

A single bout of acute exercise has a positive influence on basic information processing tasks such as simple reaction time (Tomporski and Ellis, 1986, *Psychological Bulletin*, 99, 338–346). Although similar cognitive improvements have been observed in more complex, executive function tasks, including visual search and short-term memory tasks, the research findings are less consistent (Chang, Labban, Gapin, and Etnier, 2012, *Brain Research*, 1453, 87–101). Previous studies have employed various exercise modes, duration and intensities, as well as differences in the nature and timing of the psychological task, which may explain the inconsistent findings (Chang et al., 2012). Therefore, the improvement in cognitive function following acute exercise needs further investigation. Identification of an optimal exercise intensity could be used to improve executive functioning in sport, occupational (e.g. military) or academic settings. The aim of the present study was to determine whether an acute bout of treadmill running at different intensities affects performance on an executive functioning task. With institutional ethics approval, 21 healthy adult males (mean age 20.8 years,  $s = 1.6$ ; body mass 79.9 kg,  $s = 10.4$ ) completed a maximal incremental graded exercise test to establish maximal oxygen uptake ( $\dot{V} O_{2max}$ ). Thereafter, participants performed an executive functioning task immediately prior to and following either 30 min of rest or treadmill running at three different exercise intensities determined by  $\dot{V} O_{2max}$ ; light (30%  $\dot{V} O_{2max}$ ), moderate (50%  $\dot{V} O_{2max}$ ) and hard (70%  $\dot{V} O_{2max}$ ) workloads. The modified flanker test was used to assess executive function (Eriksen and Eriksen, 1974, *Perceptual Psychophysiology*, 16, 143–149). Repeated measures analysis of covariance (ANCOVA) for time was employed to assess the main effect of exercise intensity on reaction times (RT; ms) and error rate (%). RT significantly improved following exercise ( $P < 0.01$ ). Pairwise comparisons indicated that RT following hard exercise was significantly faster ( $m = 471.07$  ms,  $s = 4.53$ ) than either no exercise ( $m = 494.05$ ,  $s = 4.62$ ) or light exercise ( $m = 492.04$  ms,  $s = 4.59$ ) ( $P < 0.01$ , 95% CI 6.786–41.186;  $P < 0.01$ , 95% CI 3.820–38.140, respectively). Accuracy of response was not significantly affected by exercise ( $P > 0.05$ ). The present results suggest that treadmill running at 70% of  $\dot{V} O_{2max}$  significantly improves executive functioning and could be a useful tool when employed to improve the performance of complex cognitive tasks in sport, occupational or academic settings.

## D2.P37. The application of the 3 + 1 Cs model to client–trainer relationships in physical activity settings: implications for practitioners

LOUISE ROWE<sup>1\*</sup> & SOPHIA JOWETT<sup>2</sup>

<sup>1</sup>University of Cumbria; <sup>2</sup>Loughborough University

\*Corresponding author: [louise.rowe@cumbria.ac.uk](mailto:louise.rowe@cumbria.ac.uk)

Low client retention is a perennial problem for exercise on prescription schemes and in the fitness industry more generally. The client–trainer relationship (CTR) is potentially an important factor in all personal training contexts which could have a significant impact on client retention, achievement and satisfaction (Vinson and Parker, 2012, *Qualitative Research in Sport, Exercise and Health*, 4, 15–31), yet it has been largely ignored in empirical research. In the related area of sport coaching, the 3 + 1 Cs model was developed to explain coach–athlete relationships (Jowett, 2007b, In S. Jowett and D. Lavelle (Eds.), *Social Psychology in Sport* (pp. 15–28), Champaign, IL: Human Kinetics). Using this conceptualisation, the relationship has been shown to predict positive outcomes in this setting (Jowett and Ntoumanis, 2004, *Scandinavian Journal of Science and Medicine in Sport*, 14, 245–247). This qualitative study aimed to explore the CTR in health-related exercise settings using the 3 + 1 Cs model. After receiving institutional ethical approval, semi-structured interviews were performed with 15 client–trainer dyads drawn from two settings; personal training ( $n = 7$ ) and exercise on prescription schemes ( $n = 8$ ). Relationship lengths ranged from 9 weeks to 4 years. Each participant completed a semi-structured interview with assurance that their views would not be revealed to the other dyad member. Participants were encouraged to give a narrative of their experiences with their partner as their relationship developed. Analysis was completed in three steps. Initially, transcripts were read and then coded openly using Atlas Ti 6.2. Next, the codes were analysed inductively, refined and fitted to the a priori higher order themes of closeness, commitment, complementarity and coorientation. In addition, a further theme of “Antecedents” emerged. Finally, selective coding was performed around important codes within each theme for both clients and practitioners. The themes relating to the 3 + 1 Cs were well saturated and shown to be reliable (Cohen’s kappa  $> 0.60$ ) when compared with another expert coder. This supports the validity of the model for

physical activity contexts. The discussion shows that expertise, trust, respect and understanding are important features of the relationship for both dyad members although these are contextualised in different ways for clients and practitioners. These lead to practical recommendations to improve the CTR from the early stages of the relationship.

## **D2.P38. The organisational stressors experienced by disabled sport performers**

RACHEL ARNOLD\* & YASMIN PRATT

*University of Bath*

\*Corresponding author: [R.S.Arnold@bath.ac.uk](mailto:R.S.Arnold@bath.ac.uk)

Organisational stressors have emerged as an important issue for sport performers, since they can attenuate not only their preparation for and performance in competitions, but also their health and well-being. These demands are also pervasive and predominant, with a meta-interpretation identifying 640 organisational demands encountered by a total of 1809 sport performers (Arnold and Fletcher, 2012, *Journal of Sport and Exercise Psychology*, 34, 397–429). What is evident from reviewing the stressor literature, however, is that there is a tendency for studies to sample non-disabled, rather than disabled, sport performers. Whilst there are exceptions to this (see, e.g. Campbell and Jones, 2002, *Adapted Physical Activity Quarterly*, 19, 82–99), studies recruiting disabled athletes have typically examined the holistic environment and all of the sources of stress encountered, rather than specifically focusing on the pervasive and problematic organisational demands. The purpose of this study, therefore, was to explore the organisational stressors that disabled sport performers encounter. Following ethical approval, 10 disabled sport performers (eight males and two females), who were aged 18–56, reported a range of disabilities and impairments (e.g. amputee, spina bifida, cerebral palsy), and competed in a variety of sports (e.g. golf, wheelchair basketball, athletics), participated in a semi-structured interview. A thematic interpretational content analysis identified 104 organisational stressors that were encountered by the sample. Each of these demands could be placed within the pre-existing classification of organisational stressors (Arnold and Fletcher, 2012), which comprises leadership and personnel (nine subcategories), cultural and team (seven subcategories), logistical and environmental (11 subcategories), and performance and personal issues (four

subcategories). That said, within these subcategories, new stressors emerged in the data which had not been previously identified. For example, the participants raised organisational stressors relating to lack of coach/teammate disability knowledge, sympathetic supporters, unfair disability classifications and lack of disabled access to facilities. Overall, the findings suggest that whilst there are some demands which appear similar to those encountered by non-disabled athletes, there are also various unique and novel stressors encountered by disabled sport performers. In addition to the contribution that this novel study can make to research and theory, it can also offer practitioners who are tasked with supporting disabled athletes greater insight into their organisational stressors. This will enable more appropriate organisational stressor interventions to be developed so that, ultimately, negative consequences of these demands can be reduced and an individual's well-being and performance enhanced.

## **D2.P39. The role of parents in youth sport values**

LUKE GOGGINS<sup>1</sup>\*, PAUL FREEMAN<sup>2</sup> & CRAIG WILLIAMS<sup>1</sup>

<sup>1</sup>*University of Exeter*; <sup>2</sup>*University of Essex*

\*Corresponding author: [lpg204@exeter.ac.uk](mailto:lpg204@exeter.ac.uk)

Values are fundamental constructs that influence individuals' attitudes and behaviours (Lee, Whitehead and Belchin, 2000, *Journal of Sport & Exercise Psychology*, 22, 307–326; Schwartz, 2007, *Journal of Cross-Cultural Psychology*, 38, 711–728). Children can develop sport-related values systems from the attitudes and behaviours of their significant others (Welks, Babkes and Schaben, 2004, In M. C. E. Silva and R. M. Malina (Eds.) *Children and Youth Organized Sports* (pp. 95–122). Portugal: Coimbra University Press). After institutional ethics approval was granted, this study employed quantitative and qualitative methods to examine the relationships between parents' values, motivational climate, and children's values. In Study 1, 92 school children (mean age = 14.10 years, SD = 1.10) and their parents (mean age = 47.40 years, SD = 5.60) completed versions of the Youth Sport Values Questionnaire-2 and Parent-Initiated Motivational Climate Questionnaire-2. Strong correlations were found between children's own and perceived parent competence, status, and moral sport values. A moderated-mediation analysis found that children's