Psychological Health and wellbeing

Although most of the research in this area covers several topics, we can identify a number of main categories: the relationship between physical activity and general aspects of psychological well-being; the relationship between physical activity and self-esteem; the role of physical activity in the management of anxiety and depression; work on general life satisfaction material dealing with specific groups (older women, children and young people), the role which sport can play in assisting personal and social integration of people with disabilities and one study examining the relationship between sport events and national well-being.

Scully et al review evidence relating to the positive relationships between levels and types of exercise and depression, anxiety, stress and mood states. In relation to self-esteem they conclude that the literature provides little guidance as to which forms of exercise are most beneficial to which types of self-esteem. Fox's review (2000) concludes that general improvements in self-perception/self-esteem are most likely to occur in those who have most to gain physically from exercise and the greatest improvements are most likely in those with low self-esteem physical self-worth and body image. More generally, Chatzisarantis and Hagger suggest that life aspirations are the key factor in determining the level and quality of psychological well-being rather than sports participation per se. The relative importance of participants' intrinsic or extrinsic life aspiration greatly influences what they want from and get out of sport.

Fox's review (1999) illustrates the growing evidence that exercise can be effective in improving mental well-being via improved mood and physical self-perception. Further, it is effective in the treatment of clinical depression and both state and trait anxiety. Taylor reviews research on the role of physical activity in reducing anxiety and stress, concluding that low-to-moderate physical activities can reduce anxiety; that a period of exercise training can reduce trait anxiety in clinical and non-clinical settings and a single exercise session can reduce state anxiety. In a 12-month longitudinal study DiLorenzo et al conclude that increases in aerobic fitness have both short and long-term beneficial effects on psychological outcomes. Rendi et al compared two groups undertaking different types of aerobic exercise for 20 minutes and found that there were significant psychological improvements in both groups, with the changes being independent of workload or exercise intensity.

Lawlor and Hopker, in a review of research on exercise and the management of depression, conclude that in non-clinical populations both aerobic and non-aerobic exercise can reduce symptoms of depression in the short term. However, they are limited in their conclusions by the poor nature of current research and, like Scully et al, Fox and Taylor, they speculate that measured improvements may be due as much to psychosocial factors as the exercise itself (see also Rendi et al).

Lee and Russell, in a longitudinal study of Australian women in their 70s, conclude that physical activity is associated with emotional well-being (cross-sectionally and

longitudinally). Kotlyn's survey of women over 60 years of age found significant positive relationships between overall quality of life and energy expenditure and vigorous activities. Chodzko-Zaijko's review of research on physical activity and aging concluded that regular physical activity is associated with increased psychological well-being, more positive mood states and reduced anxiety. Eime et al examine the different impacts of participation in club sport, gymnasium activities and walking on health-related quality of life and life satisfaction among women. They found that club sport had the highest mean score for physical role functioning; general health; vitality; social functioning; emotional role functioning; mental health and life satisfaction score. The results support the notion that sports clubs might be beneficial settings for health promotion.

In a cross-sectional, self-report, study of 9-12 year old children Valois et al conclude that, especially for white females, participation in sports teams may enhance physiological and psychological well-being, contributing to life satisfaction. Tomson et al's cross-sectional, self-report study of 8-12 years olds found a strong positive association between depression and levels of physical activity and health-related fitness status - although the relationship between playing sports outside school and depressive symptoms was much more significant for boys than girls. In a 12 month study of schoolchildren participating in organised sport Findlay and Coplan found that shy children demonstrated a significant decrease in social anxiety and increase in self-esteem. They suggest that this effect may in part be explained by the role of sport in determining social status.

Bunker's review of research on the contribution of sport and physical activity to the psycho- physiological development of girls and young women concludes that psychological and emotional benefits can be maximised by the provision of a wide range of activities, the avoidance of excessive exercise and emphasis on body physique and moderate and regular physical activity. Pedersen and Seidman suggest that a sense of achievement in a collective team sport environment in early adolescence is related to girls' global self-esteem in middle adolescence. However, the impact of self-esteem was small, reflecting the variety of experiences which influence global self-esteem. Schneider et al, in a nine month controlled trial that physical activity among sedentary adolescent females did not enhance physical self-concept or global self-esteem. They speculate that something more than participation in group-based physical activities might be needed to raise self-concept and they suggest that both cognitive and behavioural interventions are required. In this regard DeBate et al report that participation in a 12 week developmentally-focussed sports programme led to beneficial changes in self-esteem and body-size satisfaction. Although improvements were greatest after the first exposure, those returning to the programme experienced further improvements. The authors conclude that it is important to consider structuring educational programmes which promote the development of self-esteem and positive attitudes toward physical activity in a fun atmosphere that does not stress exercise.

Bowker divides physical self-esteem into physical appearance and physical competence and suggests that they may be differently associated with global self-esteem for boys and girls. The research found that, consistent with previous research, the relationship between sports participation and general self-esteem was not direct, with participation having its strongest impact on physical self-esteem, which in turn

was predictive of general self-esteem. Physical competence played a more significant role for boys in determining general self-esteem, with the more difficult to attain physical appearance more important for girls.

The material on the contribution of sport to the personal and social integration of people with disabilities is mostly small scale and qualitative. It illustrates that, irrespective of the sport, participation can increase perceived personal and social competence and social acceptance. Taub and Greer's interview data with 10-17 year olds with physical disabilities indicate that physical activity provides a normalising experience, facilitating perceptions of legitimation of social identity and enhancing social networks. Kristen et al's two articles illustrate the perceptions of both parents and their 9-15 year old children. Parents viewed sports participation as providing valuable experiences of being part of a group, feeling of togetherness and providing self-confidence. The participant interviews are used to identify 6 categories of experience, including experienced-based learning, developing self-confidence and social acceptance. In a systematic review of material on sport and amputees Bragaru et al comment on the lack of good quality research, but conclude that participating in sports or physical activity is beneficial for those with lower limb amputations, with the psychosocial benefits being at least equal to those experienced by able-bodied people.

Groff and Kleibert's interviews with participants in adapted sports illustrate that they provide a heightened sense of competence and opportunities for identity formation. Blinde and Taub's interviews with male college students (with physical and sensory disabilities) indicate that sports participation resulted in perceived competence as a social actor; facilitation of goal setting and attainment; social integration. Page et al's study of six competitive disabled athletes illustrates that participation affirmed competence and provided a common social outlet. However, Ninot and Maiano offer a different perspective on the basis of a study of 13-17 females with intellectual disabilities, illustrating a decline in perceived athletic competence and perceived general self-worth after playing integrated basketball. The positive conclusion that they draw from this is that the integrated competition provided a more realistic awareness of competence.

Kavetsos and Szymanski explore the impact of sporting success and sporting events on self-reported life satisfaction for 12 European countries. Overall they conclude that it is plausible that national sporting success can lead to an increased sense of life satisfaction, but the effect is not a very powerful one. With regard to the impact of hosting events there is a stronger effect, at least relating to soccer tournaments. It is not the performance at an event, but hosting the event that matters for happiness. They conclude that the results do not generally support the view that there are systematically significant and positive anticipatory or post-event legacy effects with respect to measured happiness.

There is a general agreement that further research is required in a number of areas:

- To provide more precise guidelines regarding the type, intensity and duration of exercise most likely to achieve different outcomes with different populations.

- The identification of the nature of the psychological and physiological processes and mechanisms that lead to the measured outcomes.
- The exploration of the relationship between activity and context, process and social interactions in the development of aspects of self-esteem and self-confidence.
- The long-term effects of accumulated doses of activity.
- The value of sport in promoting quality peer relationships and the role of sport in global self-identities.

Professor Fred Coalter, Department of Sports Studies, University of Stirling. January 2012

Added to the Value of Sport Monitor in January 2012:

Bragaru, M., Dekker, R., Geertzen, J.H.B. and Dijkstra, P.U. (2011) Amputees and sports: a systematic review, *Sports Medicine*, 41(9), 721-740