

# Training In Diverse Style And Its Effect In Improving Some Biomechanical Variables Of The Skill Of The Aces In Volleyball

**Prof. Dr. Suhad Kasem AL-Musauy<sup>1</sup>, Prof. Dr. Moayad Abdullah Jassim<sup>2</sup>, Prof. Dr. Najah Mahdi Shalash<sup>3</sup>**

<sup>1</sup>Iraq Bagdad University/College of Physical Education and Sports Science from gill,  
[suhad@copew.uobaghdad.edu](mailto:suhad@copew.uobaghdad.edu)

<sup>2</sup>Iraq/Al-Farahidi University/College of Education/ Department of Physical education and sports Science, [m.jassim@uoalfarahidi.edu.iq](mailto:m.jassim@uoalfarahidi.edu.iq)

<sup>3</sup>Iraq/Al-Farahidi University/College of Education/Department of Physical education and sports Science, [najah.m.shalash@uoalfarahidi.edu.iq](mailto:najah.m.shalash@uoalfarahidi.edu.iq)

## Abstract

The aims of the research to identify the biomechanical variables of the skill of the aces in volleyball of the research sample. Likewise, setting exercises in a diverse style to improve some biomechanical variables associated with performing the skill of the aces in volleyball. Also, identifying the effect of exercises in improving some Biomechanical variables associated with the skill of the aces in volleyball. The researchers followed the experimental approach to its suitability of the nature of the research. The researchers conducted the experiment on a sample consisting of (12) players represented by the players of the Sports Industry Club, The researchers used a set of exercises in the diverse style for the purpose of improving some biomechanical variables in the skill of the aces in volleyball. For exercises to modify and improve some variables, including (the speed of approaching, the corner of the ball's start, the angle of the rise, the peripheral speed of the striking arm, the speed of the ball's start). Likewise, moral differences appeared between the results of the pre -tribe and post tests in the two variables (the maximum height, The horizontal distance to enter the stadium) The researchers recommended to conduct similar studies and in different age groups.

**Keywords:** Training in diverse style, Biomechanical variables, the skill of the aces in volleyball.

## Research problem:

Those concerned with the sports aspect have a great role in the progress and prosperity of society by upgrading sports and achieving high achievements in addition to research and investigation of the best means and methods that shorten time and effort to achieve these achievements, whether in encouraging society to exercise or proper selection of heroic athletes or the use of sports training According to the

correct scientific foundations and for all individual and group games. Volleyball game is one of the sports that needs high technology in training according to a studied scientific foundations because it is one of the games that are linked to the abundance of its variables, installation and speed Only change, all of which need technical and high training depth and players possess the various physical qualities mixed in performance, biological mechanics as one of the sports sciences that

work to achieve advanced results in different mathematical skills and the study of influencing force through the use of various methods and tools that enable students to identify the most important steps of skill and effectiveness, which was not previously at this level that it reached today. The skill of the overwhelming transmission in volleyball has a role in provoking and exciting in the match because of its offensive nature and difficulty in performance and because of its great impact on resolving the points in favor of the team, and here lies research importance, The researchers see the conduct of this study to know the effect of the diverse method training in improving the biomechanical variables associated with the skill performance of the overwhelming transmission skill and thus excel in obtaining advanced results. Through the followers of the researchers in training, practicing the game and its continuous follow-up to the league, a number of skill performances of the skill of the aces in volleyball, and these variables can be invested in an organized form to obtain the best level of skill performance and thus obtain advanced results between the teams. Through the researchers' knowledge of scientific research, they found that there is a great contrast between the digital values of these variables, which have a great relationship with the skill performance between the global advanced teams and the Iraqi teams, despite the difference between physical measurements and relatively low physical qualities, and this is a real problem that we must develop suitable solutions to them and upgrading these variables, because they affect the level of skill performance.

#### **The research aims:**

- 1- Recognition the values some of biomechanical variables to the research sample.

- 2- Establishing exercises to train in a varied style in improving some of biomechanical variables to the skill of the aces in volleyball.
- 3- Identify the effect of training in the diverse style in improving some of biomechanical variables to the skill of the aces in volleyball.

#### **The research hypotheses:**

- 1- There are statistically significant differences between tribal and post-research tests to improve some of biomechanical variables to the skill of the aces in volleyball.

#### **Study methodology:**

The researchers used the experimental curriculum with a design (one group with a tribal and remote test) to suit the nature of the research and its problem.

#### **Study Society and its sample:**

The research sample is represented by the young volleyball players of the Sports Industry Club, which number (12) players, as the sample was chosen in the intentional way for the season (2021-2022).

#### **Measurement Tools and Test:**

Has been determined some of biomechanical variables of the skill of the aces in volleyball, The researchers divided the skill into three phases, each stage containing a group of biomechanical variables associated with them and the three stages are the first stage: the steps of approaching and the process of rise, and the important variables at this stage are the speed of approaching and the angle of rise and the number of approaching steps and the peripheral speed of the arms when performing the plans process to the top , And the second stage: It includes the main section, and it starts from the moment of rise and cutting the feet with the ground and ends after the moment of hitting the ball

and leaving the player's hand and the important Kinematic variables in this section It is the maximum high body mass concentration, the maximum curvature of the back and the peripheral speed of the striking hand, the speed of the start of the ball and the angle of its start, and the third stage: It includes the final section, this section begins from the moment the ball comes out of the hand and follows it to the moment the feet touched the field and the important changes to this section is the distance The horizontal that the body cut from the point of relegation to the place of landing and touching the feet of the ground, and the researchers used a Sony video (25 photos) video to measure the search variables, placed on a triple holder, fixed next to the volleyball field on the side of the striking hand For sending at a height of (1.40) meters, and away from The player is (5) meters, a one -meter drawing scale was used and then photographed at the middle of the performance of the performance of the performance. After completing the filming, the researchers measured the angles by identifying the involvement of the angle and influencing it with the mouse index in the (Auto Cad 2003) program, so the value of that angle comes out, and these angles that are the angle of the rise: which is the corner confined between the

horizontal level of the earth and the line connected from the knee and passive joint With the ankle joint, it is measured from the front, and the angle of the start of the ball: It is the angle between the horizontal level and the line that connects from the center of the ball the moment it comes from the hand to the center of the ball at the next moment, And distances and arches: which were measured by determining the starting point and the end point and then measuring the distance by giving the measurement order as well The drop, as the speed was measured: by extracting the distance and time taken and through the following law: **(Horizontal speed = distance / time)**, The experiment was after the researchers prepared training in the diverse style n during the use of the sources as well as the messages and the relevant themes, then applying the exercises in the diverse style on the research sample for a period of (6) weeks and by three training units, the duration of the training unit in the main section (35) minutes . Exercises were applied in the period of seat, as pregnancy ripples were (1: 2), Experience took from 11/25/2021 until 17/1/2022, and after the experiment ended the data was processed by the statistical system (SPSS).

### **Results and discussion:**

**Table 1: Results of the study to the pretest and posttest**

The tests	pretest		Posttest		W	Ass
	Median	Spring deviation	Median	Spring deviation		
The speed of approaching	20	0.3	18.65	1.13	4.11	S
The corner of the start of the ball	59	1.13	64	1.09	2.58	S
The angle of renaissance	41	0.02	30	0.8	5.22	S
The peripheral speed of the striking arm	35	1.15	40	0.13	4.58	S
The highest height	2.45	0.23	3.14	0.32	2.26	S

Ball starting speed	60	1.13	81	0.22	4.56	S
The horizontal distance to enter the stadium	3.85	0.4	2.11	0.8	3.25	S

It is noted from the above table, that there are differences in the values of the mediator and the spring deviation between the two tests, (Tribal and post) and for some of the variables, including (the speed of approaching, the angle of the start of the ball, the angle of the renaissance, the peripheral speed of the striking arm, the speed of the start of the ball) Where these differences, which were used by the researchers in the (W. Koksen) test for the symmetrical samples, which means that the exercises in the diverse style have an effect on improving these variables. As for the variables (higher, height, and the horizontal distance to enter the stadium), moral differences did not appear between the two tests The researchers attribute the reason for the emergence of moral differences to the effect of exercises according to a studied scientific strategy in a way that made the level of players better than before, as the exercises in the diverse style seek to reach the required level, and this is what we have noticed in the skill of the overwhelming transmission, as there are moral differences in the speed of approaching speed As for the angle of the ball flying to the upper imam, the researchers indicate that the angle of ejaculation of the ball affects the horizontal distance to enter the stadium, where the more the angle of the ball ejaculation is close to the horizontal level, the more horizontal distance will be greater (Samir: 1999). As for the angle of the start of the ball, it is like the angle of the tool attack, as the more this angle is below the horizontal level, on the condition of traffic over the network, the more difficult for the opponent team to receive the transmission.

As for the speed of the start of the ball, this means and we note there is a clear impact of the presence of strengths that are distinguished by the speed of the arm -set arm, as well as there is a clear focus on vertical jumping exercises that gave more resistors than what helped to develop the special strength of the research sample personnel. In addition, it makes the athlete seeks to control the corners of the body and the movements of joints to maintain the balance that lacks it when raising or landing from an unequal surface. Many sports training experts have agreed that the use of 'diverse style training' is already limited to developing and developing explosive capacity' (Bob: 2010), and on this basis it was popular as' important and main exercises to develop and develop the most important physical component of many sports events, interval training applied to the experimental group, as the standardized training according to the scientific foundations, the graduation and the change in degrees of intensity according to the method followed below to increase the muscle tension as a result of the use of the training loads below the extremity to the closest ones It led to the excitement of the largest number of muscle fibers and then increased the strength produced (Moaed & Other:2021).

#### **Conclusions and Implications:**

- There is a clear and real effect of exercises in modifying and improving some variables, including (speedy approach, the corner of the ball's start, the upper angle, the peripheral speed of the striking arm, the speed of the ball's start).

- There are moral differences between the results of the pre -tribe and post tests in the two variables (the maximum height, the horizontal distance to enter the stadium).
- Conduct similar studies on different age groups and other volleyball skills.
- The necessity of focusing on improving the level of technical performance of the skill of overwhelmingly in volleyball and biometric variables associated with the players.

**References:**

1. **Bob Gambarda . Serving, (2010): . The AVCA Voollyball Hand Book of American**
2. **Moaed Abdullah Jasm,Dr. Suhad Qasem Saeed Almusawi, Dr. Najah Mahdi Shalash, (2021): .Effectof the opposite hierarchical training method todeveloping explosive power, which is characterized by speed and some functional variables for basketball players. Annals of the Romanian Society for Cell Biology, Vol. 25, Issue 6, Pages. 730-738, View at: [Publisher Site](#) | [Google Scholar](#)**
3. **Samir Musalah Al –Hashemi, (1999): Sports Biomicanic, Mosul, Dar Al -Kutub for Printing and Publishing, Pag: 156.**