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## A comparative study on anxiety of sports and non-sports personnel

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### Abstract

Anxiety is one of the most interesting and important areas of focus in sports psychology and has continued to attract great research interest (Weiss & Gill, 2005). This research attempted to determine the state and trait anxiety of sports and non-sports personnel. To investigate the state and trait anxiety of athletes and nonathletes, we comprised 200 adolescents and divide according to sports and non-sports personnel (100 from each group) and 50 girls and 50 boys were selected from each sports and non-sports groups. Spielberger, Gorsuch, Lushane, Vagg and Jacobs (1983) State-Trait Anxiety Inventory (STAI) was administered on them. Mainly three conclusions were drawn from the study: 1. The Sports personnel possessed less state and trait anxiety than non-sports personnel. 2. Trait anxiety of sports girls was low as compared to non-sports girls. 3. Sports girls showed less trait anxiety than sports boys.

**Keywords:** Sports psychology, state anxiety, trait anxiety, sports personnel, non-sports personnel

### Introduction

Sports bring out the best qualities in every individual. Every faculty of the human body, whether physical or mental, is stretched to its limits while playing a competitive game. In today's world, the standard of all games has increased considerably. Elite sportspersons are finding it increasingly difficult to sustain their dominance in their respective sports. The mental state of a sportsperson plays a vital role in his or her performance. Anxiety sets in when an individual begins to doubt his or her capacity to deal with the situation which builds stress. Quite often it is not the talent that decides your performance. It simply depends on the way you deal with the ups and downs of the game.

Anxiety is a psychological and physiological state characterized by somatic, emotional, cognitive, and behavioral components. It is the displeasing feeling of fear and concern. The root meaning of the word anxiety is 'to vex or trouble'; in either presence or absence of psychological stress, anxiety can create feelings of fear, worry, uneasiness, and dread. Anxiety is considered to be a normal reaction to a stressor. It may help an individual to deal with a demanding situation by prompting them to cope with it. When anxiety becomes excessive, it may fall under the classification of an anxiety disorder.

Anxiety is a common phenomenon of everyday life. It plays a crucial role in human life because all of us are victim of anxiety in different ways (Goodstein and Lanyon, 1975). Generally, anxiety can be either a trait anxiety or a state anxiety. A trait anxiety is stable characteristic or trait of the person. A state anxiety is one which is aroused by some temporary condition of the environment such as examination, accident, punishment, etc. Academic anxiety is a kind of state anxiety. Thus, the academic anxiety has emerged as one of the most salient constructs in modern-day psychology and by far the most widely studied specific form of anxiety in the literature. Academic anxiety is a psychological condition in which a person experiences distress before, during or after a test or other assessment to such an extent that this anxiety causes poor performance or interferes with normal learning. It deserves its notice due to its prevalence amongst the students' populations of the world (Mandler and Sarason, 1952). Suinn (1968) described academic anxiety as an inability to think or remember a feeling of tension, and difficulty in reading and comprehending simple sentences or directions on an examination. Spielberger and Vagg (1995) viewed academic anxiety as a 'situationspecific form of trait anxiety', which is explained as a stable personality characteristic and 'state

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anxiety' is a transitory emotional state. Academic anxiety is believed to be the trait that predisposes individuals to react negatively to examinations and test (Keogh and French, 2001).

Academic anxiety is a normal response to the pressures of school. It can motivate students to study for tests or complete assignments. Sometimes, however, the anxiety can reach levels that hinder academic performance instead of improving it. Some students delay, others cannot concentrate on studies. Academic anxiety can adversely affect the performance on tests as well (Cathreen, 2009). Sarason (1959) had examined the research literature on test anxiety among school children and concluded that the performance of high test anxious students may be both facilitated and impaired by experimental conditions. Personal evaluation or threat leads to decrements of the performance of high test anxious students whereas reassurance facilitates their performance. Achievement oriented instructions impair the performance of high test anxious subjects. Observing a successful model facilitates the performance of high test anxious subjects, while observing a fail model results in poorer performance. It shows that anxiety is considered to be an uneasiness of mind. The situation will get worse when it starts interrupting the quality of life. Therefore, the present study was designed to investigate academic anxiety among female successful, unsuccessful and non-athlete adolescents.

Anxiety is a natural reaction to threats in the environment and part of the preparation for the 'fight or flight' response. This is our body's primitive and automatic response that prepares it to 'fight' or 'flee' from perceived harm or attack. It is a 'hardwired' response that ensures survival of the human species. Sporting competition promotes similar psychological and bodily responses because there is often a threat posed towards the ego; our sense of self-esteem. Essentially, when the demands of training or competition exceed one's perceived ability, anxiety is the inevitable outcome. Anxiety is one of the most interesting and important areas of focus in sport psychology and has continued to attract great research interest (Weiss & Gill, 2005). The concepts of stress, anxiety, and psychological pressure are increasingly recognized as being of key importance and a large number of studies had shown the influence of these concepts on athletes' performance, regardless of sex, age or competitive level (Cruz, 1997).

Anxiety which is seen as an important determinant of performance in sports environments has been defined in many different ways by authors. As to Cox (1985)<sup>[7]</sup>, anxiety is "an increased physiological stimulation and distress". As to Anshel (1997)<sup>[11]</sup> anxiety is "perceived threat". It is seen in two forms: The first one is trait anxiety which is a part of behavioural patterns of individuals. The latter is state anxiety. Trait anxiety is composed of feelings of distress and tension and it is relatively seen as a self-consistent character trait (Spielberger, 1972)<sup>[25]</sup>. Spielberger argued that individuals having high trait anxiety levels perceive many situations as threats (Woods, 1998). Barnes, Harp and Jung defines state anxiety (2002, p.604) as "a state fluctuating and a function of the stressors on an individual.

It is argued that state anxiety has a multi-dimensional structure (Craft, Magyar, Becker, & Felt, 2003; Martens, Burton, Vealey, Bump, & Smith, 1990)<sup>[8, 18, 19]</sup>. This structure containing cognitive state anxiety, somatic state anxiety and self-confidence dimensions is argued by Martens, Vealey and Burton (1990)<sup>[19]</sup> in order to make an evaluation on competition anxiety in sports environments. Cognitive anxiety

was defined as 'negative expectations and cognitive concerns about oneself, the situation at hand, and potential consequences' (Morris *et al.*, 1981, p. 541)<sup>[21]</sup>. Somatic anxiety refers the physiological and affective components of anxiety experience. Self-confidence is characterized by the individual's belief to perform well (Martens *et al.*, 1990)<sup>[18]</sup>. As it is understood from these definitions, cognitive anxiety and perceived self-confidence is related to performance and competence expectations (Gould *et al.*, 1984)<sup>[14]</sup>.

In sports, individuals who are state anxious and low on the trait anxiety in tough situations, often deliver good performances consistently. Whereas, athletes who have higher levels of trait anxiety, added with the state anxiety, tend to perform below expectations. Woodman and Hardy (2001)<sup>[30]</sup> stated that anxiety is generally accepted as being an unpleasant emotion. Additionally, anxiety is seen as an emotion characterized by negative affect that can have a debilitating impact on performance. Spielberg (1966)<sup>[26]</sup> defined anxiety in terms of state and trait anxiety, with state anxiety being referred to as "subjective consciously perceived feelings of tension and apprehension, associated with...arousal of the autonomic nervous system". State anxiety therefore refers to the thoughts and feelings that are specific to that moment in time and are subject to fluctuation, essentially more of a "right now" feeling of tension and apprehension in a specific situation (Gould, Greenleaf & Krane, 2002)<sup>[13]</sup>. In contrast, trait anxiety refers to a predisposition to view and interpret situations to be threatening that is more general and not situation specific (Hardy, Jones & Gould, 1996)<sup>[15]</sup>. In extreme cases, anxiety is believed to lead to "choking", a decrement in performance that can occur under conditions where the incentive to perform is heightened.

The aim of the present study is to promote sports among adolescents. Adolescence is a sensitive state for adapting and growing emotions and giving shape of personality. Sports is a key for opening door to discover both physical and psychological strengths and weaknesses and promotes responsible behaviour, forms character and identity and enhance overall wellbeing of adolescents. From a purely behavioural perspective, sport and play is a highly functional activity that can teach us how to adapt and survive in the real world. This includes the development of leadership skills, respect for authority, competitiveness, cooperativeness, sportsmanship, self-confidence and reducing anxiety.

For this study we took two groups, sports personnel as experimental group and non-sports personnel were the comparison group. For understanding the true effect of sports on emotional competence of adolescents, we included the variables: sports and non-sports and gender of participants. The goal of the current study is to learn more to reduce anxiety through sports and encourage students for participation in sports.

The present study is an attempt to examine the difference between sports and non-sports personnel of Maharashtra state with respect to anxiety of adolescent girls and boys.

### Objectives

There are two main objectives studied in this paper:

To measure the anxiety of sports and non-sports personnel.

To compare anxiety of sports and non-sports personnel in terms of gender.

### Hypothesis

The above aims enable us to formulate following hypothesis:

Sports and non-sports personnel will differ significantly on Anxiety.

Gender of sports and non-sports personnel will affect significantly on anxiety.

## Methodology

### Design

A survey research design was used for the study to assess the anxiety of sports and nonsports personnel in Maharashtra State in India.

### Sample

Total sample comprised 200 subjects, 100 were sports personnel and 100 non-sports personnel subjects were included in the sample. Further, sample bifurcated according to gender (50 girls and 50 boys). We assigned only team players studying in 11 th and 12th standard and represented their institution at least at district level. Data were collected during competition time from different districts of Maharashtra State in India.

### Tools Used

The State-Trait Anxiety Inventory (STAI) was used as research tool. This inventory was designed by Spielberger, Gorsuch, Lushane, Vagg and Jacobs (1983) [27] not only for the assessment of the anxiety loading of the individual but also for the distinction of two aspects of anxiety viz. state anxiety and trait anxiety. "State Anxiety" is conceptualised as a transitory level of anxiety, which is often situationally determined, and fluctuates with time and circumstances, whereas, "Trait Anxiety" is regarded as a latent predisposition, which is relatively stable and can be triggered by appropriate stimuli. This is considered as basic anxiety level.

STAI is a self-evaluation questionnaire. Both of the two parts of the inventory contains 20 items each. Items of this scale have been constructed in reverse- and non-reverse-keyed format, and instructions are given asking participants to rate their agreement with a statement on 4-point "Likert type scale".

### Statistical Analysis

The collected data were classified and tabulated in accordance with the objectives to arrive at the meaningful and relevant inferences by using arithmetic mean, standard deviation, t-test and ANOVA.

### Results and Interpretation

To examine the significance of difference between sports and non-sports personnel on their anxiety (state and trait anxiety), obtained data was treated with the help of t-test and analysis of variance ( $2 \times 2$ ) statistical techniques. The outcomes of the analysis are presented in the tables (Table 1, 2, 3, 4 and 5).

Table 1 indicates, significant difference between sports and non sports personnel on state anxiety ( $t = 2.25, p < 0.05$ ) and trait anxiety ( $t = 2.71, p < 0.01$ ). Mean value indicates that sports personnel (state anxiety =37.07 and trait anxiety=39.33) are less anxious in comparison to non-sports personnel (state anxiety =39.95 and trait anxiety =42.38).

Examination of Table 2 reveals significant difference between sports and non-sports girls on trait anxiety ( $t=3.37, p < 0.01$ ). Non-sports girls show comparatively higher trait anxiety ( $M=41.74$ ) than sports girls ( $M=36.48$ ). While comparing sports and non-sports boys no significant difference found between the mean scores of anxiety level.

It is evident from Table 3 that girls and boys of sports personnel differs significantly from each other on trait anxiety ( $t = 3.68, p < 0.01$ ). Mean values show that sports boys ( $M=42.1800$ ) are having more trait anxiety as compared to sports girls ( $M= 36.48$ ). Remaining 't' values not found significant on state and trait anxiety.

Analysis of the Table 4 clearly revealed that sports and non sports affect the state anxiety of subjects. The only significant difference was found for type (Sports and Non-sports). It was observed that the type having F value 5.02 is significant at 0.05 level of confidence. It indicates that difference in type (Sports and Non-Sports) affects the state anxiety. The interactional F value of type x gender ( $F=4.41$ ) is not found significant at any level of confidence.

The mean score of subjects (sports and non sports) with gender (boys and girls) was analysed by  $2 \times 2$  factorial design (Table 5). A significant difference was found for type (Sports and Non-Sports) and gender. It is observed that the type having F value 7.78 and gender ( $F=10.18$ ) are significant at 0.01 level of confidence. It indicates that difference in type (Sports and Non-Sports) and gender affects the trait anxiety. The interactional F value (4.08 df 1 and 196) (type x gender) is significant at both level of confidence. Therefore, it is clear that impact of sports and non-sports on trait anxiety in participants is dependent on the gender.

### Discussion

The purpose of this study was to examine the trait and state anxiety (somatic, cognitive, and selfconfidence) of sports and non-sports personnel. Athlete who is conditioned to win and perform well faces a huge stress. Since competition is not a physical challenge, it is a psychological and social challenge too.

So, sports which is the most effective and natural way to protect physical and psychological health deviates from its ultimate purpose and becomes a threat to psychological and physical health (Yavuz, 2002). The practice of a regular physical activity induces benefits for health. These benefits are not only physiological but are also psychological. In particular, physical training results in increased self esteem and perceived physical competence (Demarco *et al.*, 1989; Sonstroem, 1984) [10, 24], especially when self-esteem is initially low (McAuley, 1994), and in reduced anxiety level (Landers and Petruzzello, 1994; Carmack *et al.*, 1999; Katula *et al.*, 1999) [17, 4, 16]. To define anxiety, a distinction between state and trait has become commonplace. State anxiety is defined by an unpleasant emotional arousal in face of threatening demands or dangers. On the other hand, trait anxiety is independent of specific situations and reflects the existence of individual differences in the tendency to respond with state anxiety in the anticipation of threatening situations (Spielberger, 1983) [27]. It is primarily through experiences that some individuals acquire low or high trait anxiety and persons who are high in trait anxiety tend to be anxious in many situations. In other words, does a regular physical activity practice help to limit problematic variations of self-esteem levels (decrease) and trait anxiety (increase)?

In the present study it is clearly observed from the table 1 that sports and non sports personnel differ significantly on state and trait anxiety. Results indicate that sports personnel possess less state and trait anxiety as compared to non-sports personnel.

In Table 2, comparison of sports and non-sports personnel in respect of gender separately we found that sports and non-sports girls differs on trait anxiety and sports girls are lower

on trait anxiety in contrast to non-sports girls. Furthermore, no significant difference exists between sports and nonsports boys on trait anxiety.

Analysis of Table 3 showed that girls and boys of sports personnel differs significantly from each other on trait anxiety and sports girls possess less trait anxiety as compared to sports boys.

The findings are inconsistent with Costarelli and Stamou, 2009 results which showed no significant differences between athletes and non-athletes on state trait anxiety but anxiety levels (STAI) were significantly correlated with over 15 different constituents of EI (BarOn EQ-I), such as emotional selfawareness, selfactualization, reality testing and impulse control among others.

Dominikus *et al.* (2009) <sup>[11]</sup> revealed that there is a significant difference between male and female athletes in five subscales in OMSAT-2 i.e Goal setting with, fear control, activation, mental practice and competition planning. There is also no significant difference shown in the t-test between male and female athletes on self confidence, commitment, stress reactions, relaxation, imagery focus and refocus.

Rokka *et al.* (2009) <sup>[23]</sup> showed that male junior handball players reported lower scores of cognitive anxiety, which was facilitative to performance. On the other hand, females displayed a higher score in cognitive anxiety, which was rather debilitating to performance.

Carter, M.M and Weissbrod, C.S (2011) <sup>[5]</sup> explored the relationship between gender and enjoyment of competition and various indicators of mental health and adjustment in a sample of college students who report that they highly value

athletics. One hundred and thirty-seven students completed the Sports Anxiety Scale, Multi-perfectionism Scale, State-Trait Anxiety Inventory (Trait), Beck Depression Inventory, and Perception of Competition Scale. Results indicated that among women, enjoyment of competition was associated with decreased levels of athletic anxiety and a positive correlation between positive self-perception when winning and self-and socially oriented perfectionism, and between negative perception when losing and self-and socially oriented perfectionism. Among males, enjoyment of competition was related to decreased levels of general anxiety and depression, but not athletic anxiety. Furthermore, among men there was a positive correlation between enjoying competition and self-oriented perfectionism and between negative self-perception when losing and socially-oriented perfectionism. These data indicate gender differentially impacts the benefit of valuing athletics on measures of athletic anxiety and general measures of psychological well being. The above findings seem to support the existing theories on intensity which demonstrates that the more experienced player will show lower levels of cognitive and somatic anxiety than the less experienced player.

**Conclusion**

Following conclusions can be drawn from the present study: The Sports personnel possess less state and trait anxiety than non-sports personnel.

Trait anxiety of sports girls is low as compared to non-sports girls.

Sports girls show less trait anxiety than sports boys.

**Table 1:** Mean, SDs and ‘t’ Values for Anxiety of Sports and Non-sports Personnel

Anxiety	Type	N	Mean	S.D	t
State Anxiety	Sports	100	37.07	8.56	
	Non-Sports	100	39.95	9.54	2.25*
Trait Anxiety	Sports	100	39.33	8.21	
	Non-Sports	100	42.38	7.72	2.71**

**Table 2:** Comparison of Gender Between Sports and Non-sports Personnel on Anxiety

Gender Anxiety	Type	N	Mean	S.D	t
State Anxiety	Sports	50	36.28	8.96	
	Non-Sports	50	39.98	10.32	1.91
Girls Trait Anxiety	Sports	50	36.48	7.62	
	Non-Sports	50	41.74	7.97	3.37**
Boys State Anxiety	Sports	50	37.86	8.15	
	Non-Sports	50	39.92	8.78	1.22
Trait Anxiety	Sports	50	42.18	7.86	
	Non-Sports	50	43.02	7.48	.55

**Table 3:** Comparison between Girls and Boys of Sports and Non-sports Personnel on Anxiety

Type	Anxiety	Gender	N	Mean	S.D	t
State	Anxiety	Girls	50	36.28	8.96	
		Boys	50	37.86	8.15	.92
Sports	Trait	Girls	50	36.48	7.62	
		Boys	50	42.18	7.86	3.68**
Non-Sports	State	Girls	50	39.98	10.32	
		Boys	50	39.92	8.78	0.31
Non-Sports	Trait	Girls	50	41.74	7.97	
		Boys	50	43.02	7.48	0.83

**Table 4:** 2 × 2 ANOVA on State Anxiety of Sports and Non-sports Personnel

Source of Variation	Sum of Squares	df	Mean Square	F
Type (Sports and Non-Sports)	414.72	1	414.72	5.02*
Gender (Girls and Boys)	28.88	1	28.88	.35
Type × Gender	33.62	1	33.62	.41
Residual	16190.76	196	82.61	
Total		199		

**Table 5:** 2 × 2 ANOVA on Trait Anxiety of Sports and Non-sports Personnel

Source of Variation	Sum of Squares	df	Mean Square	F
Type (Sports and Non-Sports)	465.12	1	465.12	7.78**
Gender (Girls and Boys)	609.01	1	609.01	10.18**
Type × Gender	244.21	1	244.21	4.08*
Residual	11724.46	196	59.82	
Total				

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