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Psychological skills of elite archery athletes

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ABSTRACT

Bebetsos, E. (2015). Psychological skills of elite archery athletes. *J. Hum. Sport Exerc.*, 10(2), pp.623-628. The purpose of this study was to examine age, sport/competition experience, and gender differences in psychological skills among Greek elite archery athletes. Seventy archery athletes completed a Greek version of the Athletic Coping Skills Inventory-28 by Smith, Schutz, Smoll, and Ptacek, during the 2011 Greek Men and Women National Archery Championship Tournament. Analyses yielded differences between age groups on two factors (freedom of worries and peaking with pressure). Additionally, differences were indicated between sport/competition experience groups on three factors (freedom of worries, confidence and concentration) but no statistically significant differences between sexes. Older athletes reported better emotional control, with less distress. Overall, results could help archery athletes become more familiar with the sport-specific psychological skills involved in their sport. **Key words:** ATHLETIC COPYING SKILLS INVENTORY, SPORT/COMPETITION EXPERIENCE, AGE DIFFERENCES.

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INTRODUCTION

Sport psychology research and its continuous growth over the past decades led to the conclusion, that psychological factors play an important role in athletic performance (Browne & Mahoney, 1984; Mahoney & Suinn, 1986; Mahoney, et al., 1987; Smith et al., 1995). According to Martens (1987), some athletes have the ability to develop several psychological skills such as concentration, anxiety control skills, goal setting, and mental imagery in order to perform better. Vealey (1988), tried to give a definition of the term “psychological skills” (qualities).

Martens (1987), and Weinberg and Gould (1999), indicated that the basic psychological skills that athletes need to practice and develop are: mental-imaging, control of mental power, stress control, attention, concentration and goal setting. Morgan (1980), attempted, without success, to define the “ideal sports personality”. Mahoney (1988), through his efforts, mentioned that the “ideal sports personality” focuses on six psychological skills: anxiety, concentration, confidence, mental preparation, motivation and team performance. According to Vealey (1988), the basic methods that develop psychological skills include: stress control techniques, mental imagery, goal setting, and attention and concentration techniques.

Although athletes, coaches and sport scientists recognize the importance of psychological skills on athletic performance, studies confirming this relationship are relatively new (Browne & Mahoney, 1984; Mahoney & Suinn, 1986; Mahoney et al., 1987; Murphy & Jowdy, 1992; Williams & Krane, 1992; White, 1993; Smith et al., 1995). Other investigations identified certain categories of psychological skills that can diversify athletes i.e. in areas such as effectiveness of exercise, resistance to pain and competition (Straub, 1984; Morgan, 1985). Additionally, a series of studies, investigated psychological skills that can be taught to athletes (Williams, 1986; Syer & Connolly, 1987; Anshel, 1992).

Sport psychology practitioners frequently build their investigations on psychometric evaluation of athletes' psychological skills and needs. Such an inventory is the Athletic Coping Skills Inventory-28 (Smith, et al., 1995), investigates athletes' perceptions and reactions to competition. The inventory consists of 28 items and taps seven factors of performance enhancement: coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom of worries, confidence and coachability (Cox, 1990; Nideffer, 1993; Vealey & Walter, 1993; Williams, 1993).

In Greece, two studies used the Greek version of this inventory (Goudas, et al., 1996; 1998). Both studies confirmed its structural validity. Research showed that across sexes, ages and skills, more successful athletes identified themselves as less depressed, less sensitive, yet more confident, more anxious and aggressive than the less successful athletes (Mahoney, 1989; Nideffer, 1993; Bebetos & Antoniou, 2003; Karamousalidis, et al., 2006). Other studies pointed-out that more experienced athletes identified themselves as more confident, using goal setting and being more concentrated in their purpose than less experienced ones (Goudas, et al., 1998; Bebetos & Antoniou, 2003). Finally, research indicates that sex differences on psychological skills were placed on the team rather than on the individual (White, 1993; Karamousalidis, et al., 2006). In contrast, other studies (Vealey, 1988; Bebetos & Antoniou, 2003; Skourtanioti & Bebetos, 2008), found no differences between sexes on any psychological characteristic of elite athletes.

The aim of this study was to extend the research to another individual sport (archery) and to assess psychological skills of Greek elite archery athletes and possible age, sport/competition experience, and sex differences. It should be mentioned that archery is a not so common sport in Greece. The examination of

age and sex differences would help in deciding whether variations in training of psychological skills maybe required. Based on previous studies, age differences were expected, with older athletes exhibiting more positive psychological profiles. No sex differences were expected.

MATERIAL AND METHODS

Participants

The sample consisted of 70 elite athletes, 48 men (68.6%) and 22 women (31.4%), between the ages of 12 and 49 years old ($M=24.97$, $TD=11.11$), who participated in the 2011 Greek Men's and Women's National Archery Championship Tournament. More specifically, the sample was divided according to age into 3 groups: a) 12-16 $N=23$ (32.9%), b) 17-24 $N=19$ (27.1%), and c) 25-> $N=28$ (40%), and according to their sport/competition experience (yrs.): a) 1-2 $N=26$ (37.1%), b) 3-5 $N=21$ (30%) and c) 6-> $N=23$ (32.9%).

Measures

The Greek version of the Athletic Coping Skills Inventory-28 (Goudas, et al., 1996; 1998) was used. Each item had a 6-point Likert-type scale ranging from 1 (Never) to 6 (Always). Examples of items are: Coping with Adversity, "When things turn bad during the game, I tell myself to relax and I manage"; Peaking with Pressure, "It is a challenge for me to play under pressure"; Goal Setting, "Every day, every week, I have very specific goals that lead me on what to do"; Concentration, "On snag situations during the game, I know very well what to do"; Freedom from Worries, "When I worry how I will play (perform), I feel very stressed"; Confidence, "During the game and before, I feel very sure that I will play well"; and Coachability, "I listen carefully the advises and instructions of my coach". Athletes were also asked to indicate their gender, their age, and sport/competition experience in years.

Procedures

The sample completed the questionnaire prior to competition.

Analysis

To investigate differences between sexes, age, and sport/competition experience for each factor of the questionnaire, univariate analyses were conducted. The post hoc multiple comparisons Scheffe test was used to define the statistically significant differences between groups.

RESULTS

Internal consistency

The internal consistency for the variables of the questionnaire was: coping with adversity .65, peaking under pressure .76, goal setting/mental preparation .62, concentration .72, freedom of worries .65, confidence .67, and coachability .60. The fact that the subscales contained only four items and tapped broad psychological skills may account for the relatively low coefficients alpha of some of the subscales (Cronbach, 1951).

Age differences

Univariate analyses were conducted in order to find any age differences. The analyses revealed statistically significant age differences:

- (1) For the variable "Freedom from Worries": $F(2.69) = 3.6$. More specifically, the post hoc multiple comparisons Scheffe test indicated the differences between the youngest age group ($M=4.4$, $SD=.89$) and the oldest ($M=3.7$, $SD=1.08$).
- (2) For the variable "Peaking with Pressure": $F2.69 = 5.7$. More specifically, the post hoc multiple comparisons Scheffe test indicated the differences between the youngest age group ($M=3.1$, $SD=1.32$) and the oldest ($M=4.1$, $SD=.99$).

Sport/competition experience differences

- (1) For the variable "Freedom from Worries": $F2.69 = 3.1$. More specifically, the post hoc multiple comparisons Scheffe test indicated the differences between the 3rd ($M= 4.4$, $SD= .89$) and 1st ($M= 3.7$, $SD= .96$) group.
- (2) For the variable "Concentration": $F2.69 = 9.2$. More specifically, the post hoc multiple comparisons Scheffe test indicated the differences between the 3rd ($M= 5.4$, $SD= .71$) and 1st ($M= 4.7$, $SD= 1.87$) group, but also between the 2nd ($M= 5.1$, $SD= .80$), and 1st ($M= 4.7$, $SD= 1.87$) group.
- (3) For the variable "Confidence": $F2.109 = 14.4$. More specifically, the post hoc multiple comparisons Scheffe test indicated the differences between the 3rd ($M= 4.7$, $SD= .69$) and 1st ($M= 3.9$, $SD= .84$) group, but also between the 2nd ($M= 4.6$, $SD= .69$), and 1st ($M= 3.9$, $SD= .84$) group.

Finally, the analysis showed no statistically significant differences between sexes in any of the factors.

DISCUSSION

The results showed that older athletes were better prepared to deal with anxiety and related destructive aspects (worries, anxiety, etc.). Research shows that older people generally cope better with negative aspects in everyday life conditions based on past experience, consequently they react better in similar situations in the sport domain. Research indicated that age categories showed difference between athletes, with the older ones being less worried and more prepared to peak under pressure than the younger ones (Mahoney, et al., 1987; Cox & Davis, 1989; Mahoney, 1989; Nideffer, 1993). Present research matched previous findings that suggested that older and more experienced athletes tend to free themselves of worries and perform under pressure (Goudas, et al., 1998; Bebetsos & Antoniou, 2003; Karamousalidis, et al., 2006).

Analysis indicated that more experienced sport/competition groups, showed increased concentration and confidence indicators. These results agree with previous researchers that identified older and more experienced competition athletes to be better prepared on psychological skills, especially on individual sports such as archery (Bebetsos & Antoniou, 2003; Skourtanioti & Bebetsos, 2008).

On the contrary, no sex differences were shown. Mainly in Greece both men and women archery athletes, practice on the same courts, with the same coaches. Moreover, archery is an adaptive sport, generally independent from sex, so researchers assumed that this might be the reason. Previous studies on individual sports support these findings (Koutsogiannis, et al., 2000; Antoniou, et al., 2001; Bebetsos & Antoniou, 2003; Skourtanioti & Bebetsos, 2008).

CONCLUSIONS

In conclusion, it should be mentioned that the Athletic Copying Skills Inventory-28 is an instrument that measures features that are related to positive self-evaluation. As Smith and his colleagues (1995) indicated, physical and psychological skills appear to be relatively independent of one another. Additionally, Murphy and Tammen (1998) mentioned that this specific inventory might be a better measure of copying skills rather than of psychological performance skills. The feasibility for desirable answers to the items might be an important reason for not using the questionnaire. Some athletes might respond to the items by trying to “show” a more positive image.

Nevertheless, the inventory serves as a future research tool in the investigation of psychological skills in archery.

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