STUDIA UBB EDUCATIO ARTIS GYMN., LXVII, 4, 2022, pp. 75-81
(RECOMMENDED CITATION)
DOI:10.24193/subbeag.67(4).35

STUDY ON THE RELATIONSHIP BETWEEN GENDER AND ANXIETY IN TEAM SPORTS GAMES

DATCU Francisc Remus[1], BRÎNDESCU Sorin[1], DOMOKOS Martin Petru[1], PETRACOVSCHI Simona[1,*]

Received 2022 October 09; Revised 2022 November 22; Accepted 2022 December 06; Available online 2023 March 10; Available print 2023 March 30.

ABSTRACT. This study aimed to identify possible differences in competitive anxiety and whether there is gender variability. **Methods**: The study included a total of 118 female and male athletes aged 13-24 years from 3 sports: 62 football athletes (16-female; 46-male), 33 basketball athletes (16-female; 17-male) and 23 volleyball athletes (15-female; 8-male). All 3 groups were subjected to an assessment aimed at state anxiety The following questionnaire was used for this assessment: Questionnaire for the identification of competitive state anxiety. **Hypothesis:** There are statistically significant differences in anxiety levels (cognitive and somatic) between athletes in the three sports involved in the research (football, basketball and volleyball). This study's results show statistically significant differences in competitive state anxiety among the study group, both genders and between the three categories of athletes (football, basketball, volleyball). Male subjects in this study tend to score higher to lower on competitive anxiety compared to female subjects. Football players have lower levels of competitive state anxiety. **Conclusions:** There are differences in anxiety levels (cognitive and somatic).

Keywords: *competitive state anxiety, cognitive anxiety, somatic anxiety*

Introduction

The study of anxiety is a frequently explored area in sport psychology due to the influence of emotions on sport performance. Athletes want to both meet the demands of competition and perform optimally under pressure (Thomas et al.,

[1] *Universitatea de Vest din Timişoara, Vasile Pârvan nr.4, Timişoara, 300223, România*
[*] *Corresponding author: simona.petracovschi@e-uvt.ro*

2004). But depending on certain individual characteristics such as personality type, and type of motivation (external or internal) it is possible that each individual perceives the pressure of competition differently and reacts differently to it (Ntoumanis et al., 2000). Lazarus (2000) goes further and makes a direct link between the intensity of pressure and emotions and the value goals at stake. The multidimensional theory of anxiety developed by Martens et al. (1990) suggests that anxiety consists of two subcomponents: cognitive anxiety and somatic anxiety. "Stress is the process that involves the perception of a substantial imbalance between environmental demand and response capabilities, were, failure to meet demands is perceived to have significant consequences and personal response is, an increased level of cognitive and somatic anxiety" (Martens, Vealey & Burton, 1990, p. 10).

The existing literature examining directional perceptions of symptoms associated with competitive anxiety suggests several areas that require further investigation. First, situation and individual difference variables such as sport type and competitive experience have only been examined in isolation with no investigation of the potential influence of the interaction of such variables upon the anxiety- and competition-related symptoms (Jones, 1995; Hanton et al., 2002c).

Second, no studies have empirically examined how the level of competitive experience of the participant in their respective sport may effect the direction of the anxiety response, particularly in an elite or professional sport context (Mellalieu et al., 2004).

Research objective

To identify differences in competitive state anxiety in the three categories of athletes (football, basketball and volleyball) studied and to explore possible correlations between competitive state anxiety and sport.

Materials and Methods

The study included a total of 118 athletes aged between 13 and 24, both female and male, from 3 sports and divided according to the table below:

Table 1. Percentage distribution of subjects according to gender and sport practiced

Sport	Female gender	Male gender	Percentage/sport
Football	16	46	53%
Basketball	16	17	28%
Volleyball	15	8	19%
Distribution			
By genders	40%	60%	100%

Competitive State Anxiety Questionnaire

This questionnaire was developed by Vealey, Bump and Smith (1983) having a total of 18 items with a scale from 1 to 4 (1=Not at all; 4=Very much), being divided into 2 subscales, cognitive anxiety and somatic anxiety, both having 9 items each.

The statements are like:" When I compete, I'm afraid of making mistakes; Before a competition, I worry/worry that I might not perform well; Before a competition, I feel nauseous in my stomach; Just before a competition, I notice that my heart is beating faster than usual; I get nervous waiting for the game to start."

The score for each item is as follows: 0 for never, 1 for rarely, 2 for sometimes and 3 for often. Some items receive 0 regardless of the answer given (they are not scored): 1, 4, 7, 10 and 13. Some examples of unscored items would be:" Competing against others is socially enjoyable; Setting a goal is a very important step when you compete. Team games are more exciting than individual sports. "The total score obtained is interpreted as follows: a value of less than 17 is equivalent to a low level of anxiety; a value between 17 and 24 is equivalent to a medium level of anxiety; a value greater than 24 represents a high level of anxiety.

Results

There are statistically significant differences in the level of anxiety (cognitive and somatic) between athletes in the three sports involved in the research (football, basketball, volleyball).

There are only partially statistically significant differences, as we obtained highly significant differences only for **cognitive anxiety** (sig.=.000) but not for **somatic anxiety** (sig.=.158), using the questionnaire for competitive state anxiety (cognitive anxiety and somatic anxiety).

Table 2. Differences between the three categories of athletes in terms of competitive state anxiety

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Anx. cognitive	Between Groups	647.784	2	323.892	9.100	.000
	Within Groups	4093.140	115	35.593		
	Total	4740.924	117			
Anx. somatic	Between Groups	124.539	2	62.269	1.878	.158
	Within Groups	3813.054	115	33.157		
	Total	3937.593	117			

The results of the comparisons between the groups of athletes are presented in Table 3, where we can see that the significant differences observed in Table 2 (ANOVA test results) are found in terms of cognitive anxiety between the group of footballers and basketball players (mean difference of -3.6; significance level of .017), but also between footballers and volleyball players (mean difference of -5.7; high statistical significance = .000). These differences are not observed between basketball players and volleyball players (sig.=.48).

Table 3. Differences between the 3 groups of athletes in terms of the parameters analysed.
Multiple Comparisons

			Hochberg				
Dependent Variable	**(I) sport_ type**	**(J) sport_ type**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
						Lower Bound	**Upper Bound**
Anx. cognitive	football	basketball	-3.61193*	1.28555	.017	-6.7252	-.4987
		volleyball	-5.70547*	1.45656	.000	-9.2329	-2.1781
	basketball	football	3.61193*	1.28555	.017	.4987	6.7252
		volleyball	-2.09354	1.62051	.484	-6.0180	1.8309
	Volleyball	football	5.70547*	1.45656	.000	2.1781	9.2329
		basket	2.09354	1.62051	.484	-1.8309	6.0180
Anx. somatic	football	basketball	-2.21750	1.24079	.211	-5.2224	.7874
		volleyball	-1.77349	1.40584	.504	-5.1781	1.6311
	basketball	football	2.21750	1.24079	.211	-.7874	5.2224
		volleyball	.44401	1.56409	.989	-3.3438	4.2318
	volleyball	football	1.77349	1.40584	.504	-1.6311	5.1781
		basketball	-.44401	1.56409	.989	-4.2318	3.3438

Thus, we can observe higher state of cognitive anxiety in volleyball and basketball players compared to football players.

Table 4. t-test. Comparative analysis of competitive state anxiety by gender.
Assessment of gender differences in competitive state anxiety

	gender	N	Mean	Std. Deviation	Std. Error Mean
Anx. cognitive	female	47	24.0426	6.27610	.91546
	male	71	17.3662	4.88215	.57940
Anx. somatic	female	47	20.6596	6.49507	.94740
	male	71	15.6197	4.27406	.50724

In Table 5, which systematically presents the significant results, the female population can observe higher cognitive and somatic anxiety scores.

Table 5. Significant gender differences in competitive state anxiety

	Female gender (mean±dev.st.)	Male gender (mean±dev.st.)	Difference between averages	Statistical significance (sig.2-tailed)
Cognitive anxiety	24.04±6.28	17.37±4.88	6.68	.000
Somatic anxiety	20.66 ±6.49	15.62±4.27	5.04	.000

Discussion

An important aspect in studying competitive state anxiety has been the direction in which it is used by athletes. As the literature shows, competitive state anxiety can be used on a continuum from facilitative to debilitating (Raglin & Hanin, 2000).

In this sense, we wanted to look for those factors that can move competitive state anxiety along the facilitator-debilitator axis (Grossbard et al., 2009).

The results of the meta-analyses clearly show that the relationship between anxiety and sports performance is a complex issue, especially as it is moderated by person, situation and task characteristics (Kleine 2007).

Interesting to note in the dynamics of the research, but also in the interest of this is how sport performance is articulated about self-confidence and cognitive anxiety. Woodman T., Hardy L. (2011) show that both sets of magnitudes of effect (cognitive anxiety and self-confidence) are heterogeneous. Although previous research has shown that, compared to men, women report higher cognitive anxiety (apud. Martens et al., 1990; apud. Russell et al., 1998), lower self-confidence (apud. Martens et al., 1990; apud. Jones et al., 1991; apud. Krane and Williams, 1994) and less stability before the competition (apud. Jones and Cale, 1989; Jones et al., 1991), thus findings do not explain why cognitive anxiety and self-confidence should be more related to performance for both sexes. Differences in mean effect sizes between genders suggest that pre-competition cognitive anxiety and self-confidence have an impact greater on subsequent performance for males than females.

Interpreting our results in the context of the literature we can observe both similarities and discrepancies. As far as similarities are concerned, we can mention that we find the presence of competitive state anxiety in our study as well.

The same is true for gender differences, where other researchers also detect statistically significant differences between women and men. Women and male athletes in individual sports show higher levels of competitive anxiety (Correia, 2019).

Conclusions

In conclusion, analyzing the results of the study about the research hypothesis we can say that: The hypothesis that there are statistically significant differences in the level of anxiety (cognitive and somatic) between athletes in the three sports involved in the research (football, basketball, volleyball) is partially confirmed because the differences are only significant between footballers and basketball players and between footballers and volleyball players respectively. No significant differences were found between basketball and volleyball groups.

The existence of differences between female and male athletes in anxiety levels (cognitive and somatic) was confirmed. Therefore, we can say that our results support the literature and constitute further evidence that competitive anxiety is experienced differently depending on gender and sport.

REFERENCES

Cashmore, E. (2008). Sport and Exercise Psychology: The Key Concepts. London and New York: Routledge, *Taylor and Francis Group*, p. 35.

Correia, M., & Rosado, A. (2019). Anxiety in athletes: Gender and type of sport differences. *International Journal of Psychological Research*, 12(1), 9-17.

Cox, R. H., Martens, M. P., & Russell, W. D. (2003). Measuring anxiety in athletics: The revised competitive state anxiety inventory-2. *Journal of Sport and Exercise Psychology*, 25(4), 519-533.

Creswell, J. W. (2010). Mapping the developing landscape of mixed methods research. *SAGE handbook of mixed methods in social & behavioral research*, 2, 45-68.

Patel, D. R., Omar, H., & Terry, M. (2010). Sport-related performance anxiety in young female athletes. *Journal of pediatric and adolescent gynecology*, 23(6), 325-335.

Dosil J. (2006). Psychological interventions with football (soccer) teams: *The sport psychologist's handbook: A guide for sport-specific performance enhancement* (Chichester, UK: John Wiley & Sons;), 139-158.

Kleine, Dietmar (1990). Anxiety and sport performance: A meta-analysis, *Anxiety Research*, 2:2, 113-131, Doi: 10.1080/08917779008249330.

Krane, V., & Williams, J. M. (1994). Cognitive anxiety, somatic anxiety, and confidence in track and field athletes: The impact of gender, competitive level and task characteristics. *International Journal of Sport Psychology.*

Kusuma, D. W. Y., & Bin, W. (2017). Effect of yoga program on mental health: competitive anxiety in Semarang badminton athletes. KEMAS: *Jurnal Kesehatan Masyarakat*, 13(1), 121-130.

Gardner, F. L., & Moore. Z. E. (2004). A mindfulness acceptance-commitment-based approach to athletic performance enhancement: Theoretical considerations. *Behavior Therapy*, 35, 707-723.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26-42.

Grossbard, J. R., Smith, R. E., Smoll, F. L., & Cumming, S. P. (2009). Competitive anxiety in young athletes: Differentiating somatic anxiety, worry, and concentration disruption. *Anxiety, Stress, & Coping*, 22(2), 153-166.

Martens, R., Vealey, R. S., & Burton, D. (1990a). Competitive anxiety in sport. Champaign, IL: *Human Kinetics.*

Martens, R., Burton, D., Vealey, R.S., Bump, L.A., & Smith, D.E. (1990b). Development and validation of the Competitive State Anxiety Inventory-2 (CSAI-2). In R. Martens, R.S. Vealey, & D. Burton (Eds.), Competitive anxiety in sport (pp. 193-208). Champaign, *IL: Human Kinetics.*

Mellalieu, S. D., Hanton, S., & O'Brien, M. (2004). Intensity and direction of competitive anxiety as a function of sport type and experience. *Scandinavian journal of medicine & science in sports*, *14*(5), 326-334.

Ntoumanis, N., & Biddle, S. J. (2000). Relationship of intensity and direction of competitive anxiety with coping strategies. *The Sport Psychologist*, *14*(4), 360-371.

Raglin, J. S., & Hanin, Y. L. (2000). Competitive anxiety*. Emotions in sport*, 93-111.

Russell, W. D., Robb, M., & Cox, R. H. (1998). Sex, sport, situation, and competitive state anxiety. *Perceptual and Motor Skills*, 86(3), 816-818.

Thomas, O., Maynard, I., & Hanton, S. (2004). Temporal aspects of competitive anxiety and self-confidence as a function of anxiety perceptions. *The Sport Psychologist*, 18(2), 172-187.

Woodman, T. I. M., & Hardy, L. E. W. (2001). The relative impact of cognitive anxiety and self-confidence upon sport performance: A meta-analysis. *Journal of sports sciences*, 21(6), 443-457.