



## CONSTRUCTING A BASKETBALL SHOOTING ACCURACY TEST UNDER PHYSICAL AND PSYCHOLOGICAL PRESSURE FOR FIRST DIVISION CLUB PLAYERS IN AL-ANBAR PROVINCE

Imad Saadallah Khamees

College of Physical Education and Sports Sciences, University of Anbar

[imad.s.kamees@uoanbar.edu.iq](mailto:imad.s.kamees@uoanbar.edu.iq)

### Abstract

This study aimed to construct a test designed to measure shooting accuracy in basketball under conditions of physical and psychological pressure. The research population consisted of 84 players representing first-division clubs in Al-Anbar province. The test was developed and applied to the research sample following established scientific principles of test construction. The findings indicated that the test effectively reflected real match conditions. Based on these results, the researchers recommended designing and preparing similar tests for other skills within basketball as well as in other sports.

**Keywords:** Shooting accuracy test, Basketball, Test construction, Physical and psychological pressure, Psychological and physical measurement.

### 1. Introduction

There is no doubt that basketball is one of the team sports that has attracted the attention of many people interested in the field of sports. It enjoys a large audience and, by the end of the twentieth century, had become widely spread, with hundreds of thousands of players practicing it. This was confirmed by Patrick Baumann and others, who stated that the number of national federations affiliated with the International Basketball Federation exceeded 208 members, meaning that hundreds of thousands of players practice the game (Patrick Baumann et al, 2000).

The focus of federations, clubs, and coaches is directed towards the training process, one of the most important components of which is sports testing, particularly skill-based tests. These tests are of great importance, beginning with the selection process, passing through the evaluation and assessment of training curricula, and culminating in achieving accomplishments. It is well known that the closer the tests and measurements are to the actual atmosphere and environment of play, the more credible and objective they become. Most skill tests are applied in environments far removed from the pressures of competition, whether physical or psychological. Therefore, the results achieved by players in such tests often differ significantly from their performance levels during actual matches.

Here lies the importance of this research: to establish a test that takes into account the psychological and physical pressures that greatly affect players' achievements. Khalida Ibrahim pointed out that exposure during training or competition to various psychological pressures has a significant impact on the athlete's performance, behavior, skill execution, and motor abilities (Khalida Ibrahim, 2010). Thus, the aim is to achieve results that are closer to the players' true capabilities in an environment similar to that of actual play.

### 1.2 Research Problem

Through the researchers' review of skill tests in basketball, it was observed that most of these tests focus solely on the skill aspect and are conducted under non-pressured conditions, which are far removed from the real playing environment. This prompted the researcher to work on constructing a test that simulates the psychological and physical pressures of competition, making it closer to the atmosphere of a real match.



Hence, the research question arises: Can this test measure the skill and accuracy of basketball shooting under physical and psychological pressure?

### 1.3 Research Objectives

1. Constructing a basketball shooting accuracy test under psychological and physical pressure.

### 1.4 Research Fields

- Human Field: First division basketball club players in Al-Anbar Province.
- Spatial Field: Basketball courts of first division clubs in Al-Anbar Province.
- Temporal Field: From 3/10/2025 to 8/1/2026.

### 1.5 Research Terms

- Shooting Accuracy: Refers to the precision of hitting the target, which is the true criterion of measurement, as in shooting in archery or basketball (Khalil Ibrahim Suleiman, 2012).
- Psychological Pressure: A state resulting from imbalance between achieving goals and the player's educational capabilities, generating emotional tension that negatively affects skill performance and athletic behavior (Muhammad Hassan Allawi, 1998).
- Physical Pressure: The load imposed on the body's vital systems such as the heart, lungs, and muscles as a result of performing specific physical activity (Jack Wilmore & David Costill, 2021).

## 2. Methodology

### 2.1 Study Design:

The descriptive method was used in order to suit the nature of the study (Abdullateef AbdulJabbar et al., 2025; Fayyad et al., 2025, 2026).

### 2.2 Research Population

The research population consists of first division basketball club players in Al-Anbar Province, totaling 84 players distributed across seven clubs: Anah, Phosphate, Al-Wahda, Al-Mustaqbal, Al-Anbar, Habbaniya, and Al-Suqoor.

#### 2.2.1 Research Sample

The sample was intentionally selected and consisted of 36 players representing three clubs: Al-Wahda, Al-Anbar, and Habbaniya. This represented 42.8% of the research population, which is considered a good percentage, as descriptive studies typically require 10–20% of the population. Sami notes that relatively small populations require samples of about 20%, while larger populations do not need more than 10%.

### 2.3 Devices and Tools

- Stopwatch
- Loudspeaker (DJ)
- Whistle
- Basketballs
- 5 cones
- 5 hurdles (50 cm high)

### 2.4 Steps of Test Construction

- Test Name: Basketball Shooting Accuracy Test under Psychological and Physical Pressure.
- Objective: Measuring basketball shooting accuracy under psychological and physical pressure.
- Level: First division club players.
- Devices Used: Stopwatch, basketball court, loudspeaker (DJ), five basketballs, five cones, five hurdles (50 cm high), whistle, recording form.
- Test Procedure:

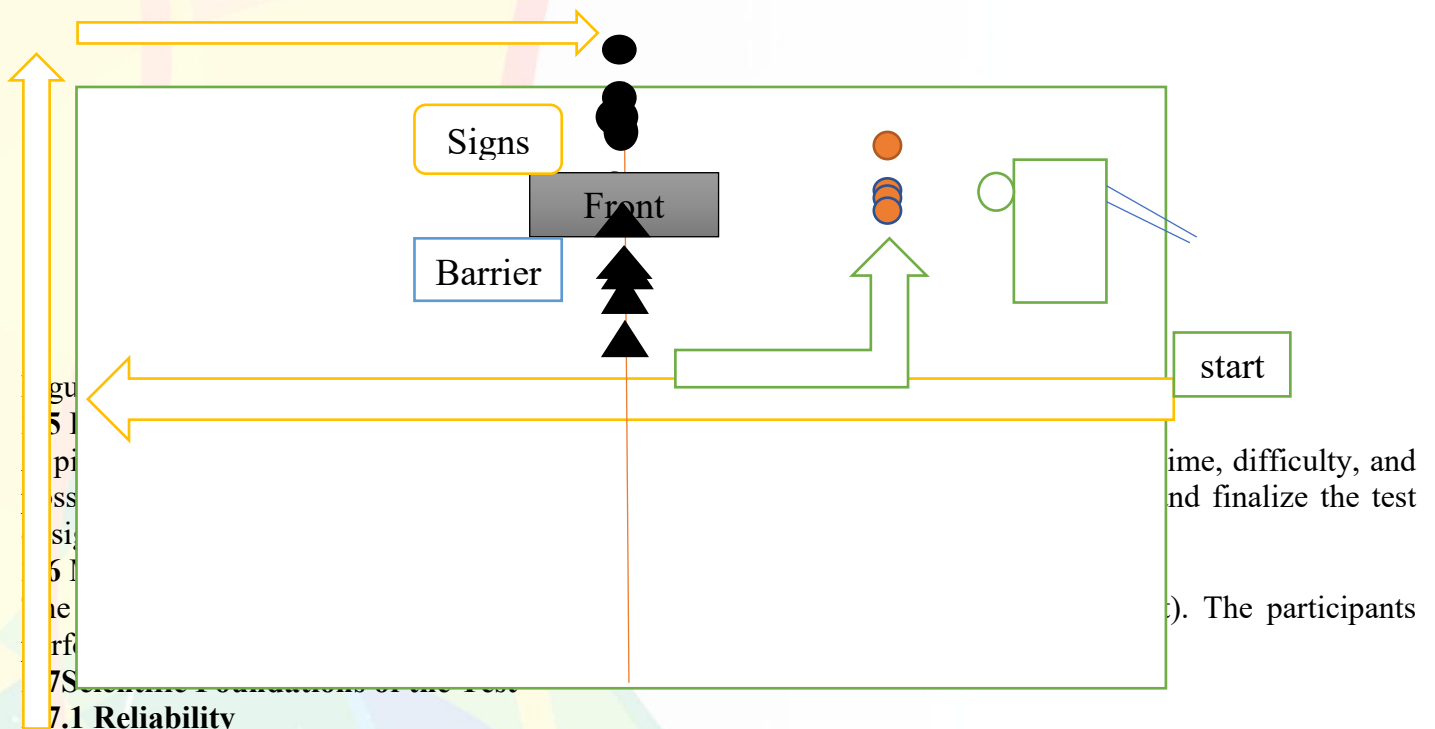


The player stands at the baseline of the basketball court facing the target. At the sound of the whistle, the player runs around the court at maximum speed until reaching the halfway line, then turns left to run through five cones spaced one meter apart (zigzag run). Next, the player performs five push-ups, then jumps over five hurdles (50 cm high). Afterward, the player proceeds to the free-throw line where five basketballs are placed. The player attempts to shoot all five within 50 seconds, while a loudspeaker plays crowd-like sounds. Two assistants stand nearby: one encourages the player (e.g., “You’re a champion, you’ll score them all”), while the other discourages him (e.g., “You can’t score”). This continues until the last shot.

• Scoring Method:

- 3 points if the ball enters the basket without touching the rim.
- 2 points if the ball touches the rim and enters.
- 1 point if the ball touches the rim but does not enter.
- 0 points otherwise.

The score is recorded next to the player’s name. After 50 seconds, the whistle signals the end, and no shots after that are counted.



## 2.7.1 Reliability

By repeating the test and applying Pearson’s correlation coefficient, a high reliability value of 0.93 was achieved.

## 2.7.2 Validity

Validity was confirmed through:

- Intrinsic Validity: Derived from the square root of the reliability coefficient, reaching 0.96.
- Content Validity (Expert Validity): The test was reviewed by 12 experts, 11 of whom approved it (91.6%). Thus, the test is considered valid (Fouad Al-Bayhi Al-Sayed, 1979).

## 2.7.3 Objectivity



The test instructions and scoring method are clear and not subject to interpretation or bias. With 11 out of 12 experts agreeing, the test demonstrates high objectivity.

## 2.8 Statistical Methods

The researchers used appropriate statistical methods via the SPSS software package (Hammood et al., 2024; Khalaf et al., 2025; Mohammed et al., 2025).

## Results

### 3.1 Presentation and Analysis of Results

Table (1): Results of the Basketball Scoring Accuracy Test under Psychological and Physical Pressure

| Highest Achievement | Minimum achievement | Arithmetic mean | Unit of Measurement | Standard deviation |
|---------------------|---------------------|-----------------|---------------------|--------------------|
| 14                  | 5                   | 9,37            | point               | 2,71               |

The table above shows the results of the basketball shooting accuracy test under psychological and physical pressure. The highest achievement was 14 points, the lowest was 5 points, with a mean of 9.37 points and a standard deviation of 2.71. These results indicate that the standard deviation is of medium value, meaning the test results are not widely dispersed from the mean. Thus, the mean can represent the test results well and can be relied upon in the statistical analysis of all outcomes.

## 4. Discussion

The mean score of 9.37 points reflects a level that is not suitable for the research sample, as these players represent first division clubs competing to advance to the premier division. The researcher attributes this to the combined physical and psychological pressure on players. Basketball shooting requires a high degree of concentration, which decreases with fatigue. Mental processes decline under physical fatigue, and fatigue is one of the most important factors affecting performance efficiency, often leading to narrowed attention (Robert Weinberg & Daniel Gould, 2019).

This test significantly considered psychological pressure through loud crowd-like sounds, which simulate real match conditions. Hamed Suleiman noted that most players give great consideration to the audience, which creates a heavy burden on them (Hamed Suleiman Hamad, 2011). Additionally, the encouragement and discouragement provided by assistants simulate the influence of coaches or teammates. Suleiman also emphasized that players may fall under the pressure of coaches or administrators, making them feel incapable of showing their abilities (Hamed Suleiman Hamad, 2011).

Another factor is time pressure, as the test limited shooting to 50 seconds. This requires fast performance, which strongly affects accuracy. Khalil Ibrahim Suleiman confirmed that speed and accuracy are inversely proportional: the faster the performance, the lower the accuracy, and vice versa (3).

## 5. Conclusions

1. The test significantly simulated match conditions in terms of physical and psychological states.
2. The test proved valid in measuring what it was designed to measure.

## Recommendations

1. Designing and preparing similar tests for other basketball skills.
2. Designing and preparing similar tests for skills in other sports.
3. Designing tests that incorporate additional pressures beyond psychological and physical ones.

## References

1. Abdullateef AbdulJabbar, M., M. Ali, M., Ali Khalaf, Y., Hadi Hammad, S., Khalid Awad, A., Jaber Mushref, A., & Adham Ali, O. (2025). The effect of mental training (mental visualization and attention focus) on the accuracy and speed of offensive performance in fencing players. *Retos*, 70, 1097–1113. <https://doi.org/10.47197/retos.v70.117026>



2. Fayyad, F. H., Hammood, Y. M., Ali, O. A., Mushref, A. J., Awad, A. K., & Khalaf, Y. A. (2026). Construction and Standardization of a Reliable Test to Measure Short Aerial Ball Shooting Accuracy in Football. *International Journal of Human Movement and Sports Sciences*, 14(1), 48–58. <https://doi.org/10.13189/saj.2026.140106>
3. Fayyad, F. H., Hammood, Y. M., Ali, O. A., Mushref, A. J., Awad, A. K., & Shanta, A. (2025). Building and legalizing a test to measure the level of football agility of young players. *Retos*, 68, 1578–1590. <https://doi.org/https://doi.org/10.47197/retos.v68.116368>
4. Fouad Al-Bayhi Al-Sayyid: *Statistical Psychology and Measurement of Human Action*, 3rd ed., Cairo, Dar Al-Fikr Al-Arabi, 1979.
5. Hamed Suleiman Hamad: *Sports Psychology*, 1st ed., Dar Al-Arab Publishing, Damascus, 2011.
6. Hammood, Y. M., Awad, A. K., Ali, O. A., Mushref, A. J., & Hummadi, J. N. (2024). Measuring the aggressive behavior of the teams in the Iraqi Premier League in football and its relation to the results and ranking of the league for the 2022-2023 season. *Sportske Nauke i Zdravlje*, 14(2), 127–134. <https://doi.org/10.7251/SSH2402127H>
7. Jack Wilmore & David Costill: *Physiology of Sport and Exercise*, 1st ed., Champaign, USA, 2021.
8. Khalaf, Y. A., AbdulJabbar, M. A., & Ali, O. A. (2025). The effect of sports job burnout on the performance of workers in student activities departments in Iraqi universities | El efecto del agotamiento laboral deportivo en el rendimiento de los trabajadores de los departamentos de actividades estudiantiles de. *Retos*, 66, 86–95. <https://doi.org/10.47197/retos.v66.113271>
9. Khalida Ibrahim: *New Concepts in Sports Psychology*, Baghdad, Al-Noor Office, 2010.
10. Khalil Ibrahim Suleiman: *Motor Learning*, 1st ed., Dar Al-Arab Studies and Publishing, Damascus, 2013.
11. Khalil Ibrahim Suleiman: *Motor Learning*, Dar Al-Arab Studies and Publishing, Damascus, 2012.
12. Mohammed Hassan Allawi: *Psychology of Training and Competitions*, 1st ed., Dar Al-Fikr Al-Arabi, Cairo, 19
13. Mohammed, K. J., Suleiman, K. I., Naser, M. M., Ali, O. A., & Ali, O. (2025). The effect of colorful and varied visual skill exercises on the development of sensory perception and complex skill performance among futsal players. *Retos*, 69, 1226–1239.
14. Patrick Baumann et al.: *Basketball for Young Players and Coaching Guidelines*, 2000.
15. Robert Weinberg & Daniel Gould: *Foundations of Sport and Exercise Psychology*, 7th ed., Human Kinetics, 2019.
16. Sami Mohammed Milhem: *Measurement and Evaluation in Recreation and Psychology*, Amman, Dar Al-Maysarah Publishing, 2000.