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## Psychological anxiety and its relationship to serve accuracy in tennis for physical education students

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### Abstract

#### The objectives of this research study were

1. To identify the level of anxiety and its relationship to the accuracy of the serve among tennis students at the University of Babylon.
2. To identify the relationship between anxiety and the accuracy of the serve in tennis.

The researcher used a descriptive approach, employing survey methods, normative studies, and comparative studies to measure the anxiety of the University of Babylon tennis students. The sample consisted of (14) students, (10) of whom were randomly selected, representing a sample size of 71%. After distributing the anxiety scale questionnaire, the tests were administered, and the researcher reached the following conclusions

1. There is a significant and inverse correlation between the accuracy of the serve and the anxiety of the research sample.
2. Students with a higher level of anxiety had weaker serving than their peers.
3. Students with a lower level of anxiety had better serve accuracy than their peers.

#### The recommendations are

1. Emphasize serving drills under varying challenging conditions.
- Emphasize the importance of adequate psychological preparation for students to minimize the impact of anxiety on skill performance.

**Keywords:** Psychological, anxiety, accuracy, tennis

### Introduction

Sport is a physical exertion or skill performed according to agreed-upon rules for the purpose of recreation, competition, or building self-confidence. The goals vary depending on whether they are combined or pursued individually. What distinguishes sports, in addition to building confidence, is the impact that players or teams have on their sport. Tennis is one of the most popular sports worldwide, played by two teams over a net in a designated area separated by a high net. Accuracy plays a crucial role in scoring points, whether in serving or receiving, and is related to the artistry of a tennis player's performance, which has its own unique characteristics compared to other team sports<sup>[1]</sup>. Most importantly, accurate serving is essential for constructing a correct attack, scoring points, and winning matches. Many psychological factors affect performance accuracy, and this research will examine anxiety to determine its impact on tennis serving.

### Research Problem

The researcher observed that some students at the University of Babylon experience a decline in their performance during matches compared to their usual practice level. Therefore, the researcher decided to study the psychological factors contributing to this decline, including anxiety. This led the researcher to explore this area to understand the underlying causes and address them.

### Research Objectives

1. To determine whether anxiety levels and service accuracy decrease among University of Babylon tennis students.
2. To identify the relationship between anxiety and service accuracy in tennis.

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## Research Hypotheses

There is a significant relationship between anxiety and service accuracy among University of Babylon tennis students.

## Research Scope

- **Human Scope:** University of Babylon tennis students in their third year of study for the academic year 2024-2025.
- **Time Scope:** The study period is from October 1, 2024, to April 3, 2025. 1-5-3 Spatial Area.
- a) The open sports hall in the College of Physical Education and Sports Sciences.

## Research Methodology

The researcher used descriptive and correlational methods, as appropriate to the nature of the research.

## Research Population and Sample

The researcher selected the research population, which consisted of tennis students at the University of Babylon during the academic year (2024-2025), totaling (130) students. (100) of these students were randomly selected, thus representing (71%) of the research sample.

## Research Procedures

### 1. Lectures on Anxiety <sup>[2]</sup>

The researcher prepared a series of lectures delivered to the research sample by specialized professors. Each lecture lasted approximately 15 minutes and was conducted during the practical tennis lessons. This facilitated the testing process, which revealed a significant difference compared to previous sessions. 3-4 Tests Used in the Research.

### 2. Serve Accuracy Test <sup>[3]</sup>

- Serving accuracy from thrown balls
- a) **Purpose of the test:** To measure serve accuracy.
- b) **Equipment:** Tennis court, exercises, (4) volleyballs

## Exploratory Experiment

This is a preliminary experimental study conducted by the researcher on a small sample before conducting research aimed at testing the research methods and tools.

The aim of the experiment was <sup>[4]</sup>

- To determine the suitability of the tests for the research sample.
- To determine the appropriate time to conduct the research.

## Main Experiment

Testing serves accuracy and measuring psychological anxiety on (April 13, 2025) at 10:00 AM.

The psychological anxiety scale was distributed to the players, and they completed its items. Afterwards, the serve accuracy test was administered. Each player was given (5) attempts in area A or (5) attempts in area B. The scores were recorded according to the test for each player.

## Statistical Methods

The researcher used SPSS software to calculate

- Mean
- Standard Deviation

- Pearson Correlation Coefficient

## Results and discussions

### Presentation, Analysis, and Discussion of Results

- **Presentation of Results (Optional):** Transmission Accuracy and Psychological Anxiety of the Research Sample

**Table 1:** Shows the arithmetic means, standard deviation, and results of the simple correlation coefficient (Pearson) for the research sample

Statistical variable	Value
Mean (Transmission Accuracy)	240.1
SD (Transmission Accuracy)	20.322
Pearson correlation coefficient (r)	0.63
Statistical significance value (sig)	0.046
Result of the indication	(Significant)
(Psychological Anxiety Test)	270.5
SD (Psychological Anxiety Test)	20.505

Table (1) shows the arithmetic means Standard deviations and Pearson's simple correlation coefficient were used. The results showed that the mean score for serving accuracy was 240.1, with a standard deviation of 20.322, while the mean score for psychological anxiety was 270.5, with a standard deviation of 20.505 <sup>[6]</sup>. The calculated Pearson correlation coefficient between serving accuracy and psychological anxiety was 0.63, and the calculated p-value was 0.46, which is less than the significance level of 0.05. This indicates a significant correlation between the two, and the relationship is inverse; <sup>[7]</sup> that is, the higher the students' psychological anxiety, the lower their serving accuracy. These students will be affected by the sounds and cheers of the crowd, which will impact their skills during the match and, consequently, <sup>[8]</sup> the team's performance. This situation requires the coaching staff to prepare the students psychologically to minimize the impact of this situation, especially for the students most affected by it <sup>[9,10]</sup>.

## Conclusion

1. A statistically significant inverse correlation was found between serve accuracy and anxiety levels among tennis students. The correlation coefficient ( $r=0.63$ ) and significance level ( $\text{sig}=0.046$ ) indicate that higher anxiety levels lead to lower serve accuracy.
2. The results showed that students with lower anxiety levels achieved higher serve accuracy compared to their peers with higher anxiety levels, reflecting the direct impact of psychological state on skill performance.
3. Skill performance during competitions is affected by external factors such as crowd noise and the presence of the audience, which increases anxiety levels and negatively impacts the ability to concentrate and execute fine motor skills like serving.
4. This research highlights the importance of paying attention to the psychological aspect of players as much as their technical and physical aspects. Inadequate psychological preparation is a major factor in the decline of skill execution in tennis.

## Recommendations

1. Implement structured psychological training programs to reduce anxiety levels among players. These programs should include relaxation exercises, strategies for controlling negative thoughts, and deep breathing techniques before and during matches. Diversifying

- serving drills in conditions like real competitions, such as a live audience, sound effects, and time pressure, enhances students' ability to adapt to stressful situations.
2. Including sports psychologists on the coaching staff to regularly evaluate players and develop plans to improve emotional balance during performance.
  3. Emphasizing psychological education within the curricula of physical education colleges to raise students' awareness of the role of psychological factors and their impact on key skills in individual sports like tennis.

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