

# COMPARATIVE ANALYSIS OF COMPETITION ANXIETY OF BOSNIAN AND HERZEGOVINIAN ATHLETES IN RELATION TO THE TYPE OF SPORT

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## Abstract

*The concept of competition anxiety has been increasingly recognized as a basis for success in competitive sports. Therefore, we examined whether the type of sport the athletes train for is a distinguishing factor of the demonstrated level of competition anxiety. Using a sample of 38 athletes (26 basketball players and 12 cyclists) from four clubs in Bosnia and Herzegovina we tested forms of anxiety (cognitive and somatic anxiety) and the level of self-confidence just before the game (30 minutes before the game). Testing was conducted using the Competitive State Anxiety Inventory-2; CSAI-2, Martens et al., 1990, and the obtained results differ from the results in similar studies. For our sample, we can say that the basketball players show significantly higher levels of self-confidence, while the effects of competition anxiety are uniform in both groups of athletes.*

**Keywords:** *competition anxiety, self-confidence, team sports, individual sports*

## Introduction

The psychological component of sports is perceived as an increasingly relevant factor, which accounts for a significant share in the development of athletes, and in achieving results in the competitions. If we look at the factors that are associated with sporting success, the importance of talent is emphasized for a particular sport, in addition to physical fitness, and technical and tactical preparedness. As the results in many sports in terms of speed and strength are approaching the physiological limits, the role in the psychological components is more prominent (Pajević, 2003).

One of the major constructs that sports psychology deals with is the issue of athlete personalities, including parts and manifestations of personalities in a sports context of preparation and competition. Sports psychologists are interested in whether an athlete's personality is distinguished by some specifics that are not inherent to non-athletes, and how the personalities of athletes are different in various sports (e.g. individual vs. group, contact vs. non-contact sports). Large interindividual variations of athlete personalities are possible, even when it comes to just one kind of sport. There are individuals who achieve note-worthy results in comparison to those who are not very successful in the same sporting event. In a large number of variables that can be explained by the personality of athletes, anxiety is among those that are the most important for achieving sports results. A number of researchers agree that anxiety and the ability of an athlete to deal with intense anxiety are the basis for

success in competitive sports, especially at the highest level (Gould, Eklund and Jackson, 1992a, 1992b; Craft, Magyar, Becker and Feltz, 2003). In sports psychology, anxiety is regarded as an unpleasant feeling which usually rises when an athlete starts to doubt his or her own ability to cope with external or internal demands in a certain situation (Woodman and Hardy, 2001). We need to look at anxiety through several different aspects that are closely linked with fear: loss of self-confidence as a result of defeat, a threat to one's personality, unpredictability or fear of the unknown, the fear of disrupting the daily habits, and the fear of negative evaluation by others (Cox, 1994). Spielberger (1999), as one of the leading authors in this field, distinguishes between anxiety as a state and anxiety as a trait. Anxiety as a state is characterized by the subjective experience of tension, fear, nervousness and concern with the arousal of the autonomic nervous system (Spielberger, 1999). In the context of competitive anxiety, Martens et al. (1990) recognize the cognitive and somatic anxiety. Thus, the cognitive state of anxiety is associated with the degree of worry and negative thoughts, while the somatic state of anxiety takes part in the changes observed in the physiological activation that does not derive from activities but from stress.

The interest of researchers to investigate the impact of competitive anxiety stems from a large number of research findings that suggest that anxiety has a negative impact on athletic performance (Martens et al., 1990; Smith, Smoll and Schutz, 1990). We've already said that the ability of athletes to cope with intense anxiety is

the basis for success in competitive sports (Gould, Eklund and Jackson, 1992a, 1992b; according to Craft et al. 2003), One of the major conclusions is presented by Cox (2005), who believes that the manifestation forms of cognitive anxiety, shown through concern and fear, are the main obstacles to sports achievement, and that the state of cognitive connection is negatively correlated with the results achieved. On the other hand, the optimal level of somatic indicators of anxiety is associated with better sports achievements, while the levels that exceed the optimum level contribute to the reduction of achievements (Cox, 2005).

The researchers suggest that there are significant differences in performance and its relationship with anxiety of athletes who train for individual and team sports (Martens et al., 1990; Terry et al., 1996). The number of athletes who play together can reduce the effects of anxiety on performance. Some authors suggest that athletes in individual sports suffer much larger negative effects of anxiety than those in team sports (Martens et al., 1990; Terry et al., 1996). Meta analysis conducted by Craft et al. (2003), which included 29 studies that identified the connection between the competitive anxiety and sports achievement confirms the conclusion that the athletes in individual sports are exposed to the stronger effects of anxiety compared to those in team sports, which is reflected in their sports achievement. On the other hand, there are research findings that are contrary to the above. In fact, Ichraf et al. (2013) found that athletes in team sports show higher levels of both cognitive and somatic anxiety compared to those from individual sports.

Taking into account the inconsistency of research findings, with this study we assume that any differences in the expressed levels of competitive anxiety and self-confidence in a sample of Bosnian and Herzegovinian athletes will be strongly expressed in those coming from individual sports.

## Methods

### Respondents

The sample (N = 38) consisted of basketball players from two Bosnian and Herzegovinian basketball clubs (N = 26; mean age 21) participating in the highest ranked competitions,

and two cycling clubs (N = 12, mean age 23), including competitors who achieve significant results.

### Instruments

- CSAI-2 - Competitive Anxiety Test (Martens et al. 1990)

CSAI-2 is a questionnaire consisting of 27 questions, which measures the level of competitive anxiety using three subscales: cognitive anxiety scale, somatic anxiety scale and self-confidence scale. The questionnaire consists of 27 questions and takes about 5 minutes to complete. For the development of the questionnaire they used factor analysis with varimax rotations on a sample of 242 respondents. The results showed three subscales with 9 items each that best defined cognitive and somatic anxiety, and self-confidence with an internal consistency coefficient between .79 and .90. Items in the questionnaire are four-fold similar to Likert. The CSAI- 2 was marked by counting separately for each of the three subscales, which ranged from 9-36 points. A higher score meant greater cognitive and somatic anxiety, as well as a higher level of self-confidence. The questionnaires in which two or more questions were omitted were considered invalid.

### Description of the measurement conditions

The measurement of competitive anxiety was performed twice: for the first time during the evening practice 1 day (24 hours) before the official game and for the second time 30 minutes before the start of the game (basketball players), and 1 day before the race/competition (24 hours), and 30 minutes before the start of the race (cyclist) for the second time. Both times the respondents filled out a questionnaire in a room where they were so positioned so that they could not see what the other respondents' answers were to some of the questions. This required complete silence.

## RESULTS AND DISCUSSION

Descriptive statistics of the examined variables shown in Table 1 tell us about the severity of the presence of cognitive and somatic anxiety, and confidence levels of the respondents from two tested samples or basketball players and cyclists.

Table 1. Descriptive statistics for the tested variables

		N	M	SD	Min	Max
Cognitive anxiety 24 hours before the competition	team	26	19.12	5.31	9	27
	individual	12	18.25	3.77	12	24
	Total	38	18.84	4.84	9	27
Somatic anxiety 24 hours before the competition	team	26	18.50	4.91	9	32
	individual	12	17.92	2.51	14	22
	Total	38	18.32	4.26	9	32
Self-confidence 24 hours before the competition	team	26	27.77	3.59	22	34
	individual	12	24.42	3.17	19	30
	Total	38	26.71	3.77	19	34
Cognitive anxiety half an hour before the competition	team	26	19.19	5.95	10	28
	individual	12	17.08	3.89	12	23
	Total	38	18.53	5.47	10	28
Somatic anxiety half an hour before the competition	team	26	18.23	5.60	10	29
	individual	12	18.33	1.23	16	20
	Total	38	18.26	4.65	10	29
Self-confidence half an hour before the competition	team	26	27.50	4.19	18	35
	individual	12	24.41	4.76	19	33
	Total	38	26.53	4.55	18	35

For the tested sample of basketball players, it can be said that they have a relatively highly expressed self-confidence, and a moderate presence of both cognitive and somatic anxiety.

On the other hand, the tested cyclists showed the presence of low levels of moderate cognitive and somatic anxiety, and moderate self-confidence in both test situations.

Table 2. One-way analysis of variance for the tested variables in relation to the type of sport

	Source of variability	Sum of squares	df	F	p
Cognitive anxiety 24 hours before the competition	Between group variance	6.15	1	.26	.615
	Within group variance	860.91	36		
	Total	867.05	37		
Somatic anxiety 24 hours before the competition	Between group variance	2.79	1	.15	.701
	Within group variance	669.42	36		
	Total	672.21	37		
Self-confidence 24 hours before the competition	Between group variance	92.28	1	7.66	<b>.009</b>
	Within group variance	433.53	36		
	Total	525.82	37		
Cognitive anxiety half an hour before the competition	Between group variance	36.52	1	1.25	.271
	Within group variance	1052.95	36		
	Total	1089.47	37		
Somatic anxiety half an hour before the competition	Between group variance	.09	1	.004	.951
	Within group variance	801.28	36		
	Total	801.39	37		
Self-confidence half an hour before the competition	Between group variance	78.06	1	4.08	<b>.051</b>
	Within group variance	689.42	36		
	Total	767.47	37		

If we compare the results of the two test situations, certain (expected) changes are visible. In fact, in the time interval of one day before the competition to the period immediately before

the competition we recorded small changes in the tested variables.

On the whole sample (N = 38), the changes are noticeable in the specified time interval, which speaks of a slight decline of intensity of cognitive and somatic anxiety and of a slight decline of self-confidence. The observed changes in value are not statistically significant, so it can be said that the levels of demonstrated cognitive anxiety remain stable in a period of 24 hours before the competition ( $t = -0.15$ ;  $p > 0.05$ ), and the same conclusion can be applied to somatic anxiety ( $t = 0.39$ ;  $p > 0.05$ ) and self-confidence ( $t = 0.47$ ;  $p > 0.05$ ).

When we compare the results for the entire sample of athletes, we can say that they somewhat deviate from the expected changes that were recorded in the reference literature. Specifically, it is expected that there will be a slight increase in cognitive and a somewhat more noticeable increase in somatic anxiety over a period of 24 hours prior to the competition until 30 minutes immediately before the competition (Cox, 2005), which is demonstrated through the increased somatisation (e.g., accelerated pulse, respiratory and digestive problems, and concentration difficulty), and reinforced fear of potential failure, lower self-confidence, etc. In our sample changes in the intensity of these symptoms remain the same in the specified time interval, which indirectly speaks of the developed mechanisms to cope with the stress caused by a sports competition. Maintaining a stable level of cognitive anxiety in terms of moderately expressed anxiety contributes to achieving potentially better sporting achievements because cognitive anxiety and sporting achievement are negatively and linearly related (Burton, 1988; Gould et al., 1987 according to Cox, 2005), therefore for this type of anxiety the statement that "little" anxiety is desirable is not true, and it can be said that it interferes with the achievement.

On the other hand, maintaining the same level of somatic anxiety (assuming an optimal level necessary for a good performance is reached, and moderate somatic anxiety is the optimal level) supports a finding on the developed mechanisms to cope with competitive pressure. The reasons for the above mechanisms can be found in the fact that the tested athletes have a long exposure to the training and competition process behind them, and a relatively less important competition before which they were tested. What our findings lack, and what would further support certain conclusions is the lack of information on the shown achievement in the competition before which any testing was done. To some extent, this goes beyond a paper set up in this manner, but nevertheless deserves full attention in future studies.

In this paper, we were most interested in the potential differences in the demonstrated levels of cognitive and somatic anxiety, and self-confidence in relation to the type of sport that the respondents train for. After analyzing the obtained results, we can point out that our findings are aligned with the ascertainment on inconsistency of conclusions of similar studies. Based on the previous research, we assumed that athletes from individual sports would exhibit more pronounced indicators of cognitive and somatic anxiety, but this assumption was not confirmed. On our tested albeit small sample of basketball players and cyclists, we found categorical (moderate level of anxiety) and statistically consistent levels of cognitive and somatic anxiety (Table 2), as well as significantly higher level of self-confidence of basketball players in both testing periods (24 hours and half an hour before the competition). In relation to the presented conclusions from the earlier studies, we can conclude that our results differ from those results which suggest that athletes from individual sports show significant levels of anxiety (Martens et al., 1990; Terry et al., 1996; Craft et al. 2003) as well as from those who point out that these differences "benefit" the team sport athletes (Johnson, 2004; Ichraf et al. (2013). The absence of significant differences can largely be attributed to the size of the sample because the majority of the demonstrated tendencies would likely have been significant on larger samples. The results obtained in this manner suggest a strong similarity in the levels of demonstrated anxiety types in basketball players and cyclists, so in terms of our sample we cannot talk about the type of sport as a relevant factor for predicting the severity of cognitive and somatic anxiety. On the other hand, the results obtained on the self-confidence test are somewhat surprising. Basketball players showed relatively high self-confidence 24 hours before the competition, and half an hour before the competition to the extent that it was considerably higher than the self-confidence expressed by the cyclists. This result is quite different from the results of research conducted by Roger et al. (1993), Johnson, 2004, and Ichran et al. (2013). These researchers found that the self-confidence of athletes from individual sports was higher than those that come from team sports, and they were also less anxious. In our case, if we ignore the statistical relevance of the differences, the athletes from team sports show higher anxiety and more self-confidence, which is likely to rely on the possibility of "distribution" of responsibility during the competition, which in individual sports is excluded as an option. On the other hand, self-confidence is based on the self image which is largely built on the basis of

evaluation of people who are important to us, referring to the success based on the inner (inherent) reasons while attributing failure to the external circumstances. The possibility of building the self-confidence observed in this manner is higher in athletes from team sports, who can easily alleviate and mitigate the perceived failure because team results do not depend solely on one player, as opposed to athletes from individual sports who can hardly attribute their own failure or unclaimed achievement to the factors that are not under their control.

## Conclusion

The results of the conducted study on a small and convenient sample mostly speak of the absence of significant differences in the expression of cognitive and somatic anxiety in relation to the type of sport they train for, and of a significantly higher level of self-confidence shown by the basketball players. These findings relate to both situations in which the test was conducted, 24 hours before the competition, and half an hour before the competition, and the findings should be attributed to the sample without any major generalization because of the characteristics of the sample itself.

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