

Original Article

Competitive state anxiety and gender differences among youth greek badminton players

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Abstract

The aim of this study was to reveal any possible differences on the aspect of competitive anxiety and more specifically any sex differences between athletes that participated in the youth singles' national championship tournament in Greece. Fifty-six athletes (33 boys and 23 girls) completed a Greek version of the Sport Competition Anxiety Test (SCAT) (Martens, 1977), in the 2009 Greek Youth Singles' (Under 17) National Badminton Championship Tournament. Analyses revealed differences between sexes. Girls identified themselves as more relaxed than boys. Apparently, competitiveness and aggressiveness are aspects that are not high in girls' hierarchy. Overall, the results of the study will help badminton athletes and coaches become more familiar with the aspect of competitive anxiety and its outcomes that are involved in the sport of badminton.

Key words: Competitiveness, aggressiveness, relaxation, gender differences.

Introduction

The topic of sport performance and different elements that might interact with, it has been a topic of great interest among coaches, athletes and researchers. One of these elements is performance anxiety. In many cases athletes indicate that anxiety or certain aspects of anxiety can interact with performance (Jones & Swain, 1995). Researchers clarify and "divide" anxiety into trait and state. According to Spielberger (1972), state anxiety: "may be conceptualized as a transitory emotional state or condition of the human organism that varies in intensity and fluctuates over time. This condition is characterized by subjective, consciously perceived feelings of tension and apprehension, and activation of the autonomic nervous system" (p. 39). In other words, state anxiety is an immediate or "right now" emotional response that can change from one moment or situation to the next. State anxiety can be measured behaviorally, physiologically and psychologically (Silva & Weinberg, 1984).

On the other hand, Spielberger (1972) mentions that trait anxiety: "refers to relatively stable individual differences in anxiety proneness, that is, to differences in the disposition to perceive a wide range of stimulus situations as dangerous or threatening, and in the tendency to respond to such treats with state anxiety reactions (p. 39)." People with increased levels of state anxiety have greater chances to demonstrate trait anxiety reactions, than people with low state anxiety.

After many years of research, psychologists pointed out that anxiety is a multifaceted construct. Anxiety is an emotional response and an avoidance motive which is characterized by worry and a concern of physical or psychological harm, together with increased physiological arousal resulting from the appraisal of threat (Smith, Smoll & Weichman, 1998). Morris, Davis and Hutchings (1981) specified that cognitive anxiety is characterized by awareness of unpleasant feelings relatively to ones' self or to an external stimulant, to discomposure and to disturbing mental images. On the other hand, somatic anxiety refers to the apprehension of an individual of a physiological arousal which has negative characteristics, such as increased pulse, queasy feeling in the stomach, sweating palms, etc. Cognitive and somatic anxiety might be closely related, but they can alter independently for one another.

It is generally accepted that the psychological state of the athletes prior to competition is crucial for their performance. Because of this aspect, many researches examined athletes' anxiety level on different times prior to competition. The results indicated that cognitive anxiety is high few days before the competition and remains high up to the beginning point. Reversely, somatic anxiety is starting to rise the day of competition and reaches its climax just before the beginning point (Cox, 1994). Anxiety affects many outcomes. Children reported that they dropped out of sports because they found that athletic competition is aversive and threatening rather than enjoyable and challenging (Orlick & Botterill, 1975; Gould, Feltz, Horn & Weiss, 1982; Bebetos & Antoniou, 2003). The understanding of the decisive aspects of state anxiety can provide with useful information for reduction of anxiety and increase of performance. One potential predictor of an athlete's pregame state anxiety is his/her tendency to be anxious in competitive situations (Cooley, 1987). Martens (1977) mentioned that a competitor's anxiety at the time of performance may be a powerful decisive aspect of his/her performance. According to the researcher, competitive trait anxiety "is a construct that describes individual differences in the

tendency to these situations with a state anxiety' reactions of varying intensity" (p. 36). In order to access competitive trait anxiety, an instrument was developed, the Sport Competition Anxiety Test (SCAT) (Martens, 1977). Its psychometric development was guided by the theoretical conceptualization of competitive trait anxiety as a situation-specific form of anxiety that intercede the athlete's perceptions and responses to threat in the competition process (Ostrow, 1996). The construction of this instrument was based on four theoretical approaches: (a) the acceptance of the theory of personality interaction, (b) the development of an instrument specifically to measure individual characteristics under particular circumstances, (g) the distinction of state and trait anxiety and (d) the development of a notional model for the study of sport competition as a social approach (Martens, 1977). SCAT was initially constructed for the use with children. An adult version was developed by the modification of the instructions. Results indicate that many researchers focused on the gender differences, even from the initial development of the test (Martens, 1977; Martens, Vealey, & Burton, 1990). Some researches showed that women had greater values than men (Martens, 1977; Scanlan, & Passer, 1978b, 1979a; Hogg, 1980; Martens et al., 1990), other did not indicate any gender differences (Smith, 1983; Feltz & Albecht, 1986; Rainey & Cunningham, 1988), and other showed that men had higher values (Martens et al., 1990), especially on specific (high level athletes) populations (Durrtschi & Weiss, 1984).

Researchers mentioned that all the results on youth anxiety must be taken into consideration with caution because older children and females appear to be less defensive about admitting their anxiety levels than younger children and males. So, it might be possible that gender differences in anxiety reflect collateral differences in defensive responses to anxiety questionnaires (Dusek, 1980). In Greece results indicated that SCAT is an appropriate instrument for measuring competitive trait anxiety and also women had higher levels than men in all aspects of competitive anxiety (Zervas & Kakkos, 1990).

The aim of this study was to extend the competitive anxiety research to another sport, badminton, where psychological research is minimal. More specifically, possible gender differences might reveal significant aspects of the sport in Greece, where badminton is a non-widespread sport.

Method

Sample and Procedure

Fifty-six athletes (33 boys and 23 girls) participated in the 2009 Greek Youth Singles' (Under 17) National Badminton Championship Tournament. More specifically, the championship tournaments according to age are: under 11, under 13, under 15, under 17, under 19 and Open. The athletes completed the questionnaire voluntarily.

Questionnaire

The Greek version of the Sport Competition Anxiety Test (SCAT) (Zervas & Kakkos, 1990) was used. The questionnaire has 10 items and each item had a 3-point Likert-type scale with anchors of 1: Hardly Ever and 3: Often. More specifically the items of the questionnaire are: 2 items on anxiety, anxiety factor (example: before I compete I feel uneasy), 2 items on emotions reversely to anxiety, calmness factor (example: before I compete I am calm) and 6 items on psychosomatic anxiety symptoms, psychosomatic factor (example: before I compete I have a queasy feeling in the stomach). The questionnaire was administered just before the athlete(s) went on court to compete. Athletes were also asked to indicate their gender.

To investigate differences between sexes for each factor of the questionnaire, one-sample *t* tests, a one-way analysis of variance, two-way table of contingency (by crosstabulation analysis) and Chi-Square test were conducted.

Results

Internal Consistency

The internal consistency for the variables of the questionnaire was: a) anxiety .72, b) calmness .74 and psychosomatic .68. The coefficients are not large, but this is not surprising. Cronbach (1951) pointed out that alpha is heavily influenced by the test length. One-sample *t* test was conducted in order to indicate whether the mean of a single variable differs from a specified constant. The results show that all anxiety groups have differences from the mean of scale. The difference between the scores on the anxiety factor ($M=1,83$, $SD=0,524$) and the mean of scale (1,5) is 0,330. The 95% confidence interval of the difference it oscillates 0,189 to 0,470. Because this confidence interval does not have the 0.00 the difference is statistical significant in two – tailed level 5%. The difference between the scores on the psychosomatic factor ($M=1,66$, $SD=0,426$) and the mean of scale (1,5) is 0,169. The 95% confidence interval of the difference it oscillates 0,553 to 0,284. Because this confidence interval does not have the 0.00 the difference is statistical significant in two – tailed level 5%. Also, the difference between the scores on the calmness factor ($M=1,98$, $SD=0,687$) and the mean of scale (1,5) is 0,482. The 95% confidence interval of the difference it oscillates 0,298 to 0,666. Because this confidence interval does not have the 0.00 the difference is statistical significant in two – tailed level 5%. One-way analysis of variance was conducted to indicate any differences between boys and girls on the three variables of the

questionnaire. The results revealed statistical significant differences only on the subscale of calmness, $F_{(1,55)}=8.50$, $p<0.01$. More specifically, girls had higher score ($M=2,37$, $SD=.55$) than boys ($M=1,84$, $SD=.69$).

Gender Differences

A two – way table of contingency (by crosstabulation analysis) for each questionnaire item were conducted to examine the frequencies of answers from boys for the frequencies of answers from girls (homogeneity test and independent test). The results revealed statistical significant differences only on the subscale of calmness and especially in the item “before I compete I am calm” (Pearson Chi-Square $\chi^2 = 8,101$ $p<0.05$). Only 5,3% of girls says “Often” instead 40,5% of boys.

Finally Chi-Square tests were conducted to determine if all questionnaire items contains the same answers both for boys and girls players. For boys the results shows statistical significant differences in the following items: “before I compete, I feel uneasy” 54,1% declare sometimes 32,4% hardly ever (Chi-Square = 9,13 $p<0,05$), “before I compete, I worry of not performing well ” 51,4% sometimes 35,1% hardly ever (Chi-Square = 8 $p<0,05$), “before I compete I have a queasy feeling in the stomach” 75,7% hardly ever (Chi-Square = 30,86 $p<0,05$), “just before I compete, my heart beats rapidly” 51,4% sometimes 32,4% hardly ever (Chi-Square = 6,86 $p<0,05$), “before I compete, I feel nervous” 45,9% sometimes 40,5% hardly ever (Chi-Square = 6,70 $p<0,05$), “while I’m waiting to compete, I fell nervous” 43,2% sometimes 43,25 hardly ever (Chi-Square = 6,54 $p<0,05$), “before I complete, I feel uptight” 59,5% hardly ever (Chi-Square = 11,73 $p<0,05$).

For girls the results shows statistical significant differences in the following items: “before I compete, I feel uneasy” 84,2% sometimes (Chi-Square = 8,89 $p<0,05$), “before I compete, I worry of not performing well” 63,2% sometimes (Chi-Square = 7,68 $p<0,05$), “while I compete, I worry of not performing well” 57,9% sometimes (Chi-Square = 6,42 $p<0,05$) “before I compete I have a queasy feeling in the stomach” 84,2% hardly ever (Chi-Square = 22,21 $p<0,05$), “before I compete, I feel relaxed” 52,6% hardly ever 42,1% sometimes (Chi-Square = 7,05 $p<0,05$), “while I’m waiting to compete, I fell nervous” 63,2% sometimes (Chi-Square = 9,57 $p<0,05$).

Discussion

The aim of this study was to reveal any possible differences on the subject of anxiety brought about by competitiveness and more specifically the differences between athletes who participated in the Youth Singles’ National Championship Tournament in Greece.

The first results indicated that, as a whole, the athletes were characterized as being calm. It was assumed by the researchers that the general sport environment and the conditions of the competition are well known to the athletes. The athletes also understand that in order to compete in badminton, full concentration is required, together with readiness to make the right decisions on the court and the ability to implement the right tactics and strategies, in order to overcome their opponent. Calmness is one of the key and crucial aspects during the game. Many coaches’ directions stress the importance of the necessity of the calmness of the player and as a result, this was reflected by the athletes when completing the questionnaire.

On the other hand, differences were shown on the anxiety factor. The questionnaire however, was administered shortly before each athlete went on the court to compete, at which time it is logical to suppose that each participant was anxious. To be calm and ready to play is on thing, to feel ready to correspond to the special psychological and physical needs of the game, is another. The results are from the whole sample, including weak or inexperienced athletes which might be the reason that the mean of the psychosomatic scale was also high. Badminton is a sport where the “knock-out” system is used in tournaments. After the draw, the weakest players play against the better ones so that during semi-finals there will be no chance for two good players to play against each other. It gives the good players the opportunity to play their best games during the finals. Therefore, it can be noted that the differences of the sample on the anxiety and psychosomatic factors, are properly extracted from this instrument (questionnaire).

As far as the differences in the sexes are concerned, the girls seemed more relaxed than the boys. In Greece the level of competitiveness between girls is lower than boys. Their game is much slower and easier to compete against. For this study sample in particular, girls were fewer than boys. Fewer participants might be “translated” as fewer games, an easier way to get to the next competition level (quarter finals, semi-finals, finals). The results of the study coincide with results of previous ones (Durrtschi & Weiss, 1984; Martens et al., 1990; Konstantoulas, Bebetos & Michailidou, in press). More specifically, the crosstabulation analysis revealed that the girls’ answers were oscillating in the mean of the calmness factor, in contrary to boys’ answers. Boys’ results were divided between the extreme scores (1 and 3) of the factor. Competitiveness and aggressiveness, two aspects that are greater among boys/men, might be the reason for these results (Durrtschi & Weiss, 1984; Theberge, 2003; Maxwell, 2004; Digelidis, et al., 2006). It is very significant to indicate that badminton is a sport in which concentration plays a very important role. While hitting the shuttle, a player must also decide where to hit it in order to place the opponent in a defensive position. Additionally, the return of the shuttle from the opponent must be anticipated. As bibliography mentions, badminton is a sport mostly played with the mind, then quickness of the legs and finally vigorousness of the arm (Partemian & Antoniou, 2002).

Finally, it is very important to site the distinctiveness of this study. By Greek law the athletes who win one of the three first positions in any national championship, earn bonuses towards his/her induction to any University within the country. The championship tournament used for this study was included in this procedure. This might explain the high indicators of anxiety and stress among the athletes. More specifically, in badminton tournaments the first four positions earn this bonus (first, second and two third places). Possible limitations of the study might be that this study was conducted only on Greek badminton players between the ages of 15 up to 17. Overall, despite increased levels of the anxiety and the psychosomatic indicators, the sample revealed its higher indicators on calmness ($M=1,98$, $SD=0,687$). Therefore, it can be said that badminton is a sport that contributes to the “emotional discharge” by offering an ideal athletic environment even on championship level, in Greece.

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