



## A comparative study of anxiety among sportspersons of different gender and sports

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### Abstract

Sport is a social event and as such is influenced by the many psychological factors affecting sports performance, and competitive anxiety is one such factor. This study aimed to investigate competitive anxiety levels of athletes in relation to gender and types of sport participated. The Sport Anxiety Scale-2 questionnaire was used to collect data from subjects, which was constructed and developed by Smith *et al.* [1]. Seven hundred sports persons who participated at inter-university and state level competitions were sampled from both genders (350 males and 350 females). The type of sports was categorized into team sports (hockey, football and basketball), indigenous sports (kabaddi and kho kho), individual sports (athletics) and combat sports (wrestling). To examine the hypothesis of the study, descriptive statistics such as mean, standard deviation, ANOVA, and comparative statistics such as multivariate and univariate analysis of variance were applied. The study indicated that females showed significantly greater somatic anxiety and worry than their male counterparts; individual sport exhibited the least anxiety in all the subscales and combat sport showed higher anxiety in somatic and concentration disruption subscales. Indigenous games also showed significant amount of worry. This research confirms many previous studies that females are more predisposed to competitive anxiety while it contradicts notions that individual sport exhibits the highest levels of competitive anxiety.

**Keywords:** Competitive anxiety, gender, team sports, combat sports, indigenous sports

### Introduction

Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure. Competition anxiety is an emotional response, which is detrimental to sports performance, and caused by various factors related to the competition environment. It is an inhibitory emotional which occurs in reaction to the stressors arising from competition factors before and during sports performance [2].

Athletes have been subjected to numerous studies related to anxiety and its effect on performance [3]. One of the principle psychological factors having a significant negative impact on performance is considered to be anxiety [4]. Anxiety is a complex negative emotion with a variety of cognitive, physiological and behavioural symptoms [4]. Numerous studies have been conducted on anxiety with athletes as the centrepiece of investigation [3] since anxiety has proven to be the single most psychological attribute causing a debilitating effect on performance [4]. It is assumed that athletes subjected to anxiety causes deterioration of abilities influencing performance, thereby resulting in sub-par performance [5, 6]. Therefore, it is inevitable that competitive anxiety has been on the receiving end of constant attention.

Hann (2000) is of the opinion that anxiety is considered as the most crucial factor among all the other psychological factors affecting sports performance, which explains why so much research has concentrated on stress and anxiety in athletes. The two types of anxiety studied are state and trait anxiety. State anxiety has been said to be the “anxiety intensity at a given time,” whereas trait anxiety is said to be “an individual’s general tendency to experience elevations in state anxiety when exposed to stressors” [7]. Research has shown that “some individuals can tolerate a wide range of anxiety intensity before experiencing a decline in

performance, whereas others perform best only when anxiety lies within a very narrow range” [7]. Research has shown that too much anxiety can negatively affect an athlete’s sport performance, but if the amount of anxiety is within the athletes ZOF then the results will be positive [7].

Many studies have established the differences in competitive anxiety between gender and sport types. A study conducted in Portugal reported that females experienced greater anxiety than males [8], while another study highlighted that individual sport exhibited higher level of anxiety than team sport athletes [4, 8]. Anxiety is also a commonly occurring issue in combat sports due to its aggressive nature and significant effects on sports performance. It is frequently occurring subject of study within combat sporting competitions. Therefore, due to its increased effects on competition performance within combat sports, rigorous research is required to determine its influence on sports performance [9, 10].

This study will help to document the anxiety experienced by sportspersons of different sports. It would also give insights into differences in anxiety as experienced by sportspersons of different genders and sport types.

### Material and Methods

#### Selection of subjects

The present study is aimed at comparing the anxiety among sportspersons of different sports. For the purpose of data collection, total 700 sportspersons in the age group of 17–25 years were selected from both genders (350 males and 350 females). The subjects were delimited to individual sports like Athletics, Wrestling, and team sports like Kabaddi, Kho-Kho, Basketball, Football and Hockey. The subjects were accomplished sportspersons from sports hostels and Associations in Karnataka and had participated in university and state level competitions.

**Tool of Study:** The Sport Anxiety Scale-2 questionnaire was used to collect the data from subjects, which was constructed and developed by Smith *et al.*<sup>[1]</sup>. This scale is a multidimensional measure of trait anxiety and is intended to measure individual differences in cognitive and somatic anxiety experienced by athletes. It is comprising of twenty-one items aimed at obtaining the most likely responses to competition induced situations. This questionnaire procures a total score for all the 21 items as well as for the three distinct subscales: (a) somatic anxiety (nine items); (b) worry (seven items); and (c) concentration disruption (five items). The ratings are based on a four-point scale that ranges from (1) Not at all to (4) Very much so, on performance situations before and during the competition, which the respondents face. The score for each subscale is obtained by adding the respective items in each subscale and the total score is computed by summing up the scores of all three subscales. The Sport Anxiety Scale scores range between 9 and 36 for somatic anxiety subscale, 7 and 28 for worry scale and between 5 and 20 for concentration disruption scale<sup>[8]</sup>.

**Data collection Procedure**

The subjects were selected from various sports hostels and academies. The purpose of the study was explained to them and the questionnaire was administered. Confidentiality was assured. The researcher provided sufficient time to provide the opinion. The questionnaire was translated to Kannada and administered in both Kannada and English to add clarity to the participants not adept in English.

**Statistical analysis**

To examine the hypothesis of the study, descriptive statistics was used to describe the basic characteristics of data. Further, with the objective of examining the level of anxiety in three different parameters across gender and type of sport the subjects were categorized as (a) gender: male (n=350) and female (n=350) and (b) type of sport: team (n=300), indigenous (n=200), individual (n=100) and combat (n=100). The data was analyzed using Statistical Package for Social Science (SPSS 20.0). ANOVA and post hoc analysis were carried out to determine whether there was a significant difference in the anxiety parameters between the groups characterized by gender and sport types.

**Results**

The mean and standard deviation for all the subjects is reported in table 1.

**Table 1:** Descriptive Statistics of the anxiety variable of all the subjects

Anxiety variables	N	Mean	Std. Deviation
Somatic Anxiety	700	2.1054	0.48
Worry	700	2.2263	0.56
Concentration Disruption	700	1.985	0.54

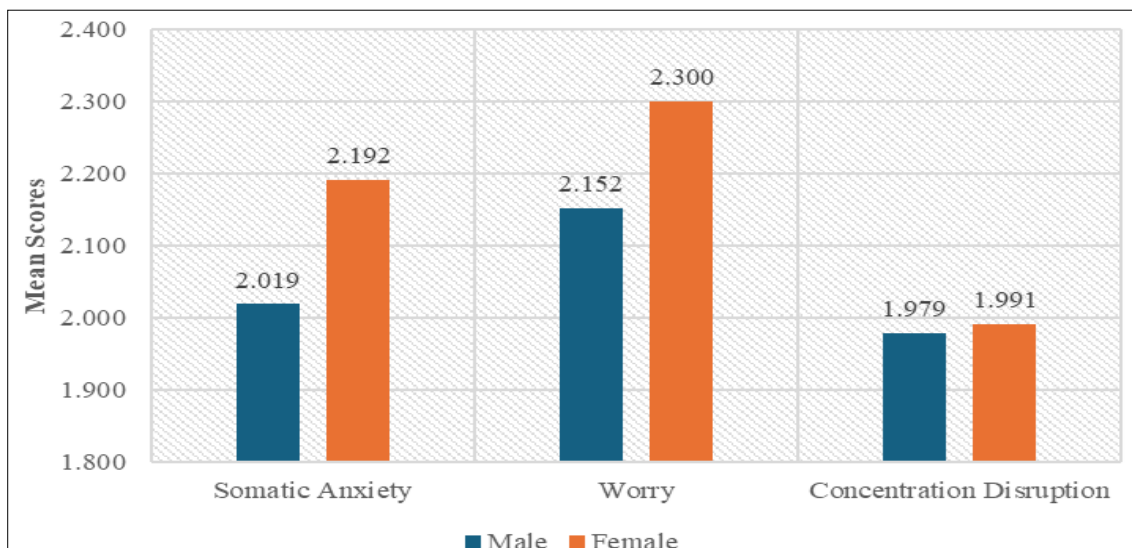
Table 1 indicates the mean values of anxiety variables of all the subjects. Competition anxiety has been measured in three subscales, namely, Somatic anxiety, worry and concentration disruption. Worry has shown to be the highest influencing subscale while concentration disruption is indicated as the lowest affecting anxiety subscale.

**Table 2:** Descriptive Statistics of the anxiety variable gender-wise

Anxiety variables	Gender	N	Mean	Std. Deviation	P value (Sig)
Somatic Anxiety	Male	350	2.019	0.46	P<0.01 (HS)
	Female	350	2.192	0.50	
Worry	Male	350	2.152	0.58	P<0.01 (HS)
	Female	350	2.300	0.54	
Concentration Disruption	Male	350	1.979	0.54	P=0.787>0.05 (NS)
	Female	350	1.991	0.55	

HS: Highly significant, NS: Not Significant

From Independent sample t test, it is evident that there is significant difference in the somatic anxiety and worry scale between male and female sportspersons at 1% level of significance as p value is less than 0.01 but no difference in the Concentration Disruption Scale between male and female sportspersons (Table 2). But as far as Somatic Anxiety and worry are concerned on an average it is high among female sports personal than male (Figure 1). This shows that females have a greater tendency to show physically anxious symptoms and to worry about the ensuing situations. There is no significant difference in concentration disruption, which would indicate that though females are more worried and anxious, they manage to maintain their concentration.



**Fig 1:** Anxiety subscale values gender-wise

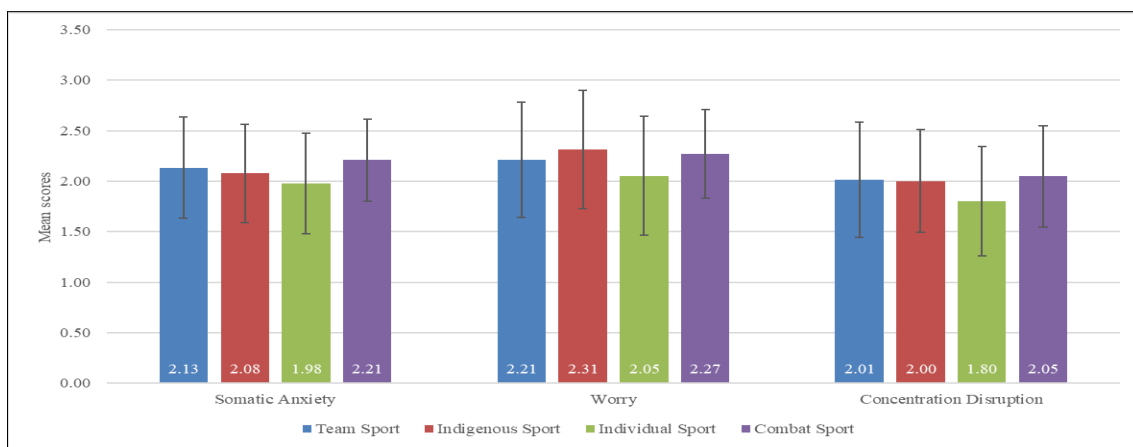
**Table 3:** Descriptive Statistics of the anxiety variable between sport types

Anxiety variables	Sport Type	N	Mean	Std. Deviation	P value
Somatic Anxiety	Team Sport	300	2.13	0.50	.005**
	Indigenous Sport	200	2.08	0.49	
	Individual Sport	100	1.98	0.50	
	Combat Sport	100	2.21	0.41	
Worry	Team Sport	300	2.21	0.57	.003**
	Indigenous Sport	200	2.31	0.58	
	Individual Sport	100	2.05	0.59	
	Combat Sport	100	2.27	0.44	
Concentration Disruption	Team Sport	300	2.01	0.57	.003**
	Indigenous Sport	200	2.00	0.51	
	Individual Sport	100	1.80	0.54	
	Combat Sport	100	2.05	0.50	

\*\* - Significant at 1% level of significance

Sport types have been classified as team sports like hockey, football and basketball, indigenous sports like kabaddi and kho kho, individual sport like athletics and combat sports

like wrestling. Table 3 shows the mean values of the three anxiety scales namely somatic anxiety, worry and concentration disruption for all the sport types (Figure 2).



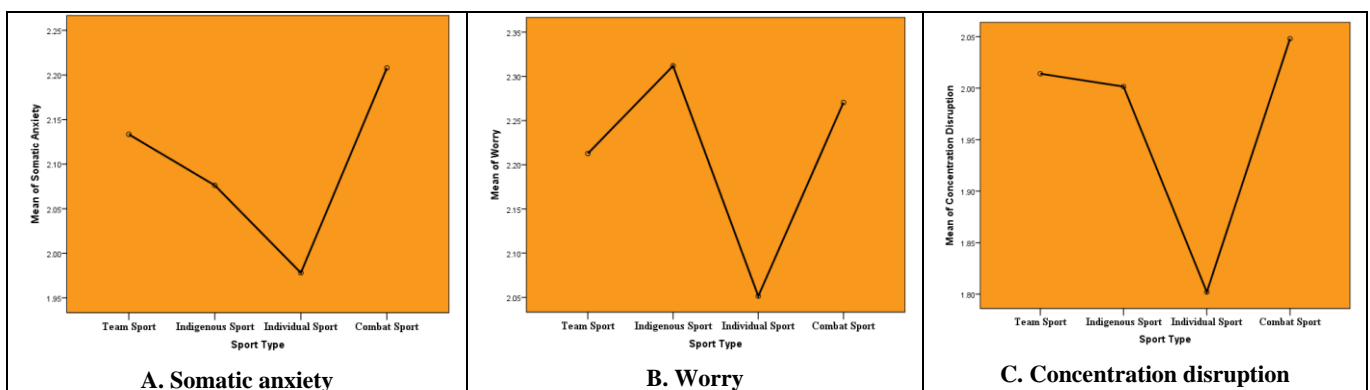
**Fig 2:** Level of Competitive anxiety between sport types

Individual sports show less anxiety than all the other sport categories in all the three anxiety scales. Combat sports show highest anxiety in somatic and concentration disruption. This could be due to the physical nature of the sport combined with its individualistic nature. Team sport and indigenous sport show similar anxiety in somatic and concentration disruption. It can be assumed that this could be because team sports provide camaraderie among the teammates, the anxiety is shared among all and there is a shoulder to lean on. Indigenous games also being team in nature show similar characteristics, except for worry where the indigenous sport is the highest. This could be due to the less fan following and flamboyancy of the sport.

From Levenes Test for homogeneity of variance we can observe that groups are homogeneous for Concentration Disruption and somatic anxiety as p value is greater than 0.05 and hence ANOVA is applied but for Worry p value is less than 0.05 and hence groups are not homogeneous, so Weich ANOVA is applied.

From ANOVA it is evident that there exists a significant difference in anxiety scales between sports personals of various sport types as p values are less than 0.01 and hence type of sports have significant impact on the level of anxiety (Table 3).

**Post Hoc Analysis**



**Fig 3:** A-C. Post hoc means plot anxiety subscales between various sport types

Figures 3 A-C indicates the post hoc analysis of the anxiety between different team sports. From Post Hoc Analysis Means Plot one can observe that as far as Somatic Anxiety is concerned there exists two groups based on sport types (Figure 3A). One group consists of Indigenous and Individual sport who are at very low level of Somatic Anxiety scale and the second group who are in Team sport and Combat sport are at high level of Somatic Anxiety scale. There is significant difference in somatic anxiety between indigenous, individual and team, combat while there is no significant difference between indigenous and individual, team and combat.

From Figure 3B one can observe that as far as Worry is concerned there exists two groups based on sport types. One group consists of Individual sport who are at very low level of Worry scale and the second group who are in Indigenous, Team sport and Combat sport are at high level of Worry scale. There is no significant difference between indigenous, team and combat sport, while individual sport shows significant difference from all the other three sport categories.

Figure 3C portrays that as far as Concentration Disruption is concerned there exists two groups based on sport types. One group consists of Individual sport who are at very low level of Concentration Disruption scale and the second group who are in Indigenous Sport, Team sport and Combat sport are at high level of Concentration Disruption scale. As in the worry scale, in concentration disruption scale also, there is no significant difference between indigenous, team and combat sport, while individual sport shows significant difference from all the other three sport categories.

## Discussion

Anxiety is a common element in the challenges of day to day living in society, of which sport is a very important and engaging phenomenon. Sport performance and experience has numerous interdependent factors of which gender and sport types are a few. Many studies have reported that anxiety in competition is influenced by gender and type of sport<sup>[4]</sup>.

A study conducted with Portuguese sports persons indicated that female athletes experienced a higher level of cognitive and somatic anxiety<sup>[8]</sup> while some studies found that females had significant difference in worry subscale only<sup>[11]</sup>.

There have been contradictory findings in some studies regarding the effect that type of sport has on competitive anxiety. While Martens *et al.* and Dias *et al.* reported a higher level of anxiety especially worry and somatic subscales in athletes of individual sport<sup>[10, 6]</sup>, O'Donoghue and Neil and Hanton *et al.* found on differences in competitive anxiety between athletes of team sports and individual sports<sup>[12, 13]</sup>.

Gender based analysis of anxiety shows that women sportspersons exhibit a higher level of general sports anxiety. An analysis of each of the competitive anxiety subscales reveals that females had an increase in somatic anxiety and concentration disruption at a significant level. This is indicative of higher levels of anxiety in female sportspersons when compared to men. These results agree with findings of previous research<sup>[4, 14]</sup>.

An analysis of sport types having an influence on the levels of competitive anxiety, it is found that individual sport

athletes display higher levels of general sport anxiety. Several studies conveyed that athletes of individual sports tend to experience more competitive anxiety when compared to team sports athletes<sup>[15, 16]</sup>. This could indicate that due to the nature of the sport, individual sports athlete experiences the pressures of competition expectations alone, thereby magnifying anxiety symptoms<sup>[17]</sup>. However, the worry subscale exhibited conflicting findings where individual sports athletes showed significantly lower values than team sports. This leads to the assumption that this could be due to the opportunity for sharing feelings in team sports, that the athletes express worry more freely than in individual sports. This could be exemplified in the findings. In line with the results reported from study by Martens *et al.*<sup>[4]</sup>, this study highlights the finding that females are significantly greater affected by somatic anxiety and worry subscales while there is in significant difference in concentration disruption. In accordance with the observation and experience of the investigator, this difference could be pinned to the fact that women in India are not given the same opportunities for sports as men, and therefore, they enjoy less social and emotional support than males. Since the number of samples are reasonably large, this study could be throwing an important truth in sports scenario in Indian conditions.

This study has taken four categories of types of sport and each category has its own characteristics. Though team sports and indigenous sports overlap in the feature of team characteristic, the categorisation is based on Olympic team sports and indigenous sports as this would represent a different category of sports persons. This study reported that in all the subscales of competitive anxiety, athletes of individual sports reported significantly lesser anxiety than the team, indigenous and combat sport athletes. This could be due to the fact that individual athletes require more preparation and train themselves to be independent due to the nature of their sport i.e. athletics. This would possibly explain their low level of anxiety compared to other categories. Combat sports report significantly higher somatic anxiety and approximately similar worry to indigenous athletes. The three categories of type of sport namely, team, indigenous and individual sport are similar in concentration disruption subscale.

Though this study throws important insights into the performance factors an athlete, it is not without its limitations, since this study depends extensively on the responses of the athletes. The number of samples are not equal to all the sport, and only athletics is considered for considering data in individual sport. This could have some influence on the findings and interpretation of the data. Notwithstanding such limitations, this study does reveal vital information as to the mental pressure with regards to gender.

## Conclusion

Psychological disposition is affected by a plethora of factors, and tradition, culture, societal rules would be some of the important ones. Sport being a societal phenomenon would certainly be affected by these factors/ Therefore in this study sheds light on the psychological influence on sports competition anxiety in an Indian setting. The culture, traditions, societal and academic pressures, sports infrastructure would certainly affect the mental state of

mind of athletes. Indigenous games followed mostly by rural population, would certainly get affected not only by the demands of the sport, but also by the popularity and encouragement that the sport derives.

This study initiates a train of thought into the psychological aspects of competition between males and females and also between sport types. Sports anxiety is also determined by many interpersonal factors such as academic demands, peer pressure, parental support, therefore future studies could be ventured into in these areas. This study could correlate the performance and anxiety, therefore provide insight into the measures that could be taken to channelise the anxiety levels constructively resulting in optimum performance.

## References

1. Smith RE, Smoll FL, Cumming SP, Grossbard JR. Measurement of multidimensional sport performance anxiety in children and adults: The Sport Anxiety Scale-2. *J Sport Exerc Psychol*,2006;28(4):479-501. doi:10.1123/jsep.28.4.479.
2. Mellalieu SD, Neil R, Hanton S. Self-confidence as a mediator of the relationship between competitive anxiety intensity and interpretation. *Res Q Exerc Sport*,2006;77(3):263-270. doi:10.1080/02701367.2006.10599359.
3. Sewell D, Edmondson A. Relationships between field position and pre-match competitive state anxiety in soccer and field hockey. *Int J Sport Psychol*,1996;27(2):159-172.
4. Martens R, Vealey RS, Burton D. *Competitive anxiety in sport*. Champaign, IL: Human Kinetics, 1990.
5. Weinberg RS, Gould D. *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics, 2010.
6. Raglin JS, Hanin YL. Competitive anxiety. In: Hanin YL, editor. *Emotions in Sport*. Champaign, IL: Human Kinetics, 2000, 229-243.
7. Hanin YL. *Emotions in sports*. Champaign, IL: Human Kinetics, 2000.
8. Dias C, Cruz J, Fonseca A. Coping strategies, multidimensional competitive anxiety and cognitive threat appraisal: Differences across sex, age, and type of sport. *Serb J Sport Sci*,2010;4(1):23-31.
9. Friesen A, Lane A, Galloway S, Stanley D, Nevill A, Ruiz MC. Coach-athlete perceived congruence between actual and desired emotions in karate competition and training. *J Appl Sport Psychol*,2018;30(3):288-299. doi:10.1080/10413200.2017.1388302.
10. Maloney MA, Renshaw I, Headrick J, Martin DT, Farrow D. Taekwondo fighting in training does not simulate the affective and cognitive demands of competition: Implications for behavior and transfer. *Front Psychol*,2018;9:25. doi:10.3389/fpsyg.2018.00025.
11. Ramis Y, Viladrich C, Sousa C, Jannes C. Exploring the factorial structure of the Sport Anxiety Scale-2: Invariance across language, gender, age, and type of sport. *Psicothema*,2015;27(2):174-181. doi:10.7334/psicothema2014.263.
12. O'Donoghue P, Neil R. Relative age effect on behavioural regulation, burnout potential, and anxiety of sports students. *Eur J Hum Mov*,2015;35:1-11.
13. Hanton S, Neil R, Mellalieu SD, Fletcher D. Competitive experience and performance status: An investigation into multidimensional anxiety and coping. *Eur J Sport Sci*,2008;8(3):143-152. doi:10.1080/17461390801987984.
14. Clifton RT, Gill DL. Gender differences in self-confidence on a feminine-typed task. *J Sport Exerc Psychol*,1994;16(2):150-162. doi:10.1123/jsep.16.2.150.
15. Terry PC, Cox JA, Lane AM, Karageorghis CI. Measures of anxiety among tennis players in singles and doubles matches. *Percept Mot Skills*,1996;83(2):595-603. doi:10.2466/pms.1996.83.2.595.
16. Ramis Y, Torregosa M, Viladrich C, Cruz J. Adaptación y validación de la versión española de la Escala de Ansiedad Competitiva SAS-2 para deportistas de iniciación. *Psicothema*,2010;22(4):1004-1009.
17. Kirkby RJ, Liu J. Precompetition anxiety in Chinese athletes. *Percept Mot Skills*,1999;88(1):297-303. doi:10.2466/pms.1999.88.1.297.