create a deeper personal understanding into how mindsets are formed. In addition, it was apparent in the literature that most research into mindsets has been quantitative in nature, either in the educational domain or with youth/sub-elite athletes. This highlighted the need for idiographic research in elite level sport.

**Methods:** 10 elite swimmers and four coaches were purposely selected, and were interviewed using semi-structured interviews. Interviews were transcribed and the method of inductive thematic analysis was applied to identify key themes in the data set.

**Results:** The types of mindsets that emerged were fixed mindsets, growth mindsets and a combination of both mindsets. A number of potential antecedents of fixed and growth mindsets were identified, such as the motivational climate, culture and upbringing. Consequences of fixed and growth mindsets were presented as three main outcomes: affective, cognitive and behavioral.

**Conclusions:** The mindset that ability can be developed by hard work and learning was promoted by all the athletes and coaches. This mindset may have been shaped by parents, coaches and experience. A small amount of natural talent was perceived as needed for elite success, but hard work was emphasized as more important to their
swimming development. This research discovered many practical implications that can enhance the development of elite sport.

Ref: 6680 Oral
A mixed-methods examination of military veterans’ experiences of competing at the Invictus Games
Gareth Roberts, University of Bath; Rachel Arnold, University of Bath; James Bilzon, University of Bath; James Turner, University of Bath

**Exercise**

**Objectives.** The purpose of this study was to develop a greater understanding of UK military veterans’ experiences of an international competitive sporting event. Specifically, the study aimed to examine how various psychological variables changed over the event, examining possible associations with veterans’ health, well-being, and performance.

**Design.** A longitudinal design was adopted to explore patterns of change in psychological variables (i.e., organizational stressors, coping, social support, resilience, motivation) in the lead-up to, during, and after the 2016 Invictus Games (IG), as well as the impact these could have on health, well-being, and performance.

**Methods.** Forty IG athletes completed questionnaires measuring study variables at seven time points (6-, 3-, and 1-week before, during, and 1-, 3-, and 6-weeks post-games). A control group of twenty military veterans not competing, completed the same procedures. Multilevel growth curve analyses examined and compared growth trajectories of variables. Informed by the quantitative data, interviews were conducted with a subset of IG participants to gain deeper insight into athletes’ experiences.

**Results.** The analyses are expected to reveal differences between groups (i.e. superior versus inferior performers) in growth trajectories of measured variables. Differences are also expected between the IG participants and control group.

**Conclusions.** The study will provide the first insight into the changes that military veterans experience in certain psychological variables in the process of a sporting competition, and whether these psychological variables can influence health, well-being, and performance. The findings will offer recommendations for practice regarding optimal support of military veterans using sports recovery pathways.

Ref: 6690 Oral
Developing resilience-based life skills: Can we support lifelong wellbeing?
Hamish Cox, Cardiff Metropolitan University; Rich Neil, Cardiff Metropolitan University

**Skills Acquisition**

**Objectives:** Given the utility of sport as a context for positive youth development, skills that support lifelong wellbeing and enable individuals to thrive in multiple contexts should be considered. The aim of this research was to design, implement and evaluate a resilience-based life skills intervention for adolescents. Utilising the challenge model of resilience, a 16-hour intervention was delivered to adolescents via the ‘vehicle’ of golf.

**Design:** An action research methodology informed the initial design, delivery and process evaluation of the intervention. To assess the impact and efficacy of the intervention, a mixed methods design was employed.

**Methods:** Four separate intervention groups were delivered within a golf club, to a total of 50 non-athlete adolescent participants. Informing the process evaluation, the intervention facilitator engaged in a reflective process as part of the action research methodology. The outcome evaluation was carried out via participant focus groups as well as utilising the Youth Life Skills Scale (YLSS) and Adolescent Resilience Questionnaire (ARQ).

**Results:** Following a thematic analysis of participant focus groups, three key themes emerged: engagement and experience, life skills learning and transfer, and dealing with challenges. Due to the mixed methods design, the quantitative findings will be discussed alongside qualitative results to provide a contextual landscape for each individual intervention group.

**Conclusions:** The challenge model of resilience provided a suitable framework for supporting the development of resilience-based life skills. Due to the applied nature of this research, practical recommendations for sport psychology practitioners will be discussed alongside future research directions.

Ref: 6682 Oral
Stimulating people with disabilities who are ready to participate in physical activity: a systematic review
Eva Jaarsma, University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences; Brett Smith, University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences
**Exercise**

**Purpose:** The aim of this systematic review was therefore to investigate what is known from previous literature about promoting physical activity for disabled people who are intenders. A second aim was to determine which interventions or elements of interventions significantly improved regular physical activity of people with disabilities.

**Background:** Participating in physical activity can improve fitness, reduce secondary conditions and increase self-confidence. Despite these benefits the majority of people with disabilities are not physically active. Therefore knowledge on how to stimulate people with disabilities to become physically active is needed. To successfully increase participation in physical activity, people with disabilities need to have the intention to become physically active (i.e. intenders).

**Methods:** Six databases were searched using a combination of MeSH terms and free texts. Inclusion criteria were studies focusing on people with disabilities, physical activity and intention. Exclusion criteria were studies not focusing on people with disabilities, studies focusing on children or studies with their main focus on biomechanical, physiological or neurological aspects of physical activity. Nineteen studies were selected in this review, with 18 studies including people with SCI. Frequently mentioned positive outcomes for intenders were self-efficacy, outcome expectancies, generating action and coping plans and positive attitude towards physical activity.

**Conclusions:** Tailor-made and client-centred physical activity programs including self-efficacy, outcome expectancies, generating action and coping plans and positive attitude will improve chances of long term behaviour change and adopting a more physically active lifestyle.

Ref: 6587 Oral

**Life Skills Development and Well-Being in Physical Education: The Role of the Teaching Climate.**

Lorcan Cronin, Edge Hill University; Paul Russell, University of Bolton; Claire Mulvenna, University of Bolton; Justine Allen, University of Stirling

**Skills Acquisition**

**Objectives:** Physical education is acknowledged as a setting to promote young peoples’ development and well-being, provided a positive teaching climate exists. The present study explored the relationships between teachers’ autonomy support, students’ life skills development within physical education and psychological well-being.

**Design:** This descriptive study used a cross-sectional research design. Participants were recruited from six schools across the United Kingdom to ensure a diverse sample of physical education students.

**Method:** School physical education students (N = 294) completed measures of teacher autonomy support, life skills development within physical education (teamwork, goal setting, time management, emotional skills, communication, social skills, leadership, and problem solving) and psychological well-being (self-esteem, positive affect, and satisfaction with life).

**Results:** Bivariate correlations were consistent with self-determination theory. Autonomy support was related to both life skills development and psychological well-being. Mediational analysis revealed that teamwork fully mediated the relationship between teachers’ autonomy support and self-esteem, teamwork and leadership partially mediated the relationships between teachers’ autonomy support and positive affect, and time management fully mediated the relationship between teachers’ autonomy support and satisfaction with life. The associations between teachers’ autonomy support and all three psychological well-being indicators were also mediated by total life skills.

**Conclusions:** Results suggest that the relationship between teachers’ autonomy support and students’ psychological well-being can occur through the promotion of teamwork, leadership, time management, and total life skills. Therefore, teachers should endeavour to create an autonomy supportive climate that promotes young peoples’ life skills and fosters their psychological well-being.

Ref: 6788 Oral

**Mental toughness, mindfulness, and pain catastrophizing and their association with pain experience**

Martin Jones, University of Exeter; Alexandra Saunders, University of Exeter; Oliver Whitton, University of Exeter; John Parker, University of Gloucestershire

**Exercise**

**Objectives:** The purpose of this study was to examine the relationship between mental toughness (MT), pain catastrophizing (PC), and mindfulness and pain threshold, intensity, and tolerance.

**Design:** We adopted a prospective correlational research design where participants completed measures of trait-like individual differences before a cold pressor test.
Methods: Following ethical approval we recruited 132 participants. We asked participants to complete measures of MT, PC, and mindfulness. We then invited participants to submerge their nondominant hand in 1°C circulating water. We recorded the time at which participants reported the first sign of pain (threshold) and asked them to rate the intensity of pain on a visual analog scale (intensity). We then recorded how long they could keep their hand submerged in the cold water (tolerance).

Results: We found small relationships between MT and threshold (r=.041, p = .321); intensity (r=.001, p = .494); and tolerance (r=.095, p = .138). We found small relationships between mindfulness and threshold (r=.107, p = .110); intensity (r=.097, p=.135); and tolerance (r=.047, p = .135). We found small relationships between PC and pain threshold (r=.094, p = .142) and intensity (r=.183, p = .018) and a moderate relationship between PC and tolerance (r=-.355, p&lt;.001).

Conclusions: In the current sample, mental toughness and mindfulness are not meaningfully related to pain experiences however pain catastrophizing is a stronger correlate of pain intensity and pain tolerance and should be considered as a potential predictor of pain.

Ref: 7061 Oral
Developing, Implementing and Evaluating life skills modules for Golf Union of Wales Coaching Centres across Wales.

Charlotte Williams, Cardiff Metropolitan University; Rich Neil, Cardiff Metropolitan University; Brendan Cropley, Cardiff Metropolitan University; Tim Woodman, Bangor University; Ross Roberts, Bangor University

Skills Acquisition

Three years ago the Golf Union of Wales (GUW) began developing the ‘Coaching Centres’; a five year junior golf program aimed at providing young people between the ages 8-12 the opportunity to learn to play golf at GUW certified facilities under the expert tuition of a GUW accredited PGA Professional. Within these centres, young people are provided with development opportunities across five pillars: 1) SwingSMART; 2) MoveSMART; 3) LiveSMART; 4) PlaySMART and 5) GolfSMART. The focus of our project is LiveSMART, where we have attempted to use golf as a mechanism to develop life skills within young people. Specifically, we aim to develop life skills under four key categories; Live Aware, Live in Control, Live as Yourself, and Live Positively. As individuals progress through the program we provide them with opportunities to develop their levels of understanding and application of specific life skills that fall within these four categories. This poster presentation gives insight into phase 1 of our project which consists of the development, implementation and evaluation of the content and delivery methods for year 1 of LiveSMART. We present the research findings from phase 1, in light of the action research cycle of critical reflection and strategic action (Berg 2004). We also propose changes to the content and delivery methods within year 1, and offer insight into phase 2.

Keynote

Psychology of Physical Activity: Interventions and outcomes

Professor Nanette Mutrie, University of Edinburgh

In this presentation I hope to illustrate how sport and exercise [physical activity] psychologists can inform and develop interventions that will help adults increase their levels of physical activity. This will include discussion of the need for recruitment strategies, the use of behavior change techniques and theories, approaches to activity counseling and knowledge of appropriate activity. In terms of outcomes I will discuss measurement of physical activity and appropriate tools for measuring mental health and psychological well-being. Throughout I will illustrate these discussions from projects I have been involved with including Football Fans in Training [http://www.ffit.org.uk], ActWELL, and Understanding Sedentary Behaviour. In addition I will make the case for teachers and coaches to be as aware of ‘physical activity’ psychology as they are of ‘sport’ psychology and challenge the audience to discuss the balance they have on these two aspects of our division in their teaching.

Ref: 6460 Oral
Acceptability of a 10 week instructor led, group based HIIT intervention for physically inactive adults

Florence Kinnafick, Loughborough University, School of Sport, Exercise and Health Sciences; Cecilie Thøgersen-Ntoumani, Curtin University; Sam Shepherd, Liverpool John Moores; Oliver Wilson, Leeds Beckett University; Anton Wagenmakers, Liverpool John Moores; Chris Shaw, Deakin University
**Objectives:** The current study aimed to understand the acceptability of high intensity interval training (HIIT) in comparison to moderate intensity continuous training (MICT) in a 10 week workplace intervention.

**Design:** Researchers argue that social-validity should move beyond the traditional questionnaire format and include in-depth qualitative methods of assessment. Focus groups included both exercise training groups to generate discussion and comparisons between training approaches.

**Methods:** Eighteen (6 male, 12 females, M age=40.3 SD=4.5 years, M BMI=28.1, SD=1.6 kg.m⁻²) physically inactive participants who had participated in the workplace intervention were interviewed as part of 3 separate focus groups. Perceptions of programme satisfaction, barriers and facilitators to adhering to the programme, and longer-term exercise maintenance were explored. Interview data was analysed using thematic analysis. Four criteria (credibility, transferability, dependability and confirmability) were used to ensure trustworthiness.

**Results:** HIIT was comparable to more traditional MICT interventions for achieving satisfaction due to perceived positive outcomes. HIIT specifically, initiated interest, feelings of satisfaction and addressed the barrier of perceived lack of time. MICT group members described feelings of boredom during longer sessions. Perceptions of social support from a significant other outside of the programme, and autonomous motivation were key drivers of continued exercise behaviour in both groups.

**Conclusion:** The barriers and facilitators of HIIT and MICT occurred at multiple levels of influence (individual, social and the physical environment) which supports the use of socio-ecological models to help guide programme design/delivery. Future work should investigate the influence of HIIT programmes on sustained physical activity behaviour.

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Ref: 6754 Symposium

**Adapting mental skills training from sport to homeless youth: What works and why?**

Sam. J Cooley, University of Birmingham

**Mental Health & Wellbeing**

The International Society of Sport Psychology (ISSP) states that sport psychologists should utilise their knowledge to support human welfare and social policy within the society they live and work. This proposition acknowledges that the approaches and benefits of sport psychology can reach beyond the context of sport. With this in mind, we have established a partnership with St Basils, a youth homeless housing service. The aim of this partnership is to promote social change with the Mental Skills Training for Life programme (#MST4Life). In Paper 1 of this symposium, we present our delivery model, including the core principles of MST4Life, and how these offer a unique approach to working with a disadvantaged youth population. In Paper 2, a feasibility study is presented, which establishes the potential impact of MST4Life following an initial 8-week pilot programme. Paper 3 focuses on the mental skill of self-awareness, and how MST4Life has adapted techniques such as performance profiling to identify, monitor, and develop individual strengths. Evidence is also provided of the typical mental strengths developed in those who take part in MST4Life. The focus of Paper 4 is on support seeking and how this mental skill is developed through activities such as the Dream Team. Finally, a qualitative investigation is presented in Paper 5, which seeks to understand the connections between the processes and outcomes of MST4Life. In all five papers, practical examples and solutions are provided for adapting mental skills training (MST) from sport to a disadvantaged youth population and the vice versa.

Ref: 6755 Paper 1

**The Delivery Model of the Mental Skills Training for Life Programme**

Jennifer Cumming, University of Birmingham; Sam. J Cooley, University of Birmingham; Mary. L. Quinton, University of Birmingham; Benjamin. J. Parry, University of Birmingham; Mark. J. G. Holland, Newman University

**Mental Health & Wellbeing**

**Purpose:** This talk explains the delivery model of MST4Life, a programme co-produced with a youth homeless housing service to improve outcomes in complex and hard to reach young people.

**Background:** MST is an approach more commonly used in sports settings to support the psychological development of athletes for performance and well-being benefits. Many of the same techniques taught in MST programmes (e.g., goal-setting, planning) are also relevant for success in other life domains. In adapting MST to homeless young people, we developed a delivery model that is informed both psychologically (e.g., self-determination theory, strengths-based perspective) and pedagogically (e.g., experiential learning theory, groupwork). We also draw from best practice guidance for meeting the psychological and emotional needs of homeless young people.

**Key points:** MST4Life is implemented in two phases: community-based (10-weekly sessions) and residential course (3-night trip to an outdoor pursuits centre). Facilitators focus on creating a needs satisfying and emotionally safe
environment for the young people through rapport-building skills and autonomy-supportive, competence-supportive, and relatedness-supportive behaviours. Mental skills are developed experientially and through structured reflections, rather than a more prescriptive educational approach. Transfer of learning is fostered by encouraging participants to notice when opportunities are presented to try out new ideas and skills (e.g., seeking employment).

Conclusions: Although MST is a core activity within sport psychology, programmes rarely acknowledge the pedagogical approaches used to create learning experiences. By articulating the MST4Life delivery model, we hope to start a dialogue on best practice within mental skills training for both sport and life.

Ref: 6756 Paper 2
The feasibility of a strength based mental skills training programme for homeless youth
Mark. J. G. Holland, Newman University; Sam. J. Cooley, University of Birmingham; Mary. L. Quinton, University of Birmingham; Benjamin. J. Parry, University of Birmingham; Jennifer Cumming, University of Birmingham

Mental Health & Wellbeing

Objectives: This presentation discusses the results of a feasibility study for the MST4Life programme. The aims were to investigate the intervention’s feasibility in relation to its delivery, evaluation, and demand.

Design: A single sample, pre/post time-point design was employed.

Intervention: The MST4Life is a theoretically informed and strength-based programme delivered in two phases. First, eight weekly community-based sessions targeted both existing and new mental skills and qualities. Second, a four-day outdoor education residential to the Lake District aimed to further promote and develop these attributes in a novel environment.

Methods: Participants were two male support workers and 15 young people from two housing service sites (Mage = 20 years, SD = 2.4; 54% male). These sites were chosen because they accommodate and support some of the “hardest to reach” young people within the wider service. Data collected included attendance records, semi-structured video diary rooms comprising reflections both in- and on-action, and three post-intervention social validation focus groups.

Results: Indicators of feasibility were found to be attendance, engagement, and reaction. Attendance to the community-based phase was 75%, deemed very high by the support workers. Participants had fun whilst learning transferable skills and qualities without realising it, suggesting a high quality of engagement. A positive reaction was identified through perceptions of enjoyment, value, and the surpassing of expectations.

Conclusions: Results support the feasibility of MST4Life in homeless youth. However, this study goes further in beginning to identify factors that determine the acceptability and attractiveness of such an intervention.

Ref: 6757 Paper 3
Mental skills training in homeless youth: Approaches to developing self-regulation
Sam. J. Cooley, University of Birmingham; Mark. J. G. Holland, Newman University; Mary. L. Quinton, University of Birmingham; Benjamin. J. Parry, University of Birmingham; Jennifer Cumming, University of Birmingham

Mental Health & Wellbeing

Objectives: This presentation outlines how mental techniques from sport are adapted to develop self-awareness and self-regulation during MST4Life. Techniques include performance profiling and if/then planning, which are combined with experiential learning to identify, reflect on, and develop mental skills and qualities.

Design: Participants’ performance profiles are investigated in a single sample, pre/post time-point design.

Methods: The experiences shared in this talk stem from over 250 MST4Life recipients. A subsample (N = 28), who completed performance profiles at the beginning and end of MST4Life, are used for pre/post comparisons. This subsample (Mage = 19.57; SD = 1.97, 53.6% female) had lived in supported accommodation for approximately 6 months (SD = 3), 75% were white British, and 68% unemployed. Qualitative feedback was also collected through a video diary room and focus groups.

Results: Participants required varying levels of support to identify skills and qualities important in life, a process facilitated by visual collages and group discussion. An average of 11 skills and qualities were identified, including self-confidence (73%), motivation (66%), decision-making (61%), and teamwork (51%). Ratings in these areas were improved significantly from pre- to post-programme (p < .001). These improvements were strongly correlated with facilitator ratings for quality of engagement (r = .58, p = .01), but not with the number of sessions attended (r = .14, p = .47).
**Conclusions:** Self-regulatory skills are vital components and outcomes of MST4Life. The findings suggest that techniques adapted from sport are effective in developing and monitoring changes in mental skills and qualities in homeless youth.

Ref: 6758 Paper 4
**Approaches to giving and receiving social support: The mental skill of support seeking**
Mary. L. Quinton, University of Birmingham; Sam. J. Cooley, University of Birmingham; Mark. J. G. Holland, Newman University; Benjamin. J. Parry, University of Birmingham; Jennifer Cumming, University of Birmingham

**Mental Health & Wellbeing**

**Purpose:** This talk explains how support seeking is developed through a specific activity in MST4Life: the Dream Team.

**Background:** Support seeking is rarely featured in sport MST programmes. However, for young homeless people who suffer from loneliness and social isolation and find it difficult to trust others, this skill is a key attribute of resilience. Unfortunately, this group has poorer interpersonal skills and resilience levels than the general population. Therefore, support seeking is a crucial skill developed in MST4Life to help young people build awareness of their social support networks and improve their social inclusion and resilience.

**Methods:** A case study was used to explore the benefits of the MST4Life dream team activity. Using the analogy of a sporting dream team, a female young person (aged 21, diagnosed with borderline personality disorder who also suffered from depression and anxiety) was asked to reflect on her support network and assign each member to a role (e.g., coach, supporter), noting the best quality that person adds to their dream team. Data regarding the activity benefits was collected through video diary room entries.

**Conclusions:** Developing support seeking evoked confidence, self-worth, social skills, and mental health benefits (e.g., knowing who to contact in a crisis) for the young person. This evidence demonstrates support seeking is important in a youth homeless context, but we also suggest its relevance in sport (e.g., coping with injury) and propose its inclusion in future sport MST interventions.

Ref: 6759 Paper 5
**Linking processes to outcomes: The importance of understanding the ‘how’ and ‘why’ of delivering mental skills training to homeless young people**
Benjamin. J. Parry, University of Birmingham; Sam. J. Cooley, University of Birmingham; Mark. J. G. Holland, Newman University; Mary. L. Quinton, University of Birmingham; Janice. L. Thompson, University of Birmingham; Jennifer Cumming, University of Birmingham

**Mental Health & Wellbeing**

**Objective:** This final talk provides a qualitative evaluation of the processes that underpin the outcomes of the MST4Life programme. The Model for Optimal Learning and Transfer (MOLT) was the conceptual framework used to guide the research aiming to investigate what the key processes are that support homeless young people before, during, and after mental skills training.

**Design:** A multiple case study design was used to gain an in depth understanding of the perceived processes that contribute to MST4Life.

**Methods:** The mixed cohort featured in this case study included young people living in supported accommodation (n = 10) and those taking part in Rewriting Future (n = 8), a scheme run by St Basils to support the hardest to reach young people (e.g., young offenders or street homeless). The young people relayed their views and opinions about the programme via recorded (e.g., audio or video) or written diary room entries. The perspectives of St. Basil’s support staff (n = 6), programme deliverers (n = 3) and instructors (n = 5), were also captured using informal interviews, focus groups, and field notes (e.g., reflective diaries). A thematic analysis was used to inductively and deductively generate themes.

**Results:** The key processes identified as being important to staff, instructors and young people were preparation, enjoyment, removal from norms, and social support.

**Conclusion:** The findings support the use of the MOLT, but also suggest adaptations to make this model more applicable when delivering future mental skills training either to disadvantaged young people or more traditional uses.

Ref: 6607 Oral
**Rational Emotive Behavior Therapy (REBT), irrational beliefs, and the mental health and well-being of athletes**
Martin Turner, Staffordshire University
Cognitive-behavioral approaches predominate in the provision of sport psychology, and often form the backbone of psychological skills training (PST) for performance enhancement and maintenance. But far from being solely performance-focused, the cognitive-behavioral approach to sport psychology can restore, promote, and maintain well-being and mental health. This presentation introduces Rational Emotive Behavior Therapy (REBT; Ellis, 1957), as a valuable approach to addressing ill-being and mental health issues in sport. REBT holds that it is not events that directly cause emotions and behaviors. Rather, it is one’s beliefs about the events that lead to emotional and behavioral reactivity. Further, REBT distinguishes between rational and irrational beliefs, and suggests that in response to failure, maltreatment, and misfortune, people can react with either healthy or unhealthy emotional and behavioral responses. The extant research indicates that irrational beliefs lead to unhealthy negative emotions, a range of pathological conditions, and a host of maladaptive behaviors. Therefore, REBT proposes a process for the reduction of irrational beliefs and the promotion of rational beliefs. This presentation examines the evidence that irrational beliefs are harmful for well-being and mental health, and proposes REBT as an important framework for use with athletes to reduce irrational beliefs and promote rational beliefs. This review also assesses the efficacy of REBT for use in sport, and details how REBT can be used with athletes, outlining the process and distinctive features of REBT. This presentation also debates the paradoxical implications of irrational beliefs for performance enhancement.

Ref: 6736 Oral

Strategies to improve athletes’ coping with career-ending sport injuries
Monna Arvinen-Barrow, University of Wisconsin-Milwaukee; Brian Hemmings, St Mary's University London

Mental Health & Wellbeing

Purpose: To present strategies to improve athletes’ ability to cope with career-ending sport injuries and the transition out of sport process.

Background: When an athlete is faced with a career-ending injury, they are forced to deal with imminent biopsychosocial reactions to the injury, rehabilitation, as well as the overall impact of the injury on their personal, social, and financial lives. Many athletes are not adequately prepared for a life outside of sport, so when faced with a career-ending injury, they often experience an unsuccessful transition out of sport, which typically affects their lives negatively for a prolonged period of time.

Methods: Grounded in scientist-practitioner model, the strategies discussed are grounded in the conceptual model of transitioning out of sport (Taylor & Ogilvie, 1994) and the integrated model of psychological response to the sport injury and rehabilitation process (Wiese-Bjornstal et al., 1998), and the existing research investigating psychosocial impact of career-ending sport injuries. The presentation has its focus on three main areas identified as important when transitioning out of sport due to career-ending injury: (1) pre-injury career planning outside of sport; (2) social support; and (3) the role of sport psychologist.

Conclusions: By improving athletes’ ability to cope with a potential career-ending injury, they are likely to learn how to cope with both the injury and a range of other sport and life stressors, thus resulting in improved mental health and wellbeing for the athletes.

Ref: 6646 Oral

Is Social Identity of Leadership (SiL) fit for purpose? Impact of a leadership intervention on perceptions of leadership and exercise outcomes
Joanne Wood, Staffordshire University; Matt Slater, Staffordshire University

Exercise

Objective: This applied study examined the effectiveness of an identity leadership intervention with Group Exercise Instructors.

Design: The study utilised a single-case research methodology with a multiple baseline across individuals, which allowed for any intervention effects to be compared against stable baseline data.

Methods: A leadership intervention based on the 3R’s (Reflect, Represent, Realise) of identity leadership was developed and delivered over a 12-week period. Qualified Group Exercise Instructors (n = 4) were recruited to take part in the study, during which the participants attended educational workshops covering the 3R’s model, embedded their learning into practice, and took part in a post-intervention interview. In addition, data was collected from the exercisers (n = 46) in each of the Group Exercise Instructors’ classes, including a range of social identity (e.g., group
identity), leadership (e.g., Identity Leadership Inventory; ILI and Trust), individual (e.g., mobilisation of effort) and health-related measures (e.g. waist circumference), together with social validation following the intervention.

Results: Data collection is currently being completed. It is expected that the analyses will indicate increases, from pre- to post-intervention, in the exercise group members’ perceptions of the Group Exercise Instructors’ identity leadership, and participants’ individual and exercise outcomes. Social validation data providing comments about the intervention’s efficacy from both the perspective of the instructors and exercise group members, will be discussed.

Conclusions: Will be outlined in the light of the results and practitioner reflections with an emphasis on the implications for leadership within a group exercise context.

Ref: 6626 Oral
The Effects of a Rational Emotive Behaviour Therapy (REBT) Intervention on Performance in Elite Paralympic Athletes.
Andrew Wood, Staffordshire University
Performance Excellence

Objectives: The effects of Rational Emotive Behaviour Therapy (Ellis, 1957) are receiving increased attention within the sport psychology literature, yet the precise link with athletic performance remains unclear. The primary purpose of this was to investigate the effects of REBT on important physiological, psychological, and competition simulation scores indicative of athletic performance. Furthermore, examine the acute and maintenance effects of REBT using a single-case research design with elite Paralympic athletes.

Design and Methods: Using a single-case research design eight athletes recruited from the same Paralympic sport (M = 40.12, SD = 12.99) received five, one-to-one REBT sessions. Measures of Irrational Beliefs (IBs) were collected on a weekly basis, whereas the remaining psychological and physiological measures were collected at a pre-, post-intervention and at a 9-month follow-up time point.

Results: Data indicates REBT brought about reductions in IBs that were coupled with reductions in Systolic Blood Pressure (SBP) indicative of an adaptive physiological response, improved athletic performance during competition simulations, and reductions in avoidance goals. Furthermore, social validation data reported greater self-awareness, emotional control and competition concentration as a result of the REBT intervention. Results are also discussed with reference to anxiety, limitations and intervention reflections.

Conclusions: This paper further contributes to the extant literature supporting the promising effects of REBT as an intervention to facilitate psychological health and enhance performance with elite athletes.

Ref: 6660 Oral
Creation and implementation of a psychological treatment plan for long-term injured footballers: An integrated approach
Misia Gervis, Brunel University
Mental Health & Wellbeing

It has long been acknowledged that athletes are psychologically vulnerable when they experience long-term injury (Brewer et al., 2000. Rehabilitation Psychology, 45, 20-37). It is well documented that athletes can undergo loss to their self-esteem, self-confidence and identity. Additionally these significant psychological changes can result in negative emotional responses such as depression and other post-traumatic stress disorders (Appaneal et al., 2009. Journal of Sport & Exercise Psychology, 31, 60-76). However, most injured players rarely receive psychological support as a matter of course. Needs analysis revealed that long term injured academy players received no specialist psychological support and as a consequence were psychologically vulnerable. The focus of the intervention was to create a psychological treatment plan (PTP) that integrated into the existing rehabilitation programme. Critical partnerships were developed through a workshop for the staff who work with injured players. It focused on the psychological challenges during four key periods: Initial injury period; rehabilitation; transition into training; transition into playing. Together a new protocol was developed for each period of recovery. The PTP was underpinned by a guidance document for all support staff to refer to. A total of 4 long term injured players had the PTP integrated into their rehabilitation programme throughout their recovery. Evaluation undertaken in the form of staff and player reviews, and team evaluation meetings revealed new important dialogues were had between staff; beneficial for the players showing improved psychological awareness. Significant psychological outcomes were shown by improved recovery, better transition back into playing and effective team functioning.
**Priming Satisfaction and Frustration of Autonomy Decreases Persistence on a Self-Control Task but not Physical Activity Intentions**
**Stephen Murphy, Loughborough University; Ian Taylor, Loughborough University**

**Exercise**

**Objective:** The ability to exert self-control and persist is believed essential for wellbeing and healthy behavioural choices. Promisingly, self-control may be more effectively utilised when people are feeling autonomous, but self-control exertion may negatively impact on subsequent acts requiring cognitive resources. We, therefore, investigated whether priming of autonomy satisfaction and frustration were associated with persistence on a task requiring self-control and subsequent intentions for physical activity.

**Design:** Double-blind, between-subject experimental design

**Methods:** Fifty-eight participants were randomised to either Autonomy satisfaction (n=20), Autonomy frustration (n=19), or Neutral (n=19) prime conditions using a scrambled-sentence test. Participants subsequently attempted an impossible geometric tracing task that required self-control. Finally, participants’ physical activity intentions were measured.

**Results:** One-way ANOVA revealed differences in task duration across the three groups (p=0.079, η²=0.09). Post-hoc analysis revealed the Neutral condition spent more time on the tracing task than participants in the Autonomy satisfaction (28.6 vs. 21.6min, p=0.04, d=0.64) and Autonomy frustration (28.6 vs. 21.8min, p=0.05, d=0.71) conditions. No differences were found for physical activity intentions (p=0.58, η²=0.02).

**Conclusion:** Priming participants to feel more autonomy satisfied or frustrated may reduce persistence on a task requiring self-control, but this process does not influence physical activity intentions. The unexpected nature of these findings may indicate that priming need satisfaction and frustration may lead to similar exertion of self-control, but they do not rule out different reasons for the reduced persistence.

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**Adverse life events influence cardiovascular responses and sports performance under pressure**
**Lee Moore, University of Gloucestershire; Tom Young, University of Gloucestershire; Paul Freeman, University of Essex; Mustafa Sarkar, Nottingham Trent University**

**Performance Excellence**

**Objectives:** Research has suggested that experiencing moderate levels of adversity improves future stress reactions by promoting a challenge state. This study examined the association between negative life events and subsequent challenge/threat states and performance in a stressful laboratory-based task.

**Design:** A predictive quantitative design was employed to improve our understanding of the impact of prior adversity upon sports performance under stress.

**Method:** One hundred participants (64 men, 36 women; Mage = 21.94 years, SD = 4.98) completed a measure of lifetime adversity before performing a stressful dart-throwing task during which performance was recorded. Before the task, challenge and threat states were assessed objectively via cardiovascular reactivity (with relatively higher cardiac output and lower total peripheral resistance reactivity marking a challenge state).

**Results:** Compared to participants who reported experiencing low or high adversity, those who reported experiencing moderate adversity exhibited cardiovascular responses more reflective of a challenge state. Moreover, participants who reported experiencing moderate or high adversity performed better than those who reported encountering low or very high adversity.

**Conclusions:** The findings suggest that facing some adversity might have a ‘silver lining’ and aid cardiovascular responses and performance during stressful tasks in the future. Practitioners should therefore appropriately and progressively expose athletes to moderate levels of adversity to ensure they are resilient to stress. Future research should address the limitations of this study and explore the specific role of non-sport and sport-related adversities, as well as replicating the results with experienced athletes and in real competitive sport settings.

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**An exploration of elite footballer’s psychosocial experiences of recovering from injury**
**Amanda Wilding Pinckney, Southampton Football Club**

**Mental Health & Wellbeing**

**Purpose:** The aim was to explore the environments and interactions which impact upon players’ psychological experiences of recovering from injury.
**Background:** With 50 injuries occurring per season in elite squads of 25 players, it is essential to support players’ psychological return-to-play. The role of psychological skills is well understood but the impact of environments and social interactions less so. Research focused on 7 injured professional footballers from a category one academy. Players were from the same squad but played in different positions. Injuries were categorised as both acute and chronic with time away from training ranging from 4 to 35 weeks.

**Method:** The longitudinal case-study occurred over the 2015/16 season allowing a unique opportunity to gain in the moment perspectives of players’ cognitions and emotions surrounding their rehabilitation. The multi-method qualitative approach utilised observations, emotional mapping, interviews and player reviews to enable in-depth contextual scrutiny of how and why experiences changed over time and across environments. Three environments including team-based psychology workshops, injury-specific workshops and individual sessions were examined.

**Conclusions:** Integration with non-injured players increased negative experiences of frustration, boredom, lack of control and a sense of isolation amongst injured players. Psychological injury-specific workshops positively enhanced the sharing of cognitions and emotions, reduced negative emotional responses and normalised the recovery process leading return-to-play being viewed as a cohesive shared journey. Individual sessions developed player’s self-awareness. Findings could be used to provide environments specific to players’ stage of recovery as they elicit meaningful interactions and experiences, though generalisations cannot be made.

Ref: 6710 Oral

**How do male and female primary school children engage in play pre- and post-integration of Key Stage One and Key Stage Two?**

**Tracey Devonport, University of Wolverhampton; Emma Powell, Newman University; Alan Nevill, University of Wolverhampton; Sam Applegarth, University of Gloucestershire; Abbe Brady, University of Gloucestershire; Stefan Hunt, University of Gloucestershire; Lucy Baines, University of Gloucestershire; Lauren Ellis, University of Gloucestershire; William Hooton, University of Gloucestershire**

**Exercise**

**Purpose:** The aim of the present study was to examine the influence of segregated and mixed Key Stage play environments on the play behaviours of male and female primary school children.

**Background:** Break and lunch periods present an ideal time for children to become active through play behaviours. This study was commissioned by the head teacher of the case study school who wished to move from segregated to mixed key stage play, and wanted to monitor consequences for play behaviour.

**Methods:** The study began by observing play for two consecutive school weeks whilst children were physically separated by Key Stage One (4-7 years of age) and Key Stage Two (8-11 years of age). This was followed by two-weeks of integrated Key Stage play observations. Integrated play observations were then repeated ten-weeks later across three days. Observations were recorded using the ‘system for observing children’s activity and relationships during play’. Two playground supervisors and the head teacher were interviewed to ascertain their perceptions of play behaviours under the two conditions.

**Conclusions:** Quantitative and qualitative findings indicate that post-integration, males significantly increased their domination of sports play. Females by contrast increased their display of maternal behaviours post-integration, producing a significant drop in sports participation in order to associate aid to their younger peers. This was particularly evident among older girls. These findings indicate that in order to ensure that every child engages in the recommended amount of physical activity, active play needs to be made appealing to both genders.

Ref: 6400 Oral

**The use and effectiveness of m-a-c monitoring among elite team sport athletes: road to gold**

**Philip Lew, National Sports Institute Of Malaysia**

**Performance Excellence**

This applied study identified and monitored the psychological changes experienced by 18 elite women’s field hockey players (M=24.56; SD=3.60) throughout their preparation and participation in the 2015 Women’s FiH Hockey World League Round 2 Delhi and Singapore SEA Games. The Revised Competitive-State Anxiety Inventory-2 (CSAI-2R, Cox et al., 2003), Brunel Mood Scale (BRUMS; Terry & Lane, 2003), self-report measures (e.g. coaches, individual players' perceived ratings and perceived match intensity) were regularly administered. Results obtained were tabulated into the M-A-C (Mood-Anxiety-Confidence) monitoring matrix. The analysis of M-A-C Monitoring for both competitions highlighted that prior to "high intensity" game, the players showed an increase in anxiety (44%), in confidence level (17%). 56% maintained their anxiety level compared to low intensity game. A significant main effect was identified among the players’ self-confidence level [F(1.593, 27.085) = 4.826, p < 0.05], cognitive-state anxiety [F(1.988, 33.802) = 2.244, p = 0.039].
41% of the players that experienced higher level of vigour and depression rated their performance higher and 57% of players rated their performance lower when their vigour and depression were lower. The data provided a platform in creating a comprehensive profiling database that was beneficial for monitoring purposes, understanding the player’s individualized psychological states, assisted in designing suitable strategies for the players to be in optimal emotion level to perform during tournaments.

Ref: 6674 Oral
The role of previous life events in athletes’ psychological responses to injury
Helen Oliver, Cardiff Metropolitan University
Mental Health & Wellbeing

Objective: Models of post-traumatic growth suggest that higher levels of wellbeing and enhanced coping can be reached following traumatic events, which can be beneficial for dealing with subsequent traumatic life events. Within sporting populations, sport injury is a particularly stressful, traumatic experience which has been shown to benefit from enhanced coping. However, research is yet to consider whether growth and life events may influence athletes’ experience of injury through enhanced coping. The purpose of the present study, therefore was to explore the perceived influence of previous major life events on athletes’ experience of and response to injury.

Design: Interpretative Phenomenological Analysis (IPA) was adopted to capture participants lived experience of post-traumatic growth and its effect on athletes injury experience.

Methods: In-depth interviews were conducted with three male and three female athletes, aged 21 – 59, who were selected through criterion sampling; all participants had recently been injured. Semi-structured interviews were conducted and analysed following a six-step interpretative phenomenological analysis procedure.

Results: Five themes emerged by which previous major life events shaped participants psychological responses to injury, namely, approach to coping, realisation of identity, sociocultural context, and support. The fifth theme, aspects for growth, had three sub-themes relating to; gaining perspective, accommodating information, and realising strength.

Conclusions: The findings suggest that previous major life events played a key role in athletes’ response to injury. Such events can influence what sport means to injured athletes, and so they may prove crucial in understanding exactly what they are responding to.

Ref: 6397 Poster
The perceived stress reactivity scale for adolescent athletes: Validity and reliability of a self-report measure assessing individual differences in responses to stress in sport
Darren Britton, Bournemouth University; Emma Kavanagh, Bournemouth University; Remco Polman, Bournemouth University
Mental Health & Wellbeing

Objectives: Individual differences play a significant role in the outcomes experienced by adolescent athletes, in what is a highly stressful period of their development. Stress reactivity is a stable individual difference underlying the broad variability in responses to stress, which has received very little attention within sport. Therefore, this study aimed to adapt a self-report measure of perceived stress reactivity for use with adolescent athletes, which could capture young sportspeople’s perceptions of their typical responses to stressful situations.

Design: A quantitative design was adopted to adapt and validate the existing Perceived Stress Reactivity Scale for use with adolescent athletes.

Methods: 192 Adolescent athletes competing in various sports completed the perceived stress reactivity scale for adolescent athletes (PSRS-AA) along with measures of perceived stress, big five personality traits, and subjective well-being. Model fit was assessed using confirmatory factor analysis. Content validity and test re-test reliability was assessed using Pearson’s R correlations. A T-test was performed between male and female scores on the PSRS-AA.

Results: The five factor 23 item structure of the original PSRS provided acceptable model fit for the PSRS-AA. There was good internal consistency and test re-test reliability for the scale’s measure of total reactivity. Total reactivity was positively associated with perceived stress, and negatively associated with emotional stability and life satisfaction. Female adolescent athletes reported significantly higher stress reactivity than males.

Conclusions: These findings demonstrate PSRS-AA to be a valid measure that can be administered to assess perceived stress reactivity in adolescent athletes in future research and practice.
Objectives: Complex task learning has traditionally been shown to require 300-900 repetitions, considerably more than the 30 trial average used in rehabilitation. This pilot study aimed to determine whether reduced trials could induce learning in control and dual-task conditions. It was hypothesised that retention performance would be enhanced compared to baseline.

Design: The primary task selected was an Xbox Kinect bowling game. Mean game duration was matched to approximate duration of published skill acquisition tasks repeated >300 times to determine task repetitions. Participants completed a familiarisation session, two training sessions consisting of a six trial test (baseline on day one, retention on day two), nine training trials (control or dual-task) and another six trial retention test. An additional retention test was completed seven days later. Dual-tasks matched those shown to enhance learning and participants received no technical instruction.

Methods: Seventeen participants (mean age: 22 ± 2) were randomly divided into three groups – control, choice-preparation (choice audio-response task presented before game) or simple-execution (simple audio-response task presented during game). Performance was determined using game score and results analysed using a mixed model ANOVA.

Results: Performance was significantly better at the third (p = 0.034) and fourth (p = 0.014) retention tests when compared to baseline. There was no significant effect for group (p > 0.05).

Conclusions: Implicit learning can occur with a low number of repetitions. These findings have implications for learning in rehabilitation where reduced repetitions are used. Study limitations include low participant numbers and the brief period between training and retention.

Ref: 6658 Poster
The Effects of Observation Content Familiarity upon Changes in Collective Efficacy, Eye Movements, and Attentional Effort of Team Sports Athletes
Adam Bruton, University of Roehampton; Mason Blake, Denver University; David Shearer, University of South Wales
Performance Excellence

Objectives: This study compared the effects of observation intervention content familiarity upon changes in collective efficacy perceptions, eye movements, and attentional effort of team sports athletes.

Design: An experimental study design was used to examine the effects of both familiar and unfamiliar observation interventions.

Methods: Participants were recruited from six interactive sports teams at a UK university (N = 36; Male = 19, Female = 17). Competitive video footage of each sports team was collected over an 8-week period. 11 x 12sec video clips of positive footage were produced for all sports teams’ familiar observation intervention. Participants were randomly allocated another sports teams’ video clips as their unfamiliar intervention. Individual collective efficacy perceptions were recorded pre-/post-intervention and eye-gaze was registered during the intervention. Repeated measures ANOVAs and post-hoc paired sample t-tests were run for all variables.

Results: Collective efficacy increased for both familiar (Mdiff = 0.81) and unfamiliar conditions (Mdiff = 0.29) post-intervention. Post-hoc analysis revealed a significant difference between conditions for post-intervention change in collective efficacy (Mdiff = 0.52, t [32] = 3.43, p $\lt$ 0.01). No differences existed between conditions for fixation duration (across regions of interest) or attentional effort. Follow-up social validation interviews revealed that participants thought that their attention was directed towards teammates actions during the familiar intervention and the ball during the unfamiliar intervention.

Conclusions: The findings provide further support for the use of observation interventions containing familiar footage as a means to enhance collective efficacy. No attentional differences were reported for familiar compared to unfamiliar content, indicating that the meaning of the observed footage may be crucial towards collective efficacy development.
**Skills Acquisition**

**Objectives:** Research has identified experts are typically more efficient in visual search strategies enabling effective processing of environmental information. It has been suggested that examination of the gaze behaviour of golfers engaging in their pre-shot routines alongside their subsequent skill execution is warranted. The aim of this pilot study was to examine differences in green reading behaviour used by novice and expert golfers during varying green complexity in golf putting.

**Design:** Golf putts were completed in three slope conditions; Straight (S), Right to Left (RL), and Left to Right (LR) using a between-participants (Novice v Expert) experimental design.

**Methods:** Fourteen mixed ability golfers (age: 26±9.9 yrs.) were divided equally into expert and novice groups based on handicaps and took ten familiarisation putts on a synthetic putting green. Participants wore a Tobii Glasses mobile eye tracker to record gaze behaviour towards key features (KF) of the putting green. Ten putts were competed in each condition.

**Results:** There was a significant main effect of group (p=0.05) in all conditions with experts typically displaying longer fixation duration, a greater number of total fixations, and a greater number of fixations towards the KF compared to novices.

**Conclusion:** There was evidence to suggest that expert golfers displayed more distinctive gaze behaviours towards KF of the green across all conditions. Experts displayed significantly longer fixation durations on key environmental features prior to shot execution indicating that they are better able to identify and plan movements in relation to putting conditions.

Ref: 6611 Poster

**The role of self-presentational concerns in choking under pressure: A qualitative investigation**

Sarah Carvell, Private Practice Swindon; Denise Hill, University of Plymouth

**Performance Excellence**

**Objectives:** The study explored the role of self-presentational concerns in choking under pressure. More specifically, it explored whether athletes’ appraisals (i.e. threat or challenge) of self-presentational demands were associated with choking and/or clutch performances.

**Design:** The study adopted a phenomenological approach to examine the role of self-presentational concerns in choking under pressure.

**Methods:** Through a phenomenological methodology, this study aimed to explore in detail the choking and clutch performances of 7 athletes (male = 4; female = 3) from a range of sports (cricket, golf, rugby & netball). Using semi-structured interviews the athletes’ experiences of choking and clutch performances were discussed. Moreover, the perceived influence of self-presentational concerns on those performances was examined at length.

**Results:** Participants revealed they experienced self-presentational concerns prior to pressurized performances, which predominantly included the desire to portray an image of athletic competence to opponents, selectors, and coaches. The need to evade the embarrassment of appearing athletically incompetent in front of selectors, media and family was also noted. Although self-presentational concerns (i.e., avoidance/fear of negative judgement) were perceived to precede choking, they also acted as a motivational trigger, which encouraged clutch performance at times. In addition, alongside self-presentational concerns, several other constructs (e.g., fear of failure, anxiety & outcome-focus) were recognized as pertinent antecedents to choking.

**Conclusion:** These findings challenge the scope of the self-presentation model, and extend the current understanding of choking in sport.

Ref: 6647 Poster

**Irrational beliefs among parents**

Nanaki Chadha, Staffordshire University

**Performance Excellence**

**Objective:** The present study examines parental irrational beliefs, emotions and behaviors, with reference to their children engaged in a range of performance settings such as sport, education, military, and extracurricular activities.

**Design:** The study is a mixed-method design, comprising a cross-sectional approach to data collection via an online survey (Qualtrics) encompassing the irrational performance beliefs inventory (IPBI; Turner et al., 2016), practical tool for assessing core irrational beliefs, and visual methods i.e., photographs to encourage reflective practice and gain an insight into the real life experiences of individuals.
Methods: Participants are recruited through the use of social media and word of mouth. The study comprises of four groups of parents: sport parents, education parents, military parents, and extracurricular parents, with an approximation of 44 participants in each group. This study employs MANCOVA to assess the difference in irrational beliefs, emotions, and behaviors, between the four parent groups. Further, the data collected by visual methods is analyzed using content analysis.

Results: The results of the study find that parents tend to engage in irrational beliefs, emotions and behaviors in reference to their child’s performance in a range of performance settings. The study identifies different categories of irrational beliefs, which the parents engage in (i.e., demandingness, awfulizing, low frustration tolerance and global evaluation of human worth).

Conclusion: By identifying the irrational beliefs, emotions, and behaviors of parents, it is possible to understand how these aspects may transfer onto their children. Also, the results may help to identify and alter the influential socio-cultural mediators of child irrational beliefs, emotions, and behaviors, in performance settings.

Ref: 6701 Poster
The Effect of Perceived Control Reinforcement on Male Amateur Penalty Shootout Performance
Paul Ellison, Edge Hill University; Brad Tyldesley, Edge Hill University; Evelyn Carnegie, Edge Hill University; David Marchant, Edge Hill University

Skills Acquisition

Objectives: Anxiety is the most significant contributory factor to performance failure in penalty shootouts. The extent to which one believes they can control the outcome of an event may have a role to play in performance breakdown in pressurised circumstances. The present work investigated whether the introduction of a perceived control reinforcement programme would influence subsequent performance of penalty takers.

Design: Penalty practice was completed in two conditions; Perceived Control (PC) vs Normal Practice (NP) using a between-participants experimental design.

Methods: Following a baseline test consisting of 10 penalties each, twenty male amateur footballers (26±1.3 yrs.) were equally assigned to either a PC (intervention) (n=10) or NP (control) (n=10) group based on performance. Penalty training was conducted over a four week acquisition period, immediately after a 90 minute weekly football training session, and a retention test was conducted one week later under pressure conditions.

Results: A 2 (Group) x 4 (Trial) RM ANOVA indicated main effect for Group (F(1, 18) =6.07, p = 0.024, np2 = 0.25). Bonferroni post hoc tests showed the NP performed significantly (p < 0.05) better in acquisition sessions: 1&3; 1&4, 2&3 and 2&4. The PC group performed statistically better (M=19±9.05) than the NP (M=4 ±13.76) in the final retention test: t(18) =2.1, p = 0.049. (82% v 63% success).

Conclusion: Practice using PC reinforcement positively affected penalty performance under pressure. Perceived control appears to be a critical and trainable characteristic that warrants further investigation.

Ref: 6664 Poster
Mindfulness Inventory for Sport and perceived exertion at varying levels of cycling intensity: testing a psychobiological model of whole-body endurance performance
Kirsten Fasey, Nottingham Trent University; Dr Niamh McNamara, affiliated to Nottingham Trent University

Endurance

Objectives: To explore the relationship between mindfulness and perceived effort at different exercise intensities and between cyclists and non-cyclists, using the framework of the psychobiological model of endurance performance. This framework proposes only two mechanisms to increase performance – increase motivation, or decrease perception of effort.

Design: A non-randomised within subject quasi-experimental design

Methods: A volunteer sample of 25 participants (M age 45.48, SD 7.70) performed a ramp test using an ergometer to determine maximum power, then cycled for five minutes at each of 30%, 50% and 80% of maximum power. Participants assessed their perceived effort (using Borg’s 15-point scale) each minute, and responded verbally to the Mindfulness Inventory for Sport (“MIS”) following each five minute intensity session.

Results: Results showed a negative correlation between mindfulness and RPE, although after separating out by exercise intensity, the correlation was only significant in the moderate intensity condition. Cyclists demonstrated higher mindfulness levels than non-cyclists at hard intensity, but not at lower intensities. By MIS sub-scale, only “awareness” was correlated with RPE.

Conclusions: The findings suggest that higher levels of mindfulness are associated with lower perceived exertion, which should, according to the psychobiological model, then be linked with higher performance. However, this
A mixed method investigation of the relationship between mental toughness and flow states in sport.

Patricia Jackman, University of Lincoln; Lee Crust, University of Lincoln; Christian Swann, University of Wollongong

**Performance Excellence**

**Objectives:** Flow and mental toughness (MT) are concepts commonly associated with superior performance functioning in sport. While previous studies have investigated the relationship between MT and flow, this study sought to ascertain a more detailed understanding of this relationship by utilising a mixed method approach to examine the flow experiences of individuals with higher / lower MT soon after repeated performances.

**Design:** A mixed method design was utilised to explore individual experiences of flow in athletes with higher / lower MT.

**Methods:** An intensity sampling strategy using a questionnaire to identify individuals with higher / lower MT acted as a prelude to the main data collection phase. Sixteen individuals (female n = 11; male n = 5) participated in a mixed method investigation of flow experiences. Participants completed a questionnaire assessing flow within 24-hours of five consecutive competitive performances (total observations = 83), and forty event-focused interviews (M length = 45 minutes) were conducted as soon as possible following the occurrence of flow (M = 4.5 days). Data were initially interpreted using within-case and then cross-case analysis.

**Results:** Although the process of entering flow was similar for higher / lower MT participants, differences in the psychosocial interactions underlying the transition into and out of flow were evident between groups. Intra-individual differences concerning the situations in which individuals experienced flow emerged.

**Conclusion:** Findings support previous research by highlighting that differences exist in the flow experience of individuals with higher and lower MT which may have applied implications for researchers, coaches, athletes and practitioners.

Ref: 6497 Poster

**Straight from the Horse’s Mouth: Understanding experiences of Professional Event riders’ techniques in mental preparation for maximising self-confidence**

Sally McGinn, University of West England

Performance Excellence

Previous research supported that high self-confidence or sport-confidence had been defined as a key psychological characteristic required by elite athletes. This study contributes towards increasing knowledge and support of the sport and exercise relationship with psychology, expanding information within the equestrian sport discipline. It focusses on understanding mental techniques, used by five professional event riders leading up to and during top level international competition, maximising self-confidence and manage anxiety. Specifically, the coping strategies such as self-talk, goal setting, visualisation, pre-performance routines and relaxation techniques to manage competition anxiety and build self-confidence, Experience-type data were collected, through 45-60 min semi-structured interviews using pre-prepared questions. Thematic Analysis of participants’ data revealed two themes - “Planning and Preparation” with three sub-themes of goal setting, time management and pre-performance routines; “Arousal and Distraction Management” with two sub-themes of Psychological Skills Interventions and Support Team. The riders, who each represent their country at international level, discussed different coping strategies and psychological skill interventions used, eluding to a form of self-confidence in their goals. The number of participants fits appropriately into a qualitative paradigm and although these riders epitomise the elite of their sport, they cannot truly characterise the thousands of riders that compete across all levels within the Eventing discipline. From this study it is difficult to truly understand whether their self-confidence is improved or not by using the interventions they have spoken of. The findings suggest these riders are similar to other non-equestrian athletes using a combination of coping strategies.

Ref: 6699 Poster

The role of performance coaches’ in the psychosocial development of youth soccer players.

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Performance Excellence

Objectives: Though sport is considered a vehicle for facilitating positive youth development, the perceived role of the coach on the holistic psychosocial development of young people in the performance domain (i.e., academy settings) has yet to be investigated. This research aims to address this issue by exploring the key psychosocial attributes performance domain coaches aim to develop in youth athletes, and the strategies they adopt to promote these outcomes.

Design: Due to the exploratory nature of this research, a qualitative research design was adopted. Method: Semi-structured face-to-face interviews were conducted mid-season with a purposive sample of 8 (male) high performance academy soccer coaches. Interviews were transcribed verbatim and analysed using thematic analysis.

Results: Though the technical development of players was perceived important by performance domain coaches, the desired psychosocial attributes reached beyond on-field success, and predominantly aligned with aspects of positive youth development frameworks including character (e.g., respect), competence (e.g., communication), confidence (e.g., self-belief), connection (e.g., friendships) and additional life skills (e.g., organisation). Coaches expressed a range of approaches were used to promote these desired attributes including positive role modelling, initiative taking, and approaches that conformed to expectations of the club and influential others (e.g., parents).

Conclusion: These findings provide novel implications for coach education by underscoring the important role that coaches perceive they play in the holistic psychosocial development of youth athletes. Given the exploratory nature of this study, future research should investigate the effectiveness of different approaches adopted by coaches when developing such psychosocial attributes in youth athletes.

Ref: 6654 Poster

More than just horsing around: The therapeutic effects of horse-riding and carriage-riding for individuals with complex needs.

Rachael Newport, University of South Wales; Daniel Rhind, Brunel University

Exercise

Horse-riding and carriage-riding are examples of equine-assisted activities, where the therapeutic benefits of physical activity can be combined with animal-assisted therapy. This investigation used ethnography to identify the therapeutic effects of horse-riding and carriage-riding for individuals with complex needs. Four participants aged between 28 and 63 years, were recruited from a self-contained village that supports adults with complex needs. The horse-riding and carriage-riding sessions took place as normal, whilst being observed by the researcher who worked as a volunteer. Following each session, interviews were carried out with parents, support workers, coaches and where appropriate the participants. The results were displayed in a narrative format. Some of the therapeutic benefits shown by the participants were improvements in confidence, independence, building relationships, empathy, social-emotional ability, relaxation and overcoming anxiety. This investigation showed evidence that horse-riding and carriage-riding, as forms of equine-assisted activities, can have therapeutic effects on individuals with complex needs. However, the environment needs to be supportive and encouraging, with specific rehabilitative goals set for each individual.

Ref: 6803 Poster

Examining the Association between Athletes’ Mindfulness and Intrusive Visual Imagery

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Mental Health & Wellbeing

Objectives: Athletes utilise imagery for the purposes of rehearsing physical skills, strategies, arousal, and goal-orientated responses. However, athletes can and do experience involuntary occurring intrusive visual imagery. Such images are often visual, vivid, difficult to control, and likely to trigger negative emotional reactions. Mindfulness is an attribute that affects the quality of one’s consciousness and engenders paying attention purposely to present moment stimuli, non-judgmentally. Moreover, mindfulness is influential in disengaging individuals from automatic thoughts, reducing negative emotions, and known to facilitate wellbeing. This study explored the association between athletes’ dispositional mindfulness and their reported intrusive visual imagery. We hypothesised that an inverse relationship would exist between these variables.

Design: We employed a correlational design following institutional ethical clearance and written consent.
Method: Participants were 209 undergraduate university students (male = 129 and female = 80, Mage = 19.91, SD = 1.64), all were engaged competitively in their chosen sports and studying sport science related programmes. The sample completed a dispositional Mindful Attention Awareness Scale and a trait measure of intrusive visual imagery.

Results: A Pearson bivariate correlation and bootstrapping analysis demonstrated dispositional mindfulness was significantly, and negatively related to intrusive visual imagery p two-tailed &lt; 0.01 level (r = -0.24, 95% CI’s [-.38, -.11]).

Conclusions: We found dispositional mindfulness to be an attribute of consciousness inversely related to trait intrusive visual imagery scores within an athletic sample. Future research should seek to establish whether the manipulation of athletes’ mindfulness via training intervention alters the prevalence of intrusive visual imagery and/or attenuates the negative affect often experienced with this type of involuntary imagistic ideation.

Ref: 6506 Poster
A belief elicitation study to identify salient beliefs concerning university students’ decision to participate in sport
Thomas St Quinton, Leeds Trinity University College
Grass Roots (Mass Participation/Olympic Legacy)

Objectives: Due to modest results from recent attempts to increase sports participation in higher education, the study aimed to identify salient beliefs using recommendations from The Theory of Planned Behaviour to inform a theoretically based intervention to alter behaviour. Design & Methods: A theory-based qualitative questionnaire was conducted with 76 first year university students (36 males, 40 females; mean age: 19.2 ± 1.7 years) undertaking various degree subjects (Nutrition, Food and Health (n=20), Secondary PE and Sports Coaching (n=20), Childhood and Welfare Studies (n=18), and English (n=18)) at a higher education institution in the North of England. Specifically, behavioural, normative and control factors of university sports participation were assessed using open-ended questions. Thematic content analysis and coding was conducted on 30 randomly selected questionnaires followed by a frequency count to identify the salient beliefs. A 30% cut-off was used for the modal set. Results: The modal set revealed 17 beliefs from a possible 53; six behavioural, five normative, and six control. These beliefs were related to health benefits, enjoyment, friendships, time constraints, study workloads, awareness, and the perception of family, friends, and academics.

Conclusions: The results highlight the factors that should be targeted for intervention and provide data to be utilised for a second main quantitative study which will identify more specific belief targets. Due to equivocal intervention success, this formative research increases the chances of intervention effectiveness which would hopefully give rise to the number of students participating in university sport.

Ref: 6697 Poster
The Effects of Arousal Reappraisal on Adaptive Stress Responses
Nadine Sammy, University of Exeter
Performance Excellence

Background and Objectives: This study examined the effects of arousal reappraisal on cardiovascular responses, demand-resource evaluations, self-confidence, performance and attention under pressurised conditions. A recent study by Moore et al. (2015) suggested that arousal reappraisal is beneficial to the promotion of challenge states and leads to improvements in performance. This study aimed to extend the work of Moore and colleagues (2015) by examining the effects of arousal reappraisal on cardiovascular responses, demand-resource evaluations, self-confidence, performance and attention in a multi-trial pressurised performance situation.

Design and Methods: Participants were randomly assigned to either an arousal reappraisal intervention or control condition, and completed a pressurised dart-throwing task. The intervention encouraged participants to view their physiological arousal as facilitative rather than debilitative to performance. Measures of cardiovascular reactivity, demand-resource evaluations, self-confidence, task performance and attention were recorded. Results: The reappraisal group displayed more favourable cardiovascular reactivity, demand-resource evaluations, and reported higher self-confidence than the control group but no task performance or attention effects were detected. Conclusion: These findings demonstrate the strength of arousal reappraisal in promoting adaptive stress responses and self-confidence.

Ref: 6689 Poster
“It means everything”: The meanings athletes associate with their sport team identity
Matt Slater, Staffordshire University
Performance Excellence

Objectives: The social identity approach indicates that when individuals depersonalise themselves to be part of the group (e.g., an athlete shifts their perception of themselves as an individual to define themselves in terms of their sports team), the meaning(s) of the group govern individuals' cognitive processes and behavioural action. Yet, such meaning(s) have received limited scholarly attention. The purpose of this study was to explore the meaning(s) that athletes associate with their sport team identity.

Design: A qualitative design was employed. Methods: 300 athletes (Mage = 36.11, SDage = 12.20) from a range of team sports competing at recreational to international-level completed demographic information before engaging in a written expression task. In the written expression task athletes qualitatively responded to the stem: “What does it mean to you to be a member of your sports team?” To ensure athletes identified with their team a measure of team identification was taken. Qualitative data were analysed using inductive content analysis.

Results: Athletes reported high levels of team identification (M = 6.00, SD = 1.10). Data analysis is on-going, and initial findings suggest that athletes associate multiple and unique meanings with their sports teams (e.g., “it means to connect with other people”, “it means to develop my skills”, “it means to have fun”).

Conclusions: Current findings will provide the foundation for the development of a measure of the meaning(s) athletes associate with their team identity.

Ref: 6653 Poster
Mindful vs Mindless: A pilot mindfulness-based program for injury rehabilitation with an elite environment
Amy Spencer, Southampton FC; Malcolm Frame, Southampton FC; Stewart Cotterill, Winchester University

Purpose: The aim of this case study was to monitor a single subject intervention program designed for a category one youth player over the final half of the football season.

Background: An injured U14 player experienced patella-femoral pain in his right knee which started to occur towards the backend of December. This player saw a handful of doctors and physios to discuss the treatment and the injury that was present, yet due to symptoms and inflammation it took time to come to a definite diagnosis. Both physios and doctors stated that there was “lots of inconsistent examination findings and lots of psychological overlay...and abnormal pain perception”. This created anxiety and worry from the player and his parents which delayed his recovery time.

Methods: A tailored single-subject mindfulness program was used to help him ‘sit comfortably’ with the pain and progress with his rehabilitation and exercises. The program was shaped using MBSR/MBCT/.b which allowed the program to follow what has been previously researched yet also cater for the age of the player and the situation he was in. The one-to one sessions were issued before his rehab sessions, which then allowed him to put ‘theory into practice’. He also used the headspace app for structured/formal practice.

Conclusion: In the initial stages of the program the player was hesitant however; the ‘Eureka’ moment came when undertaking mindful movement. Triangulation of experts throughout the rehabilitation process ensured consistent messages and language was utilised, and this aided the ‘Eureka’ moment.

Ref: 6661 Poster
Buoyancy in Physical Education
Kate Tudor, Loughborough University

Exercise

Objectives: Academic buoyancy refers to a students’ ability to deal with everyday setbacks and challenges that are typical of school life. Currently there is limited research examining this concept in Physical Education (PE). The present study takes the first steps in understanding the concept of buoyancy in PE and its associated correlates. The first aim was to explore every day hassles associated with participating in PE. Second, we aimed to explore how students positively adapt to these hassles and identify factors that may contribute to students’ buoyancy in PE.

Design: Focus groups with students and interviews with teachers were conducted using semi-structured approach. Transcripts were analysed using thematic content analysis.

Methods: Head teachers from five schools in the Midlands were approached and put into contact with PE teaching staff. Six PE teachers were interviewed and 54 students took part in focus group interviews.

Results: A variety of hassles in PE were identified, which differs from previous classroom-based research. The social environment, particularly peer interactions, was a commonly occurring hassle for students. Participants identified
environmental, cognitive and behavioural resources that assisted their ability to bounce back from hassles in PE, with the social environment playing a particularly influential role.

**Conclusions:** Results from the current study show a number of environmental and individual resources can be employed to enhance positive adaptation to setbacks in PE. These resources differ from those identified in the academic buoyancy literature and therefore current measures of academic buoyancy may not be applicable to PE.

Ref: 6608 Poster
**The further validation of the irrational performance beliefs inventory (iPBI).**
**Martin Turner, Staffordshire University**

**Performance Excellence**

The irrational performance beliefs inventory (iPBI) was developed to measure irrational beliefs within performance settings such as sport, business, and academia. With the growing use of rational emotive behavior therapy (REBT) in sport (e.g., Turner, 2014), and the recognition that irrational beliefs could be deleterious for both performance (Wood, Barker, & Turner, in prep) and well-being (Turner & Moore, 2016), the development of a valid measure for irrational performance beliefs is warranted. Initial validation demonstrates that the iPBI has good criterion, construct, and concurrent reliability (Turner et al., 2016). However, original validation data included only an occupational sample, and did not assess test-retest reliability. Therefore, two studies are reported in the current paper. The first study examines the test-retest reliability of the iPBI in university students (N = 160) and athletes (N = 75). The first study also assesses the associations between irrational performance beliefs, age, and social desirability. The second study examines the predictive validity of the iPBI across three groups; elite athletes (N = 49), recreational athletes (N = 103), non-athletes (N = 117). Specifically, the relationships between irrational performance beliefs and emotions anxiety, anger, and depression, are assessed, as well as differences in irrational performance beliefs between groups. Results show that the iPBI demonstrates test-retest validity, and good predictive validity in student and athlete samples. Results are discussed in relation to future developments of the iPBI, and recommendations for its usage are offered.

Ref: 6628 Poster
**The nature of conflict in coach-athlete relationships**
**Svenja Wachsmuth, Loughborough University; Sophia Jowett, Loughborough University; Chris Harwood, Loughborough University**

**Performance Excellence**

Purpose: Despite its significant role in everyday coaching, the underlying processes and correlates of conflict in coach-athlete relations are largely under-researched. The current study aimed to investigate experiences of conflict between coaches and athletes.

Design: Considering the novelty of the research inquiry, a qualitative approach was utilized. This approach enabled the exploration of various aspects of interpersonal conflict.

Methods: Eleven high performance coaches (3 team sports and 8 individual sports) and athletes (8 team sports, and 3 individual sports) took part in a semi-structured interview. The interview guide consisted of 26 questions, covering 1) sport experiences, 2) the conceptualization of conflict, 3) conflict experiences, and 4) conflict determinants as well as conflict outcomes. All interviews were transcribed verbatim and a cross-case content analysis was conducted. This paper presents results that form part of a wider research project.

Results: The nature of conflict was described through the following main themes of 1) cognitive, 2) emotional, and 3) behavioural responses to conflict, as well as 4) conflict descriptors and 5) impact factors.

Conclusions: Participants provided detailed information on responses to coach-athlete conflict and uncovered potential processes linked to conflict (de-)escalation. These were largely influenced by external, intra-, and interpersonal factors and determined how conflict was perceived in terms of, for example, intensity or frequency. Thus, the current study presents a first endeavour to understand conflict in coach-athlete relationships and offers a starting point for future investigations into functional and dysfunctional consequences of interpersonal conflict.

Ref: 6672 Poster
**“We’re trying to create normal people in a world that wants aliens”: A critical evaluation of the Elite Player Performance Plan (EPPP)**
**Eleanor Whittaker, Liverpool John Moores University, School of Sport and Exercise Sciences**

**Performance Excellence**
Objectives: Since its inception, the Elite Player Performance Programme (EPPP) has proved controversial, and a number of professional clubs have anecdotally cited EPPP-related demands as a reason their academies have recently ceased to exist. Therefore, the aim of this study was to provide a critical review of the (EPPP), since it was introduced by the English Premier League in 2011 and this is the first study to do so.

Design and methods: Semi-structured interviews were conducted with twelve football administrators (Academy Managers, General Managers, Intermediaries and National Governing Body Executives). Thematic inductive analysis revealed four major themes.

Results: Four major themes emerged. Although the philosophy behind the EPPP was perceived favourably (theme one), the governance of English football (theme two) was perceived as a particularly salient factor undermining its effectiveness. This unstable governance is exaggerated by the ever-increasing wealth of the Premier League, and was perceived to be having clear implications for the working practices of club staff (theme three), and in turn, a negative impact on players’ experience of the youth Academy setting (theme four).

Conclusion: There are clear negative implications for the future of the EPPP. It is unclear whether key football stakeholders will continue to invest in it in the long term. Although the underlying philosophy is positive, the implementation and the demands on key stakeholders to deliver the programme has been found to be particularly onerous and there are concerns about its detrimental impact on the world’s most widely played sport.

Ref: 6676 Poster
A Longitudinal Examination Of Two Elite Golfer’s Sport-Confidence
Tom Williams, Cardiff Metropolitan University; Owen Thomas, Cardiff Metropolitan University
Performance Excellence

This study examined the sport-confidence beliefs of a female professional and male collegiate golfer from a broader macro perspective. The study took place over 6 months of their competitive seasons. Data collection comprised of unstructured interviews, confidence profiling, and reflective diaries. Macro changes in each player’s sources and types of sport-confidence were evident throughout the six month period, highlighting the importance of adopting an ideographic approach to the assessment of sport-confidence in order to tailor interventions to an athlete’s individual confidence needs. Specifically, reflection emerged as a potentially important addition to supplement traditional mental skills (i.e. goal-setting, imagery, self-talk) in an attempt to develop stronger, more stable sport-confidence beliefs.
Tuesday 13 December

Ref: 6735 Oral
Iceland’s strange magic - Narratives of Young Talented & Retired Professional Football Players
Ho Law, Empsy® Cambridge Coaching Psychology Group; Unnur María Birgisdóttir, Icelandic National Soccer Team, Football Association of Iceland

Skills Acquisition

Objectives: This research aims to explore the factors of recent achievement of Iceland football team in Euro 2016 with an objective to investigate whether young talented athletes benefit from coaching by the retired professional athletes. We hope our research will contribute to the increasing knowledge of sport psychology.

Design: comparative narrative design is used to explore stories of young and retired players and the emerging themes.

Methods: narrative research method using semi-structured interviews. Participants: seven Icelandic male footballers; four young talented players (age 19-22) and three retired professional players (age 30-37) in Iceland.

Results: Two meta-stories are developed, one for each age group, embodying from interviews. As a whole, the stories of the young athletes show optimistic and progressive narrative tones, while the narratives of the retired players are more pessimistic and regressive in nature. The retired athletes recognize the significance of support throughout their athletic career and value their relationships, while the young players are more concerned with their dreams for success and are generally hopeful about their future to succeed on the world stage.

Conclusion: Retired elite and professional athletes may act as coach/mentors for younger athletes by offering inside perspectives into the world of elite sport and by sharing real experiences from their athletic careers. Narrative coaching offers valuable resources to support athletes in achieving their dreams.

Ref: 6667 Symposium
Understanding the Triggers and Consequences of Mental Health and Wellbeing in Professional Sport
Vaithehy Shanmuganathan-Felton, UCFB College of Football Business

Mental Health & Wellbeing

Moderate to high levels of intensive physical activity is considered critical in the management, prevention and recovery from mental health problems, however, excessive exercise or competing at a professional level can negate the benefits of physical activity for optimal health. There is growing evidence illustrating the increasing prevalence of mental health problems in professional sport. This coupled with the increasing number of high-profile athletes disclosing their personal struggles accentuates the exploration of mental health disorders among this population as a critical avenue for research and practice. Accordingly, the aim of the current symposium is to present a selection of the latest research that has explored mental health and wellbeing in professional sport, through the employment of varied and innovative methodologies. Specifically, the first study provides an insight into the awareness and understanding of psychiatric symptoms within equestrian sports from various perspectives. The second study highlights the critical role of the emotional connection formed in a coach-athlete dyad as a precursor of eating psychopathology in athletes. The third study presents a retrospective case study identifying the triggering factors and the impact of unmanaged mental health problems on personal and professional development. The final study provides a narrative on the lived experiences of a professional football player, focusing on the impact of playing professional football on psychological wellbeing. Collectively, the generated findings contribute to widening our theoretical and practical understanding, as well as signifying the importance of the provision of access to specialist educational training and interventions in managing mental health and wellbeing within professional sport.

Ref: 6668 Paper 1
Mental Health Awareness in Equestrian Sport: An Exploratory Study
Hannah Butler-Coyne, University of Central Lancashire; Vaithehy Shanmuganathan-Felton, UCFB College of Football Business; Jamie Taylor, University of Central Lancashire

Mental Health & Wellbeing

Background: Equestrian media is showing an increasing interest in the impact of mental health on performance and general wellbeing of equestrian athletes. There is limited research in this area.
Aim: This study explores the awareness of mental health difficulties and psychological wellbeing within equestrian sport from the perspectives of equestrian athletes, instructors/coaches and parents.

Methods: The exploratory nature of the research provided opportunity for a dual approach to gather data which involved both anonymous e-survey together with a purposive sample of semi-structured interviews.

Results: Strong thematic commonalities emerged from the international total sample of 163 participants of varied demographics and equestrian sport discipline and expertise. Analysis identified five key themes (Emotional Wellbeing in Balance; Emotional Wellbeing Imbalance; Wellbeing Imbalance – Impact on Equestrian Sportspeople; Impact of Equestrian Sport on Wellbeing; Regaining Balance) and 22 sub-themes.

Conclusions: The study presents a rare if not singular exploration of the understanding of mental health difficulties and psychological wellbeing within equestrian sport. Findings indicate a limited awareness and understanding as to the impact and consequences of unmanaged mental health difficulties specific to equestrian sport together with a general lack of specialist support and guidance. The study determines that there is compelling need for education, promotion of sharing experiences (particularly from well-known equestrian professionals) and facilitation of specialist training supported by professional intervention. Publicised support together with a review of regulations from equestrian sport Governing Bodies would direct attention towards the importance of mental health and help address a distinct need within the equestrian industry.

Ref: 6669 Paper 2

Eating psychopathology and coach-athlete attachment in athletes: The role of moderators
Vaithehy Shanmuganathan-Felton, UCFB College of Football Business; Luke Felton, University of Roehampton

Mental Health & Wellbeing

Objective: There is growing evidence illustrating the coach as an attachment figure in the life of an athlete, with the capacity to impact athletes’ psychological wellbeing. The current study first examined the association between coach-athlete attachment and eating psychopathology among a sample of male and female athletes. Second, it examined the factors that moderated such relationship.

Design: The study was cross-sectional and correlational in nature.

Method: A total of 149 athletes completed the Coach-Athlete Attachment Scale and the Eating Disorder Examination Questionnaire.

Results: Avoidant attachment to the coach was found as the only significant predictor of eating psychopathology among female athletes. However, such relationship was moderated by coach gender, with increases in avoidant attachment ensuing increases in eating psychopathology for female athletes with female coaches. Attachment to the coach was not found to be related to male athletes’ eating psychopathology.

Conclusions: The current findings suggest that the factors involved in athletes’ eating psychopathology is not equivalent across gender. In particular, attachment disruption in female coach-female athlete dyads may be a potential risk factor for disordered eating and eating disorders in female athletes only. Thus, assessing attachment insecurity and interpersonal functioning in coach-athlete dyads can help inform therapeutic stances and interventions.

Ref: 6670 Paper 3

Suicide attempts, mental health issues and associated antecedents in professional football. The case study of Clarke Carlisle
David Horrocks, UCFB College of Football Business; Alice Kelke, UCFB College of Football Business; Vaithehy Shanmuganathan-Felton, UCFB College of Football Business

Mental Health & Wellbeing

Objective: Recent studies highlight the increasing prevalence of mental health disorders in football, with a cocktail of events being a tipping point for loss of self-control. The current study retrospectively explored the trigger factors of and the impact of mental health in professional football.

Design: This study presents a single case design qualitative investigation.

Method: Two interviews was conducted with a former professional footballer player of over 15 years’ experience who had survived two suicide attempts and suffered clinically diagnosed mental disorders both during and post professional career. Interviews were recorded, transcribed and content analysed for rich and thematic data.

Results: Results offer a framework of understanding for mental health issues and suicidal behaviour in football and identify triggering factors and associated antecedents. These include addictive behaviours, feelings of rejection and failure, heightened fame and responsibility, role model demands, media intrusion, de-personalisation and further extensive existential misunderstanding.
**Conclusions:** The study offers recommendations for clinicians, management and support staff, governing bodies and players themselves. Policy recommendations are posited and updating of governing body information is proposed. Further longitudinal multifactorial research is recommended and the limitations of the case study are recognised.

Ref: 6671 Paper 4

“Get knocked down, you get back up again. It’s the only way!” An auto-ethnographic study exploring critical moments, identity and meaning in professional football

Alan Tonge, UCFB College of Football Business; Mark Nesti, Liverpool John Moores University; Martin Littlewood, Liverpool John Moores University; David Richardson, Liverpool John Moores University

**Mental Health & Wellbeing**

**Objective:** Previous literature within sport psychology offers little detailed discussion regarding lived experiences of a professional footballer (from entry to exit), specifically from the vantage point of “the self”. The primary objective of this paper was to examine the many highs and lows on the road to becoming a professional footballer, specifically from a critical moments, identity and meaning perspective.

**Design:** The design was a single case study.

**Method:** The method chosen was auto-ethnography which provides a rich, detailed account of a personally lived experience of the first author. This lived experience was charted around different transitional points spanning approximately 20 years in total through a performance and mono-logical narrative where the narrative explored topics such as critical moments, identity and meaning. Key existential themes were considered from a “feeling and emotional insider viewpoint” rather than a “detached, but interested outsider viewpoint.”

**Results:** The mono-logical narrative presented the many challenges of professional football daily practice including lived experiences around transitions, cultural adaptation, experiences with managers and coaches, support mechanisms, de-selection and coping with the end of a career.

**Conclusions:** Suggestions are offered with reference to the role of the applied sports psychologist and allied practitioners (e.g., educators) in supporting players through critical moments within the culture of professional football.

**QSEP Workshop**

**The P in consultancy? Defining philosophy underpinning professional practice**

Moira Lafferty Chief Supervisor QSEP, Martin Eubank, Liverpool John Moores University, Jonathan Katz, Performance in Mind and Joanne Hudson, Swansea University.

One of the most important career-long learning experiences for the sport psychologist is identifying with, developing and articulating their philosophy of practice. For the Trainee Sport Psychologist, this core activity should begin its development during supervised practice and is evaluated rigorously in the QSEP assessment process.

A fundamental task for practitioner sport and exercise psychologists is to work ethically and efficaciously and to ensure applied support is underpinned by correct theory and a research evidence base. At times practitioners are faced with applied situations in ‘cutting edge’ delivery settings where the demands require the generation of creative interventions based on effective decision making founded on the core professional skills of deriving conceptualisations and formulations.

Applied practitioners enhance their professional effectiveness by developing a professional philosophy of practice, which provides a sound methodology to achieve robust professional decisions and associated quality of support delivery. It is the use of professional philosophies to develop robust work practices that assists applied practitioners in making relevant and effective decisions underpinned by clear theoretical principles. These ‘philosophies of practice’ enable practitioners to ethically respond to a wide range of professional challenges.

This workshop will encourage and challenge candidates to articulate the values independent from a particular theoretical approach or model that they perceive to be of central importance to them in their applied practice. One philosophy of practice will be presented, including its origin, underlying values / assumptions, and application for candidates to reflect upon. It is intended that by attending the workshop, candidates will have the opportunity to explore their own philosophy, while also providing insights that might be helpful to trainees in developing their own philosophy of practice.
Ref: 6713 Oral
A coach behaviour change intervention: The coaching of psychological skills
Rosemary Arthur, University of the West of Scotland; Ross Roberts, Bangor University; Nichola Callow, Bangor University; Joy Bringer, Sports Wales
Performance Excellence

Objectives: We conducted a theoretically underpinned coach behaviour change intervention designed to increase coach provision of psychological skill (PS) support for athletes. To promote a rigorous approach to coach intervention research, the study was guided by medical research council guidelines for complex interventions.

Design: We used a longitudinal, quasi-experimental design to compare a coach behaviour change intervention (BCI) to standardised online coach workshops (WI).

Methods: Participating coaches were matched (BCI = 13 coaches; WI = 12 coaches; Myears coaching = 16.09) along with 179 elite athletes (Mage = 16.7) who worked with the participating coaches. Each coach completed a four month individualised programme; the structure and delivery of the programme was based on a coach behaviour change model. The model described the hypothesised change process and included the principles of self-determination theory and pilot findings.

Results: Two-way (group: BCI/WI × time; post/follow-up) mixed model ANCOVAs (pre-test scores as a covariate) revealed that athlete-reported coaching of PS was significantly greater for BCI coaches at follow-up; and BCI athletes had significantly greater awareness of PS compared to WI athletes. Furthermore, independent t-tests (group: BCI vs WI) suggested the BCI was more need supportive and more effectively impacted on the components of the coach behaviour change model. Coach interviews revealed the positive impact of both interventions on coaching and the athletes involved.

Conclusions: The use of intervention modelling for coach intervention design created more sustainable coach change and could be applied to future coach and sport psychology interventions.

Ref: 6662 Oral
Is flow really effortless? The complex role of effortful attention.
David Harris, University of Exeter; Samuel Vine, University of Exeter; Mark Wilson, University of Exeter
Skills Acquisition

The aim of this study was to inform our understanding of flow in sport using an experimental research design adopting objective, physiological measures. The predominant characterization of flow in sport has emphasized athletes’ reports of automaticity and ease of performance; however, this is difficult to reconcile with reports of superior focus and lack of distraction, which indicate attentional control. In order to address the extent to which flow relies on effortful attention, in contrast to mere automaticity, we assessed objective visual attention and mental effort measures across three repeated measures conditions of a simulated car racing task, designed to manipulate the level of flow: too easy, matched challenge point (flow), and too hard. This design reflected the traditional flow model and provided an experimental approach that is largely absent from flow research in sport.

36 participants, recruited from the undergraduate population, took part in a training phase followed by experimental conditions. Eye tracking and heart rate measures were taken during performance and self-reported flow and mental effort following each race. The challenge manipulation had significant effects on reported absorption (p=.003), objective mental effort (heart rate variability, p<.001), and gaze variability (p<.001). This indicated that optimal challenge lead to a state of absorption, focused gaze and effortful attention. However, reported fluency and felt effort demonstrated a linear relationship across conditions (lowest in easiest and highest in hardest). These results suggest a dichotomy between objective and reported effort and suggest that flow is underpinned by efficient attentional control.

Ref: 6629 Oral
How to deal with dispute: Conflict management strategies utilized by high performance coaches and athletes.
Svenja Wachsmuth, Loughborough University; Sophia Jowett, Loughborough University; Chris Harwood, Loughborough University
Performance Excellence

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**Purpose:** The current study presents part of a wider research project exploring coaches’ and athletes’ experiences of interpersonal conflict. This specific investigation aimed at identifying behavioural strategies employed to minimize dysfunctional and maximize functional outcomes of interpersonal conflict.

**Design:** A qualitative approach to data collection was deemed appropriate in order to exploit the range of conflict management approaches utilized by the study participants.

**Methods:** Within the scope of the current study, eleven coaches (3 team and 8 individual sports) and athletes (8 team and 3 individual sports) took part in a semi-structured interview. A total of 26 questions covered 1) personal sport experiences, 2) the conflict concept, 3) conflict experiences (including management behaviours), and 4) conflict determinants as well as outcomes. A cross-case content analyses were conducted.

**Results:** Results cover the main themes of 1) coaches’ and athletes’ responsibilities, 2) intrapersonal strategies, 2) interpersonal strategies and 3) Communication strategies, as well as 4) seeking external help. Further, several conflict management barriers were pointed out.

**Conclusion:** A combination of multiple management strategies was employed to facilitate successful conflict resolution. Interestingly, all participants emphasized coaches’ responsibilities in regards to being a role model and conflict solver. Thus, it was deemed important that coaches were in control of their emotions and guided athletes through conflict situations. In contrast, athletes were expected to be responsive and openly communicate expectations and concerns. Overall, participants agreed that conflict management needed to be a two-way process to be most effective.

**Ref:** 6773 Oral

**The focus of attention adopted by golfers during a competitive round**

Philip Kearney, University of Chichester; Charlie Godwin, University of Chichester

**Skills Acquisition**

**Objectives:** While research has identified the value of adopting an external focus of attention during the performance of a range of sport skills, there is a lack of research investigating the actual focus adopted by sports performers. Developing our understanding of current knowledge and practice is essential to guide player development. As such, the present study investigated how the attentional focus adopted by golfers was influenced by skill level, perceived shot difficulty, and shot type.

**Design:** Due to the lack of research examining this question in natural contexts, a cross sectional design was adopted.

**Methods:** High (N = 24, x̄handicap = 1.3) and low (N = 76, x̄handicap = 16.3) skilled golfers were approached as they walked away from the 18th green during club competitions. Players were asked to answer a series of questions about the shots they had taken on the final hole, and their attentional focus on each shot. Reported attentional foci were inductively categorised. χ² analyses were performed to evaluate whether shot type, perceived shot difficulty, and golfer skill level influenced the adopted attentional focus.

**Results:** The majority of golfers rated swing thoughts as a very important contributor to their performance. The type of focus reported varied within and between golfers. Contrary to recommendations from the literature, the type of focus was not adapted based upon skill level or perceived shot difficulty.

**Conclusions:** Golfers may benefit from increased education on how to use swing thoughts to focus their attention appropriately.

**Ref:** 6694 Oral

**Leading to inspire athletes: A grounded theory approach.**

Sean Figgins, University of Chichester; Matt Smith, University of Chichester; Camilla Knight, Swansea University; Iain Greenlees, University of Chichester

**Performance Excellence**

**Objectives:** Great leaders are proposed to inspire athletes to exceptional performances, however, little is known about how they do this. Therefore, the aim of this study was to explore the process of inspirational leadership.

**Design:** A grounded theory methodology was used to explore how leaders inspire athletes.

**Methods:** Athletes (n = 17) and coaches (n = 10) with varying experience, who were recruited based upon theoretical sampling procedures, took part in semi-structure interviews (with the interview guide constantly modified based upon the emerging concepts) about their experiences of inspirational leadership. Data were analysed through a process of open coding, axial coding and theoretical integration.

**Results:** The findings indicate that athletes are inspired by behaviours which change their awareness of their capabilities in a range of contexts (e.g., when athletes are uncertain about their potential). Importantly, whether
athletes are inspired by the leader depends upon the extent to which mutual trust, respect and loyalty (on a personal and professional level) exists between the coach and athlete/s. Further, factors relating to the coach and athlete/s (e.g., experience) and the context (e.g., performance level) impact upon how leaders inspire athletes and the likelihood athletes will be inspired.

**Conclusions:** This is the first study to produce a sport-specific theory to explain how leaders inspire athletes. Consequently, the findings could provide a framework for applied practitioners' work with leaders and inform coach education programs aimed at developing leaders’ “soft skills” which ultimately impact upon their effectiveness.

**MSC Award Presentation**

**Chronic Pain in Sport: A Narrative Approach.**
Emily Hunt, University of Chichester

Research has provided valuable accounts of acute sports injuries, yet the complexities of chronic pain are not well understood in sport. Given the integral role of the body in chronic pain and that “stories are told about, in, out of, and through the body” (Smith & Sparkes, 2008, p.5), a narrative methodology was utilised to holistically understand the individual experiences of chronic pain. Eight athletes participated in life history interviews (lasting 60-120 minutes), which asked participants to tell their stories of chronic pain and aimed to preserve the holistic nature of the story. A structural narrative analysis (Riessman, 2008) was used to explore the type of stories that were told. Results are presented as four transitional stories of chronic pain: ignoring pain, fixing pain, accepting pain, and overcoming pain. As each narrative developed some participants transitioned through all stories while others remained fixed in an earlier plot. These transitions illustrate that as participants lost hope of a cure for their enduring pain they learnt to accept pain and eventually overcome and live with pain by making adaptations to their life and identity. However, despite being interviewed up to 10 years after their initial pain symptoms, some had become fixed in a narrative of ignoring pain or seeking to fix pain without the narrative resources to consider alternative stories. The narratives identified in this study may provide an effective tool for applied practitioners to help athletes transition towards overcoming pain by increasing their narrative resources.

**Keynote**

**Optimizing the acquisition of sport skills: The OPTIMAL theory of motor learning**

Professor Gabriele Wulf, University Nevada, Las Vegas

Skilled motor performance is important for surviving and thriving – in life and in sport. In recent years, there has been consistent evidence demonstrating the importance of motivational and attentional factors for optimal motor performance and learning. I present a new theory of motor learning, the OPTIMAL (Optimizing Performance through Intrinsic Motivation and Attention for Learning) theory (Wulf & Lewthwaite, 2016). Key factors in the theory include (a) enhanced expectancies for future performance, (b) learner autonomy, and (c) an external focus of attention. Evidence from various lines of research indicates that enhancing performance expectancies facilitates learning. Confidence, the anticipation of positive experience, aligns thoughts, attention, motivation, and neuromuscular activity to the performer’s goals. Furthermore, providing learners with some measure of control, or supporting their need for autonomy, has been found to enhance learning in numerous studies. Independent of which factor the learner is given control over – or whether this factor is even related to the task to be learned – the learning benefits appear to be very robust and generalizable. The sense that one is in a situation in which one has control reduces the need to resist and enhances expectations for future success. Finally, directing performers’ attention to the (environmental) effects of their movements (external focus), rather than to the coordination of their body movements per se (internal focus), results in more effective performance and learning. In this presentation, I review key findings and discuss implications for establishing conditions for optimizing the performance and learning of sport skills.

**Ref:** 6409 Oral

**Coaches’ Perceptions of Elite Swimmers’ Adversarial Growth**

Karen Howells, The Open University; David Fletcher, Loughborough University

**Performance Excellence**

**Objectives:** Previous research has identified that elite athletes report growth following adversity. However, some researchers have questioned whether these reports reflect real veridical growth. In the trauma literature, researchers have recommended seeking corroboration from significant others to provide further clarification.
Accordingly, this research explored whether swimming coaches corroborated the growth experiences of elite-level swimmers.

**Design:** A qualitative design, which involved a retrospective recall of events and the interpretation of those experiences, was utilised to address the research question.

**Methods:** Purposive sampling was used to select eleven elite swimming coaches who had coached swimmers to World Championships and/or Olympic Games. Semi-structured interviews were transcribed and analysed using qualitative content analysis which was partly guided by pre-existing concepts.

**Results:** Three dimensions were identified: Responses to Adversity, which comprised cognitive responses, emotional responses, and behavioral strategies; Positive Outcomes which comprised perceived benefits and constructive growth; and Absence of Positives which comprised no information and no positive outcomes.

**Conclusions:** Corroborating accounts lent partial support to athletes’ reports of adversarial growth. However, the coaches were able to provide information that distinguished between the different types of positive outcomes that swimmers experienced. This has implications for coaches who need to be aware of the different positive outcomes that athletes may present and their associated consequences. Although the design of the study identified different types of growth it was apparent that coaches sometimes colluded in the promotion of the cultural script and accordingly, methodological implications are discussed.

**Ref:** 6677 Symposium

**Athlete mental health and well-being: Dilemmas and ways forward**

Sarah Partington, *Northumbria*

**Mental Health & Wellbeing**

There is recognition in the field of sport psychology of the need to address the mental health and well-being of athletes. Sport psychologists understand the sport context, but the majority do not have the expertise to support needs beyond performance enhancement. Sport psychiatry is an underdeveloped discipline and athlete care is often delivered by practitioners who have the psychological and medical expertise but lack understanding of athletes and the athletic context. For effective support, sports psychiatrists, sports psychologists and coaches must work collaboratively. Issues to address include: the underreporting of mental health issues in athlete populations, understanding what may be unique to athletes in relation to mental health, the difficulty in distinguishing mental health issues from perceived ‘normal’ athlete behaviours and appropriate pathways to treatment. This symposium will explore these issues and will conclude with some suggestions for the way forward.

Paper one looks at athlete culture, focusing in particular on the role of athletic identity and how different identities may be more strongly associated with mental health issues.

Paper two focuses on excessive alcohol consumption in team sport athletes, exploring the complex relationship between alcohol consumption and mental and physical health.

Paper three uses the optimal state of ‘flow’, as a context to discuss how behaviours and emotions celebrated within sport share similarities with symptoms that could be indicative of mental health issues.

Paper four explores the organisation of medical services and the nature of medical care provided to professional footballers, focusing on the medical management of psychological issues.

**Ref:** 6678 Paper 1

‘Toxic Jocks’ - the role of athletic identity in athlete mental health.

Elizabeth Partington, *Northumbria University; Andrew Sparkes, Leeds Beckett University*

**Mental Health & Wellbeing**

**Objectives:** This study is part of a larger study exploring identity reconstruction following athletic injury. Certain types of athletic identity have been associated with increased risk of health compromising behaviour in athletes. The objective of the current study was to explore the different types of athletic identities present on one university campus, and to gain insight into their relationship with mental health and health compromising behaviour.

**Design:** A qualitative research design was adopted.

**Methods:** Following ethical approval, in-depth semi-structured interviews were conducted with 31 student-athletes (M = 14, F = 17) from a range of university sports. Interviews were recorded and transcribed verbatim and thematic analysis was completed. Participant observation was carried out via involvement in two university sports teams.
Field notes were maintained and a reflective diary was completed. Documentary analysis was conducted using the student newspaper and a thesis on the ‘history of the university.’

**Results:** Five distinct athletic identities were identified; ‘jocks’, ‘wanna be jocks’, ‘also rans’, ‘sport scholars’ and ‘anti-jocks.’ These identities exhibited different behavioural characteristics, espoused different values, and differed in their relationship with mental health and health compromising behaviour.

**Conclusions:** This study highlights the complex nature of athletic identity and its role in athlete mental health. All athletic identities exhibited evidence of health compromising behaviour and susceptibility to mental health problems. However, the types of behaviour and the nature of the problems differed depending upon the type of identity. Better understanding of athletic identity is required to ensure effective support for athlete mental health.

Ref: 6686 Paper 2

**The impact of drinking behaviour on student-athlete mental health and wellbeing**

Joanne Smith, Northumbria University; Sarah Partington, Northumbria University; Liz Partington, Northumbria University; Fran Longstaff, Middlesex University; Nick Heather, Northumbria University

**Mental Health & Wellbeing**

**Objectives:** This study aimed to explore the role of alcohol in the social world of student-athletes and assess perceptions of their own and other’s drinking. The study focused on the social benefits and deficits athletes may experience as result of their drinking behaviour.

**Design:** A qualitative research design was adopted.

**Methods:** Semi-structured interviews were conducted with 17 student-athletes (M = 6, F = 11) from four university sports; rugby, hockey, netball and water polo. Each interview was recorded and transcribed verbatim to facilitate thematic analysis.

**Results:** Drinking heavily was described by all athletes as a praised and desirable behaviour within team culture. Athletes who drank at the desired level experienced three types of social benefits; 1) relaxed, confident interactions with peers, 2) intimate, supportive team relationships, including looking after one another whilst drinking and 3) a wealth of memories and stories to share. However, the alcohol consumption required to achieve such benefits put these athletes at risk of injury, weight gain and loss of fitness. Conversely, athletes who drank little or who struggled to adhere to the drinking culture reported social exclusion, isolation, lowered mood and in extreme cases, drop out from the sport.

**Conclusions:** This study provides an insight into the complex role of alcohol in the social lives of student-athletes. The results highlight the impact of drinking choices on athlete mental health and wellbeing. Coaches and practitioners need to consider the implications of such ‘off pitch’ activities on the mental as well as the physical health of athletes.

Ref: 6687 Paper 3

**The case of Flow – Is optimal experience always optimal?**

Sarah Partington, Northumbria University; Andrew Sparkes, Leeds Beckett University

**Mental Health & Wellbeing**

**Objectives:** This study is part of a wider study exploring athletes’ experiences of flow. Whilst flow has been celebrated as both an optimal experience and the psychological state underpinning optimal performance, it has also been recognised that some flow characteristics and behaviours may be synonymous with symptoms indicative of mental health issues. Using flow as a framework, the current study sought to further explore whether mental states and the associated behaviours linked to optimal sport performance may in fact be disguising potential mental health issues.

**Design:** A qualitative research design was adopted.

**Methods:** Following ethical approval, in-depth semi-structured interviews were conducted with 25 student-athletes (M = 13, F = 12) from three university sports; white water canoeing, rugby and swimming. Interviews were recorded and transcribed verbatim and thematic analysis was completed.

**Results:** All athletes highlighted the enjoyable aspects of flow and the links between flow and optimal performance. However, when discussing flow, athletes also described symptoms similar to those of addiction, blunting of affect/repressed emotions, elements of narcissism, inward and outward aggression, maladaptive perfectionism, and performance contingent self-esteem.

**Conclusions:** This study provides some insight into the complexities of recognising and diagnosing mental health issues in athlete populations. The results highlight the similarities between some mental health symptoms and what are considered normal or valued behaviours and emotions in athletic contexts. Coaches and sports psychologists
need to be aware of the potential for misdiagnosis of mental health issues and to gain further knowledge of the mental health needs of athletes.

Ref: 6688  Paper 4
The medical management of mental health: A case study of professional football
Andrea Scott-Bell, Northumbria University; Dominic Malcolm, Loughborough University

Mental Health & Wellbeing

Objectives: Data are derived from a larger study on the organisation of medical services provided to professional footballers. The current paper responds to the medical management of psychological issues among these athletes.

Design: A qualitative research design was adopted.

Methods: Semi-structured interviews were conducted with doctors [n = 8] and physiotherapists [n = 14] working in English professional football. Interviews were recorded and transcribed verbatim and analysed thematically.

Results: Although few would expect sports medicine to lead the way in the bio-psychological understanding of mental health conditions, clinicians recognised their role in the management of athletes’ emotional health, including where this manifested in a mental health condition. Despite this, clinicians talked of their uncertainty around the management of these conditions. Interview data exposed dissimilar practice relating to athlete-clinician confidentiality/disclosure of conditions to managers, coaches and fellow athletes. Physiotherapists were often the first port-of-call for athletes though many felt ill-equipped. Conversely, while doctors recognised their greater expertise of mental health conditions, their part-time role negated their ability to establish the relationships needed for athletes to seek their support.

Conclusions: Data indicate a need to further assess the degree to which athletes experience mental health problems. Second, a review of the training needs of clinicians must be established if mental health needs are to be identified and managed appropriately. Further, sports psychologists need a better balance between performance enhancement and athlete health and wellbeing. Finally, a careful look at the organisation of sports medicine in professional sport, particularly the autonomy of clinicians needs to be addressed.

Ref: 6652 Workshop
Empowering the Coach-Athlete Relationship: The Tandem Method
Sophia Jowett, Loughborough University

Performance Excellence

Background: One critical factor for performance success and personal satisfaction is the quality of the coach-athlete relationship. What does this mean in practice? How can we help coaches and athletes build healthy, constructive, engaging relationships with one another? How can we persuade coaches and athletes that getting the best out of each other requires such key interpersonal properties as mutual trust, respect, appreciation, commitment, reliance, co-operation, collaboration, assurance and open channels of communication.

Key Points: The workshop is interactive, reflective and experiential and aims to supply answers to the questions above by outlining the research evidence to date, making it invaluable for anyone who wants to keep abreast of recent data. However, the main focus is on practical application and level of theory. The workshop will supply participants with the opportunity to:

• Discuss the ways that good quality coach-athlete relationships support coaches and athletes strive to be their best
• Understand the core constructs of relevant theoretical frameworks and identify ways to integrate these into their work with individual athletes and coaches as well as teams and squads
• Use Tandem, an evidence-based web-based tool that has diagnostic, prognostic and educational facilities, to improve the effectiveness of coach-athlete relationships and patterns of communication (see www.tandemperformance.com)

Conclusion: The overall aim is to empower practitioners who work with individual coaches and/or athletes and sport teams to act more intentionally and strategically to strengthen coach-athlete relationships and communication.

Ref: 6726 Oral
Do Coping Interventions Help Individuals Perform Under Pressure? A Systematic Review
Sofie Kent, University of Wolverhampton; Tracey Devonport, University of Wolverhampton; Wendy Nicholls, University of Wolverhampton; Andy Lane, University of Wolverhampton

Performance Excellence
Purpose: The purpose of this systematic review (SR) was to synthesise applied studies that focus on interventions developed to enhance an individual’s ability to cope under performance pressure.

Background: In various domains of life, an individual may be confronted with situations where the outcome hinges on one pressured moment. For example, a child in an examination, a footballer taking a penalty, or a soldier in combat. Consequently, practitioners have strived towards developing interventions that enhance an individual’s ability to cope and perform under stressful conditions.

Methods: The systematic review was completed according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A comprehensive search of five electronic databases (Business Course Complete, Education Course Complete, PsycINFO, MEDLINE, SPORTDiscus) was undertaken from 1980 to 2015, which yielded 60390 articles. Studies were assessed for inclusion by examining their title, abstract, and then full text of which 23 met the inclusion criteria. The quality of included papers was assessed using the standard quality assessment for evaluation of primary research papers (Kmet, Lee & Cook, 2004).

Conclusions: A narrative aggregate synthesis identified intervention studies that encompassed educational (n = 12), consultancy sessions (n = 3) and simulation strategies (n = 8). The findings identified that pressure interventions may all offer, at least to a small degree, enhancement to performance under pressure. However, simulation studies that exposed individuals to ‘pressure’ settings, in combination with educational coping-workshops provided the largest evidence of treatment efficacy regarding performance under pressure.

Ref: 6679 Oral
Time-lags; should we assume knowledge leads to understanding?
Amanda Wilding Pinckney, Bournemouth University
Performance Excellence

Purpose: To explore the nature and impact of the relationship between knowledge and understanding within the athletic coaching setting.

Background: Knowledge deals with learning of a subject’s existence and gaining an understanding of its function. Yet the terms knowledge and understanding have distinctive definitions. In the applied setting of importance is the need to transfer knowledge into practical coaching tools.

Method: Following ethical approval, an inductive qualitative approach using the verbalised word allowed for in-depth explorations of complex relationships. The NGBs search engine was used to randomly select 21 participants which ensured coaches were licensed, thus guaranteeing parity between their minimum levels of knowledge. The semi-structured interviews allowed coaches to talk in their own words. Transcriptions were analysed using inductive content analysis and emerging codes were placed into dimensions.

Results: Three categories for classifying sport psychology knowledge emerged on a continuum from lack of knowledge to knowledge gained from mediated sources. Coaches were placed on the continuum according to two factors, 1) coaching career stage and, 2) coaches engagement with sport based education. These factors were found to influence coaches level of interaction with knowledge gained and led to three parallel levels of understanding (no understanding, need more guidance and confident to use knowledge).

Conclusion: The time lag between gaining knowledge and the need to use that knowledge determined coaches’ level of understanding. Greater time-lags led to lower levels of understanding. Such information can be used by practitioners to increase coaches’ transfer from knowledge to understanding.

Ref: 6693 Oral
Thriving on Pressure: A Latent Profile Analysis of Sport Performers’ Responses to Competitive Sporting Encounters
Daniel J. Brown, University of Bath; Rachel Arnold, University of Bath; Martyn Standage, University of Bath; David Fletcher, Loughborough University
Performance Excellence

Objectives: Although much research exists on performers’ responses to sporting encounters, little is known about how athletes thrive in these situations. In the current study, we aimed to examine if sport performers who thrived in competitive encounters exhibited distinct response patterns compared to those who did not thrive.

Design: Cross-sectional.

Methods: A heterogeneous sample of 535 sport performers (Mage = 23.60 years, SDage = 8.08) completed a multi-section survey containing measures of functioning (i.e., performance and well-being), personal and contextual enablers, and process variables following a sporting encounter. Scores on functioning variables were assessed using latent profile analysis (LPA) to determine group membership. Follow-up ANOVA analyses with effect sizes were conducted to explore potential group differences on the enabler and process variables.
**Results**: LPA supported a four-class solution comprising a high-functioning ‘thriving’ group (n=148), a low-functioning group (n=41), and two groups characterized by scores marginally above (n=130) and below (n=210) the mean. The thriving group reported highest levels of personal (e.g., resilient qualities) and contextual (e.g., social support) enablers, and process (e.g., basic psychological needs satisfaction) variables.

**Conclusions**: Four groups of sport performers displaying distinct patterns on functioning, enabler, and process variables were identified. These results extend extant findings via the introduction of a holistic approach to examine performers’ functioning in competition, and by providing significant knowledge and understanding of pertinent variables for the facilitation of thriving. Such data provide a basis to inform the development of thriving interventions.

Ref: 6621 Oral

The identification of best practice principles of performance management in elite sport

Conor Molan, University College Dublin; Arnold, University College Dublin; Rachel Arnold, University of Bath; James Matthews, University College Dublin

**Performance Excellence**

**Objectives**: There is growing interest in how organizational and management factors impact on performance excellence in elite sport, with performance management (PM) identified as a salient research area. However, the mechanisms of how PM affects performance in elite sport settings are unclear. The objectives of this study are to (1) explore what PM practices are aimed at developing the performance of people within elite sport programmes and (2) examine how PM is used to evaluate performance at individual, operational and strategic levels.

**Design**: The study employed a phenomenological research design using qualitative methods to interpret the experiences of individuals (i.e. international experts) who have experienced the phenomenon (i.e. PM within elite sport).

**Methods**: Purposive sampling was used to identify individuals with significant track records of achievement at management-level within Olympic sport. Semi-structured interviews were conducted with 13 participants from Olympic sport organizations across five nations. Content analysis was used to group units of meaning into themes. Member checking and an independent peer-review process were conducted to enhance rigor and trustworthiness.

**Results**: The analysis process is still in progress however, key themes have begun to emerge related to practices aimed at developing people (e.g. multi-disciplinary teamwork, staff capability/capacity) and evaluation of performance across various levels of elite sport (e.g. utilizing performance data, system planning and review).

**Conclusions**: The findings are being examined to develop our understanding of the theoretical components and how the mechanisms of PM interact. Practical implications for management within elite sport are discussed.

Ref: 6648 Oral

The role of social identification on perceived levels of stress

Jamie Gillman, Staffordshire University

**Performance Excellence**

**Objectives**: The aim of this study was to understand the effect of social identification and social support on individuals’ challenge and threat states, and subsequently the impact this has on perceived stress and life satisfaction.

**Design**: The study adopted a cross-sectional design assessing social identification, social support, challenge and threat appraisals, perceived stress, and life satisfaction. Questionnaires were completed by four groups: students, workplace employees, team sport athletes, and group exercisers.

**Methods**: An online survey was completed by four hundred and eighty (female = 275, male = 205) participants (Mage = 32.01 years, SDage= 10.02 years) on one occasion. A path diagram was created in AMOS to assess the relationships between variables.

**Results**: Overall, data indicated an acceptable fit for a i) challenge, and a ii) threat model. The challenge model positively predicted and accounted for 46% variance in life satisfaction, and the threat model negatively accounted for 47% variance in life satisfaction. In both models social identity was positively related to social support and the resource appraisals, with social support also showing a negative relationship with perceived stress. Furthermore, social support was found to explain a similar amount of variance in challenge and threat as the individual resource appraisals.
Conclusions:
Overall, the findings from this study highlight the valuable role that social identification and social support have on the resource appraisals of challenge and threat states. Therefore, when understanding individuals’ stress responses and associated life satisfaction, research and practice needs to focus on the combination of individual and social factors.

Keynote
Performance pegs and emotional holes
Dr Jonathan Katz, Performance in Mind

Athletes commit a significant amount of their time, financial, social, family, and work resources towards improving their sporting excellence. These resources are employed, often as a priority over every other professional and personal demand, so that activities related to performance preparation, delivery and recovery take precedence. The aspiration of the athlete to achieve ‘their best’, particularly if this is to be on the world stage, influences the intensity of the athlete’s ‘psychological world’ in relation to whether their outcome ambitions are being met.

This drive is often internally fuelled though personal, individual ambitions and expectations, which interact with the expectations those stakeholders such as coaches, managers, spectators and the media, have for the athlete. The need to reconcile often conflicting expectations is a frequent consequence for the athletes, which can influence and impact on the athlete’s psychological wellbeing.

Stakeholders form value judgements about the ‘person behind the athlete’s’ worth, likeability, quality of character, and so on based on their perception of the athlete’s performance. Further, a single ‘sporting event’ can come ‘to define the athlete’ that may, in fact, be non-representative of them. Managing a wide range of professional and personal judgements and bias, at times public and outside of one’s control, can be a constant demand on an athlete’s coping capacity.

Sport and exercise psychologists have a professional responsibility to support clients. There is considerable pressure and demand to ensure athletes are ‘fit’ to perform effectively, often translated as meaning ‘to win’. This demand can conflict with the need to support the psychological and emotional needs of the ‘person behind the athlete’. This keynote presentation will shed light on this professional dilemma to advance this debate in this profession by sharing reflections and insights gained from applied consultancy

Ref: 6712 Oral
Mental health awareness programme for university athletes: the State of Mind Ireland pilot study
Gavin Breslin, Ulster University; Tandy Jane Haughey, Ulster University; Laura Caulfield, Bath Spa University; Martin Lawlor, Programme Lead & Medical Director (HSE/CRSI/SOMI); Wesley O’Brien, University College Cork; Alexa Robertson, Ulster University

Mental Health & Wellbeing

Objectives: We tested the effects of providing a mental health awareness, resilience and introduction to mindfulness programme to university athletes to increase knowledge of mental health, intentions to offer support, resilience and wellbeing. Design: A 2x2 mixed factorial design; Methods: One hundred student athletes (M age = 20.78; SD = 2.91) took part and were placed in either an intervention or control group. Participants in the intervention group received the State of Mind Ireland (SOMI) programme. Participants in the control group received content matched in length not related to mental health. The main outcome measures included: The Mental Health Knowledge Schedule; Reported and Intended Behaviour Scale, Short Warwick Edinburgh Wellbeing Scale and Brief Resilience Scale. Participants completed questionnaires before and after the programme.

Results: Knowledge of mental health increased in the intervention group significantly more than in the control group. Participants in the intervention group also increased their intention to offer support to someone with a mental health problem, this increase was greater than that in the control. The programme did not lead to changes in resilience or mental health and wellbeing of participants.

Conclusions: Providing a short duration (75 minutes) mental health awareness programme can increase knowledge of mental health and increase intentions to offer support to others with a mental health problem. However, further modifications to the content of SOMI are being considered and further follow-up with the participants will take place to determine the long term effects of the programme on resilience and wellbeing.
Ref: 6637 Symposium
How Group and Individual supervision develop the fundamentals of the BPS Stage 2 process: Three trainees’ and a supervisor’s perspective
Sarah Carvell, Private Practice Swindon
Performance Excellence

The pathway to becoming a chartered sport and exercise psychologist, through the British Psychological Society (BPS), has developed over recent years. During this process, the BPS require trainees to demonstrate 460 days of supervised professional development across the domains of standards, knowledge, research, and practice. These requirements form the basis of the postgraduate qualification known as the QSEP (Qualification in Sport and Exercise Psychology). In order to demonstrate these qualities trainees are required to work with an approved co-ordinating supervisor. Due to the independent nature of this qualification, the symposium aims to highlight the benefits of having group and individual supervision available throughout the QSEP process in order to develop professional competencies across four key roles. The symposium will encompass a series of reflective accounts from three QSEP trainees and a supervisor in order to convey the journey throughout the QSEP process. Each author will outline the advantages, challenges and obstacles of having group and individual supervision whilst completing the QSEP Stage 2 process. The symposium will combine open reflections and presentations of the key learning experiences of including multiple types of supervision throughout the training process. It is anticipated that this symposium will appeal to students, trainees, other supervisors or early career practitioners interested in the options available and the demands associated with QSEP.

Ref: 6638 Paper 1
Reflections of using group supervision through the QSEP process: A first year trainee perspective
Nanaki Chadha, Staffordshire University
Performance Excellence

The application of all theoretical knowledge embedded over the years into the real world is not as easy as it seems. Stepping into the applied field and working with athletes soon after completion of a Masters degree is a daunting experience, thus, I feel there is nothing better to learn directly from those who have gained valuable experience in the applied field over the years and cultivated their way into becoming successful sport and exercise psychologists. Supervision is an important aspect of the training and development of an individual looking towards attaining Chartership as a Sport and Exercise Psychologist. Being in my first year of the BPS Stage 2 qualification, I would say our programme encompassing group and individual supervision sessions are ideal for personal and professional development. The group supervision sessions have a clear aim of covering an important topic at each meeting and are valuable as they help in the supervisee’s self-knowledge and understanding of practice. Regular group meetings with supervisors and peers allow everyone to discuss their personal experiences and challenges faced during practice, which provides a platform to learn from others. In addition, the individual supervisor-supervisee meetings allow addressing of concerns, which might occur whilst working in the applied field. It also helps the supervisor in guiding and reassuring the supervisee that they are heading in the right direction, thus boosting one’s confidence.

Ref: 6639 Paper 2
Reflections of using group supervision through the QSEP process: A second year trainee perspective
Colin Ford, Seajay Sport Psychology
Performance Excellence

After 35 year working in Telecoms & IT I started my stage 2 qualification in October 2014. Having worked in a commercial business I have developed an appreciation for the benefits of working in diverse teams. For me the benefit of team working (and consequently group supervision) is the range of ideas and experience everyone brings to the group. This session will be about the benefits my supervision group has brought to me and how, in my second year, I am passing on some of my experience to newer members of the group. I will elaborate on how working in my supervision group has made me less sure about the definition of my professional philosophy, compared to a year ago, but also helped me to build up my belief that I can be a competent Sport Psychologist. The group is helping me to develop the skills required to be a good practitioner. These include building relationships, how to listen to my clients, having a professional approach to running a business and how to cope with the trials and tribulations of gaining and losing clients.

Ref: 6640 Paper 3
The journey of a final year trainee through the QSEP process: Using group and individual supervision
Sarah Carvell, Private Practice Swindon
Performance Excellence

Supervision is an important aspect of the training and development of practitioners in sport psychology. Due to the nature of the QSEP Stage 2 process the collaboration of group and individual supervision is most beneficial to a trainee nearing the end of her training process. This aspect of the symposium will reflect on the author’s journey throughout the supervision process and how specific group sessions, collaborating with other professionals and trainees, contributed to the development of various professional competencies, which are part of the key roles. Since beginning the process, the presenter will reflect on the valuable experiences learned during the supervisory group meetings. A large amount of support, feedback, and reflection is generated during the supervisory support-group sessions. Throughout this process, I have used these opportunities to put forward particular issues to the group and was able to evaluate and reflect on my own actions and those of my peers. Taking these opportunities to share my experiences with others usually create a roundtable discussion that enables views to be exchanged and further reflective practice to be generated. The group sessions also facilitate the process of layered reflection, for trainees, in that I was able to reflect further on reflections that had taken place earlier in my career. Incorporating both group and individual supervision also enables trainees to personally reflect on any discussions taken place during the group sessions directly with their supervisor, at which time suggested action points can be advised.

Ref: 6641 Paper 4
Flow Mindset Interventions on Flow States and Performance in Elite Athletes
Brian Hemmings, St Mary's University
Performance Excellence

For nearly twenty years I have offered professional individual supervision to candidates pursuing professional careers in sport psychology. My reflections on these supervisory experiences are that candidates often did not experience the best environment for learning the skills required for effective practice, and sometimes became isolated and demotivated. Working collaboratively for the last three years with another experienced practitioner to offer both group and individual elements of supervision has shown that much richer and diverse learning and training experiences can be offered to QSEP candidates. This presentation will reflect on the advantages of working collaboratively with another co-ordinating supervisor to provide group and individual supervision with QSEP candidates and aim to propose how present and future trainees can integrate individual and group supervision and learning experiences to foster their development through the stage 2 process.

Workshop
Measuring and Monitoring Physical Activity Workshop: Challenges of employing commercial grade monitoring devices in research and consultancy
Ruth Lowry, University of Chichester
Exercise

Background: Physical activity is often the outcome measure of health interventions. Whilst a range of subjective and objective measurement tools are currently available questions over reliability, validity and appropriateness continue to challenge researchers and practitioners (Sylvia et al., 2014). In recent years, this issue has been further complicated by the availability of commercially available wearable motion sensors and smartphone technology. Despite these advances there is still a lack of standardisation for the calibration of monitors (Freedson et al., 2012). The learning outcomes for this workshop include (1) introducing delegates to a range of objective and subjective monitors including research and commercial grade devices (2) practical experience of activity capture, data extraction and processing (3) discussion and signposting of literature relating to specialist populations. This is an entry-level workshop for those who have little knowledge of physical activity measurement. The workshop is best suited to delegates who wish to gain an insight into an evidenced-based approach to the selection of appropriate devices.

Key points: To support the learning outcomes, the workshop will provide delegates with practical experience with a range of subjective and objective physical activity measurement tools. Delegates will discuss contemporary research that will explore the practicalities and considerations researchers and consultants need to make when selecting measurement instruments.

Conclusions: Delegates will leave with a critical awareness of physical activity measurement and research to enable selection of appropriate measurement tools for individual and group level intervention.
A Retrospective Examination of Parental Involvement in Youth Rugby
Steffan Berrow, Swansea University

Performance Excellence

Research has begun to extensively document the positive and negative psychological consequences of parental involvement within youth sport. However, such studies have usually considered only the influence or involvement of the parent perceived to be “most involved” in their child’s sporting life, limiting our understanding of how parents might work together to support or influence children’s sporting participation. Thus, the purpose of this study was to retrospectively examine athletes’ and their parents’ perceptions of both of their parents’ involvement (where present) throughout their junior rugby careers. Semi-structured interviews were completed with 8 university rugby players, as well as 8 of their mothers and 6 of their fathers. Interviews were then transcribed verbatim and interpretive thematic analysis (Braun & Clark, 2006) was conducted. Analysis highlighted an overarching theme, centred around the idea of athletes’ idolisation of fathers and dismissal of mothers. Such idolisation of their father’s appeared to be triggered by the fathers’ consistent and explicit involvement in their child’s rugby. Particularly, there was a clear link made between a father’s social status and their son’s rugby participation and the role of a father as their child’s coach. In contrast, mothers were required or seen to take on many of the “hidden” roles of youth sport, which were often discounted not only by athletes but also by fathers. Taken together, such findings point to the importance of extending research to consider the joint influence parents (as well as other members of the support network) can have on young athletes.

Evaluation of Mental Health First Aid (MHFA) for the Armed Services Community
Diane Crone, University of Gloucestershire; Mustafa Sarkar, Nottingham Trent University; Elizabeth Loughren, University of Gloucestershire; Thomas Curran, University of Bath; Colin Baker, University of Gloucestershire; Denise Hill, University of Portsmouth; Tabitha Dickson, University of Gloucestershire; Andrew Parker, University of Gloucestershire

Mental Health & Wellbeing

Objectives: The purpose of this paper is to present findings from an evaluation of a Mental Health First Aid (MHFA) intervention aimed to support mental health literacy among members of the Armed Forces community in the UK.

Design: A mixed methods design was adopted to investigate the impact of MHFA training. The evaluation used both quantitative (surveys) and qualitative (interviews and focus groups) elements to address the objectives of the study.

Methods: A pre- and post-training survey assessed shifts in trainee (n=602) knowledge, attitudes, and confidence surrounding mental health issues from pre-training to post-training. The qualitative aspect comprised of semi-structured telephone interviews with trainees post-training (n=13 trainees) and focus groups with trainers (n=14 trainers).

Results: Quantitative findings revealed that from pre- to post-intervention (the training course), trainees showed a significant increase in knowledge, attitudes, and confidence related to mental health issues. Importantly, this effect was sustained at the 10 month follow-up. Qualitative findings revealed an increased knowledge, understanding, and confidence in discussing and communicating with people who have mental health issues. This included improved listening skills, advice giving, and confidence in asking difficult questions regarding mental health issues.

Conclusion: These evaluation findings provide evidence that the MHFA Armed Forces intervention helped to improve mental health literacy, and reduce stigma and misunderstandings surrounding mental health in the UK Armed Forces community.

Positive Illusions in Youth Academy Football: Investigating the extent to which parents make favourable child-other comparisons
Greg Irvin, Sunderland Association Football Club

Performance Excellence

Cognitive biases have been well documented to favourably influence the judgements individuals make when comparing both themselves and their relatives to other people. The current study investigated the extent to which parents of youth academy footballers demonstrated illusory superiority and optimistic bias when they compared their children to other academy footballers. A sample of 87 participants recruited from a single Premier League
Football Club Academy completed an online questionnaire consisting of a 30-item positive illusions scale designed to measure parental perceptions of their children’s general characteristics, mental skills, football skills and future prospects. Factor analysis supported the four proposed categories of positive illusions. Statistical analysis of participant responses revealed that parents demonstrated illusory superiority when comparing their children to other academy players, but that this did not translate into a perception of optimistic bias regarding their likelihood of attaining future footballing success. The results showed that academy football parents do exhibit positive illusions when making child-other comparisons, but that they are more realistic when predicting future prospects of football success. The processes underpinning such bias are considered with regard to motivational and information processing mechanisms. Whilst only representing the environment of a single, elite level football Academy, implications of these findings for the talent development process in academy football are proposed, particularly in reference to the potential influence of parental perceptions on a child’s academy football participation/experience, and in terms of how such parental positive illusions may influence the relationships formed between parents and staff at an academy.

Ref: 6656 Oral
How are our Athletes Being Treated for Mental Illness? Literature Review and Proposal for an Ecologically Validated Diagnostic Instrument and Referral Strategy
Charlotte Murphy, Hartpury College
Mental Health & Wellbeing

Purpose: To critically review the existing literature examining mental health challenges in elite sport to enable synthesis of current practices in identification, detection, and referral processes.

Background: Emerging research examining the role of mental health and clinical issues has signified the importance of early identification in athletes and the need for a proactive approach rather than reactive in prevention, intervention, and management. Despite the importance of detection, effective treatment, potential risks and consequences of mental illness; athletes are still undiagnosed, mistreated, or non-disclosed. This review aims to propose a solution to these challenges by increasing understanding of the prevalence and prevention of mental health issues, whilst highlighting the need for improved identification and intervention strategies.

Methods: A systematic review of current literature published from 2009 to June 2016 was conducted using keyword searches from three relevant electronic journals. Thirteen articles met inclusion criteria of; mental health, clinical issues, elite sport, assessment, identification, referral, warning signs, and early intervention. The articles reflected quantitative and qualitative methods, case studies, autobiographies, and practitioner interventions to provide a diverse interdisciplinary perspective on applied issues and challenges.

Conclusions: Implications highlighted the importance of early identification and key responsibility of support staff in efficacy of this process; however it is apparent there is a lack of knowledge, awareness, and understanding of clinical issues and warning signs in elite sport. The need for a sport-specific diagnostic assessment tool and referral strategy as a solution is discussed alongside overcoming issues of non-disclosure, pathway support, and integrating clinicians.

Ref: 6720 Oral
Parents’ perceptions of a parent education programme within UK youth football
Adam Gledhill, Leeds Beckett University
Performance Excellence

Objectives: Parents are key stakeholders in player development in football, yet their views and experiences are currently underrepresented in sport psychology literature. Scholars have recently called for greater education of parents to support them in their sport parenting. Consequently, the aim of this study was to examine football parents’ experiences of a parent education programme focussed on the positive roles of parents in football player development.

Design: An inductive qualitative design was used.

Methods: Data was collected anonymously using open-ended questionnaires collected from 68 football parents would had attended a series of parent education workshops. The questionnaires invited parents to provide their views on workshop content, their wider experiences of taking part in the workshops, and to provide concrete examples of how they had used/would use the workshop activities in future. Data was analysed using thematic analysis.

Results: Four key themes emerged as positive perceptions of the workshops: (1) Empowerment of parents; (2) Perceived parental value; (3) Reflective practice; and (4) A culture of sharing. One theme emerged as a negative perception of the workshops: (1) Parental threat perception.
**Conclusions:** Delivering parent education workshops using a progressively parent-led, interactive manner may enact a culture of experience sharing where parents perceive themselves as a more valuable, involved and capable stakeholder in their player-child’s football development. Practitioners - and those who invite them - should be mindful of creating negative threat perceptions in football parents, as these perceptions may minimise the impact and perceived value of such workshops.

Ref: 6622 Oral

**The influence of perceptions of teammates’ burnout on individual athletes’ emotional well being**

Ralph Appleby, *Northumbria University*; Paul Davis, *Umeå University*

**Mental Health & Wellbeing**

The aim of the present study was twofold: firstly to examine potential relationships between an athlete’s perceptions of their teammates’ burnout and their own emotional wellbeing (i.e., positive and negative affect); and secondly to provide preliminary support for the validation of the Team Burnout Questionnaire (TBQ). Burnout and emotions have been suggested to be influenced by social interactions; however, to date, research has not empirically investigated perceptions of burnout at the team level within sport. The TBQ aims to provide a tool to examine athletes’ perceptions of their teammates’ burnout.

A cross-sectional design was adopted with a sample of male and female team sport athletes. Two hundred and ninety competitive athletes completed the TBQ, an adapted version of the Athlete Burnout Questionnaire, as well as a measure of emotional wellbeing. Structural Equation Modelling analysis found that athletes’ perceptions of their teammates’ sport devaluation appeared to play a key role in athletes’ own emotional wellbeing. Furthermore, confirmatory factor analysis revealed acceptable goodness of fit indexes for the three dimensional-first order factor model of the TBQ (SRMR = .056, RMSEA = .071, CFI = .951, NFI = .920).

The findings suggest that athletes and coaches should be aware that perceptions of teammates’ burnout may influence an individual athlete’s emotional well-being. Considering burnout at the team level may provide greater insight into the factors influencing athletes’ health and performance.

Ref: 6762 Oral

**Does Mental Toughness influence Ultra-endurance Runners’ ability to maximise Performance in Training and Competition?**

Jeremy Sutton, *Ulster University*

**Endurance**

**Objectives:** To examine whether mental toughness influenced ultra-runners’ ability to maximise aerobic performance in a laboratory (Study 1) and during competition (Study 2).

**Design:** In Study 1, ultra and leisure runners were compared by measuring mental toughness, personality, and maximal aerobic capacity on a treadmill. For Study 2, mental toughness, personality, motivation, and changes in stress hormones were measured in participants of an ultra-marathon event.

**Methods:** In Study 1, participants were all male: 10 had previously taken part in an ultra-endurance event and 10 were occasional runners. Participants’ VO2 peak scores were used to identify aerobic endurance. In Study 2, 20 male participants were selected from an existing ultra-marathon event and measured for changes in stress hormones before and after the race. Participants in both studies completed the Mental Toughness Questionnaire 48 and the Big 5 personality dimensions.

**Results:** In Study 1 there was a significant difference between groups on VO2 peak, however there were no differences between ultra-endurance and leisure runners on mental toughness and personality scores. There was a significant positive correlation between VO2 peak scores and mental toughness across both groups. In Study 2 there was a positive correlation between mental toughness and the percentage increase in the stress marker cortisol.

**Conclusions:** The findings of both studies suggest that mentally tough, autonomously motivated, ultra-endurance runners are more able to reach increased levels of aerobic capacity and physiological stress and are more likely to realise their physical potential in training and during an endurance race.

Ref: 6692 Oral

**The 2 × 2 model of perfectionism and the meaning of youth sport involvement**

Sarah Mallinson-Howard, *Nottingham Trent University*; Camilla Knight, *Swansea University*; Andrew Hill, *York St John University*; Howard Hall, *York St John University*

**Mental Health & Wellbeing**
**Objectives:** Research has found that the four subtypes of perfectionism from the 2×2 model of perfectionism have divergent influences on the experiences of youth sport participants. However, so far, research has relied solely on quantitative designs and there has been no attempt to capture the personal accounts of youth sport participants in terms of the 2×2 model. The study provided the first exploration of the experiences of youth sport participants exhibiting subtypes of perfectionism. **Design:** Both quantitative and qualitative research methods were used to identify and then elicit the experiences of participants. Methods: In the quantitative phase, participants were 192 females enrolled in a school- or community-based sport group (M age = 13.91 years; SD = .90; range 12 – 16 years). Participants completed a domain-specific perfectionism instrument (Sport-MPS-2), which helped identify participants prototypical of the subtypes of perfectionism. In the qualitative phase, 19 females (M age = 13.74 years; SD = .65; range 13 – 15 years) took part in focus groups (n = 4 – 5 per group) and individual follow-up interviews. **Results:** Thematic analysis revealed that the meaning and value young people gave to their sport involvement differed considerably between the four subtypes of perfectionism and provided varying degrees of support for the hypotheses of the 2×2 model. **Conclusion:** The study demonstrated that young people, who differ in subtypes of perfectionism hold different values for their sport involvement. Practitioners working with young people in sport ought to consider this, to help improve their experiences.

**Ref:** 6734 Oral
**A Systematic Review of the Impact of Sport Based Interventions on the Psychological Well-being of Prisoners**
**David Woods,** Sport and Exercise Science Research Institute (SESRI), Ulster University; **Gavin Breslin,** School of Sport, Ulster University; **David Hassan,** School of Sport, Ulster University

**Mental Health & Wellbeing**

**Purpose:** The primary aim was to review the content and impact of sport-based interventions (SBI) on the psychological well-being of prisoners. A second aim was to identify whether psychological theory of behaviour change was included in the design and evaluation of interventions. **Background:** The 2016 Mental Health and Criminal Justice report estimated that up to 90% of prisoners have some form of mental health problem, personality disorder or substance misuse problem. Evidence shows the positive affect sport and physical activity can have on depression, anxiety and self-perceptions. To date, no systematic review has been conducted on the impact of SBIs within prison populations. **Methods:** PRISMA guidelines were followed and a review protocol was registered with PROSPERO (ID CRD42016040005). A search was conducted during April 2016 of six databases, using truncation, wildcards and MeSH terms as appropriate. Inclusion criteria were people in prison, aged 15 or over, involved in a facilitated SBI. The outcome was impact on psychological well-being and all study designs were considered due to the complexity of prison-based research. Search results were reduced from 10,749 studies, to 12 (seven quantitative and five qualitative) after screening. **Conclusions:** Interventions lasted from six weeks to nine months, with nine being multi-component. A positive affect was reported in ten studies, however, there was inconsistencies in measurement, a lack of baseline data and limited follow-up. Future studies should address these concerns and include psychological change theory in their design, a notable omission, to better identify, test and replicate key psychological mechanisms.

**Ref:** 6663 Oral
**Insight into the barriers and adaptations of exercising with epilepsy**
**Sarah Collard,** Bournemouth University; **Caroline Ellis-Hill,** Bournemouth University

**Mental Health & Wellbeing**

**Objectives:** Exercise has been shown to be a physiological and psychological benefit for people with epilepsy. However, there are barriers that prevent many people with epilepsy from exercising safely and confidently. This research explored current barriers to exercise and adaptation techniques used by people with epilepsy. **Design:** A qualitative approach was used to allow new insight from people with epilepsy to be derived. **Methods:** Three focus groups and three semi-structured interviews took place (12 participants total- all recruited via Epilepsy Action UK). Constructive Grounded Theory was used to analyse the results. **Results:** Results show that the positive feeling and improved health status as a result of exercise was a main motivator to maintain physical activity levels. Current barriers to exercise included fear of injury, lack of social support, and exercise-induced seizures. Adaptation techniques used are self-monitoring through the use of technology, reducing exercise frequency and intensity level, and exercising at cooler temperatures. The importance
of social support was shown to provide increased confidence and positive encouragement to exercise, contrasting with family and friends worrying for his/her safety and medical professionals requesting termination of some physical activities.

**Conclusion:** These findings provide new insight into current adaptation techniques that are used and developed by people with epilepsy to overcome common barriers to exercise. These new additions to the literature can lead to further development of such techniques as well as examine current medical knowledge of the benefits of exercise for people with epilepsy.

Ref: 6673 Oral
Running in search of adventure: a case study of coping with a multiday ultra-distance running challenge.
Danny Golding, University of Bedfordshire; Gail Kinman, University of Bedfordshire

**Endurance**

Once regarded as the preserve of mavericks, ultramarathon running has seen a significant increase in participation, offering new horizons for those seeking to test the limitations of human endurance. While traditional competitive elements continue to thrive, some participants are seeking challenge and adventure. This case study followed two elite ultramarathon runners as they attempted a world first of a multiday, 330 km traverse of an Island in the Northern Hemisphere. Drawing upon transactional models of stress and coping, the aim of the research was to explore how they coped with the challenges presented by this adventure and to consider the key elements of the appraisal process. A case study design was used to capture elements of this unique endeavour and employ methods that provide insights into the lived experience. Data was captured in the field using daily diaries and other expedition media (film and text); in addition the participants were interviewed immediately pre and post event using a semi-structured approach. The findings indicated that there were a shared range of stressors; the most prominent being the extreme weather, uncertainty and the anticipation of discomfort. Preventive coping strategies included: thorough preparation, agreeing on realistic goals and applying experience based knowledge; all indicative of proactive, approach coping dimensions. Social support between the pair was also considered to be a vital success component and both participants recognised the strengths drawn from their partnership. The detailed findings from this unique adventure provide a foundation for further research into coping within extreme endurance contexts.

Ref: 6675 Oral
‘I’ve gone from a plus 2 to a minus 2 and a half in a matter of 5 minutes’: analysis of use of the Feeling Scale in a field study of outdoor beginner running groups
Katy Kennedy, University of Surrey

**Mental Health & Wellbeing**

**Objective:** There is evidence that the better people feel during exercise, the greater their future physical activity levels. The Feeling Scale (FS) — a basic affect measure— has been used successfully as an affect-regulation tool in laboratory studies. However, it is not known how people might understand the scale in real-life exercise environments. Here, I aim to understand the scale’s potential in naturalistic settings, by analysing during-exercise interviews with beginner runners.

**Design:** Mixed methods longitudinal field study, using in-exercise interviews to understand how participants felt during exercise.

**Methods:** 13 beginner running groups were visited (69 participants). Participants reported FS scores and elaborated on these. One interview per group was transcribed and analysed thematically, with additional interviews selected on richness of data, n=33. Focused thematic analysis of FS use was conducted, using sub-themes from the larger analysis, plus relevant search terms.

**Results:** Initially, many struggled to articulate their feelings using the scale, perhaps due to minimal instruction. However, participants rapidly adapted to using the scale in idiosyncratic ways to describe their experiences and communicate with other group members. They did not spontaneously use the FS to moderate exercise intensity.

**Conclusions:** Beginner runners quickly adopt the FS to describe their exercise experience, but apparently do not connect feeling ‘bad’ with a need to moderate intensity. The FS is therefore a useful tool in outdoor exercise environments, with applicability to ‘Couch-to-5K’ programmes and group outdoor exercise; however, specific training will be required to use it to help beginners affectively regulate exercise intensity.

Ref: 7056 Poster
Understanding current knowledge of positive sport-specific psychological strengths-based concepts: A systematic review.
Performance Excellence

Strengths based psychology focuses on identifying and developing the positive traits, or character strengths, already possessed by an individual. Research has shown multiple benefits of developing an individual’s existing strengths within mainstream psychology, however there is little research assessing such an approach within sport. This is potentially due to a lack of clarity as to what the different sport-specific character strengths may be. The purpose of the current study was to gain an understanding as to the positive qualities, characteristics, and traits that have been identified within the literature as potential sport-specific strengths-based concepts: positive attributes that allow athletes to flourish and achieve. A systematic review of the sports literature was conducted in order to develop a list of positive qualities, skills, and assets associated with athletic performance. The review followed a pre-defined search strategy, with strict inclusion and exclusion criteria. All articles that were deemed relevant were quality assessed, resulting in 79 articles included in the review. One hundred and fifteen themes were extracted which were conceptualised into 13 overall sport-specific strength-based concepts. These were categorised as commitment, self-confidence, love of the sport, personal responsibility, open-mindedness, self-discipline, emotional regulation, analytical, team-player, sport intelligence, leadership, moral values, and creativity. The results offer a set of sport-specific strengths-based concepts that could provide the basis for future intervention work. As different strengths-based concepts are highlighted compared to other contexts, the results also imply the need for further research in this area. Additional theoretical implications and future research directions are discussed.

Ref: 7059 Poster
The Coaching Process, Performance Analysis, Football Psychology and the £150m Prize of Premier League Football
Thomas Buck, UCFB; David Horrocks, UCFB; Alan Tonge, UCFB

Performance Excellence

The Premier League sits at the pinnacle of the professional footballing world and with many players at peak physical condition, performance analysis is playing a key role in gaining a competitive advantage. The present study increases the understanding and clarity surrounding the use of performance analysis within a Premier League football club and investigated how this process is utilised and adapted by the coaching staff.

The study employed a qualitative, holistic approach with a view to enhancing knowledge around the use of performance analysis within professional coaching. In-depth, semi-structured interviews were conducted to collect data surrounding performance analysis and its application within coaching, in an effort to improve competitive performance. Five personnel from within a Premier League football club were recruited to provide the data. Participants included the Head Analyst of the first team, a Professional Sport Psychologist working with the club, two current first team players and the Head First Team Coach. A triangulated, thematic analysis was conducted in order to reveal emergent themes and form the data for the study. Contrary to previous research, the findings concluded a decline in the use of physical data, whilst tactical and technical performance analysis was used to greater effect by coaching and playing staff. Implications of the research suggest that a greater focus on the use of tactical and technical data, whilst also incorporating the use of opponent behavioural analysis in an effort to increase competitive performance would enhance the coach’s role and increase player understanding. Thereby a process-focused, bespoke training program was developed in order to enhance player decision-making, leading to coaches employing a solution-based process to improve performance.

Ref: 7058 Poster
Effects of mindfulness practice on flow in amateur marathon runners: A single-subject design
Giles Carre, Sheffield Hallam University; Peter Olusoga, Sheffield Hallam University

Performance Excellence

Objectives: This study explored the effect of a brief mindfulness intervention on state flow, hypothesising that an increase in flow would result following the intervention.
Design: A multiple-baseline, single-subject, across-participants A-B-A reversal design was used to increase external validity and offer applied intervention possibilities.
Methods: Following institutional ethical approval, local advertising and word of mouth led to five amateur marathon runners with no experience of mindfulness practice being recruited. Two males (mean age 37.5 years) completed the study. Weekly flow scores were obtained from online completion of the Flow State Scale-2 after each long run of a
marathon training programme over ten weeks. Four weeks of baseline data collection was followed by a four-week intervention phase during which participants performed the Mindfulness-Based Stress Reduction programme body scan meditation CD the night before each weekly long run. Two weeks of post-intervention data were collected. Mindfulness scores were measured pre- and post-study using the Mindfulness Inventory for Sport. Data were assessed by visual graph analysis. A post-study social validation interview assessed participants’ opinions of the intervention.

**Results:** Both participants reported higher flow scores and higher mindfulness scores post-intervention compared to pre-intervention. Social validation data revealed flow to be desirable and the intervention to be appropriate. Impact of the intervention varied.

**Conclusions:** Mindfulness interventions can increase flow, but individual differences exist. Notwithstanding the limitation that just two of the five recruited participants completed the study, single-subject designs incorporating qualitative assessment might help real-world interventions be correctly tailored and appropriately applied.

**Ref:** 6711 Poster
**Anxiety Unleashed: The Effects of a Psychological Skills Training intervention in a Competitive Dog Obedience Handler**
**Claire Clark, Mind Games Consulting**
**Performance Excellence**

The aim of the paper was to assess the effectiveness of a psychological skills training program (PST) on coping with performance under pressure and increasing positive psychological well-being, in a competitive dog obedience handler. Although the importance of PST in developing athletic performance is widely accepted, the use of PST packages within animal sports has been largely ignored to date. Mixed findings from equestrian based research suggest an idiographic approach is required to further understand the effects of PST interventions in human-animal dyadic relationships. To date, no research has examined the use of psychological strategies within dog related sports. In order to facilitate the identification of the psychological demands faced by handlers in dog sports, it is necessary to distinguish the effectiveness of strategies which improve the handler-dog relationship and performance. The present study employed an A-B single case research design with a 54 yr. old dog handler participating in competitive dog obedience. The PST intervention comprised; relaxation, goal-setting, visualisation and countering of negative beliefs. Post intervention findings demonstrated increased psychological skills use, including; positive self-talk, goal-setting, visualisation and relaxation. In addition there was a decrease in negative self-talk and performance anxiety. Social validation indicated the client enjoyed the PST package and was pleased with the results. Her coach, family and work colleagues noticed a relaxed demeanour and an increase in positive psychological well-being. Applications and limitations of using PST interventions when understanding human-animal dyadic relationships in sport are discussed.

**Ref:** 7016 Poster
**Mental Health Awareness in Equestrian Sport: An Exploratory Study**
**Hannah Butler-Coyne, University of Central Lancashire; Vaithhey Shanmuganathan-Felton, UCFB Wembley; Jamie Taylor, University of Central Lancashire**
**Mental Health & Wellbeing**

**Background:** Equestrian media is showing an increasing interest in the impact of mental health on performance and general wellbeing of equestrian athletes. There is limited research in this area.

**Aim:** This study explores the awareness of mental health difficulties and psychological wellbeing within equestrian sport from the perspectives of equestrian athletes, instructors/coaches and parents.

**Methods:** The exploratory nature of the research provided opportunity for a dual approach to gather data which involved both anonymous e-survey together with a purposive sample of semi-structured interviews.

**Results:** Strong thematic commonalities emerged from the international total sample of 163 participants of varied demographics and equestrian sport discipline and expertise. Analysis identified five key themes (Emotional Wellbeing in Balance; Emotional Wellbeing Imbalance; Wellbeing Imbalance – Impact on Equestrian Sportspeople; Impact of Equestrian Sport on Wellbeing; Regaining Balance) and 22 sub-themes.

**Conclusions:** The study presents a rare if not singular exploration of the understanding of mental health difficulties and psychological wellbeing within equestrian sport. Findings indicate a limited awareness and understanding as to the impact and consequences of unmanaged mental health difficulties specific to equestrian sport together with a general lack of specialist support and guidance. The study determines that there is compelling need for education, promotion of sharing experiences (particularly from well-known equestrian professionals) and facilitation of
specialist training supported by professional intervention. Publicised support together with a review of regulations from equestrian sport Governing Bodies would direct attention towards the importance of mental health and help address a distinct need within the equestrian industry.

Ref: 6766 Poster
The symptoms of psychological distress, resilience and help-seeking behaviour in student athletes
Breanna Drew, University College Dublin; James Matthews, University College Dublin
Mental Health & Wellbeing

There is limited research exploring mental health issues in student athletes. The aim of this study was to examine levels of psychological distress, resilience and help seeking behaviours in student athletes in Ireland. A cross-sectional design was employed to investigate self-reported symptom prevalence and protective factors (resilience and help-seeking). 232 student athletes (144 males, 83 females) completed a self-administered survey comprising of demographic characteristics, sporting status, protective factors and mental health symptoms (depression, anxiety and stress scale; DASS-21). Both χ2 analyses and one-way analysis of variance were used to examine the data. Overall, 28.4% of athletes reported elevated symptoms of depression, 35.8% of athletes reported elevated symptoms of anxiety and 25.4% for stress. Students classified as elite senior athletes reported higher symptoms levels for depression (χ2= 15.3, p=.02) and stress (χ2= 16.7, p=.01), than did students classified as elite junior athletes or national athletes. Resilience was associated with lower levels of depression F(3, 226)=8.57, p=.000, anxiety F(3, 227)= 10.46, p=.000, and stress F(3, 227)=5.12, p<.05 in student athletes. In general, the symptoms level of psychological distress reported here are similar to those observed in the community. Students who compete at an elite level in senior competition may be a greater risk for certain mental health issues and these athletes should be well supported through access to mental health professionals. Resilience building workshops could be introduced to help support student athletes.

Ref: 7022 Poster
Developing an instrument to measure Beliefs about Green Exercise
Elliott Flowers, University of Essex
Exercise

Objective – Green exercise is physical activity that takes place in natural environments. Evidence suggests that green exercise can elicit psychological benefits over and above indoor exercise. As of yet, no instrument exists to measure beliefs about GE. The aim of this study was to utilise the Theory of Planned Behaviour to develop and validate a questionnaire to measure beliefs about green exercise.

Design – The total sample comprised of 523 participants (328 women, 195 men), that was divided into three groups; elicitation group (N=40), refinement group (N=253), and validation group (N=230). The research consisted of two distinct stages. Firstly, an open ended questionnaire was used to elicit salient beliefs about green exercise. From this, commonly cited salient beliefs were transformed into themes. Using these themes, two questionnaires were developed and validated to measure the direct and indirect beliefs about green exercise.

Methods – The questionnaires (BAGE and BAGE-ID) were distributed nationally as an online survey. Using confirmatory factor analyses, the questionnaires were validated against conventional goodness of fit indices. Additional tests for evidence of composite, parallel-form, and predictive reliability were also conducted.

Results – The refined BAGE had a good model when tested on the refinement and validation group. The refined BAGE-ID also had good model fit on both groups. Additional evidence of reliability was found for both questionnaires.

Conclusions – Two instruments now exist to measure beliefs about green exercise. Additional research is currently being conducted to see if beliefs about green exercise influence the outcomes of green exercise.

Ref: 0002 Type: Poster
Exploring the nature of psychological resilience within junior Rugby League: A Q-method approach
Hollie Fountain, Napier University
Mental Health & Wellbeing

Objectives: The purpose of this study was to explore the nature of psychological resilience in the context of junior Rugby League, using a novel Q-sort method.

Design: A cross-sectional, quali-quantilogical design
Methods: Initially, 29 junior rugby league players (aged 13-14) were recruited in order to generate statements relating to responses to adversity (Q-set). Subsequently, 60 junior rugby league players (aged 13-14) completed a standard Q-sort protocol, ranking 30 statements using a fixed quasi normal distribution, with anchors of +5 (most like me) to -5 (least like me). PQ Method statistical analysis software was used to analyse the data.

Results: Principle component analysis with varimax rotation identified four distinct subgroups that explained 72% of the total variance. These groups were distinguished through patterns relating to: emotional control, unpleasant emotions, personal resources and cognitive strategies. Shared qualities across the 4 subgroups were also identified, and included low ratings for evasion strategies, and seeking support, whilst generally high ratings for perseverance.

Conclusions: The results from this study showed that junior rugby league players display a range of psychological responses when experiencing adversity and four subgroups with both defining and shared characteristics emerged. This study provides preliminary evidence for the potential usefulness of a q-method approach for understanding the process of resilience in junior sport. Q-methodology provides an alternative to previous research designs attempting to understand the nature of resilience, and offers an engaging activity to participants, encouraging analytical reflections of their experiences.

Ref: 0001 Poster
Abbreviated Resonant Frequency Training to augment heart rate variability and enhance on-demand emotional regulation in elite support staff

Michael Gross, University of South Wales, UK. Welsh Institute of Performance Science, UK; David Shearer, University of South Wales, UK. Welsh Institute of Performance Science, UK; Ross Hall, Psychology and Therapeutic Studies, University of South Wales; Joy Bringer, Sport Wales Institute, Sport Wales, Cardiff, UK. Welsh Institute of Performance Science, UK; Christian Cook, School of Sport, Health and Exercise Sciences, Bangor University, Bangor, UK; Liam Kilduff, A-STEM, College of Engineering, Swansea University, Swansea, UK. Welsh Institute of Performance Science

Performance Excellence

Abbreviated Resonant Frequency Training to Augment Heart Rate Variability and Enhance On-Demand Emotional Regulation in Elite Sport Support Staff

Objectives: Assess the effectiveness of abbreviated Resonant Frequency Training (RFT) to enhance habitual and on-demand emotional regulation in elite sport support staff.

Design: A within-subjects multiple baseline case study approach in ABA format was used due participants’ time constraints and the idiosyncratic nature of RFT.

Methods: Senior management at a National Sport Organisation selected nine support staff (female n = 6, mean age = 45.88 ±14.48) of varied professions due to their involvement with elite athletes’ performance at the 2014 Commonwealth Games (e.g., performance director). Participants learned Resonant Frequency (RF) breathing during five RFT sessions using Mind Media’s Nexus-10 biofeedback equipment to collect respiratory and heart rate variability (HRV) data. Habitual emotional regulation strategies were recorded pre and post intervention using the Emotion Regulation Questionnaire with additional items to capture somatic regulation strategies. Social validation interviews were used to record on-demand usage of RF breathing.

Results: Compared to baseline, participants increased total HRV (SDNN; p = .006), parasympathetic HRV (RMSSD; p = .028) and HRV reflective of baroreflex function (low frequency power; p = .018) during RF breathing without a breath-pacer. Habitual use of somatic emotional regulation strategies increased (p = .032), and RF breathing was used at home, work and during the Games to reduce the emotional impact of an impending stressor, and to regulate emotions during stressful moments.

Conclusions: Abbreviated RFT interventions provided an effective on-demand emotional regulation technique for elite sport support staff at a time of true career stress.

Ref: 7027 Poster
Swimming against the Aging Tide – Reflection on Masters swimming workshops
Karen Howells, The Open University

Objective: Masters swimmers compete at both domestic and international competitions in five year age bands. Although some individuals can achieve personal best times in their twenties and thirties, for many older swimmers aging is marked by a deterioration in performance. Accordingly, the setting of performance goals in terms of target times can be detrimental to motivation and self-esteem. In 2016, the European Championships were held at the
Aquatic Centre in London and a series of workshops were put in place to assist English swimmers in their psychological preparation for international competition. **Design:** Five workshops were delivered to swimmers (n=105) ranging from 19 to 87 years of age by a chartered sport psychologist. Workshops lasted from 60-120 minutes and focused on perceptions of success, pre-race preparation, process-goal setting in training and competition, and imagery. Workshops were followed by pool training where there was the opportunity to apply the skills learned. **Results:** Reflection on the workshops illustrated the poor pre-existing psychological preparation that Masters’ level swimmers had previously engaged in. However, the level of engagement in the workshops, and the application of process goals in the pool and in pre-competition preparation illustrated the openness to psychological support and the self-determined nature of Masters swimmers preparing to compete at international level. **Conclusion:** Psychological skills training, particularly goal setting with a focus on the application of process goals both in training and competition, is useful for Masters swimmers who may be concerned about not being able to swim personal best times at competitions.

Ref: 6708 Poster
**A narrative review of reversal theory research in sport and exercise**
**Joanne Hudson, Swansea University; Jonathan Males, Performance 1; John Kerr, University of British Columbia**

**Purpose:** This paper presents a narrative review of 30 years of reversal theory (RT) based research in sport and exercise.

**Background:** Since its original conception, reversal theory has stimulated interest in sport and exercise psychology researchers. The body of research produced covers diverse topics, and employs a range of methods, but has not necessarily systematically tested theoretical proposals in logical sequence. A review is therefore now timely to critically synthesise this research, identify the extent to which theoretical proposals are upheld, and, if appropriate, determine potential applications and directions in which to best move this research forward.

**Methods:** Databases (e.g., PubMed), the RT website bibliography, and article reference lists were searched for English language peer-reviewed research articles published between 1985-2014. This produced 56 articles, including quantitative and qualitative studies that focused on four key research questions, which frame this review: (1) evidence that all motivational states have been reported and provide a valid description of individuals’ experience; (2) evidence supporting the reversal process and its causal factors; (3) the role of motivational dominance and participation in different types of sport, and, (4) the relationship between motivational state and performance.

**Conclusions:** Despite limitations and some gaps in the research literature, reversal theory has demonstrated potential for understanding sport and exercise participants’ experiences. The evidence base could be advanced with robust experimental studies of interventions underpinned by reversal theory (e.g., controlling motivational state reversals) and with explorations of exercise motivation and adherence in relation to motivational state and experienced reversals.

Ref: 6728 Poster
**Instructing Attentional Focus and Movement Intention during maximal force production**
**David Marchant, Edge Hill University**

**Objectives:** Explored the role of verbal instructions in manipulating attention and intention during force production. Whilst the former has been extensively explored, the latter has been largely ignored or confounded, and their combined influence has not been addressed.

**Design:** In a within-subjects design participants completed exercise under instructions combining different attentional focus (AF: internal vs external) and movement intention (MI: away vs towards), resulting in four counterbalanced instructional conditions.

**Methods:** 10 recreationally trained males completed 10 maximal effort knee extensions on an isokinetic dynamometer in each condition. Instructions directed attention either internally (IF) or externally (EF) (push your leg vs push the bar) in addition to MI (push away from the chair vs towards the ceiling).

**Results:** Significant main effects for AF and MI on average peak torque (APT) indicate benefits of an external focus and push towards MI. A significant interaction further suggests EF resulted in significantly greater APT compared to IF, with no influence of MI. An IF with push-towards intention resulted in significantly greater force production compared to IF with push-away intention. Average power was significantly higher with an external focus, but was not influenced by movement intention.
**Conclusions:** Attentional focus and movement intention appear to have interactive effects on force production, and warrant further exploration. An EF benefits force production compared to an IF regardless of MI. Whereas the effects of an IF are modified by movement intention. Force production tasks can be benefited through promoting an external focus of attention and movement intention.

Ref: 6729 Poster

**The Effect of an Acute Bout of Aerobic Exercise on Short-Term Memory**

David Marchant, Edge Hill University; Jamie Greenall, Edge Hill University; Paul Ellison, Edge Hill University; Craig Thorley, University of Liverpool

**Exercise**

**Objectives:** Research analysing the effects of acute exercise on memory processes has reported contrasting findings. The present study examined the effect of an acute bout of moderate intensity aerobic exercise and its timing on immediate recall, as well as true and false memories using the Deese–Roediger–McDermott (DRM) paradigm.

**Design:** within-subject, randomised, repeated measures design, involving three experimental conditions; quiet rest (CON), exercising before (PRE) and after (POST) word list presentation.

**Methods:** Ten healthy and regularly physically active participants completed a fitness test and each condition. Exercise consisted of 30 minutes of moderate intensity cycling (60% of VO2max), whilst quiet rest involved seated reading. Participants were visually presented with four neutral DRM word lists with individual words presented sequentially, followed by a free recall and recognition tests.

**Results:** There was significant effect of condition on free recall performance. The POST condition resulted in greater free recall performance and CON exhibiting the worst. When comparing conditions LTM free recall performance, the only significant difference was observed between CON and POST ($p = 0.02$). In the recognition test, both exercise conditions resulted in more studied words being remembered and fewer false critical lure recall when compared to CON.

**Conclusions:** An acute bout of aerobic exercise positively influences short term memory, with a significant effect occurring when the exercise bout occurs after learning. Results also further suggested a trend for decreased false memories associated with exercise participation, regardless of timing. These findings a consistent with positive associations between arousal and memory performance.

Ref: 7052 Poster

**Psychological demands experienced by recreational endurance athletes**

Alister McCormick, University of St Mark & St John; Carla Meijen, University of Kent; Samuele Marcora, University of Kent

**Endurance**

**Objectives:** This study aimed to identify psychological demands that are commonly experienced by endurance athletes so that these demands could inform the design of performance-enhancement psychological interventions for endurance athletes.

**Design:** Qualitative study using focus groups.

**Methods:** Focus group interviews were conducted with 30 recreational endurance athletes of various sports (running, cycling, and triathlon), distances, and competitive levels to explore the psychological demands of training, competition preparation, and competition participation. An inductive thematic analysis was used to identify psychological demands that were experienced across sports, distances, and competitive levels.

**Results:** Seven themes captured demands that were commonly experienced away from the competitive environment (time investment and lifestyle sacrifices, commitment to training sessions, concerns about optimising training, and exercise sensations during training), preceding an event (pre-event stressors), or during an event (exercise sensations, optimising pacing, and remaining focused despite adversity).

**Conclusion:** Some psychological demands are commonly experienced across endurance sports. Interventions that could be delivered to recreational athletes, who do not typically have access to a sport psychologist, are suggested. Experimental research examining the efficacy of interventions that help endurance athletes to cope with the reported psychological demands is encouraged.

Ref: 7053 Poster

**The effect of motivational self-talk on performance in an ultramarathon**

Alister McCormick, University of St Mark & St John; Carla Meijen, University of Kent; Samuele Marcora, University of Kent
**Endurance**

**Objectives:** No published studies have measured the effect of a psychological intervention on performance in a real-life endurance event using a randomised, controlled experiment. This study examined whether using motivational self-talk improves performance in an ultramarathon.

**Design:** Randomised, controlled, posttest-only, experimental design.

**Methods:** Data were collected annually at a 60-mile, self-supported, overnight ultramarathon. Across three years, 31 competitors participated. After a standardised intake interview conducted by videocall or telephone, participants were matched by their estimated VO2max and randomly assigned one of two workbooks. Both workbooks included educational material and exercises to complete. Participants in the experimental condition identified motivational self-talk statements to use during the beginning, middle, and later stages of the ultramarathon, to counter thoughts about withdrawing effort, and in response to stressors (e.g., getting lost). Participants in the control group were taught to use a concentration grid to develop their concentration. Event officials recorded performance times.

**Results:** Self-talk did not affect pre-event self-efficacy or perceived control. Differences in performance times between participants in the self-talk (853 ± 114 minutes) and control group (848 ± 75 minutes) were trivial (Δ= -0.05). Nevertheless, participants reported using self-talk at a six-month follow-up, particularly in endurance events and to a lesser extent in training.

**Conclusion:** A performance benefit was not evident, which may be attributable to the limited sample size and substantial performance variability. Nevertheless, the data shed light on the experience of completing a self-supported, overnight ultramarathon, and indicated that ultramarathon runners found learning motivational self-talk valuable.

Ref: 7043 Poster

The Effects of Achievement Goals and Underlying Reasons on the Psycho-Physiological Functioning of Sport Participants

Mairi Mulvenna, Coventry University; James Adie, Coventry University; Luke Sage, Coventry University; Nigel Wilson, Coventry University; Douglas Howat, Coventry University

**Mental Health & Wellbeing**

**Objective:** Extending current empirical research integrating self-determination theory and the hierarchical model of achievement motivation (Vansteenkiste, Lens, Elliot, Soenens, & Mouratidis, 2014), this is the first study in a sport-setting to test the effects of achievement goal adoption under different motivational contexts on the performance, and psycho-physiological functioning of athletes. A subsidiary aim was to ascertain the mediating role of situational stress in explicating the potential effects.

**Design:** A 3 (task-/self-/other-approach goal) x 2 (autonomous/controlling context) mixed experimental design was employed.

**Method:** Following ethical approval, a sample of 120 novice basketball players (aged 18-40 years) via recruitment from a University in the West Midlands, UK, will be asked to perform a basketball-shooting task and provide physiological data. Participants will then be randomly allocated to one of six experimental goal conditions before performing a second trial of the basketball-shooting task. More specifically, three different goal-states will be induced under either autonomous or controlling contexts. A multi-section questionnaire capturing stress appraisals (pre-task), state anxiety, task enjoyment, perceptions of competence and goal attainment (post-task) will also be administered along with further collection of the physiological data (heart rate and blood pressure).

**Results (work in progress):** Preliminary findings will be disseminated in a poster presentation. This work has the potential to demonstrate the most (and least) optimal achievement goal-motivational context combination in affecting the performance, and psycho-physiological functioning of participants in sport settings. The findings may also help to advance understanding on the utility of integrating prominent motivational theories in the physical domain.

Ref: 7060 Poster

Examining player perceptions of inspirational leader communication in elite sport.

Matt Smith, University of Chichester

**Performance Excellence**

**Objectives:** We aimed to explore how the communication of different sporting leaders has an inspirational impact on players.
The retirement experience of elite ballet dancers: Impact of self-identity and social support

Victoria Willard, University of Stirling; David Lavallee, University of Stirling

Mental Health & Wellbeing

Research into career transition from sport has identified self identity and social support as vital factors that influence the quality of career transition from sport. To date, only one study has investigated the transition experience of elite ballet dancers. However, no study has investigated the combined effect of self identity and social support on the career transition experiences among this population. Therefore, the overall aim of this study was to investigate the influence of self identity and social support on the retirement experience of elite ballet dancers. Six (2 males and 4 females) former elite ballet dancers [mean ± SD age: 36.2 ± 3.3 years (range 32-39 years)] from a single National Ballet Company in the UK participated in retrospective semi-structured interviews. These interviews yielded transcripts that were analysed using inductive-deductive content analysis. As expected, the majority of participants presented strong and exclusive dancer identities. Those presenting a strong and exclusive dancer identity at the point of retirement experienced identity loss and confusion during the career transition process. Refuting our anticipated outcome, the primary social support network for dancers remained intact after career termination. The dancers perceived this continued social support to positively influence the overall quality of career transition experienced. In addition to social support, dancers adopted a combination of coping strategies; predominantly retirement planning and redefinition of self. Future research should focus on identifying specific adjustment
difficulties associated with self-identity during retirement and should identify specific coping strategies adopted to counteract these adjustment difficulties during career transition from dance.