

investigate the effects of feedback on umpire confidence. While the quantitative approach should provide a rigorous test of specific hypotheses, the qualitative approach allowed exploration of issues and possible identification of new aspects that might not have been assessed in the quantitative study.

The participants were 40 "A" or "B" grade netball umpires qualified to umpire National League Division 1 netball and National League Division 2 netball respectively [females $n=36$, males $n=4$; "A" Grade $n=16$, "B" Grade $n=14$; age 44.0 ± 8.8 years (mean \pm s)]. Seven umpire assessors also volunteered to participate, whose role was to provide verbal feedback to umpires on an individual basis. All assessors were "A" grade or international level umpires (age 55.0 ± 5.0 years). Previous studies indicated that feedback is more accepted from people who are perceived to have authority in the field in question (Escarti & Guzmán, 1999: *Journal of Applied Sport Psychology*, 11, 83–96).

At the Inter-County tournament, it was necessary for umpires to officiate two 14 min games back-to-back to simulate 28 min of play typically associated with a netball game. Two feedback conditions were administered within this study. In condition one, interval feedback was provided whereby verbal feedback was given to umpires by assessors at the end of one tournament game (14 min) and at the end of a second consecutive game (28 min). In condition two, feedback was only given by assessors at the end of the second consecutive game (28 min). A 14 item self-efficacy questionnaire was developed through interviews with umpires to identify the key behaviours on which to target confidence toward. Bandura (1997) emphasized the importance of developing contextually valid self-efficacy scales. Indeed, self-efficacy scales can only be considered valid if items assess confidence to deliver the behaviours needed to achieve success. Therefore, it is inferred that the scale has content and face validity for the sample under investigation. In addition, the alpha coefficient was 0.95, hence indicating an internally reliable scale. The scale was completed before, during and after each netball game to assess umpires' confidence in performing key skills.

A 4 item questionnaire was also developed that measured the type and frequency of feedback received from assessors in the categories of positive, negative, motivational and instructional feedback. Qualitative data were also collected after the tournament using a focus group comprising those umpires who had experienced both feedback conditions. Telephone interviews were also conducted with two international level umpires who had experienced interval feedback during international netball competitions.

A repeated-measures factorial (time \times feedback condition) analysis of variance indicated no significant interaction effect ($F=0.05$, $P>0.05$) and no main effect for condition ($F=0.06$, $P>0.05$) or time ($F=1.61$, $P>0.05$). Qualitative data indicated that umpires on the whole responded extremely well to receiving feedback at intervals and full-time. The majority of verbal responses ($n=79$) recorded by umpires about receiving feedback were positive (positive $n=50$, negative $n=19$, neutral $n=10$).

It is hoped that the positive emphasis of the qualitative results will support England Netball's Umpire Development Programme with a view to making recommendations for the way that verbal feedback is used in the future. Suggested ideas for future research include replication of this study in a non-tournament setting to include a control group receiving no feedback and to give clear direction to the assessors as to the types of feedback given and the way in which it is delivered.

Influence of attentional focusing strategies during practice and performance of a motor skill

D. Marchant, P. Clough, & M. Cramshaw

Department of Psychology, University of Hull, Hull, UK

Direction of attentional focus during execution of motor skills has been found to significantly affect subsequent quality of the movement (for a review, see Wulf & Prinz, 2001: *Psychonomic Bulletin and Review*, 8, 648–660). Attention directed to the intended outcome of a movement (an external focus) has been shown to be beneficial to experienced performers and novices while executing and learning motor skills. Attention directed towards the movements themselves (an internal focus) has been shown to be detrimental. However, Beilock *et al.* (2002: *Journal of Experimental Psychology: Applied*, 8, 6–16) suggested that an internal focus of attention can be beneficial during practice.

During a one-off session, novices can successfully use an external focus of attention to increase dart-throwing accuracy, when compared to an internal focus (e.g. Marchant & Clough, 2005: *Journal of Sports Sciences*, 23, 172). The current research assessed the influence of attentional focusing strategies used during practice on subsequent performance during a dart-throwing task.

Sixty-nine participants (32 males, 37 females) carried out a dart-throwing task during a practice session (with less emphasis on throwing accurately) and a performance session (with more emphasis on throwing as accurately as possible) one week later. Each

session consisted of 10 warm-up dart throws followed by 10 blocks of 4 test throws. In the practice session, 35 participants practised using internally focused instructions (emphasizing movements of the arm) and 34 practised using external focus instructions (emphasizing focusing upon the target). For the performance session, each group was split up. For the internal-practice group, 16 used internal and 19 external focus instructions. For the external-practice group, 16 used external and 18 internal focus instructions. The 10 target rings scored from 0 to 9, with a centre shot scoring 0 (i.e. most accurate).

An attentional strategy (2) \times block (10) analysis of variance (ANOVA) indicated no significant differences between the internal and external attentional strategy groups' practice accuracy ($F_{1,67}=1.89$, $P>0.05$), with mean scores of 4.13 ± 0.24 (mean \pm standard error) and 3.67 ± 0.24 respectively. To assess whether changing participants' attentional focusing style from practice would affect accuracy during performance in the follow-up session, a practice attentional strategy (2) \times focus change/no change (2) ANOVA revealed a significant interaction ($F_{1,65}=9.57$, $P<0.05$). For the internal-practice group, those who performed using external instructions threw more accurately (3.33 ± 0.29 ; mean \pm standard error) than those who performed using internal instructions (4.19 ± 0.31). For the external-practice group, those who performed using internal focus instructions threw less accurately (4.19 ± 0.29) than those who used external focus instructions (3.18 ± 0.31). Analysis of the four different practice-PERFORMANCE groups' accuracy in the performance session using a group (4) \times block (10) ANOVA indicated a significant main effect for group ($F_{3,65}=3.21$, $P=0.05$). *Post hoc* analysis revealed that both the internal-EXTERNAL and external-EXTERNAL groups performed significantly more accurately than the internal-INTERNAL and external-INTERNAL focus groups, which in each case did not differ significantly from each other.

An external focus of attention was found to benefit performance accuracy when compared with an internal focus, regardless of practice strategy used. Similarly, an external focus of attention was found to benefit practice accuracy when compared with an internal focus. The findings indicate that the main significant influence on performance during both practice and performance sessions was the attentional focusing instructions used at that time. These findings support research and theory suggesting that movements are best executed when attention is directed to the desired outcome or goal, and not on the movements themselves. However, research is needed to identify situations where an internal focus of attention is beneficial.

Exercise dependence and fat phobia: Pilot data

D. Marchant & A. Levy

Department of Psychology, University of Hull, Hull, UK

People engage in physical activity for a variety of reasons, particularly the significant physical and mental health benefits. Paradoxically, there is an informal consensus that exercise may produce negative effects (Szabo, 1998: *Journal of Sport Behaviour*, 21, 139–147). Recently, concerns have been raised regarding excessive exercise that may manifest itself as exercise dependence, a condition where individuals feel compelled to exercise despite injuries, obligations or attempts to reduce their activity (Hausenblas & Downs, 2002: *Psychology of Sport and Exercise*, 3, 89–123). Previous research has shown a relationship between exercise dependence and extraversion, neuroticism and agreeableness (Hausenblas & Giacobbi, 2004: *Personality and Individual Differences*, 36, 1265–1273). One relevant factor that has received scant attention is fat phobia; defined as negative attitudes towards fat people and fear of becoming fat oneself (Bacon *et al.*, 2001: *International Journal of Obesity*, 25, 252–257). Given the multi-dimensional nature of exercise dependence, fat phobia can be aligned with what Veale (1995: In *Exercise addiction: Motivation for participation in sport and exercise*, edited by J. Annet, B. Cripps, & H. Steinberg. Leicester: British Psychological Society) termed secondary exercise dependence. This concerns extrinsic motives to exercise in attempts to control or alter body size or shape. This pilot study examined the relationship between exercise dependence symptoms and fat phobic attitudes.

Forty-two exercisers (19 males, 23 females) aged 18–49 years (mean \pm s: 24.5 ± 8.5 years) completed the Exercise Dependence Scale (ED21: Hausenblas & Downs, 2002: *Psychology and Health: An International Journal*, 17, 387–404) and the Short Form Fat Phobia Questionnaire (SFFPQ) (Bacon *et al.*, 2001). The ED21 consists of seven subscales: Withdrawal Symptoms, Continuance, Tolerance, Control, Reduction in Other Activities, Time and Exercise Intentions as well as Total Exercise Dependence. The SFFPQ contains 14 polarized adjectives used to describe obese people in which a single score is obtained. High scores represent negative attitudes towards fatness and obese individuals.

Pearson correlations were carried out on each ED21 factor and each participant's total fat phobia score. Fat phobia scores significantly correlated with Total Exercise Dependence scores (0.463, $P<0.002$), Withdrawal Symptoms (0.463, $P<0.002$), Tolerance (0.374, $P<0.015$) and Time (0.503, $P<0.001$). Using the Enter Regression method with fat phobia as the dependant variable and the subscales of the ED21 as