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## A meta-analysis of different sports of competitive state anxiety

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### Abstract

The purpose of this study was to compare between the selected sports (Football & Hockey) athlete performance with the help of multidimensional Theory Questionnaire (Competitive State Anxiety questionnaire). A Sample of 60 sports athlete (30 Football athletes and 30 Hockey Runner) was selected through random sampling technique from Sports Authority of India (take coaching under the SAI Schemes). There is anxiety level of athletes are measured with CSAI-2 to measure their self-confidence level during the competition, which effects their sports performance due to state anxiety. Collected data were analysed by computing Mean differences between anxiety level of football and Hockey sports athletes and 't' test to see the significance mean difference between anxiety level of selected sports. The results indicated that there were significant differences with regard to State Anxiety level of Football and Hockey sports athlete's but insignificant differences with self-confidence level of athletes. The outcome of study might help physical educators and coaches to evaluate and modify their training programs pertaining to the state anxiety of performers (Football & Hockey).

**Keywords:** Multidimensional Theory, Football, Hockey.

### 1. Introduction

The need for athletes to meet the demands of competitive situations are too difficult where to perform in the competitions well under the pressure. Depending on how the athlete perceives the competitive demands, he or she may interpret the some pressure situations in a various ways. For example, the athletes may be perceived as a natural part or invoke heightened levels of stress during athletic competition. "Stress is the process that involves the perception of a substantial imbalance between environmental demand and response capabilities under conditions in which a failure to meet demands is perceived as having important consequences and is responded to with increased levels of cognitive and somatic state anxiety" (Martens, Vealey, & Burton, 1990a, p. 10) [3].

The stressful and anxiety-provoking circumstances, some athletes have been observed to experience deficits in performance, even to the point of "choking." Thus, the relationship between anxiety and athletic performance has received considerable attention from researchers in the field of sport psychology. In an attempt to develop effective interventions that will help ameliorate these negative and sometimes detrimental experiences for the athlete, sport psychologists began studying anxiety, first as an independent construct and more recently as a set of interdependent constructs (Jones, 1995; Krane, 1992; Scanlan & Passer, 1978; Simon & Martens, 1977) [2].

Research on the sport anxiety/performance relationship was initially based on the inverted-U hypothesis (Yerkes & Dodson, 1908). This hypothesis posited a curvilinear relationship between physiological arousal and performance (Gould *et al.*, 1992; Jones, 1995; Krane, 1992; Yerkes & Dodson, 1908) [1, 2]. Moderate levels of arousal were generally associated with better performance, whereas arousal levels that were too high or too low led to poorer performance (Gould *et al.*, 1992; Spielberger, 1989) [1, 4].

Their multidimensional theory suggested that anxiety consisted of both cognitive and somatic subcomponents. Based on this theory, cognitive anxiety is defined as "the mental component of anxiety and is caused by negative expectations about success or by negative self-evaluation" (Martens *et al.*, 1990a, p. 6) [3]. The authors posited a negative linear relationship between cognitive anxiety and performance.

In order to assess the multidimensional aspects of anxiety, Martens *et al.* (1990b) [3] developed the Competitive State Anxiety Inventory-2 (CSAI-2). This 27-item measure has three subscales:

cognitive anxiety, somatic anxiety, and self-confidence. Burton (1988) was one of the first to use the CSAI-2 on a sample of elite athletes. He asked two samples of elite level swimmers to complete the CSAI-2 just prior to competition. The performance outcome for this study was the swimmers' times, which were obtained from the swim-meet results. Correlational and multiple regression analyses showed that

cognitive anxiety was more consistently and strongly related to performance than was somatic anxiety. Polynomial trend analysis confirmed that somatic anxiety showed an inverted-U relationship with performance, whereas self-confidence and performance had a positive linear relationship, and cognitive anxiety and performance had a negative relationship.

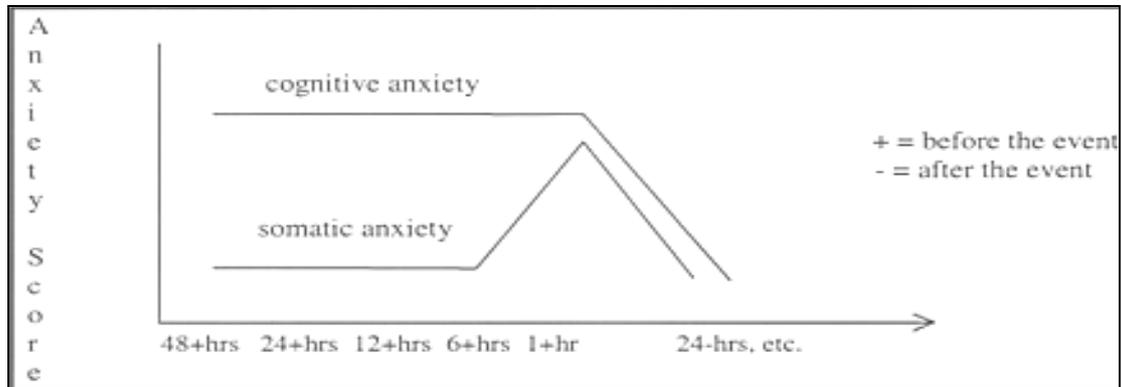


Fig 1: Martens et al. 1990 [3] Multidimensional Theory with Presence of the respective Sub-Components of Anxiety

Burton's (1988) study is considered to be a landmark study, not only for its investigation of the reliability of the CSAI-2 (in terms of stability and consistency) but also for providing evidence for the theoretical underpinnings of the multidimensional theory. As noted by Smith (1989), however, Burton's findings should be interpreted with caution, as there may have been a different conclusion from the regression analyses if Burton had entered the variables differently into the stepwise regression analyses.

2. Methodology

Initially in this research the researcher focused on the anxiety and sports performance with the help of CSAI-2. The

researcher evaluates the 60 National level athletes from 2 selected different sports (Football & Hockey). Sports Authority of India stadium are selected to gather the data of National level athletes. 30 athletes selected from each sports to measure the competitive state anxiety debilitating or facilitative effects on the performance.

To administrate the competitive anxiety, the sports performances are predicted before 1 day to 20 minute prior of competition. The statistical analysis Independent t-test was used to examine the differences between to selected sports athletes state anxiety impact on their sports performance.

3. Result and Analysis

Table 1: Descriptive Analysis of CSAI-2 Variables of Different Sports

Sources	N	Football		Hockey	
		Mean	Std. Deviation	Mean	Std. Deviation
Cognitive Anxiety	30	17.97	4.60	21.87	5.37
Somatic Anxiety	30	14.73	4.07	19.07	4.22
Self-Confidence	30	28.93	3.51	27.30	4.84

Descriptive measurement of selected 2 (two) sports of table no. 1 shows the Mean±SD values of Competitive State Anxiety-2 (CSAI-2) variables. The variable Cognitive state anxiety & Somatic State Anxiety revealed the anxieties in the

Hockey athletes are significantly higher in comparison to Football athletes. Similarly in the case of Self-confidence, the Hockey athletes have found lower level of self-confidence in comparison to football athletes.

Table 2: Independent T-Test of CSAI-2 Variables of Different Sports

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	0020Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Cognitive	Equal variances assumed	.645	.425	-3.02	58	.004	-3.90	1.29	-6.48	-1.32
	Equal variances not assumed			-3.02	56.66	.004	-3.90	1.29	-6.48	-1.32
Somatic	Equal variances assumed	.144	.705	-4.05	58	.000	-4.33	1.07	-6.47	-2.19
	Equal variances not assumed			-4.05	57.92	.000	-4.33	1.07	-6.47	-2.19
Self-Confidence	Equal variances assumed	4.33	.042	1.50	58	.140	1.63	1.09	-.55	3.82
	Equal variances not assumed			1.50	52.90	.141	1.63	1.09	-.56	3.82

Table no.2 depicted the comparison between two selected sports Football and hockey with the help of Independent t-test. Comparison between two sports revealed with analysis that there are no significant relationship between self-confidence and athlete's sports performance (Football & Hockey). The other side, both state anxiety (cognitive state anxiety & somatic state anxiety) have found negative significantly comparison at 1% levels and 0.1% levels respectively. The comparison score result of self-confidence revealed the no significant result between both football and hockey athletes sports performance.

#### 4. Discussion

The findings of this study the researcher evidence the comparison between football and hockey player's state anxiety symptoms. According to skills measurements the researcher understanding the anxiety levels of football and hockey athlete's performance which effects there self-confidence during competition. The descriptive statistics and independent sample 't'- test were computed to understand the anxiety level of athlete's. The result of the present study (A meta-analysis of different sports of competitive state anxiety) depicted that negative significant difference was found between the anxiety level of football and hockey athlete's sports performance with value -3.02 and -4.05 against the tabulated value 2.660 which was significant at 0.01 level respectively. The depicted tabulated value shows there are no significance differences between both sports athletes at state anxiety level i.e. cognitive state anxiety & somatic state anxiety, but at the self-confidence attained the 1.50 value against 1.296 tabulated value which shows the insignificant differences between the two sports athletes performance.

#### 5. Conclusion

After going through the interpretation of the results' tables it was concluded that there was no significance difference between performance of football and hockey athletes on two components of competitive state anxiety i.e. cognitive state anxiety, somatic state anxiety but on self-confidence insignificant difference indicated that there is a difference to compare performance of football and hockey athletes.

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