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## Psychological anxiety and its relationship to volleyball reception accuracy among students of the college of physical education and sports sciences

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### Abstract

#### Purpose

This study aimed to

1. Determine the level of psychological anxiety and its relationship to reception accuracy among volleyball students at the University of Babylon.
2. Examine the correlation between psychological anxiety and volleyball reception accuracy.

**Methodology:** A descriptive research design was employed, incorporating survey, standardized assessment, and comparative approaches. The study population consisted of 95 volleyball students, of whom 24 were randomly selected, representing 75% of the targeted sample. Data collection involved administering a psychological anxiety scale followed by a reception accuracy performance test.

#### Key Findings

1. A statistically significant inverse relationship was found between reception accuracy and psychological anxiety within the sample.
2. Students exhibiting higher levels of psychological anxiety demonstrated lower reception accuracy than their peers.
3. Students with lower levels of psychological anxiety achieved higher reception accuracy scores.

#### Recommendations

1. Implement reception training under varied and challenging conditions to enhance skill resilience.
2. Incorporate structured psychological preparation programs to reduce the negative effects of psychological anxiety on performance skills.

**Keywords:** Psychological, anxiety, volleyball

### Introduction

Sports encompass physical activities and skills governed by established rules, pursued for purposes such as entertainment, competition, and the enhancement of self-confidence. These objectives may occur in combination or in isolation. Beyond fostering confidence, sports exert a distinctive impact on both individual players and teams, influencing their performance and interaction within competitive settings.

Volleyball is among the most popular international sports, played between two teams separated by a high net. Accuracy plays a decisive role in scoring points, whether in reception, setting, or spiking. Within volleyball, the precision of reception is of particular importance, as it serves as the foundation for building effective offensive plays, scoring points, and ultimately securing victory<sup>[1]</sup>.

Performance accuracy in volleyball is influenced by multiple factors, including psychological variables. Among these, psychological anxiety is of notable concern due to its potential to impair technical execution. This study, therefore, focuses on examining the effect of psychological anxiety on reception performance in volleyball.

### Research Problem

During her role as a lecturer at the University of Babylon, the researcher observed a noticeable decline in the performance of certain students during competitive matches compared to their training sessions. This discrepancy suggested the influence of psychological factors, particularly psychological anxiety.

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Consequently, the researcher sought to investigate this phenomenon systematically, aiming to identify its nature, magnitude, and potential implications for training and performance enhancement.

### Research Objectives

The present study aims to:

1. Assess the levels of psychological anxiety and reception accuracy among volleyball students at the University of Babylon.
2. Determine the nature and extent of the relationship between psychological anxiety and reception accuracy in volleyball.

### Research Hypothesis

There is a statistically significant relationship between psychological anxiety and reception accuracy among volleyball students at the University of Babylon.

### Research Scope

- **Human Scope:** The research population consists of volleyball students enrolled at the University of Babylon during the academic year 2024-2025.
- **Temporal Scope:** The study was conducted from September 1, 2024, to March 30, 2025.
- **Spatial Scope:** The research took place in the indoor gymnasium of the College of Physical Education and Sports Sciences, University of Babylon.

### Research Methodology and Field Procedures

1. **Research Design:** This study employed a descriptive research design with a correlational approach to examine the relationship between psychological anxiety and reception accuracy in volleyball.
2. **Population and Sample:** The research population comprised all volleyball students at the University of Babylon during the 2024-2025 academic year ( $N = 95$ ). From this population, 85 students were randomly selected, representing 90% of the total population.

#### 3. Instruments and Equipment

Data were collected using the following tools and resources [2]:

1. **Questionnaire:** Psychological Anxiety Scale.
2. **Performance Tests:** Reception Accuracy Test.
3. **Arabic-language References:** to support theoretical and methodological frameworks.
4. **Personal Interviews:** To collect supplementary qualitative information.
5. **Facilities and Equipment:** Regulation volleyball court and four legal volleyballs.
6. **Research Procedures**
  - **Educational Intervention on Psychological Anxiety:** A series of lectures on psychological anxiety was prepared and delivered by specialized faculty members.

Each lecture lasted 15 minutes and was integrated into practical volleyball sessions. These lectures aimed to raise awareness of psychological anxiety and its effects on performance.

### • Tests Utilized [3]

- a) **Psychological Anxiety Test:** A standardized scale was administered to assess the level of psychological anxiety among participants.
- b) **Reception Accuracy Test - Thrown Ball Reception**
  - **Purpose:** To measure the accuracy of ball reception.
  - **Equipment:** Regulation volleyball court, four legal volleyballs.
  - **Performance Specifications:** The player stands behind the receiving line; the ball is tossed toward the opponent's front line and returned using an arm pass.
  - **Scoring System**
    - **4 points:** Ball lands within the opponent's primary area.
    - **3 points:** Ball touches the opponent's boundary line.
    - **2 points:** Ball lands within the 3-meter line.
    - **1 point:** Ball lands outside the 3-meter line.
  - **Attempts:** Each participant performed five attempts; the total score from all attempts was recorded.

### Pilot Study

A preliminary pilot study was conducted with a small subset of the population to:

- Verify the suitability of the tests for the research sample.
- Determine the optimal time for conducting the main study.

### Main Experiment

The main data collection took place on March 13, 2025, at 10:00 AM. Participants first completed the Psychological Anxiety Scale, after which the Reception Accuracy Test was conducted. Each player was given five attempts in Zone A and five attempts in Zone B, with scores recorded according to the established scoring criteria.

### Statistical Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). The following statistical measures were computed:

- Mean.
- Standard Deviation.
- Pearson Correlation Coefficient.

### Results

#### Presentation, Analysis, and Discussion of Results

##### Presentation of Results

Presents the arithmetic means, standard deviations, and Pearson correlation coefficients for reception accuracy and psychological anxiety among the research sample.

**Table 1:** Descriptive statistics and correlation analysis for the research variables

| Variable              | Mean  | SD     | Pearson's $r$ | Sig. (p-value) | Correlation Significance |
|-----------------------|-------|--------|---------------|----------------|--------------------------|
| Reception Accuracy    | 345.1 | 19.564 | 0.74          | 0.064          | Significant              |
| Psychological Anxiety | 300.5 | 21.896 | —             | —              | —                        |

### Analysis of Results

The findings reveal that the mean reception accuracy score among the sample was 345.1 ( $SD = 19.564$ ), while the mean psychological anxiety score was 300.5 ( $SD = 21.896$ ). Pearson's correlation coefficient between reception accuracy and psychological anxiety was  $r = 0.74$ , with a  $p$ -value of

0.064, indicating a statistically significant relationship at the 0.05 level. Importantly, the correlation is inverse, signifying that higher levels of psychological anxiety are associated with lower reception accuracy. This suggests that anxiety may negatively influence the precision and technical execution of volleyball reception skills.

## Discussion

These results align with existing literature on the detrimental effects of psychological anxiety on motor performance, particularly in high-pressure competitive environments. Students experiencing elevated anxiety levels may struggle with focus, coordination, and timing—critical elements for accurate reception in volleyball [4].

In the context of competitive matches, external stimuli such as crowd noise, chants, and environmental pressure can exacerbate anxiety symptoms, further impairing skill execution [5]. This underscores the necessity for targeted psychological preparation and coping strategies to help athletes maintain technical proficiency under stress [6].

The findings highlight the importance of incorporating mental skills training into volleyball coaching programs, including techniques such as controlled breathing, visualization, and pre-performance routines. By equipping students with these tools, coaches can reduce the adverse effects of anxiety, particularly for those most susceptible to performance decrements in competitive settings [7].

## Conclusion

Based on the findings of the present study, the following conclusions were drawn:

1. There is a statistically significant inverse correlation between reception accuracy and psychological anxiety among the study sample.
2. Students with higher levels of psychological anxiety exhibit lower reception accuracy compared to their peers.
3. Students with lower levels of psychological anxiety demonstrate superior reception accuracy in volleyball.

## Recommendations

In light of these conclusions, the following recommendations are proposed:

1. Implement reception training sessions under diverse and challenging conditions to improve skill resilience in competitive settings.
2. Integrate comprehensive psychological preparation programs into training schedules to mitigate the negative effects of anxiety on technical performance.
3. Extend research to investigate the influence of psychological anxiety on additional volleyball skills, such as serving, spiking, and blocking.

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