

Original Article

Do anxiety, anger and aggression differentiate elite water-polo players?

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Abstract

The aim of the study was to investigate if anxiety, anger and aggression differentiate a sample of elite water-polo players, in Greece. The sample consisted of 200 (100 men, 100 women) water-polo players, between the ages of 17-38 years of age. They completed the Greek versions of the CSAI-2 (Stavrou, Zervas, Kakkos, & Psichountaki, 1998), and of the CAAS (Bebetsos, Christoforidis, & Mantis, 2008), instruments. Analyses revealed differences between both sexes and age groups. Younger athletes had higher anxiety, and lower confidence scores, and also women indicated lower anger and aggressive scores. Overall, results shine some light on aspects that effect athletic performance of elite water-polo players in Greece.

Key words: Competitiveness, age differences, gender differences.

Introduction

As argued by Cox (2006) anxiety is one of the many emotions that can arise as athletes' reaction in a competitive situation. Specifically, anxiety is the feeling which is defined as addressing a precarious situation or existential threat (Lazarus, 2000). Anxiety as a feeling can be obtained after the evaluation and assessment of a person on how to handle a situation. The effects of anxiety as argued by Cox (2006) affect athletes regardless of gender and sport.

Lazarus (2000) takes a very interesting position in which he indicates that anxiety is ranked among other emotions that play an important role with their effect on athletic performance, such as anger, shame, relief and pride that can exert a strong influence on performance and for which he argues that they should be managed and categorized into positive and negative groups. So therefore, Lazarus (2000) mentioned that these feelings, such as anxiety, should be considered primarily for their specific effects on performance, for example, while anger is often considered as a negative emotion, potentially it might affect performance positively.

A very important finding is the fact that an environmental or competitive situation is not necessarily stressful by itself. So, according to Lazarus (2000) a competitive situation can act as a stimulus to induce anxiety but if this situation will eventually cause anxiety, depends mainly on how the athlete perceives and interprets this situation. This finding is also one of the most basic principles that underline the multidimensional nature of anxiety (Lane & Terry, 2000). When an athlete is confronted with a potentially stressful situation, he/she makes an assessment of the situation on two levels which include the main appraisal, (during which the athlete evaluates his/her interest on the situation) and the secondary appraisal (during which the athlete makes an estimation on his/her physical and psychological reserves in order to deal with the situation). Results from the two levels determine the degree to which will be determined if anxiety will "appear" (Hanton, Thomas & Maynard, 2004). It is therefore evident that anxiety is directly related to the individual's subjective perception of an event or situation.

CSAI-2 is one of many psychological instruments that was used in order to assess physical, cognitive anxiety and self-confidence (Martens, Burton, Vealey, Bump, & Smith, 1990). Cognitive anxiety is defined as anxiety, perception of unpleasant feelings associated with athletic performance and inability to concentrate (Borkovec, 1976). Physical stress refers to physiological and emotional factors resulting from the activation of the autonomic nervous system (Martens, Vealey & Burton, 1990). Finally, confidence refers to the athlete's expectation, their faith on themselves (Martens, 1977).

Sport competition usually results in contention and, often happens in team or individual sport events, the effort for dominance and "win" can lead to the use of aggressiveness (Leith, 1982). Researchers have reached to the conclusion that violence and aggressiveness are two of the most serious problems in sports (Stephens, 1998) and (Conroy, Silva, Newcomer, Walker and Johnson, 2001).

According to Smith (1983), aggressiveness is defined as any behavior planned to hurt someone physically or psychologically. Aggressiveness in sports is often construed as “the behavior intended to harm in sport areas” (Bredemeier, 1983). Research results have shown that male athletes and team sports showed higher levels of aggression than women athletes and individual sports (Baron & Richardson, 1994; Eagly, & Steffen, 1986; Bebetos & Konstantoulas, 2006; Bebetos, Christoforidis, & Mantis, 2008). Similarly, research results suggest that the higher was the level of competitiveness, the higher was the level of aggressiveness (Butt, & Cox, 1992). In another survey of Tucker and Parks (2001), the results showed that college sports athletes high contact were more receptive to aggressive acts and behaviors than athletes from sports modest.

Additionally, in their survey, Kavussanu and Ntoumanis (2003) examined the relationship between extensive athletic participation in team sports and three ethical scenarios. The sample consisted of college athletes who were members of teams of European football, hockey, basketball and rugby. The results showed that athletes with higher participation rates in their sport, had the lowest and highest ethics in relation to aggressive behavior.

In 2007, Maxwell and Moores created a questionnaire, the "Anger and Aggression Scale" (CAAS). The reason was the need for a gauge of aggression and anger towards a better understanding of aggression in competitive sports. Anger and aggression are recognized as two of the most powerful elements of aggressive behavior (Berkowitz, 1989; 1993), so be decisive factors in identifying athletes with aggressive feelings. So, the aim of this study was the investigation of any possible results that might differentiate the sample (gender and age), according to their aggression, anger and anxiety levels.

Methods

Sample and Procedure

The sample included 200 Greek elite water-polo athletes (100 males and 100 females). Their ages ranged between 17 to 39 years ($M=25.14$, $SD=5.37$). More specifically, the sample was divided into 3 age groups: 1) 17-21 yrs. of age: $N=59$ (29.5%), 2) 22-26 yrs of age: $N=62$ (31%), and 3) 27-> yrs. of age: (39.5%). The sample was divided into these groups, because as literature indicates, up to 21 years of age the athlete is going through development, from 22 to 25 years of age the athlete reaches peak athletic performance, and over the age of 27 the athlete stabilizes athletic performance (Bebetos & Konstantoulas, 2006).

They were all participants of the 1st National Category, in the 2011-12 Greek National Water Polo Championship season games. They completed the questionnaires voluntarily.

Questionnaires

Competitive State Anxiety

The Greek version of the CSAI-2 (Stavrou, Zervas, Kakkos, & Psichountaki, 1998) was used which includes three subscales: cognitive anxiety, somatic anxiety, and self-confidence, with five items in each scale. On a 4-point Likert scale (1 = *not at all*, 4 = *very much so*) respondents rate the intensity of their anxiety experiences to competition.

Competitive Aggressiveness and Anger Scale

The Greek version of the Competitive Aggressiveness and Anger Scale (CAAS) (Bebetos, Christoforidis, & Mantis, 2008), was used which includes two subscales: anger, and aggression, with six items in each scale. Responses were placed on a 5-point Likert scale (1 = *never*, 5 = *always*). The sample was also asked to indicate their gender and age.

To investigate differences between sexes and age for each factor of the questionnaires, univariate analyses (ANOVA) were used.

Results

Internal Consistency

The internal consistency for the variables of both questionnaires, were: a) Cognitive Anxiety .75, b) Somatic Anxiety .74, c) Confidence .84, d) Anger .74, and e) Aggression .78.

Gender and Age Differences

Univariate analyses were conducted in order to find any gender and/or age related differences. The analyses revealed statistically significant differences in both gender and age variables. More specifically:

- For the variable of “Cognitive Anxiety” a significant main effect for age was shown: $F_{2,199}=1.88$, $p<.001$. The post hoc Scheffe test showed that the differences were detected between all age groups, were the 1st (youngest) had the highest score ($M=2.41$, $SD=.64$), followed by the 2nd ($M=2.03$, $SD=.56$), and the 3rd (oldest) with the lowest ($M=1.94$, $SD=.66$).
- For the variable of “Confidence” a significant main effect for age: $F_{2,199}=7.82$, $p<.001$. The post hoc Scheffe test showed that the differences were detected between all age groups, were the 1st (youngest) had the lowest score ($M=2.76$, $SD=.72$), followed by the 2nd ($M=3.02$, $SD=.60$), and the 3rd (oldest) with the highest ($M=3.29$, $SD=.63$).
- For the variable of “Anger” a significant main effect for gender: $F_{1,200}=10.06$, $p<.01$. The post hoc Scheffe test showed that women had lower score ($M=2.23$, $SD=.52$), than men ($M=2.52$, $SD=.70$).

- (d) For the variable of "Aggression" a significant main effect for gender: $F_{1,200}=15.24$, $p<.001$. The post hoc Scheffe test showed that women had lower score ($M=2.13$, $SD=.41$), than men ($M=2.46$, $SD=.69$).

Discussion

The aim of the study was the investigation of any possible differences among the sample, on gender and age, according to their aggression, anger and anxiety levels. The results showed that, in the present study, the internal consistency supported the psychometric properties of the questionnaires.

According to the results of univariate analysis the youngest group identified themselves as athletes with the highest cognitive anxiety and the lowest confidence levels. To begin with, it's understandable that people, who score high in anxiety levels, will have low confidence. Previous research supports these findings and indicates that older individuals can cope better with anxiety (Mahoney, Gabriel, & Perkins, 1987; Mahoney, 1989; Cox & Davis, 1989; Bebetsos & Antoniou, 2003; Kouli, Bebetsos, Kamperis, & Papaioannou, 2010). Additionally, previous research showed that older athletes generally cope better with destructive aspects in everyday life situations based on previous accumulated experience, and as a result they respond better, more confident in similar situations in the sport domain.

In addition to the previous results, our findings showed that women in both anger and aggression, scored lower than men. According to previous researches, men present themselves as more competitive which many times lead to a more aggressive behavior (Bredemeier, 1978; Maxwell, 2004). Also, researches support the idea that in the environment, which is determined as more "mannish", boys will present higher rates of aggressiveness (Lirgg, 1991). As a result, because the boys-men judge many of their injuries as less serious, they address more aggressive behaviors (Hiller & Morrongiello, 1998). On the other hand, women are characterized as more sentimental and emotional (Harrell, 1980). Similar results were found in a previous research in Greece (Bebetsos et al, 2008; Christoforides, Kalivas, Matsouka, Bebetsos, & Kambas, 2010).

One limitation of the present study might be that all sample' individuals were athletes of high athletic standard. At other levels, the results might be different.

Overall, the specific research indicated that anxiety and anger, aggression levels do differentiate elite Greek water-polo athletes. Scientists, coaches and trainers must encourage the moral side of sports. In addition, psychological techniques that might be helpful on anxiety reduction are necessary and must be used in order to achieve even higher athletic performance. Professionals need to teach athletes to turn their attention on sportsmanlike behavior with lower anxiety levels.

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