

**COMPETITIVE ANXIETY AMONG ELITE ATHLETES IN MANIPUR: AN ASSESSMENT OF ANXIETY LEVELS, GENDER DIFFERENCES, AND PSYCHOMETRIC PROPERTIES OF THE SCAT**

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**Abstract**

*Competitive anxiety is a crucial psychological factor influencing athletic performance, particularly among elite athletes. This study aimed to assess the internal consistency of the Sports Competition Anxiety Test (SCAT), analyse anxiety levels among elite athletes in Manipur, and examine gender differences in competitive anxiety. A total of 55 elite athletes (aged 20–26 years) participated in the study, with anxiety levels assessed using the SCAT. The findings revealed that 45.45% of athletes exhibited low anxiety, 38.18% had moderate anxiety, and 16.36% experienced high anxiety. Additionally, female athletes reported significantly higher anxiety levels than males ( $p < 0.05$ , Cohen's  $d = 0.417$ ). These results underscore the importance of psychological training interventions tailored to gender-specific needs. Future research should explore longitudinal anxiety trends, integrate physiological assessments, and examine additional psychological constructs to enhance anxiety management strategies in sports.*

**Keywords:** Competitive anxiety, SCAT, elite athletes, gender differences, sports psychology.

## 1 Introduction

Competitive anxiety is a crucial psychological factor influencing athletic performance, particularly among elite athletes who regularly encounter high-pressure situations. Anxiety in sports can manifest in cognitive, somatic, and behavioural responses, potentially affecting an athlete's ability to perform optimally (Martens, 1977). The Sports Competition Anxiety Test (SCAT) has been widely used to assess athletes' competitive anxiety levels, providing valuable insights for coaches, psychologists, and sports scientists. Taekwondo players of Manipur might have realised the need and importance of games and sports, wide experiences in its subject matter and at the same time, they are more conscious about controlling their anxiety levels as it plays a vital role in participating in any games and sports (Singh et al., 2022).

This study aims to evaluate the internal consistency of the SCAT among elite athletes in Manipur, analyse their levels of competitive anxiety, and examine gender differences in anxiety responses. Given the growing recognition of mental skills training in sports, understanding these factors can help in developing targeted interventions to manage anxiety and enhance performance. By employing reliable psychometric tools and statistical analyses, this research contributes to the existing literature on competitive anxiety and its implications for sports psychology.

### 1.1 Rationale of the Study

Competitive anxiety is a significant psychological factor that can influence athletic performance, particularly among elite athletes who regularly face high-stakes competitions. Research suggests that elevated anxiety levels can impair decision-making, coordination, and overall performance, while well-managed anxiety can enhance focus and motivation (Jones & Swain, 1992). The Sports Competition Anxiety Test (SCAT), developed by Martens (1977), is one of the most widely used tools for measuring competitive trait anxiety in athletes. However, its reliability and applicability among elite athletes in specific cultural and regional contexts, such as Manipur, remain underexplored.

Additionally, gender differences in competitive anxiety have been a topic of interest in sports psychology, with studies indicating that female athletes often report higher anxiety levels than their male counterparts due to differences in coping mechanisms, social expectations, and psychological responses to stress (Craft et al., 2003). Understanding these differences is essential for designing effective mental skills training programs tailored to the needs of both male and female athletes.

Given the increasing emphasis on mental preparedness in elite sports, it is imperative to assess competitive anxiety levels accurately and develop appropriate interventions. This study aims to evaluate the internal consistency of the SCAT, analyse anxiety levels among elite athletes in Manipur, and examine gender differences in competitive anxiety, thereby contributing to sports psychology research and athlete development strategies.

### 1.2 Statement of the Problem

Anxiety is a common psychological challenge faced by elite athletes, potentially affecting their performance and well-being. However, there is limited research on the prevalence and impact of competitive anxiety among elite athletes in Manipur, particularly in relation to gender differences. While the SCAT has been widely used to measure competitive anxiety, its reliability among this specific athletic population has not been systematically assessed.

Furthermore, gender-based variations in anxiety responses remain a crucial yet underexplored area in sports psychology. Previous studies suggest that female athletes may experience higher anxiety levels than males, but little is known about how this trend applies to elite athletes in Manipur. Understanding these aspects can provide valuable insights for coaches, sports

psychologists, and policymakers to develop mental training programs tailored to athletes' psychological needs.

Thus, the present study seeks to address the following key research questions:

1. How reliable is the SCAT in assessing competitive anxiety among elite athletes in Manipur?
2. What are the levels of competitive anxiety among elite athletes in Manipur?
3. Are there significant gender differences in competitive anxiety levels among these athletes?

By answering these questions, this study aims to contribute to a deeper understanding of competitive anxiety and inform the development of effective psychological interventions in sports training and competition.

### 1.3 Objectives

1. To assess the internal consistency of the Sports Competition Anxiety Test (SCAT) among elite athletes in Manipur.
2. To analyse the levels of competitive anxiety among elite athletes in Manipur.
3. To examine gender differences in sports competition anxiety among elite athletes in Manipur.

### 1.4 Hypotheses

- Ho: There is no significant difference in sports competition anxiety levels between male and female elite athletes in Manipur.
- H<sub>1</sub>: There is a significant difference in sports competition anxiety levels between male and female elite athletes in Manipur.

## 2. Materials and Methods

### 2.1 Research design

A cross-sectional descriptive survey

### 2.2 Participants

A randomly selected sample of 55 elite athletes from various academies and clubs voluntarily participated in this study, conducted between December 2024 and January 2025. The participants' ages ranged from 20 to 26 years, with a mean age of  $23.34 \pm 2.35$  years.

### 2.3 Tool

The Sports Competition Anxiety Test (SCAT), developed by Martens (1977), was used to assess competitive anxiety levels. SCAT consists of 15 statements, 10 of which measure symptoms of anxiety, while five filler items minimize response bias. Participants respond on a 3-point Likert scale (Hardly Ever, Sometimes, Often). The total score is calculated based on the 10 anxiety-related items:

- <17: Low anxiety
- 17–24: Moderate anxiety
- >24: High anxiety

### 2.4 Data Collection Procedure

The SCAT questionnaire was administered to elite athletes male and female. Participants were given 10–15 minutes to complete the questionnaire individually. Before distribution, the researcher explained the study's purpose and provided detailed instructions. To ensure ethical compliance, confidentiality was maintained, and informed consent was obtained from all participants.

### 2.5 Data Analysis Procedure

Both descriptive and inferential statistics were used for analysis.

- **Descriptive statistics:** Frequency, percentages, mean, standard deviation, pie charts, and bar diagrams.
- **Inferential statistics:** An independent sample t-test was conducted to compare anxiety levels between groups. The level of significance was set at  $p < 0.05$ .

### 3. Results

#### 3.1 Reliability Analysis of SCAT

**Table 1: Reliability Statistics of SCAT (Split halve method)**

Cronbach's Alpha	Part 1	Value	.758
		N of Items	5 <sup>a</sup>
	Part 2	Value	.711
		N of Items	5 <sup>b</sup>
Total N of Items			10
Correlation Between Forms			.623
Spearman-Brown Coefficient	Equal Length		.768
	Unequal Length		.768
Guttman Split-Half Coefficient			.746

a. item numbers: 1 to 5

b. item numbers: 6 to 10

A reliability analysis was conducted to assess the internal consistency of the Sports Competition Anxiety Test (SCAT) using Cronbach's alpha, split-half reliability, and correlation between forms.

The Cronbach's alpha coefficient for the total scale was 0.758, indicating an acceptable level of internal consistency (George & Mallery, 2019). The split-half reliability was examined using the Spearman-Brown and Guttman Split-Half coefficients. The first half of the scale had a Cronbach's alpha of 0.758 (5 items), while the second half had a Cronbach's alpha of 0.711 (5 items). The correlation between the two halves was 0.623, suggesting a moderate relationship.

The Spearman-Brown coefficients were 0.768 for both equal and unequal length conditions, indicating good split-half reliability. Additionally, the Guttman Split-Half coefficient was 0.746, further supporting the scale's reliability.

Overall, the findings suggest that the SCAT demonstrates acceptable internal consistency and split-half reliability, making it a suitable measure for assessing competitive anxiety among elite athletes in Manipur.

#### 3.2 Anxiety Levels Among Elite Athletes

**Table 2: Anxiety level of elite athletes**

Anxiety level	Frequency	Percentages
<17: Low anxiety	25	45.45%
17–24: Moderate anxiety	21	38.18%
>24: High anxiety	9	16.36%
Total	55	100.00%

**Figure 1: Anxiety Levels**

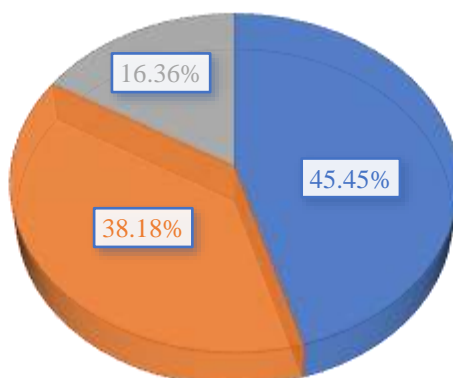


Table 2 presents the distribution of anxiety levels among elite athletes based on their Sports Competition Anxiety Test (SCAT) scores. The results indicate that 25 athletes (45.45%) exhibited low anxiety levels (SCAT score < 17), while 21 athletes (38.18%) demonstrated moderate anxiety levels (SCAT score 17–24). A smaller proportion of athletes, 9 individuals (16.36%), reported high anxiety levels (SCAT score > 24).

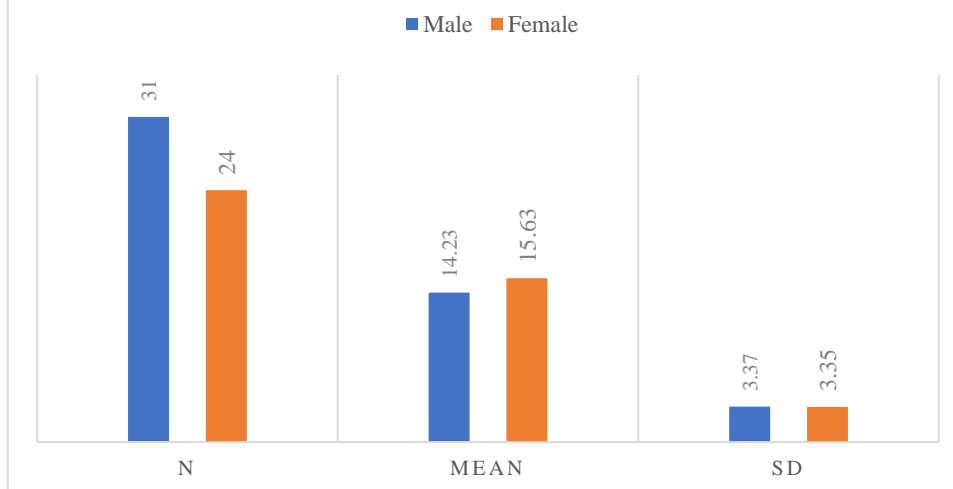
Overall, the findings suggest that the majority of elite athletes in this study experienced low to moderate levels of competitive anxiety, with only a minority displaying high anxiety. These results provide valuable insights into the psychological state of elite athletes and may assist coaches and sports psychologists in designing appropriate mental training programs to manage anxiety levels effectively.

### 3.3 Gender Differences in Anxiety Levels

**Table 3: Mean differences by gender**

Gender	N	Mean	SD	SEM	t	sig.	Cohen's d
Male	31	14.23	3.37	0.61	-.437	.000	0.417
Female	24	15.63	3.35	0.68			

**Figure 2: Mean Differences By Gender**



An independent samples t-test was conducted to examine differences in sports competition anxiety between male and female elite athletes (see Table 3). The results indicated a statistically significant difference in anxiety levels between genders,  $t(53) = -0.437$ ,  $p < .001$ , suggesting that female athletes exhibited significantly higher anxiety levels than their male counterparts. The mean anxiety score for male athletes ( $M = 14.23$ ,  $SD = 3.37$ ) was lower than that of female athletes ( $M = 15.63$ ,  $SD = 3.35$ ). The effect size, as measured by Cohen's  $d$  (0.417), indicates a small to moderate effect, suggesting that gender plays a meaningful role in competitive anxiety levels among elite athletes.

These findings highlight the importance of considering gender-specific psychological strategies in training programs to better manage competitive anxiety in elite sports settings.

### 3.4 Discussion of the Findings

#### 1. Internal Consistency of the SCAT Among Elite Athletes

The Sports Competition Anxiety Test (SCAT) demonstrated acceptable internal consistency in this study, with a Cronbach's alpha coefficient of 0.758. This finding aligns with previous research indicating that the SCAT is a reliable tool for assessing competitive trait anxiety in athletes. For instance, a study evaluating the SCAT reported a Cronbach's alpha of 0.744, supporting its reliability in measuring competitive anxiety among athletes (da Cruz et al., 2024). These results suggest that the SCAT is a dependable instrument for assessing competitive anxiety in elite athletes.

#### 2. Anxiety Levels Among Elite Athletes

The distribution of anxiety levels among the elite athletes in this study revealed that 45.45% exhibited low anxiety, 38.18% moderate anxiety, and 16.36% high anxiety. This pattern is consistent with findings from a systematic review and meta-analysis, which identified various determinants influencing anxiety symptoms and disorders in elite athletes (Rice et al., 2019). The majority of athletes experiencing low to moderate anxiety levels may reflect effective coping mechanisms and mental skills training commonly employed at elite levels. However, the presence of a subset of athletes with high anxiety underscores the need for targeted interventions to address and manage anxiety symptoms in this population.

#### 3. Gender Differences in Sports Competition Anxiety

The study found that female athletes reported significantly higher anxiety levels ( $M = 15.63$ ,  $SD = 3.35$ ) compared to male athletes ( $M = 14.23$ ,  $SD = 3.37$ ), with a small to moderate effect size (Cohen's  $d = 0.417$ ). This finding is supported by previous research indicating that gender

can moderate anxiety responses in competitive settings. For example, a study examining the interaction between gender and skill level on competitive state anxiety found that female athletes reported higher levels of cognitive and somatic anxiety compared to male athletes (Hagan et al., 2017). These differences may be attributed to various factors, including societal expectations, differences in coping strategies, and psychological responses to competitive stressors. Understanding these gender-specific differences is crucial for developing tailored interventions to effectively manage competitive anxiety among elite athletes.

### 3.5 Limitations

While this study provides valuable insights into competitive anxiety among elite athletes in Manipur, several limitations must be acknowledged:

1. **Sample Size and Representation** – The study included 55 elite athletes, which, while informative, may not be fully representative of all elite athletes in Manipur or other regions. A larger sample size across multiple disciplines would strengthen generalizability.
2. **Self-Report Bias** – The SCAT questionnaire relies on self-reported responses, which may be influenced by social desirability bias or personal interpretations of anxiety. Future studies could incorporate physiological measures (e.g., heart rate variability, cortisol levels) for a more objective assessment.
3. **Cross-Sectional Design** – The study used a cross-sectional approach, capturing anxiety levels at a single time point. Anxiety may fluctuate based on training cycles, competition phases, or external stressors. A longitudinal study could provide a more comprehensive understanding of how anxiety evolves over time.
4. **Limited Scope of Psychological Variables** – This study focused solely on competitive anxiety. However, factors such as coping strategies, resilience, self-efficacy, and motivation were not explored. Including these variables in future research could provide a more holistic view of psychological factors affecting performance.

### 3.6 Future Directions

Based on the limitations identified, future research should consider the following areas for further exploration:

1. Expanding Sample Diversity – Future studies should include a larger, more diverse group of athletes across different sports, competitive levels, and regions to enhance external validity.
2. Gender-Specific Psychological Interventions – Given the significant gender differences found in anxiety levels, further research should focus on developing and evaluating gender-specific interventions for anxiety management.
3. Longitudinal Analysis – Investigating how competitive anxiety fluctuates across a sports season could provide deeper insights into when interventions are most needed.
4. Integration of Objective Measures – Future research should combine psychological questionnaires with physiological measures (e.g., heart rate, galvanic skin response, cortisol levels) to obtain more reliable anxiety assessments.
5. Exploring Other Psychological Constructs – Studies should investigate how self-confidence, emotional regulation, mental toughness, and stress management strategies interact with anxiety and athletic performance.

### 3.7 Conclusion

This study examined competitive anxiety among elite athletes in Manipur, assessed the internal consistency of the SCAT, and investigated gender differences in anxiety levels. The findings revealed that while most athletes experience low to moderate levels of competitive anxiety, a significant portion exhibited high anxiety, warranting targeted

psychological interventions. Additionally, female athletes reported significantly higher anxiety levels than their male counterparts, highlighting the need for gender-specific mental training programs.

The results emphasize the importance of psychological preparation in elite sports and call for a more comprehensive approach to anxiety management. Coaches, sports psychologists, and training academies should consider personalized anxiety-reduction techniques, such as mindfulness, cognitive-behavioural strategies, and stress inoculation training, to help athletes optimize their mental resilience.

Despite its limitations, this study contributes to the growing body of research on sports psychology and underscores the necessity for continued investigations into competitive anxiety and its impact on athletic performance. Future research integrating longitudinal designs, objective physiological measures, and broader psychological constructs will further enhance our understanding of anxiety in high-performance sports environments.

### 3.8 Ethical Consideration

The study was approved by the Institutional Human Ethical Committee of Manipur University, Canchipur, Imphal (India), under reference number MU/IHEC/2024/13, ensuring compliance with ethical guidelines for research involving human subjects. After data collection, participants were debriefed on the study's findings and the importance of their contributions and were offered resources or referrals for psychological support if needed.

### 3.9 Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this study.

### 3.10 Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

### 3.11 Funding

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