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**Ameer Jassim Muhammad**  
General Directorate of  
Education, Maysan, Iraq

**Mustafa Abdel Karim Laibi**  
General Directorate of  
Education, Maysan, Iraq

**Abu Al-Hassan Raouf  
Mahmoud**  
General Directorate of  
Education, Maysan, Iraq

## The percentage of the contribution of some motor abilities to the performance of the crushing hitting skill in volleyball

**Ameer Jassim Muhammad, Mustafa Abdel Karim Laibi and Abu Al-Hassan Raouf Mahmoud**

### Abstract

Included problem this is the study in Lack of research Scientific that dealt Skillful performance is linked to some motor abilities that affect the performance of sports skills, including the implementation of crushing hitting in Volleyball, and given the importance of these variables in performing the skill of crushing hitting and their essential role in being an offensive skill, so we can delve into this phenomenon, and that problem crystallized from By saying that the nature and speed of performing the crushing skill requires physical characteristics and unique physical capabilities, and this can be seen through the results reflected in the performance of that skill, so the researchers thought to know the extent of the contribution of these variables in the performance of the crushing skill, which would be scientific evidence that achieves benefit in Raising a high mathematical level, while the study aimed to find percentages of contribution to the skill of crushing hitting in terms of some physical measurements and the speed of the motor response and to identify the portion of the gift of those variables in the performance of that skill.

**Keywords:** Contribution rate, motor abilities, hitting volleyball

### Introduction

Physical education and sports have become rich in the colours of physical activity, and it has been closely linked to other sciences, such as psychology, physiology, biomechanics, sociology, and others. The game of Volleyball is one of the collective sports that requires those in charge of it, including coaches and specialists, to conduct comprehensive tests that combine capabilities and physical components on the one hand and motor skills, on the other hand, to be a guide for evaluating the sports level and standing on the level of development of the training process carried out by the ball coaches. The plane during its training stages, as the individual's access to the higher levels, depends on the extent of his physical and physical capabilities appropriate to the type of activity that he practices, which allows him to succeed and excel when he has training based on sound scientific foundations. The sport of Volleyball is one of the most famous collective games in the people world in general, whose players' performance level development was linked to some physical measurements and motor abilities, which obliges the workers in this field to adopt modern and contemporary training curricula and plans on the one hand, and on the other hand, to identify the levels of players and their abilities in the requirements of the game (skilful, physical, functional, and tactical) that provides the opportunity for the coach and the player to identify the levels of the players. Therefore, the importance of the research lies in the fact that there is a weakness and lack of mastery appropriate to the skill of striking and its requirements in terms of speed of performance, which prompted the researchers to delve into or deal with this subject in the study because this skill deserves a high level of attention at all levels of sports and to find the percentage of the contribution of some motor abilities in the performance of the craft of striking. The volleyball smasher.

### Research problem

Through the researchers' exposure to many scientific sources in the sports literature, they noticed that this field of study needed to take more in sports, especially Volleyball. The problem is that the study Lacks research Scientific that dealt with Topics of skilful performance in connection with motor abilities and knowing the extent of the impact of these variables on the performance of the crushing hitting skill in Volleyball, which requires physical specifications and special motor abilities.

**Corresponding Author:**  
**Ameer Jassim Muhammad**  
General Directorate of  
Education, Maysan, Iraq

Because of the importance of the kinetic abilities of volleyball players and the kinetic abilities in performing skills (crushing punches) and their essential role in being an offensive skill, this phenomenon can be delved into in addition to that, and why this skill occupies excellent importance among the basic skills and shares with many of them the qualities familiar. Therefore, the researchers resorted to studying this problem by taking note of the variables that impact that skill, as well as reaching the percentage of the contribution of some motor abilities to the performance of the crushing skill.

### Research objectives

1. Identifying some of the essential motor abilities of the research sample.
2. Identifying the percentage of the contribution of the essential measurements of some motor abilities in the performance of the crushing hitting skill with Volleyball among the research sample members.

### Research hypotheses

The motor abilities contribute to the excellent performance of the crushing hitting skill with Volleyball in the research sample.

### Research methodology and field procedures

Scientific research methods "determine the scientific method followed by the researcher, as it is the primary tool for collecting information, imposing hypotheses, and specifying goals to solve a specific problem and reach it." Therefore (Dalen, 1985) [31], the researchers used the descriptive approach in a survey style.

### The research sample

Selecting the sample is closely related to the nature of the community from which the sample is taken because it is "that part of the community on which the tests are conducted and represents the community correctly. (Mahgoub, 1990) [41] (2021), and their number is 8 players, where they represented 57% of the original community. Also, homogenization and equivalence were conducted for the members of the research sample between the variables (height, weight, chronological age, and training age) and equivalence in terms of the studied skill. It was found that there is an apparent homogeneity and equivalence. In those variables, the research sample is not included.

### Determine the tests and measurements used in the research

The researchers distributed a questionnaire to survey experts' opinions about the importance of motor abilities that help perform the skill of crushing hitting with Volleyball. After statistical treatment, the essential variables that obtained the opinion of experts were identified, and then the researchers, after reviewing the sources, references and literature in tests and measurement. After taking the opinions of experts, the following tests were agreed upon:

#### Agility test

**Test name: Exam 9-3-6-3-9**

**The purpose of the test: is to measure agility**

Tools used: legal volleyball court without the net, stopwatch, recorder.

Description of the performance: the tester stands behind the starting line of the stadium, and after the signal, he runs in a straight direction to touch the centre line 9m with his right hand, then turns to run towards line 3 in the middle of the stadium from which he started running to touch it with his right hand, then turns around To run towards the 3m line located in the second half of the 6m stadium, where he touches it with the right hand as well, then turns to the middle line 3m to touch it with the right hand as well, then turns to run towards the finish line 9m to pass it with both feet.

Note: The player must perform the test, as shown in the explanation, and if the tester makes a mistake in the running line, the test is repeated after he gets enough rest, and he must touch the ground with his right hand, and he must cross the finish line with both feet.

Recording: The time is recorded from start to finish, and the tester is given two attempts to record the best.

### Balance test a test (bass rate) of dynamic balance

Purpose of the test: To accurately measure the ability to jump and maintain balance during and after movement.

The necessary tools: a stopwatch, a tape measure, 11 markers measuring 2.54 cm x 1.15 cm and the distance between one marker and the other marker 50 cm and fixing them on the ground.

Description of the performance: the tester stands with his right foot on the starting point, then starts jumping to the first mark with his left foot, trying to hold it on the instep of his left foot for the longest possible period, with a maximum of 5 seconds, after that he jumps to the second mark with his right foot, and so he changes the landing foot from one mark to another and resting on the instep each time, noting that his foot is above the mark so that no part of it appears.

### Register

1. The tester is awarded 5 marks for each mark in the case of a correct landing.
2. The tester is awarded one point for every second in which he maintains his balance above the mark for a maximum of 5 seconds; thus, the maximum score for the test becomes 100 degrees.
3. The tester shall not be awarded the five points for the correct landing of a single mark if he fails to stop while landing after jumping on the mark or if the heel of the foot or any part of his body touches the surface of the ground except for the instep of the foot that has the turn, or if he fails to cover the mark with an instep. If any previous landing errors occur, the tester is allowed to re-establish balance on the instep of the foot that has to turn above the mark and try to maintain its balance for a maximum of 5 seconds.
4. If the tester commits any of the following balance errors before the five-second period ends, he/she loses one point for each second:
  - If he touches the ground with any part of his body other than the instep of his foot.
  - Moving the foot during the balance position.
  - When the player loses his balance, he must return to the mark that has his turn and then try to jump on the other mark with the foot that has his turn.

### Nelson motor response test

#### Test name: motor response speed test (Nelson)

**The purpose of the test: is to measure the ability to respond**

The tools used: a space (20 meters long) and (2 meters wide) free of obstacles, a measuring tape, and a stopwatch.

Performance method: The tester stands at one end of the middle line facing the timer who stands at the other end of the line and holds a stopwatch in one of his hands and raises it, then quickly moves his arm, either to the left or right, and at the same time operates the clock, and at that time The tester runs at maximum speed to the sideline indicated by the timer, and when he reaches the line that is (6.4 m) away, he stops the clock. See Figure 10.

- Scoring: The player records the least time to the right and the least time to the left out of three attempts for each side.

### Exploratory experience

On Monday, corresponding to 7/11/2022, the researchers conducted the exploratory experiment on a sample of 4 players who are from within the research community in order to find out the time in implementing the tests and what

are the difficulties that the researchers may face, and to introduce the assisting work team to the meals entrusted to them And the preparation of equipment and tools and to ensure the scientific basis for the tests used in the research.

### The scientific basis for the tests

The researchers extracted the scientific bases (validity, reliability and objectivity) of the tests and measurements used in the research after the tests were applied in the exploratory experiments with a difference of one week.

### Field research procedures

The researchers conducted tests and measurements on the primary research sample, which consisted of 8 players at the (Martyr Wissam Oraibi Olympic Hall in Maysan).

### Statistical processors

The researchers used the statistical bag SPSS (vR21) for statistical treatments.

### Discuss the Results

**Table 1:** Shows the ratio of motor abilities skill to crushing hitting skill

Variants	R	(R) Square	Degrees of Freedom	Values	R
Motor response	0.918	0.843	1-16	48,349	significance
Agility	0.858	0.814	1-16	42,453	significance
Balance	0.848	0.826	1-16	44,236	significance
Distinctive strength with speed	0.898	0.868	1-16	47,315	significance

In order to identify the results of the percentages of the contribution of those abilities by performing the skill of overwhelming multiplication, the correlation equation was used, through which the strength of the relationship and the percentages of contribution to these variables can be expressed. It is noted through the value of (F) that it has a significant significance, which is an indicator of the significance of the contribution percentages. It is noted in Testing that motor abilities have contributed to those with high percentages.

The researchers believe that the speed of these abilities constitutes essential and effective elements for the crushing skill, in addition to enjoying the accuracy of observation, good behaviour and self-confidence. The player who can perform the crushing skill well will be given an opportunity in a good and successful attack. Also, regarding the skilful performance of Volleyball, the researchers agree with what (Qusai Hazem) pointed out: "The more the volleyball player possesses kinetic capabilities, the more the player can perform the correct behaviour at the right time, especially in games that perform a skill such as the skill of crushing the volleyball." (Muhammad, 2005) [6]. From this point of view, the importance of these abilities in the performance of crushing hitting may gain points without much effort if we work that these abilities are a reflection of the physiological state, which is related to the speed of transmission of nerve impulses between the nervous system and the muscular system.

On the other hand, the researchers attribute those results achieved by the research sample. It was the result of the players acquiring a kind of accumulated experience due to the impact of sports training, which affected their skill level in one way or another, which made them able to choose the appropriate position to hit the ball. Marwan Abdel-Maguid,

"The skill of striking the crushing to the speed in response and accuracy in movement expectation and the correct timing with the ball to the place where the ball hit the ball from" (Majeed, 2001) [5].

It is known that each sport or activity has particular physical and physical characteristics, and the same is the case in Volleyball, so it requires unique physical characteristics in terms of height, arm length, and the like. The volleyball player is significant in the centre of the play industry and the performance of defense and attack skills through crushing strikes and gaining points with minimal effort.

This agrees with it, who pointed out, "Volleyball is one of the most enthusiastic team sports, and the essential requirements for this sport are height and speed of motor response. The length of the arms, feet, and the length of palms facilitate skilful performance (Al-Hadithi, 2002) [1]". This is what "Nuri Al-Shawk" referred to, saying, "Physical measurements are an important and decisive factor when selecting players to practice volleyball, and this means that what suits the volleyball player in terms of physical specifications does not suit the boxer or wrestler, so we see that physical measurements are one of the requirements." essential for players practising Volleyball, and height plays an important role (Al-Shawk, 2016) [2].

### Conclusions and recommendations

#### Conclusions

1. The motor abilities contributed to the performance of the crushing-hitting volleyball skill effectively.

#### Recommendations

1. Putting the researchers' findings at the disposal of the different clubs and teams to benefit from them in the training process.

2. The need for the attention of trainers when developing training programs and giving exercises that will improve motor abilities.
3. Conducting similar studies in sports games and events that require physical characteristics and special motor abilities.

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