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Examination of Competitive State Anxiety Scores of 12-year-old Tennis Players by Gender

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Abstract

The purpose of the current study was to examine the differences of competitive state anxiety scores of 12-year-old tennis players by gender. A total of 50 licensed tennis players, 20 girls and 30 boys, participated in the study. Participants filled the Children's Form of the Competitive State Anxiety Inventory (CSAI-2C) until 20 minutes before the official competition started. Their cognitive anxiety, somatic anxiety and self-confidence scores were recorded. According to the results, no significant difference was found in any of the subscales of CSAI-2C between boys and girls. Similar results were found in correlation analyzes. In both groups, a positive relationship was observed between cognitive and somatic anxiety, and a negative relationship between cognitive and somatic anxiety and self-confidence. When the results were examined, it was understood that the CSAI-2C results were not affected by gender. Cognitive and somatic anxiety scores of the participants were found to be moderate and self-confidence scores were high. In addition, it was understood that as cognitive and somatic anxiety scores decreased, self-confidence increased.

Key Words: Anxiety, cognitive anxiety, somatic anxiety, self-confidence, tennis

INTRODUCTION

In addition to the fact that anxiety and anxiety disorders are the most common psychological disorders and this affects the quality of life negatively (1, 2), there are studies in the literature showing that exercise reduces anxiety (3, 4, 5) and, more importantly, that high anxiety levels negatively affect athletic performance (6, 7, 8).

Anxiety in sports has been defined in different ways. According to Cox, anxiety is a state of increased physiological arousal and subjective anxiety (9). According to Weinberg and Gould (1995), it describes an emotional state related to feelings of nervousness, anxiety and distress that occur with the arousal of the body (10). Anshel and Kaissidis (1997) defined anxiety as

perceived threat (11). Horn (1992) expressed it as the cognitive dimension or emotional effect of arousal (12). In order to improve a concept that is effective on sports performance, it must first be measured and evaluated objectively.

For this reason, many inventories have been developed to determine anxiety in sport. However, in this study, the Children's Form of Competitive Sports Anxiety Inventory (CSAI-2C) was used because it was multidimensional and suitable for the age group of the participants, since it was desired to determine the state anxiety of young athletes before the competition. This inventory can measure cognitive and somatic anxiety parameters that affect human motor and cognitive behaviors, as well as self-confidence (13, 14). Smith and Smoll (1991) especially emphasized that competition anxiety is one of the causes of behavioral changes in children and young athletes (7). Similarly, Woodman and Hardy (2003) stated in their meta-analysis study that cognitive anxiety and self-confidence affect sports performance (8).

The aim of the current study is to compare the cognitive anxiety, somatic anxiety and self-confidence level of 12-year-old boy and girl tennis players, and examine the relationship between anxiety and self-confidence levels.

METHODS

Study Design

This research was conducted to compare the competitive state anxiety levels and self-confidence levels of 12-year-old male and female tennis players before an official competition.

Subjects

A total of 50 (30 male, 20 female) licensed competitive tennis players with a mean age of 12.02 ± 1.61 participated in the study. Participants were included in the study on a voluntary basis from sports clubs in Ankara. Inclusion criteria for the study; to participate in regular tennis trainings for at least the last 6 months, to be a competitor and not to have any musculoskeletal or respiratory disorders.

Procedures

The original Competitive Sport Anxiety Inventory scale used in this study was developed by Martens, Burton, Vealey, Bump, and Smith (1990). This inventory was revised by Martens, Vealey and Buton in 1982 and was named CSAI-2. The version of the scale that can be used for children aged 12 was developed as Children's Form of Competitive Sport Anxiety Inventory

(CSAI-2C) by Stadulis, MacCracken, Eidson and Severance in 2002. CSAI-2C includes cognitive anxiety, somatic anxiety and self-confidence subscales and consists of a total of 15 items. All items in the inventory are of four-point Likert type (not at all, somewhat, so and much so). Questions 1, 7, 10, 12 and 14 meet cognitive anxiety, questions 2, 4, 8, 11 and 15 meet bodily anxiety, and questions 3, 5, 6, 9 and 13 meet the self-confidence subscale. The inventory was adapted into Turkish by Koruç and Yılmaz (2004). The Carmine Internal Consistency measurement of the original inventory was found to be 0.96, while the Cronbach Alpha Internal Consistency Coefficient was found to be 0.75 for cognitive anxiety, 0.78 for somatic anxiety and 0.73 for self-confidence. In the Turkish version, the Cronbach Alpha Internal Consistency Coefficient is 0.80 for cognitive anxiety, 0.87 for somatic anxiety and 0.85 for self-confidence.

The inventory was given to all participants 20 minutes before the start of the competition and it was provided to be filled in a quiet room.

Statistical Analyses

SPSS 22 program (SPSS, Chicago, IL, USA) was used for data analysis. First, the distribution of the data was analyzed with the Shapiro-Wilk test, and the mean comparison of each sub-dimension according to the sport gender variable was analyzed with the Independent-Samples t Test or the Mann-Whitney U Test according to the normality of the distribution. Correlation analysis was performed with Spearman correlation test since most of the data did not show normal distribution. The alpha value of 0.05 was accepted for all statistical analyses.

FINDINGS

Table 1. The averages of cognitive anxiety, somatic anxiety and self-confidence subscales obtained depending on the gender variable of the participants and the differences between the averages.

Children's Form of Competitive Sport Anxiety Inventory (CSAI-2C)		
Boys	Girls	<i>p</i>-
Cognitive anxiety		
10.13 ± 2.81	9.55 ± 2.68	0.468
Somatic anxiety		
10.47 ± 3.20	10.30 ± 3.06	0.855
Self-confidence		
15.60 ± 2.37	15.20 ± 3.53	0.998

According to the results, no significant gender difference was found in the cognitive anxiety, somatic anxiety and self-confidence subscales of the inventory.

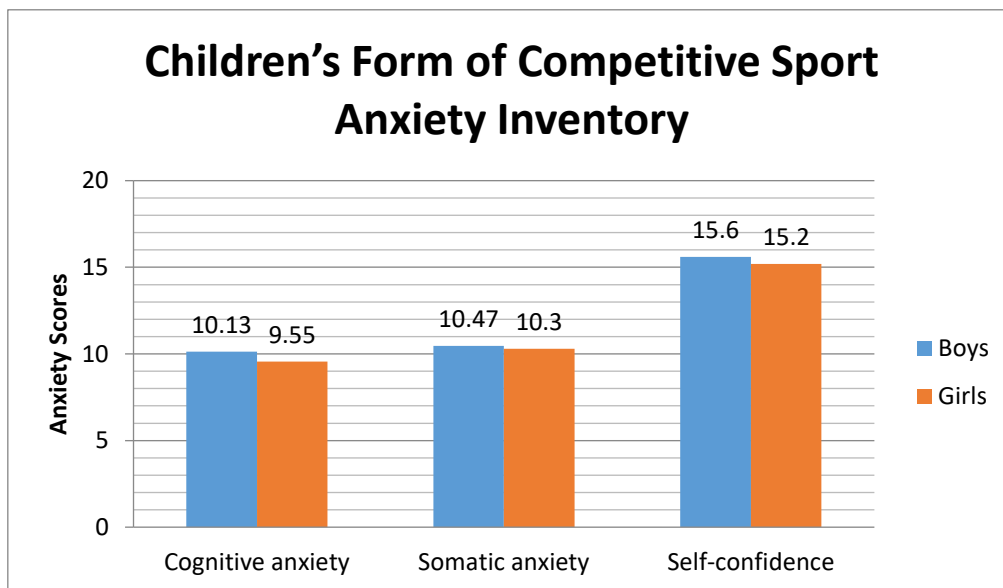


Figure 1. Graph of the averages of cognitive anxiety, somatic anxiety and self-confidence subscales obtained depending on the gender variable of the participants.

As a result of the correlation analysis, there was a positive relationship between cognitive anxiety and somatic anxiety in both boys and girls ($p < 0.01$). A negative relationship between cognitive anxiety and self-confidence ($p < 0.01$), and somatic anxiety and self-confidence were observed again in both boys and girls ($p < 0.01$ in boys, and $p < 0.05$ in girls).

DISCUSSION

The purpose of this research was to compare the results of competitive state cognitive and somatic anxiety and self-confidence scores of 12-year-old male and female tennis players, and examine the relationship among two different anxiety types and self-confidence. In order to understand the gender differences, the CSAI-2C was given to the participants until 20 minutes before the competition, and they were provided to fill the inventory in a quiet room. When the results were investigated it was seen that gender is not determinant factor. Both male and female young tennis players showed similar results. They all had a moderate level of cognitive and somatic anxiety levels, and a high level of self-confidence. The correlation results also showed gender-independent results. There was a positive significant relationship between cognitive and somatic anxiety in both groups. Similarly, a significant negative relationship was observed between both anxiety scores and self-confidence level in male ($p < 0.01$) and also female ($p < 0.05$) young tennis players.

In general, it is argued that high anxiety level has negative effects on athletic performance. From this perspective, Raglin (1992) stated in his review study that athletes should develop techniques to cope with anxiety in order to avoid the negative effects of increased anxiety on sportive performance. He also suggested that measuring and evaluating anxiety level not only before the competition but also during the competition would be effective (15). For this reason, it is seen that different interventions and applications are used to reduce the anxiety level of athletes.

In a study Salleh et al. (2021) investigated the effects of probiotics on anxiety and performance in badminton players. They used the CSAI-2 to determine the anxiety level of young adult athletes. After six weeks of probiotics consumption, they found a 16% decreased in anxiety level, besides a 5.9% increase in aerobic power (16). In another study Scott-Hamilton et al. (2016) measured the effectiveness of mindfulness practice on anxiety of competitive cyclists. At the end of the eight-week mindfulness intervention they recorded significant decrease in anxiety scores (17). As a different strategy, Englert and Bertrams (2012) examined the effects of self-control exercise on anxiety and how it would affect sports performance. In their study, in which they evaluated the performance on free throws in basketball and dart task, they stated that self-control strength reduces the negative effects of anxiety and affects performance positively (18). Lastly, Hazell et al. (2014) focused on the effects of pre-performance routines on performance and anxiety levels in semi-professional soccer players. The researchers stated that pre-performance routines affect the performance positively and also reduce the somatic anxiety (19).

CONCLUSION

This research is important because it is a study that evaluates the anxiety level of 12-year-old tennis players on the basis of gender parameter. When the results were examined, it was understood that the CSAI-2C results were not affected by gender in this age group. Cognitive anxiety, somatic anxiety and self-confidence scores were found to be similar. However, it was seen that the anxiety scores obtained were at a moderate level in this age group, and the self-confidence scores were high. Similarly, similar changes were observed in both genders in the correlation analyzes, a positive relationship between cognitive and somatic anxiety scores and a negative relationship between anxiety scores and self-confidence was recorded. Comparing state anxiety with competitive success and overall year-round success in future studies may provide a clearer comparison of anxiety and self-confidence scores. In addition, when the studies mentioned in the Discussion section are examined, it is seen that many different

approaches have been applied to reduce the level of high-level anxiety. However, it is understood that the positive effects obtained in these studies should be standardized in order to be applied in the field. Therefore, more studies on the subject are needed.

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