



## COMPARATIVE ANALYSIS OF PSYCHOLOGICAL VARIABLES BETWEEN PLAIN AND SEA-LEVEL REGION FOOTBALL PLAYERS OF WEST BENGAL

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### ABSTRACT:

The present study aimed to conduct a comparative analysis of selected psychological variables among adolescent football players from plain and sea-level regions of West Bengal. Football performance is not only influenced by physical and technical abilities but also by psychological factors such as motivation, anxiety, stress, and personality traits. These variables play a crucial role in shaping athletes' behaviour, emotional control, and performance outcomes. Therefore, the study focused on examining how geographical differences influence these psychological characteristics among young football players.

A total of 200 male adolescent football players, aged between 18 and 22 years, were selected using a stratified random sampling technique, with 100 players each from plain and sea-level regions. Standardized and validated instruments were used to assess the selected psychological variables, including motivation, anxiety, stress, and personality traits.

The collected data were analysed using descriptive statistics such as mean and standard deviation, along with inferential statistics, specifically the independent sample t-test, to determine the significance of differences between the two groups. The results revealed statistically significant differences in all selected psychological variables. Players from the sea-level region demonstrated higher levels of motivation, anxiety, stress, and personality traits compared to players from the plain region.

The findings indicate that geographical and environmental factors have a significant influence on the psychological development of adolescent football players. The study concludes that region-specific psychological training and intervention strategies are essential to enhance athletes' performance and mental well-being.

### KEYWORDS:

**PSYCHOLOGICAL VARIABLES, MOTIVATION, ANXIETY, STRESS, PERSONALITY, ADOLESCENT FOOTBALL PLAYERS, WEST BENGAL.**

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### 1. INTRODUCTION

Psychological variables play a crucial role in determining sports performance, especially in competitive games like football, where mental strength is as important as physical ability. Factors such as motivation, anxiety, stress, and personality significantly influence an athlete's behaviour, decision-making, and overall performance. According to Weinberg and Gould (2019), psychological factors are key determinants of success in sports, as they directly affect athletes' consistency, confidence, and performance under pressure.

Among adolescent football players, psychological variables are particularly important due to the developmental nature of this stage. Adolescence is characterized by rapid physical, emotional, and psychological changes, which can influence an athlete's mental stability and sports participation. Research suggests that variables such as motivation and stress are interrelated and significantly impact performance outcomes (Gould et al., 2002).

Therefore, understanding these psychological characteristics is essential for improving both performance and well-being of young athletes.

Geographical and environmental factors also play a vital role in shaping psychological variables. Differences in climate, socio-economic conditions, availability of sports facilities, and exposure to competition can influence the mental development of athletes. Hagger and Chatzisarantis (2016) emphasized that environmental and social contexts significantly affect psychological behaviour, including motivation and stress responses in sports settings.

In the context of West Bengal, diverse geographical regions such as plains and sea-level areas present different environmental conditions that may influence the psychological characteristics of football players. Players from plains regions may experience higher competitive pressure due to better access to infrastructure and organized training systems, whereas players from

sea-level regions may face environmental challenges such as climatic instability and socio-economic constraints, which can impact their psychological responses.

Despite the importance of these factors, limited research has been conducted to compare psychological variables between specific geographical regions, particularly between plains and sea-level regions. Therefore, the present study aims to conduct a comparative analysis of selected psychological variables among adolescent football players from plains and sea-level regions of West Bengal, in order to understand how geographical conditions influence their psychological development and sports performance.

## 2. OBJECTIVES OF THE STUDY

The present study was conducted with the following objectives:

1. To assess the levels of selected psychological variables (motivation, anxiety, stress, and personality traits) among adolescent football players.
2. To compare the selected psychological variables between football players from plain and sea-level regions of West Bengal.
3. To examine the influence of geographical conditions on the psychological characteristics of adolescent football players.

## 3. HYPOTHESIS OF THE STUDY

The study is based on the following null hypothesis:

- **H<sub>01</sub>**: There is no significant difference in the selected psychological variables (motivation, anxiety, stress, and personality traits) between adolescent football players from plain and sea-level regions of West Bengal.

## 3. REVIEW OF LITERATURE

Psychological variables such as motivation, anxiety, stress, and personality have been widely recognized as key determinants of sports performance. These variables influence athletes' behaviour, emotional control, and decision-making abilities during training and competition. According to Weinberg and Gould (2019), psychological factors play a central role in athletic success, as they directly affect performance consistency, confidence, and the ability to cope with pressure. Their work emphasizes that successful athletes often possess strong psychological characteristics alongside physical and technical skills.

The concept of anxiety in sports has been extensively studied by Rainer Martens et al. (1990), who identified competitive anxiety as a multidimensional construct consisting of cognitive and somatic components. Their findings suggest that excessive anxiety can negatively impact concentration, coordination, and performance. Similarly, Charles D. Spielberger (1983) distinguished between state and trait anxiety, highlighting that situational factors can significantly influence athletes' psychological responses during competition.

Motivation is another crucial psychological variable that influences sports participation and performance. Hagger and Chatzisarantis (2016) proposed that motivation is shaped by both internal and external factors, including environmental conditions, social support, and coaching practices. Their trans-contextual model explains how motivation developed in one setting can influence behaviour in another, such as sports performance. Furthermore, studies by Gould et al. (2002) indicate that higher motivation is associated with better performance, persistence, and resilience among athletes.

Personality traits also play a significant role in sports performance. Research suggests that traits such as extraversion, conscientiousness, and emotional stability contribute positively to athletic success, while high levels of neuroticism may negatively affect performance. Personality influences how athletes respond to stress, pressure, and competitive situations, making it an important factor in sports psychology.

Environmental and geographical factors have been found to significantly influence psychological variables among athletes. According to Verma and Singh (2015), differences in climate, terrain, and availability of sports facilities affect athletes' exposure, training opportunities, and psychological development. Similarly, Sharma (2018) reported that socio-economic conditions and cultural background play a vital role in shaping athletes' motivation, stress levels, and overall psychological readiness.

In the context of West Bengal, the diversity of geographical regions, such as plains and sea-level areas, provides a unique opportunity to study regional differences in psychological variables. Players from plains regions often have better access to infrastructure, coaching facilities, and competitive exposure, which may enhance their motivation and performance but also increase competitive stress and anxiety. On the other hand, players from sea-level regions may experience environmental challenges such as climatic variations and limited resources, which can influence their psychological characteristics differently.

Despite the importance of these factors, there is a lack of focused research comparing psychological variables between plain and sea-level region football players. Most studies have examined psychological factors independently without considering regional differences. Therefore, the present study aims to fill this research gap by conducting a comparative analysis of selected psychological variables among adolescent football players from plain and sea-level regions of West Bengal.

## 3. METHODOLOGY

### 3.1 RESEARCH DESIGN

The present study adopted a descriptive and comparative research design to analyse the selected psychological variables among adolescent football players from plain and sea-level regions of West Bengal. The design was

considered appropriate as it enabled the researcher to compare the psychological characteristics between two distinct geographical groups.

### 3.2 PARTICIPANTS

A total of 200 male adolescent football players, aged between 18 and 22 years, were selected for the study. The participants were actively involved in competitive football and had represented their respective institutions at inter-college, inter-university, district, or state-level competitions.

The sample was equally divided into two groups based on geographical regions:

- Plain Region (n = 100)
- Sea-Level Region (n = 100)

This equal distribution ensured balanced representation and comparability between the two groups.

### 3.3 SAMPLING TECHNIQUE

A stratified random sampling technique was employed to select the participants. The population was divided into two strata based on geographical regions (plain and sea-level), and participants were randomly selected from each group. This method helped to minimize sampling bias and ensured representativeness of the sample.

### 3.4 VARIABLES OF THE STUDY

- **Independent Variable:**  
Geographical region (Plain and Sea-Level)
- **Dependent Variables:**  
Selected psychological variables:
  - Motivation
  - Anxiety
  - Stress
  - Personality traits

### 3.5 TOOLS AND INSTRUMENTS

Standardized and validated instruments were used to measure the selected psychological variables:

- **Motivation:** Sport Motivation Scale (SMS-28) developed by Luc G. Pelletier et al. (1995)
- **Anxiety:** Beck Anxiety Inventory (BAI), developed by Aaron T. Beck et al. (1988), a 21-item self-report scale with high reliability ( $\alpha = 0.92$ ), was used.
- **Stress:** a standardized self-report stress questionnaire based on the guidelines of the International Stress Management Association was used. The scale is designed to evaluate individuals' stress levels and stress management patterns.
- **Personality:** Standardized Personality Inventory (Big Five traits)

These tools ensured reliability and validity in measuring the psychological characteristics of the participants.

### 3.6 DATA COLLECTION PROCEDURE

Before data collection, the purpose of the study was clearly explained to the participants to ensure their cooperation. Data were collected through direct interaction with the players during training sessions and competitions. Questionnaires were distributed through college sports departments, and necessary instructions were provided for accurate responses.

### 3.7 STATISTICAL TECHNIQUES

The collected data were analysed using appropriate statistical methods:

- Descriptive statistics (Mean and Standard Deviation)
- Independent sample **t-test** to compare psychological variables between the two groups
- Level of significance was set at 0.05

### 3.8 ETHICAL CONSIDERATIONS

Ethical standards were maintained throughout the study. Participation was voluntary, and informed consent was obtained from all participants. Confidentiality and anonymity of the data were ensured, and the information was used solely for academic purposes.

## 4. RESULTS AND ANALYSIS

### 4.1 DESCRIPTIVE STATISTICS OF PSYCHOLOGICAL VARIABLES

The mean and standard deviation of selected psychological variables among adolescent football players from plain and sea-level regions of West Bengal are presented in Table 4.1.

**TABLE 4.1 MEAN AND STANDARD DEVIATION OF PSYCHOLOGICAL VARIABLES**

Variables	Plain (Mean $\pm$ SD)	Sea-Level (Mean $\pm$ SD)
<b>Motivation</b>	109.26 $\pm$ 8.47	115.26 $\pm$ 7.24
<b>Anxiety</b>	47.85 $\pm$ 6.32	50.40 $\pm$ 5.98
<b>Stress</b>	21.30 $\pm$ 4.25	23.75 $\pm$ 3.90
<b>Personality (Overall)</b>	68.45 $\pm$ 7.10	71.20 $\pm$ 6.85

### INTERPRETATION

The table shows that football players from the **sea-level region** have higher mean scores in motivation, anxiety, stress, and personality compared to players from the **plain region**. This indicates that geographical differences may influence the psychological characteristics of adolescent football players.

### 4.2 INDEPENDENT SAMPLE T-TEST ANALYSIS

To determine whether the differences between the two groups are statistically significant, an independent sample t-test was conducted.

**TABLE 4.2T-TEST COMPARISON BETWEEN PLAIN AND SEA-LEVEL REGIONS**

Variables	t-value	p-value	Result
Motivation	5.12	< 0.05	Significant
Anxiety	3.21	< 0.05	Significant
Stress	4.05	< 0.05	Significant
Personality	2.98	< 0.05	Significant

**INTERPRETATION**

The t-test results indicate that all selected psychological variables show **statistically significant differences** between plain and sea-level region football players, as the p-values are less than 0.05.

- **Motivation:** Sea-level players show significantly higher motivation
- **Anxiety:** Sea-level players experience higher anxiety
- **Stress:** Stress levels are higher among sea-level players
- **Personality:** Sea-level players exhibit comparatively stronger personality traits

Therefore, the null hypothesis ( $H_{01}$ ) is **rejected**, indicating that geographical region has a significant influence on psychological variables.

**4.3 KEY FINDINGS**

1. Sea-level region players demonstrate higher motivation compared to the plain region players
2. Anxiety and stress levels are significantly higher among the sea-level players
3. Personality scores are comparatively higher in the sea-level players
4. All differences are statistically significant
5. Geographical factors play a crucial role in shaping psychological variables

**5. DISCUSSION, CONCLUSION, AND RECOMMENDATION****5.1 DISCUSSION**

The findings of the present study revealed significant differences in selected psychological variables between adolescent football players from plain and sea-level regions of West Bengal. The results indicated that players from the sea-level region demonstrated higher levels of motivation, anxiety, stress, and overall personality traits compared to their counterparts from the plain region. These findings suggest that geographical and environmental factors have a substantial influence on the psychological characteristics of athletes.

The higher motivation observed among sea-level players may be attributed to increased exposure to competitive environments, socio-cultural influences, and the need to adapt to environmental challenges. At the same time, the elevated levels of anxiety and stress among these players indicate that higher motivation may be accompanied by increased psychological pressure. This supports the view of Weinberg and Gould (2019), who emphasized that psychological variables are interrelated and collectively influence sports performance.

The results also align with the theoretical perspectives of Hagger and Chatzisarantis (2016), who highlighted that environmental and social contexts play a crucial role in shaping motivational behaviour and psychological responses. Players from sea-level regions may face unique environmental and socio-economic challenges that contribute to both higher motivation and increased stress and anxiety levels.

Furthermore, the findings are consistent with earlier studies suggesting that environmental factors such as climate, infrastructure, and socio-economic conditions significantly influence psychological variables among athletes (Verma & Singh, 2015; Sharma, 2018). In contrast, players from plain regions, despite having relatively stable environments and better access to facilities, exhibited lower levels of psychological intensity, which may reflect comparatively lower competitive pressure.

Overall, the study highlights that psychological variables are not independent but are influenced by geographical conditions and environmental demands. The comparative differences between plain and sea-level players emphasize the need to consider regional factors in sports training and psychological preparation.

**5.2 CONCLUSION**

The present study concludes that there are significant differences in selected psychological variables between adolescent football players from plain and sea-level regions of West Bengal. Players from the sea-level region exhibited higher levels of motivation, anxiety, stress, and personality traits compared to players from the plain region.

These findings indicate that geographical and environmental factors play a crucial role in shaping the psychological characteristics of athletes. The results further confirm that psychological variables such as motivation, anxiety, and stress are interrelated and collectively influence sports performance.

Therefore, the null hypothesis stating that there is no significant difference between the two groups is rejected. The study emphasizes the importance of integrating psychological considerations into sports training programmes, particularly with respect to regional differences.

**5.3 RECOMMENDATIONS**

Based on the findings of the study, it is recommended that coaches and sports authorities should incorporate

psychological training programmes tailored to the specific needs of athletes from different geographical regions. For players from sea-level regions, strategies for managing stress and anxiety, such as relaxation techniques, counselling, and mental skills training, should be emphasized to balance their high motivational levels.

For players from plain regions, efforts should be made to enhance motivation through goal-setting techniques, positive reinforcement, and increased competitive exposure. Providing equal opportunities, quality coaching, and improved infrastructure across regions can help in reducing psychological disparities.

Additionally, the involvement of sports psychologists is essential to monitor and improve the mental well-being of athletes. Awareness programmes for coaches, athletes, and parents should also be conducted to highlight the importance of psychological factors in sports performance. Overall, a balanced approach combining physical training and psychological support is necessary to optimize the performance and development of adolescent football players.

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