



MOTOR RESPONSE SPEED AND ITS RELATIONSHIP TO SOME DEFENSIVE SKILLS IN VOLLEYBALL

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Abstract

This research demonstrates the importance of identifying motor response speed in some basic volleyball skills. The researcher hypothesized the existence of statistically significant differences between motor response speed and some basic volleyball skills. The researcher used the descriptive approach because it suited the nature of the research, as well as for ease of access to data and information related to the research topic. The research sample consisted of 18 male and female volleyball players from Maysan Sports Club, who were selected intentionally. Chapter Four included a presentation, analysis, and discussion of the research results. The researcher used statistical tables to extract the values of arithmetic means and standard deviations for analysis, discussion, and study. Chapter Five included conclusions and recommendations. The researcher recommended the use of training on the skill of defending the court from movement among volleyball players at Maysan Sports Club.

Keywords: Skill, Defense, Volleyball, Movement, Maysan Club.

1-1 Introduction and importance of research

Volleyball is a team sport that falls within the general framework of sports activities in most developed countries. This game is characterized by competitiveness, sophistication, and high excitement, especially when practicing the game's requirements. We note its diverse rhythmic movements, which is evident through the motor formations, which necessitates the availability of creative abilities that include the required giving during the actual practice within the context of competition and the development of the game. Volleyball has developed significantly in the last era of this century, as the scope of the game has expanded to include many countries around the world. This has called for the development of the form of skill performance and the method of playing, which is still subject to further development. Motor activity has become more complex. In order for volleyball, as a team sport with a special nature, to maintain its position, it is obligatory for its players to perform all the basic skills and requirements of the entire game at a level of ability that enables each player to meet the needs of the position in the game. The greater the skill capacity of the players, the greater their ability to implement and improve the linear duty, whether defensive or offensive, and thus the team's chances in Achieving championships, as the researcher asked about the rapid development that occurred as a result of developing offensive skills such as the smash hit, which developed greatly and quickly and became one of the multiple means of gaining points in volleyball, and sports teams must put an end to this danger that determines the outcome of the match by finding the best defensive formations and developing defensive skills for the purpose of reducing the danger of offensive formations, and thus it became one of the general physical and skill qualities and another important one for its relationship to the skill aspect, and the researcher was interested in studying this problem⁽ⁱ⁾.

1-2 Research Problem



Volleyball team builders focus on a set of fundamental pillars, the most important of which are basic skills, which vary in difficulty and complexity from one match to the next. Based on this sense of the importance of these skills, volleyball teams are built on: authorities have developed educational curricula that reduce effort, time, and financial resources. They also work to make the initial learning process less error-prone at this stage. If errors develop, they become difficult to correct. Volleyball is a team sport whose skills are characterized by high timing and accuracy, In addition to the power of the balloon, or the sea in training or at parties, especially in the skills of receiving, defending and defending the cloth, which appear similar, especially among non-practicing or specialized flyers. Through the researcher's practice of this game, he found that many defensive situations are slow and not up to the required level within the research sample. Thus, the researcher sought to identify the reasons for the delay and response to defensive situations to determine the true causes of this problem⁽ⁱⁱ⁾.

1-3 Research objectives:

1. To identify the speed of motor response in some basic volleyball skills.
2. Identify the relationship between motor response speed and some basic volleyball skills.

1-4 Research Hypotheses:

1. There are statistically significant hypotheses between motor response speed and some basic volleyball skills.
2. There is a statistically significant relationship between motor response speed and some basic volleyball skills.

1-5 Research Areas

1-5-1 Human Area: Maysan Sports Club volleyball players.

1-5-2 Time Area: January 20, 2024 to March 19, 2024.

1-5-3 Spatial Area: Maysan Sports Club Volleyball Hall

2- Theoretical Studies

2-1-1 Basic Volleyball Skills

Basic skills are movements performed by a player from various body positions to prevent the ball from falling into his court, hit it, block it, or pass it to a teammate or to the opposing team's court, in a variety of ways controlled by the various playing conditions and various situations. The basic skills in volleyball are defined as the movements a player needs in all the situations required by volleyball, with the goal of achieving the best results while optimizing effort. Through this, a volleyball player must develop these skills while observing the rules of the game. Learning them well from an early age ensures continuity and future improvement in performance, reaching higher levels if he possesses certain important physical qualities in volleyball. However, basic skills are no less important than physical fitness, as the player must know the skills of the game he practices and master them to a great and high degree, until he has a grasp of game plans, whether offensive or defensive. Perhaps the skill connection in volleyball requires the player to reduce skill errors, because any weakness or defect in the performance of a skill leads to confusion in the next skill. For example, the characteristics of receiving The serve leads to a defect in the preparation process and affects the team's attack process. High performance can be achieved in the basic skills by taking into account the law of the game and the ability to obtain the best results with economy in effort and linking the ideal performance with



other sports sciences, including anatomy and kinesiology. The basics are available in the folder that can be sent to: "the serve skill, the serve reception skill, the preparation skill, the smash hit skill, the block wall skill, and the court defense skill"⁽ⁱⁱⁱ⁾.

2-1-2 Court Defense Skills

Volleyball is one of the games characterized by a number of skills and their interconnectedness. It is impossible to succeed and master offensive skills unless you master and succeed in defensive skills. The skills performed by team players include saving balls coming from the opposing team's court and playing them in the hand through counterattacks. Therefore, defensive skills constitute half of the team's work and are important for every player. Their effectiveness is equal to, if not superior to, offensive skills for any team. There are many teams that have distinguished themselves by their strong attacks due to their possession of players with special specifications, but they have lost important matches due to weak defensive skills. Therefore, the recent amendments and changes in volleyball have brought about a radical shift in some of these terms in favor of defensive skills, which have become slow to develop. This process allows for the use of the foot to hit the ball, in addition to the free player's participation in backhand passes, in addition to reducing pressure on the ball to reduce its speed^(iv).

2-1-3 How to perform the skill of defending the court

Some may consider it a skill of receiving the ball from below with both hands, and it is indeed so in terms of form, with the exception that there is a complete flexion of the lower limb joints, especially the knees, with the arms descending under the ball. Therefore, it is similar in form but different in execution and duties. It is used frequently in balls with sharp falling angles. The player moves to the area believed to be the ball's landing zone. After that, the player assumes a deep defensive position, with the feet separated and parallel, and the body weight resting on the toes. The knees are fixed deeply from the knee joint at a rate of 90 degrees, so the body is behind the ball. The position is sometimes moderate and sometimes deep, depending on the angle of the strike. The torso is perpendicular to the thighs and slightly tilted forward, and the head is perpendicular to the level of the shoulders^(v).

2-1-4 Defensive Formations on the court

Defensive formations on the court refer to the positions players take to cover gaps where the ball is expected to fall as a result of the opposing team's attack. The positions a team takes on a regular basis to thwart the opposing team's offensive game plans must be appropriate to the physical, skill, and psychological capabilities of the team's players, enabling the team to defend well. The positions must be varied and based on changing playing situations, in line with the opposing team's offensive plan. If the team is able to identify the appropriate defensive methods, it will certainly thwart further offensive attempts by the opposing team. There are several formations for defending the court (the 6-forward formation, the 6-rearward formation, and the loose formation)^(vi).

2-1-5 Motor Response Speed

Response speed refers to the ability to respond motorically to a specific stimulus in the shortest possible time. It is the link between the foot time and the movement time, i.e., the total time that elapses between the occurrence of the stimulus and the completion of the movement or action. Response speed is the period of time from the moment the stimulus appears to the end of the motor response, i.e., it consists of reaction speed and motor performance speed. Many scientists and researchers have confirmed that there is a period of time before the desired response appears, and this period varies from one individual to another. Response speed is



considered an important physical ability for a volleyball player. This is achieved by shortening the time to exploit gaps that occur during the game, which require a quick response to the stimulus. It requires a response from among the many types of stimuli to which the volleyball player is exposed during the game, and the reactions to which the volleyball player is exposed during the actual game, such as the rapid movement towards the net or the like. This also applies to the motor response quotient, which is the time period between the command and the movement, i.e., the time period between the appearance of a specific stimulus and the end of the movement. Response: While motor response extends to motor processes, reaction stems from these neural processes, from the moment a stimulus appears until the start of movement. The speed and accuracy of response in athletic activity depend on the following factors:

1. The ability to accurately orientate various situations spatially and temporarily.
2. The accuracy of visual, auditory, and sensory perception, and the player's ability to anticipate.
3. The level of skill performance.
4. Speed of movement, aiming, and throwing^(vii).

3- Research Methodology and Legal Procedures

The researcher employed a descriptive approach, a method used in studies, not to uncover the truth. Therefore, this approach suited the nature of the research and facilitated access to data and information related to the research topic.

3-2 Research Sample

One of the most important scientific matters that the researcher must consider when obtaining a sample is that it truly and accurately represents the original community. The research sample consists of 18 volleyball players from the Maysan Sports Club. The researcher chose the intentional method, and the sample percentage was 86% of the original community.

3-3 Tests Used in the Research

3-3-1 Court Defense Test

- Purpose of the test: To measure the player's skills in defending the court against an ace.
- Equipment used: Two circles (A) and (B) are drawn in the corners of the court, at centers (1) and (5). The distance between the circle centers and the side line is (5-1), while the distance between the centers and the end line is (3) m.
- An area is defined in centers (2, 3) to determine whether the attempt is successful.
- The presence of a player serving the ball.
- Legal volleyballs.
- Performance description: The subject stands inside the circle, facing the net. The player must defend the balls facing him and deliver them to centers (2, 3).
- Conditions: Each subject must make 15 attempts from inside circle (A) to defend the court against an ace and deliver them to center (2). The subjects also make 15 attempts from inside circle (A) to defend the court against an ace and deliver them to center (3).



- Repeat the same number of attempts in circle (B).
- All attempts use the skill of defending the field with the arms from below.
- Evaluation: A good and successful attempt is considered if it reaches positions (2) and (3) and is as close as possible to the player in that area^(viii).

3-4 Nelson Motor Response Speed Test

- Test objective: To measure the ability to respond and move quickly and accurately to the test stimulus. This test was developed based on its resemblance to motor patterns in a number of sports, ranging from gender and age from 10 years to university age for boys and girls.
 - Test evaluation
 - The test's reliability coefficient was recorded by applying the test and reapplying it to a sample of players from the College of Physical Education team.
 - The test was considered good and logical by some experts and sports samples.
 - Nelson recorded the test's objectivity coefficient.
 - Tools used:
 - A flat, obstacle-free space, 20 m long and 2 m wide.
 - A stopwatch.
 - Masking tape.
 - Procedures used in the test:
 - The test area is marked with three lines, 4 m apart, and each line is 1 m long.
 - Performance description:
 - The examiner stands at one end of the line. The center line faces the referee, who stands at the other end.
 - The examinee takes a ready position, with the center line between their feet and their body leaning slightly forward.
 - The referee holds a stopwatch in one hand and raises it upward. Then, they quickly move their arms forward to the left and right, simultaneously starting the clock.
 - The examinee responds to the hand signal and attempts to run as quickly as possible toward the team to reach the sideline, which is 4 m from the center line.
 - When the examinee reaches the correct side line, the referee stops the clock.
 - If the examinee starts running toward the line, the referee continues counting the time until they change direction and reach the correct sideline.
 - The examinee has 10 consecutive attempts, 20 seconds apart, using 5 attempts from the sideline.
- Scoring:
- The time for each attempt is calculated to the nearest 1/10 of a second.



-One point. The laboratory is: average of ten attempts^(ix).

3-5 Main Experiment

The researcher conducted the main experiment on Tuesday, February 17, 2024, on 18 volleyball players from Maysan Sports Club. The climatic conditions and experimental procedures were taken into account and provided.

3-6 Statistical Methods

The researcher used statistical methods to process the results:

1. Arithmetic mean

2. Standard deviation

3. Percentage law

4. Pearson correlation coefficient^(x).

4- Presentation, analysis, and discussion of the research results

4-1 shows the arithmetic means and standard deviations of the speed of motor response in some defensive skills in volleyball

Table No. 1

Variables	arithmetic mean	standard deviation
Motor response speed of the legs	3,4071	0,24784
Connection skill 1-2	198,3300	17,728
Connection skill 1-3	199,1187	3,41153
Connection skill 5-2	209,1638	2075842
Connection skill 5-3	213,3313	37,71253

From Table 1 which shows the arithmetic means and standard deviations of the research variables under study, we observe that the arithmetic mean of the variable motor response speed for the two men was (3.4071) seconds while the standard deviation was (0.24784), while the arithmetic mean of the variable field defense, connection skill (1-2), was (198.3300) and a standard deviation of (0.24784), while the connection skill (1-3) recorded an arithmetic mean of (199.1187) and a standard deviation of (3.41153) and a standard deviation of (20.75842), while the arithmetic mean of the connection skill (5-3) was (213.03313) and a standard deviation of (37.71253).^(xi).



4-2 Presentation, discussion, and analysis of the research results on the correlation between response speed and defensive skills on the field.

4-2-1 Table showing the correlation between the speed of the leg motor network and some of the connection skills under study.

Table No. 2

ت	Variables	Motor response speed of the legs
1	Connection Skill 1-2	0,222
2	Connection Skill 1-3	0,440
3	Connection Skill 5-2	0,554
4	Connection Skill 5-3	0,613

he tabular value of (t) at the significance level (0.05) and under the degree of freedom (6) = 707.0 It is clear from the results presented in Table No. 2 that the tabular value (707.0) is greater than the calculated value for the connection skill of (1-2, 1-3, 5-2, 5.3). This indicates the absence of a significant correlation between response speed and field defense skills. The researcher reinforces this because of several factors, including mental, physical, and skill factors, as well as what pertains to the mental process. The player needs to receive the stimulus through the sensory, auditory, and visual organs, in addition to the nervous sense. Then, the sensory signals are transmitted to the defense, which allocates an appropriate motor program, and the program sends the decision-making to the general muscles to play their role in the process. With regard to the physical aspect, which many researchers classify as the basic pillar of skill preparation, the situation is not limited to response speed, which is a type of speed. The researcher also attributes the significant relationship to the fluctuation of the player's level, which He gets a score of 1 in the motor speed test, gets a score of 11.8 in the skill of defending the field, and the player gets a score of 3 in the motor speed test, gets a score of 150 in the skill of defending the field. As for the skill aspect, there are skills that are a basis upon which defensive and offensive skills are built. Through live observation, the researcher noticed the weakness of these basic skills, which causes weakness in the skills of defending the field and offensive skills. The researcher also attributes the insignificant relationship to the young training age of the sample, because the more experienced the player is in training, the more he has the ability to respond quickly in good performance^(xii).

5. Conclusions and Recommendations

5.1 There is no significant correlation between motor response speed and field defense. This is due to the fluctuations in the players' physical level.

5.2 Recommendations



1. The researcher should use field defense skills from movement among Maysan Sports Club volleyball players.
2. Emphasize that the speed of the ball rebounding from the arms should be low so that the prepared player can move toward the ball and control it.
3. Emphasize that when performing the skills of receiving the serve and defending the field, there should be a balance between the values of minimum and maximum force during the movement.

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