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## **Psychological toughness and its relationship to some physical abilities and accuracy of performance of some basic skills among Baghdad University handball team players**

**Roaa Akram Akbar <sup>1</sup>, Shaima Habib Ali Yassin <sup>2</sup>, Jamal sakran hamza <sup>3</sup>**

<sup>1,2,3</sup> University of Baghdad, College of Physical Education and Sports Sciences

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### **Abstract**

The aim of the research is to identify psychological toughness and its relationship to some physical abilities and the accuracy of performing some basic skills among the players of the University of Baghdad handball team. As for the hypothesis of the research, it is the existence of a correlation between psychological toughness, physical abilities, and the accuracy of performing some basic skills among the players of the University of Baghdad handball team. The researcher used the descriptive approach in the style of correlational relations to suit the research problem, as the research community was determined by (18) players for the University of Baghdad handball team, while the research sample was (14) players, and the research sample constituted (88%). The research concluded that the University of Baghdad handball team has high psychological toughness and the level of its physical and skill performance is good. And that there is a strong and moral correlation between psychological toughness and the skillful and physical performance of the university handball team players. The researcher recommended the need to pay attention to the psychological aspects and the development of psychological toughness among the players of the Baghdad University team in handball and other sports in general. Because of the toughness shown by the study in the skillful and physical performance and its

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<sup>1</sup> University of Baghdad, College of Physical Education and sport sciences, [Roaa.A@cope.uobaghdad.edu.iq](mailto:Roaa.A@cope.uobaghdad.edu.iq)

<sup>2</sup> University of Baghdad, College of Physical Education and sport sciences, [Shaima.H@cope.uobaghdad.edu.iq](mailto:Shaima.H@cope.uobaghdad.edu.iq)

<sup>3</sup> University of Baghdad, College of Physical Education and sport sciences, [jomal.hamza@cope.uobaghdad.edu](mailto:jomal.hamza@cope.uobaghdad.edu)

high mark. And the need to study the relationship of psychological hardness with the performance of other skills in other games.

**Keywords:** psychological toughness, physical and skill abilities, handball

## introduction

From a physical aspect, physical abilities are the requirement of every individual to overcome the requirements of his work in general, but for an athlete, they are very important to overcome the course of training or competition in particular. As for the psychological aspect, employing these physical abilities in a negative or positive way for the course of work, which is represented by the physical aspect, depends on the concept of the athlete's psychological toughness and his strength of endurance to the events and pressures of competition and training. Team sports in which contact with an opponent is possible are considered possible, but are subject to the law. It requires the athlete to have psychological toughness and be able to complete competitions or training in a positive manner, far from negative behavior.

Handball is one of the sports that requires physical strength accompanied by psychological toughness in performing the required playing skills under high psychological influence. Therefore, the importance of the research is to know the psychological toughness and physical abilities and their relationship to the accuracy of performing some basic skills among the players of the University of Baghdad handball team.

**Research problem** It is that in team games, when the number of players is large and the type of game in which friction is common, and when any negative problem occurs to the team players whose toughness and psychological endurance are negative and far from good abilities, they are unable to deal with training or competition situations and events positively. Therefore, it will affect their result by losing

**Research objective** the current study aims to identify psychological toughness and physical abilities and their relationship to the accuracy of performing some basic skills among the players of the University of Baghdad handball team.

**Force the search** It is the existence of a correlation between psychological toughness, physical abilities, and the accuracy of performing some basic skills among the players of the University of Baghdad handball team.

## Method and tools

The researchers used the descriptive approach in the form of correlational relationships to suit the research problem, as the research population was limited to (18) players for

the Baghdad University handball team, while the research sample included (14) players, and the research sample constituted (88%). The researchers used a single sample design.

**Table (1) shows the percentage distribution of the sample**

<b>T</b>	<b>the society</b>	<b>the number</b>	<b>Percentage</b>
<b>1</b>	<b>research community</b>	<b>18</b>	<b>100%</b>
<b>2</b>	<b>The research sample</b>	<b>14</b>	<b>77%</b>
<b>3</b>	<b>Exploratory sample</b>	<b>4</b>	<b>22%</b>

The researchers used research methods (Arabic sources and references, observation and analysis, tests and measurement, the Internet), and the researchers also used tools and devices, including a stopwatch and a photographic camera.

### **Field research procedures**

#### **First: Determine the measure of psychological toughness**

Psychological Hardiness Scale: The psychological hardiness scale of (Al-Azzawi, 2004) was used. The scale consists of (32) items, and the scale's items are answered according to a four-graded scale (applies to a great degree, applies to a moderate degree, applies to a small degree, does not apply to ) which is equivalent to grades [1, 2, 3, 4]. The highest score on the scale is (128), the hypothetical average is (80), and the lowest score is (32). Obtaining a high score on the scale indicates a high feeling of psychological toughness, and vice versa.

#### **Second: Determine physical capabilities**

**Table (2) shows the selection of physical abilities and their tests**

<b>T</b>	<b>Physical abilities</b>	<b>the test</b>
<b>1</b>	Arm stretcher	Bend and extend the arms from the prone position in (10) seconds
	Bearing strength to the arms	Repeat the performance as many times as possible
<b>2</b>	The strength and speed of the leg muscles	Partridge for the farthest distance (right-left) (20)s

3	The distinctive strength of the arms	Sitting from lying (20) seconds
4	Speed table	Speed Test (30)
5	Transitional speed	Running face-to-face and back, with a distance of (252) metres
	Passing and receiving	Passing and receiving the ball on the wall from a distance of (4) metres
	Plumpness	Plump test for a distance of (30) m
	Handling	Test of long handling and accuracy of directing the ball from a distance of (30) m
	Shooting	High shooting accuracy

**Tests used:**

**Physical tests**

1-**Name of the strength endurance test for the arms** (Hassanin and Maani, 1998, p. 236)

**Purpose of the test** Measuring the endurance and strength of the muscles of the arms and shoulders.

**the performance:** From the inclined prone position, the tester bends the elbows until they touch the ground with the chest, then returns again to the inclined prone position. The performance is repeated as many times as possible.

**comments:**

- It is not allowed to stop while taking the test.
- The body's straightness is observed during the performance stages.
- The chest must touch the ground when performing.

**Register:** The laboratory records the correct attempts made.

2- **The name of the test is the strength and speed of the arms, the push-up test in the forward lean position for (10) seconds.** (Al-Sahar Wardi and Yas, 2016, p. 434)

The purpose of the test is to measure the speed-specific strength of the muscles of the arms and shoulders. Tools Stopwatch: A flat area of land.

- Performance method - Conditions: From the inclined position (frontal support), the tester bends and extends the arms to the maximum possible number in a time of 10 seconds.

Recording: The laboratory records the number of correct attempts at flexion and extension during the 10-second period that he made.

3- Name of the test: - Hurdle test (20) seconds for the maximum distance with a change of leg at the border of the handball court. (Al-Sahar Wardi and Yas, 2016, p. 434)

**Objective of the test:** Measuring the speed characteristic strength of the leg muscles.

**Tools:** Handball court (40m x 20m), stopwatch, whistle.

**How to perform the test:** The tester stands at the intersection of the sideline and the outside goal line, and the referee is in the middle of the field, carrying a stopwatch. The referee gives the audio signal. The tester begins to step on the left leg over the sideline of the court, and when the timer reaches 10 seconds, the referee is given a sound signal to switch to the right leg without stopping. The tester stops performing and continues to stone until the specified time (20) seconds expires, and the arbitrator gives an audio signal to stop performing the test.

**Register:** The distance traveled by the laboratory is calculated from the starting point to the point reached by the laboratory at the moment the time expires

**the conditions:** The goal must be above the court lines in order for the distance traveled to be calculated accurately. This is particularly emphasized when the tester reaches the intersection of the court lines in the corner. The goal must also be moved from its position so that it is not obstructed during the test.

#### **Skill tests**

**1-Test name: Test of passing and receiving the ball on the wall from a distance of (4) metres.** (Kamal Abdel Hamid, Muhammad Sobhi Hassanein, Measurement in Handball: Cairo, Dar Al-Fikr Al-Arabi, 1980, p. 215)

**Objective of the test** Measure passing and receiving endurance

**Tools:** Hand balls (15), stopwatch, blocking wall. Performance specifications: The player stands behind the line drawn on the ground at a distance of (4 metres) so that he does not touch it during the performance. Then the player passes the ball to the wall and receives it continuously as many times as possible during the specified time.

**Calendar** The number of passes and receptions is counted (45) seconds

**2-The name of the test is the zigzag bump between the pillars for a distance of (30 metres).** (Kamal Abdel Hamid, Muhammad Sobhi Hassanein, Measurement in Handball: Cairo, Dar Al-Fikr Al-Arabi, 1980, p. 218)

**Objective of the test:** Plump tolerance measurement.

**Tools:** Handballs, number (5), watches, adhesive tape, issued, numbers (5). specifications **the performance:** Install five sound signs on the ground in a straight line, and the distance between each two signs is (3) meters, and a line is drawn to start at a distance of (3) meters from the first sign. The tester stands behind the starting line when he hears the start signal. He dribbles the ball and runs in a zigzag pattern between the signs back and forth. The player runs back and forth continuously and according to the specified time.

**Calendar:** The number of signs is counted within (60) seconds.

**3-Test name:** Measuring shooting accuracy by jumping forward. Abdul Hamid and Subhi, 1990, p. 116.)

**Purpose of the test:** Measuring shooting accuracy by jumping forward

**Tools:** Handball court (6 handball), two goals (60 cm. 60 cm) suspended in the goal

**Performance method:** Shooting is made from a point located at a right angle to the middle of the goal line and 10 meters away from it, provided that the shot is preceded by preparation for running in the rhythm of doubles and triples, noting that the shot is made at two specific targets placed in the upper corners of the goal.

**the conditions:** A - It is not permissible to exceed the specified point for shooting. 2 - Shooting is once at the right target and once at the left target. Each player makes three attempts on each goal and scores his best **Attempt to register:** A shot is considered correct when it hits the target or collides with its square boundaries

#### **Exploratory experience:**

The researcher conducted a reconnaissance experiment on a sample of (4) players from outside the main research sample, in which the scale was applied in addition to the skill and physical tests on 2/5/2023, and this scale and these tests were re-applied on 2/12/2023, that is, after seven weeks had passed. Almost days.

#### **Scientific parameters of the scale and the tests used:**

**Honesty:** The test is valid if it succeeds in measuring the extent of achieving the goals for which it was set. Honesty is also defined as the degree of validity that you approach with complete success in measuring what you want to measure. Thorndike expressed the truthful test by saying that it is the test that measures what you want to measure it with, everything you want us to measure it with, and nothing but what you want to measure it.

#### **1- Validity of the psychological hardiness scale:**

To achieve the validity of the scale (psychological toughness), the researcher presented the form containing the aforementioned scale to a number of experts and specialists in sports psychology and handball, and all of them agreed on the validity of the scale for application to handball players.

#### **2- Validity of skill and physical tests:**

After the most prominent skills and abilities were tested by the experts and specialists in handball, the experts themselves were consulted about the appropriate tests for these skills and abilities, and thus the validity of the aforementioned tests was proven.

**3-Consistency** Reliability is one of the basic measurement characteristics of the scale, taking into account its validity, because a valid scale is considered stable, while a stable scale may not be valid.

**4-Stability of the scale** The reliability of the scale was verified by testing and repeating it, and the degree of correlation between the two tests, which shows the degree of stability of the aforementioned scale, is (0.85). This indicates the presence of a high reliability coefficient.

**5-Stability of tests:** The reliability of the tests was verified by repeating the test and the degree of correlation between the two tests.

**Objectivity:** Objectivity is that the test is not affected by changing arbitrators and that the test gives the same results regardless of who evaluates the test. This means excluding subjective judgment, as the more objectivity in arbitration, the less subjectivity.

The main research experiment: After completing all the scientific requirements for the scale as well as the tests (skills and physical), the researcher carried out the research by distributing the questionnaires for the (psychological toughness) scale and conducting the two tests from 2/12-19/2023.

**Statistical methods** The researcher used the following equations and statistical methods to achieve the research objectives

1. Arithmetic mean
2. standard deviation
3. Pearson correlation coefficient –

**Results**

**Table (3) shows the arithmetic mean and standard deviation of the study variables for the research sample**

Variables	N		Q	A
Mental toughness	14		107.5	5.918
Bearing strength to the arms	14	Repetition/elongation	12.85	.7703
The strength and speed of the arms	14	Repeat/10 s	9.786	.6993
The distinctive strength and speed of the leg muscles	14	m/20s	48.21	3.423
Passing and receiving	14	Repeat/45 s	3.214	.6993
Plumpness	14	Number/60s	28.71	1.204
approval	14	Count/correct	3.143	.7703

**Table (4) shows the correlation coefficient and the true significance values for psychological toughness and some physical abilities of the research sample.**

For variables		Correlation coefficient	Significance values	Moral
<b>Hardness Mental</b>	<b>Bearing strength to the arms</b>	<b>.593*</b>	<b>.025</b>	<b>Dal</b>
	<b>The strength and speed of the arms</b>	<b>.682**</b>	<b>.007</b>	<b>Dal</b>
	<b>The distinctive strength and speed of the leg muscles</b>	<b>.692**</b>	<b>.006</b>	<b>Dal</b>

**Table (5) shows the correlation coefficient and the true significance and significance values for psychological hardness and some basic skills for the research sample.**

For variables		Correlation coefficient	Significance values	Moral
<b>Hardness Mental</b>	<b>Passing and receiving</b>	<b>.563*</b>	<b>.036</b>	<b>Dal</b>
	<b>Plumpness</b>	<b>.737**</b>	<b>.003</b>	<b>Dal</b>
	<b>approval</b>	<b>.639*</b>	<b>.014</b>	<b>Dal</b>



**Figure (1) shows the histogram of the means and standard deviations for the scale and the skill and physical tests**

### Discussion

The results presented in Table (4-5) showed the correlation between the scale of psychological toughness and physical and skill abilities. When a comparison was made between the arithmetic mean of the scale, (Salih et al., 2024) which had a value of (107.5), and the hypothetical mean of the scale, which had a value of (80), it was found that the members of the research sample were players who The scale was applied to them. (Abdulhusein et al., 2024) They possess a high degree of psychological toughness according to the standards of the prepared scale. The researchers attribute the results reached to the nature of the handball game, (Kadhim, 2024) being a team game, and contact between players is permissible under the supervision of the law, in addition to what it requires to the high physical capabilities of all the players present in the match. And a high skill performance in possession of the ball, handling and shooting towards the goal.” It requires players to reach advanced levels in sports games, regular and continuous training for long periods of time, (Kazar & Kazim, 2020) in the physical field, to acquire general physical, motor, (Mohsen et al., 2024) and compatibility abilities.” (Hamza et al., 2023, p. 353). This is what (Hassan, 2020, p. 415) confirms that abilities Physical and skill “are what make the player more solid and more able to withstand and face the obstacles and problems that confront him, and stimulate his latent abilities in all stressful competitive situations. This is what makes the player more effective in confronting them because he deals with the sources of pressure directly.” (Easa et al., 2022) Thus, psychological toughness has an effect. In the player’s perceptions of events and in the player’s ability to think broadly, (Hammood et al., 2024) this is what (Salman, 2022, p. 277) pointed out: “Psychological toughness is the basic element in the process of sporting achievement. Therefore, those working in the fields of physical education must benefit from all the influences that affect human behavior. (Awad et al., 2024) And the degree of its severity so that we can find appropriate solutions to it. The variable of psychological hardiness is one of the psychological variables that contribute to the individual’s ability to confront pressures more positively, solve them, and prevent future difficulties. (Kadhim, 2023) It is also considered a general characteristic of the personality that works on its formation and development through the environmental experiences surrounding the individual. As for the relationship psychological toughness and technical performance of basic skills in all sports. Even if the individual performs well, (Abdulkareem et al., 2024) this is not sufficient in confrontation without psychological toughness and the psychological factor, and this is what they confirm and researchers agree with (Abdul, Hassoun, and Al-Dulaimi, 2012, p. 201) that “the learner needs to psychological toughness when preparing to learn skills, and this is confirmed by ( **Jassim, and Ismail, 2022, p. 334**)

**until now**“Good performance alone does not guarantee victory, but rather several factors control obtaining superiority in the match, including the level of competition, the surrounding conditions, and the audience, as well as the motivation to win, (HalahAtiyah et al., 2024) and all of these things fall under the name of psychological factors, as the above factors would tip the scales of the match and help the team overcome.” On the competition, as for the other aspects represented by the physical and skill aspect, it can be controlled and thus developed among the players as individuals and as a group thanks to good training based on modern scientific foundations. Psychological toughness is one of the important psychological factors that plays an extremely important and vital role in creating victories and excellence in the sporting field in terms of Mental and physical preparedness.” (Adnan et al., 2024) John Lefkowitz and others believe that psychological toughness is not only a psychological trait, but it is also mental, physical, and emotional. It does not mean that you have the instinct to defeat your competitors or that you are cold, (Ali et al., 2023) but it means reaching the ideal performance and the maximum of your skills, regardless of the conditions of competition. They add that psychological toughness problems can be easily discovered in the sports field, as they appear clearly through players frequently objecting to the referee’s decisions, or through frequent complaining, (Abdulkareem et al., 2024) objections, and blaming teammates on the team, (Salih et al., 2024) as a result of the player being affected by the surrounding circumstances such as the atmosphere, the referee, and the crowd, and by identifying these. Behaviors and monitoring them, we can know the extent of psychological toughness among the players and the team (Lefkowitz & Mc Duff 2012)and (Hammood et al., 2024). The coach or teacher will not be able to get his players or students to participate in competitions unless he knows their initial motivation in training in a way that is commensurate with their physical, (Ahmed Amer Abdul Hussein, 2020) psychological, skill and mental abilities towards excellence, and reinforces them with self-confidence. (Shehaib, et al., 2021, p. 92)

### **Conclusions**

The results showed that the University of Baghdad handball team has high psychological toughness and its level of physical and skill performance is good. There is a strong and significant correlation between psychological toughness and the skill and physical performance of the university handball team players. **It was recommended** Researchers' recommendations: The necessity of paying attention to the psychological aspects and developing psychological toughness among the players of the University of Baghdad handball team and other sports in general. Because the study showed the solidity in skill and physical performance and its high score. There is a need to study the relationship of psychological toughness to the performance of other skills in other games.

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