International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 03, 2020
ISSN: 1475-7192

# The effect of special exercises using weights in developing some of the physical abilities of the limbs and the accuracy of performing the skill of wavy transmission in volleyball

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**Abstract**

The aim of the research is to prepare special exercises using weights in developing some of the physical abilities of the limbs and the accuracy of performing the skill of the wavy transmission in volleyball for the members of the research sample, as well as to identify the effect of special exercises using weights in developing some of the physical abilities of the limbs and the accuracy of performing the skill of the wavy transmission in volleyball for the sample members The research, as the researchers used the experimental method for its suitability to solve the research problem, and the design of the two equal groups with pre and post tests was chosen randomly, as training with weights is one of the effective training methods that lead to the development of muscular strength in its various forms, and training with weights is one of the important parts that are Within the coach's exercises, the use of weights has increased as a kind of change in the training methods that lead to improving the level of the athlete, as the research sample consisted of players from the University of Diyala team and by (10) players out of (15) players, and through the lottery, they were randomly divided into two experimental and control groups, each group (5) players, as numbers were drawn from (1-10), so numbers (1-5) represented the experimental group and numbers ( 6-10) The control group was represented, in addition to the use of appropriate means, tools and devices, the exploratory experiment was conducted, as well as the pre-tests for the two groups, the application of special exercises, and the post-tests for the two groups, after which the data was unloaded and statistically processed, and then presented, analyzed and discussed The researchers reached several conclusions, which are :

1. The exercises for the use of weights prepared by the researchers contributed significantly to the development of some of the physical abilities of the limbs and the accuracy of the performance of the wavy transmission skill among the members of the experimental group.
2. The gradation in the training load and the diversity in the special exercises for using weights prepared by the researchers had a positive effect in developing some of the

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physical abilities of the limbs and the accuracy of the performance of the wavy transmission skill among the members of the experimental group .

3. The experimental group had an advantage compared to the control group in developing some of the physical abilities of the limbs and the accuracy of performing the wavy transmission skill among the members of the research sample .

The researchers reached several recommendations :

1. The use of exercises for the use of weights prepared by researchers in the training of volleyball teams to achieve better sporting achievements .
2. The use of tests used in research in the training process.
3. Conducting similar research on age groups and other physical and skill variables.

**– Introduction** :

In order to reach the distinguished sports level to achieve sports excellence and obtain the best sports achievements, it is necessary to rely on scientific research in the sports field and benefit from it in the training process to identify weaknesses and strengths in preparing sports teams and address weakness through the preparation of training curricula, special exercises, means and training tools They are prepared and designed according to accurate scientific bases in order to achieve the appropriate physical level and skill proficiency to achieve achievement.

Volleyball is one of the team games in which the integration of special physical abilities is required, especially for large muscle groups, such as the upper and lower extremities muscle group, as well as different playing positions in order to perform difficult technical skills with high accuracy, which necessitates the players to exert a high effort during the training units. Which must be prepared by these units in an accurate scientific manner in distributing training loads to achieve this level of requirements, as “it must be reached how to organize and arrange training curricula and distribute training loads, in proportion to the training stages and the need for sports effectiveness” (Afif Al-Ani:1989: 184), and trainers must also find training means that support the training process in addition to the available means and tools used during training, and among these means training with weights, as “training with weights is one of the effective training methods that lead to the development of muscular strength in its various forms. Training with weights is one of the important parts that are part of the coach’s exercises, and the use of weights has increased as a kind of change in the training methods that lead to improving the athlete’s level” (Mahmoud Rashid: 2020: 3).

Volleyball includes a set of technical skills, including offensive and defensive, and the importance of these skills comes through recording the largest possible number of technical points and deciding the outcome of the match, as the skill of serving is one of the important offensive skills and is frequently used in the match of all kinds, as it is the "sending skill" One of the basic skills and the key to start playing the match by sending it by the player standing in the position number (1) to the opposing team’s court by hitting it with any part of the arm without error with the aim of achieving a point and winning over the opposing team” (Hasanain Naji: 2007: 34), in addition to the undulating transmission, which is considered one of the “important and influential offensive transmissions in the game of volleyball and is used by It requires accuracy and mastery of technical skills, and it is one of the transmissions in which it is difficult for the opposing team to control its reception” (Saad Hammad: 2001 : 43 ) .

The problem of the research lies in the great role of the special physical abilities possessed by the muscles of the body, especially the muscles of the upper and lower extremities, which volleyball players enjoy in performing technical skills, especially the skill of undulating transmission and its prominent impact in achieving high achievement, so it is necessary to train

volleyball players on privacy in Performance through the use of special exercises that serve the physical and technical side in high-intensity training units to achieve the desired goal, and through the experience of researchers in the field of volleyball, they noticed a lack of interest in the use of some training aids such as weights in the implementation of physical and skill exercises that serve the optimal performance of many skills Technical and especially the skill of the wavy transmission, so the researchers decided to study this problem by preparing special exercises using weights to develop some of the physical abilities of the parties and the accuracy of performing the skill of the undulating transmission in volleyball to improve the physical and technical leveland achieve the best achievements.

The fields of research included the human field of Diyala University volleyball players, and by ( 10) players, as for the time domain, it was for the period from 10/10/2019 to 8/1/2020 And the spatial field in the volleyball hall in the College of Physical Education and Sports Sciences at the University of Diyala.

**- Research methodology and field procedures :**

**- Research Methodology :**

The researchers used the experimental method for its suitability to the nature of solving the problem. It is "the only research method that can truly test the hypotheses of cause or effect relationships" (Allawi and Ratib:1999: 217) , so the design of the two equal groups with pre and post tests was chosen at random, so that these two groups are "equal in all their properties in all respects except for the experimental variable that affects the experimental group" (Qandilji: 1999: 17) .

**- research sample :**

The research sample was chosen in a deliberate way from the players of the Diyala University volleyball team, and by (10 players out of (15), and by lottery method, they were randomly distributed into two experimental and control groups for each group (5) players. Numbers (1-10) were randomly drawn, so numbers (1-5) represented the experimental group and numbers (6-5) 10) The control group represented, and thus the sample percentage (66,666%) of the original population .

**- Means, devices and tools used in the research :**

**- Means of collecting information :**

(Arabic sources and references and previous studies, tests and measurements, personal interviews, data registration form, the assistant work team).

**- Tools and devices used in the research:**

(Volleyball court, electronic stopwatch for measuring time, number ( 2) Medical scale for measuring weight and height, markers, chalk, whistle, weights, DELL type computer, number (1), measuring tape 40 meters long with tape 5 cm wide.

**- Determine the search variables :**

**- Determination of physical abilities and tests :**

The researchers surveyed many scientific references in order to identify the most important special physical abilities of the upper and lower extremities and their tests, as well as the personal interviews. Therefore, the researchers chose the special physical abilities (explosive force, force characteristic with speed, endurance of force) and tests based on their field experience in Volleyball field.

**- Determining the accuracy of the performance test of the wavy serve skill in volleyball :**

The researchers surveyed many scientific references in the field of volleyball in order to identify the most important test of the skill of the wavy serve in volleyball, as well as the personal interviews, so the researchers chose the transmission accuracy test for specific difficult areas based on their field experience in the field of volleyball .

**- Tests used in the research :**

The strength endurance test belonging to (Bastawysi Ahmed) has been modified: 1984: 292) quoting from (Sana Khalil: 2006: 94) in terms of the test time, as the time was (30 seconds) and it was modified to until exhaustion of effort. .

**- Explosive force tests of the arms and legs:**

**First: the arms.**

- **Test name:** medicine ball push (3 kg) from the front of the chest and to the farthest distance (Bistawisi Ahmed: 1999: 116).
- **Target :** Measure the explosive power of the arms.
- **Used equipments :**medicine ball ( 3) Kilogram tape measure or a function mark to determine the distance.
- **Performance description:** From a standing position, hold the ball in front of the chest, then place the ball with both arms and push it to the farthest distance for one time.

**Second: the two men.**

- **Test name:** Vertical jump from stability (Sargent Sargent) (Hassanin: Hamdi: 1997: 56).
- **The aim of the test:** Measure the explosive ability of the two men.
- **Capabilities and tools:** A blackboard is fixed to the wall so that its lower edge is raised from the ground by a distance (150) cm to be inserted after that from (151-400) cm, Manesia (chalk), (the blackboard can be dispensed with by placing marks on the wall directly according to the performance conditions).
- **Performance Specifications:** The laboratory immerses the fingers of the hand in Mannesia. From a standing position with the laboratory facing the wall, the laboratory tries to jump vertically to the maximum distance it can reach to make a mark on the board or (wall) with both hands, as is the case in performing the skill of the blocking wall. Each laboratory has three attempts to score the best of it.
- **Registration method:**Sargent's vertical jumpSargent, in which first marks are placed before jumping (by extending the arms high from standing facing the wall), then a second mark by jumping, and the distance between the two marks expresses the degree of the tester on the test (the amount of jumping).

**- Speed tests of the arms and legs:**

**First: the arms.**

- **Test name:**From an inclined prone position (the number of times the arms are bent and extended in)10 seconds (Bistawisi Ahmed: 1999: 115).
- **Target :**-Measuring the speed characteristic of the two arms.
- **Used equipments :** Stopwatch, registration form.
- **Performance description:** The player lies on the ground, in an inclined prone position, with the body resting on the arms from the front and tiptoes of the feet, and the body is in a state of complete straightness and the knees are not bent.10) Seconds after completing the test, record the duplicates in the registration form.

**Second: the two men.**

- **Test name:**Standing test (the number of times the knees are raised and lowered, the highest possible frequency and duration) 20 seconds) (Qais Naji and Bastawisi: 1987: 329).
- **Target :**Measuring the speed characteristic of the legs.
- **Performance description:** The player stands and puts his hand behind the neck, and when the instructing is heard, the player goes down and climbs up and down and on the legs for a period of time ( 10 seconds) and after the completion of the test, the repetitions are recorded in the registration form.

**- strength endurance tests for arms and legs:**

**First: the arms.**

- **Test name:**From the prone position (the number of times bending and extending the arms until exhaustion of effort) (Bistawisi Ahmed: 1999: 116).
- **Target :** Measure the force tolerance of the arms.
- **Used equipments :** Registration form, stopwatch.
- **Performance description:** The player lies on the ground with the arms outstretched and the legs and torso in one straight state and the legs are on the comb and the knees not bent. When the special instruction is heard, the player bends and extends the arms up and down until the effort is exhausted.

**Second: the two men.**

- **Test name:** Flexion and extension of the legs test until exhaustion of effort (Bistawisi Ahmed: 1984: 292)
- **Test objective:** Measure the endurance of the force of the legs.
- **Capabilities and tools:** Help the colleague in calculating the number until the exhaustion of effort.
- **Test description** From a standing position, the tester bends and extends the knees fully and continuously.
- **Register** The number of times bending and extending the knees until exhaustion of effort is calculated as an indicator of force endurance.

**- Transmission accuracy test for specific difficult areas (Hasanin and Hamdi: 1997: 211)** .

- **The purpose of the test:**Measuring transmission accuracy for specific difficult areas.
- **Tools :** volleyball court, 30 volleyballs, the playing field is divided as shown in Figure (1):

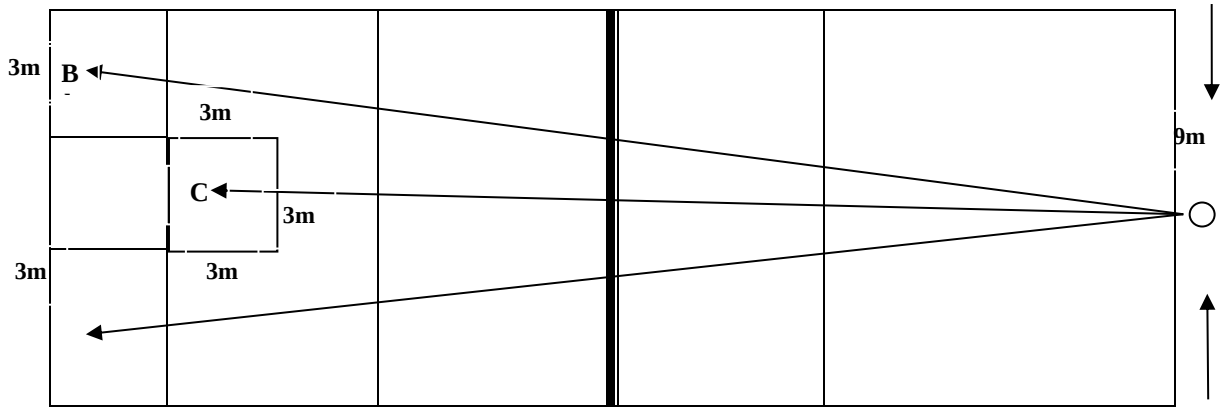


**figure (1)**

**Demonstrates transmission accuracy for specific difficult areas**

**Performance Specifications:** The tester shall serve five attempts for each of the three specified areas, ie five servings to area (a), five serve to area (b), and five serve to area (c). Only the correct attempts in which the ball falls within the specified areas are counted.
**Register :** ( 4) Points for each valid serve in which the ball falls into the designated area .

**- Experimental Experiment**

The researchers conducted the pilot experiment on Tuesday 15 / 10 / 2019 on a sample consisting of ( 2) Players who are from the same sample, and the purpose of the exploratory experiment was:

- ✓ Knowing the suitability of the tests to the level of the sample.
- ✓ Override errors that occur when executing the test.
- ✓ Organizing the work and procedures of the educational unit represented in its timing and in all its departments.
- ✓ Knowing the efficiency of the work team.
- ✓ Ensure that the place is suitable for carrying out the tests, as well as the validity of the tools and devices used.

## - field research procedures

**- tribal exams**

The researchers did the tribal tests on Sunday 20/10/2019 In the volleyball hall at the College of Physical Education and Sports Sciences at the University of Diyala, the researchers were also keen to establish the conditions for the tests in terms of (time, place, climate) so that the post-tests could be conducted with the same conditions or close to them.

**- Special exercises:**

After the researchers reviewed many available scientific resources in the field of sports training and volleyball, as well as conducting personal interviews with some experts, then the researchers prepared special exercises using weights, the purpose of which is to develop some physical abilities of the upper and lower extremities and the accuracy of performing the skill of undulating transmission in the ball The plane, in which the researchers took into account matters related to the training unit according to its divisions, as well as the available devices and tools, as the application of special exercises took (8) weeks in the special preparation period, at a rate of (3) three training units per week, and the time taken for special exercises is (25) minutes from the time of the main section of the team's training unit, which is (70) minutes out of (90) minutes for the complete training unit, as it was days (Sunday-Tuesday-Thursday) training days, thus the total training units amounted to (24) training units. Low, high intensity and repetitive intervals in order to reach the main goal of the training process for the research sample members, The exercises were carried out for the period from 24/10/2019 until 25/12/2019.

**- post-tests**

After completing the application of special exercises in the main experiment, the researchers conducted posttests on the research sample on Sunday 5/1/2020 In the volleyball hall in the College of Physical Education and Sports Sciences at the University of Diyala, they were keen to create the same conditions in terms of (time, place and climate) that were applied in the tribal tests.

**- Statistical means**

The researchers used the appropriate statistical means for the subject of the research and it was according to the statistical bag system ( spss).

**- Presentation, analysis and discussion of the results**

**- Presenting the results of the tribal and remote tests of the experimental group in the tests of special physical abilities of the upper and lower extremities and the accuracy of the performance of the wavy transmission in volleyball, their analysis and discussion.**

**Table ( 1) It shows the arithmetic means and standard deviations of the tribal and remote tests of tests of special physical abilities of the upper and lower extremities and the accuracy of the performance of the wavy transmission in volleyball for the experimental group, the calculated (T) value and the significance of the differences**

| N S | variables tests search | experimental group | | | | Q-q | p | Values ( T ) Calculated | indication the differences |
|---|---|---|---|---|---|---|---|---|---|
| | | pretest | | post test | | | | | |
| | | s- | p | s- | p | | | | |
| 1 | Arm Explosive Strength Test | 6.85 | 0.389 | 8.5 | 0.449 | 1.65 | 0.595 | 6.203 | moral |
| 2 | Explosive force test of the legs | 30 | 0.326 | 36.25 | 0.851 | 6.25 | 2.044 | 6.838 | moral |
| 3 | Arm speed test | 6 | 0.536 | 9.5 | 0.474 | 3.5 | 0.962 | 8.139 | moral |
| 4 | Leg strength test | 14 | 0.867 | 18.75 | 0.522 | 4.75 | 1.423 | 7.468 | moral |
| 5 | Arm strength test | 21 | 1.079 | 33.75 | 1.729 | 12.75 | 3.077 | 9.265 | moral |
| 6 | Leg strength endurance test | 34.5 | 1.219 | 55.5 | 2.219 | 21 | 4.533 | 10.36 | moral |
| 7 | Wavy transmission accuracy | 18.75 | 1.261 | 32.25 | 1.177 | 13.5 | 3.05 | 9,897 | moral |

**Values ( T) tabular (2.77) below the significance level (0.05) and the degree of freedom (4)**

shows the table ( 1) The results of the pre and post tests of the special physical abilities of the upper and lower extremities and the accuracy of the undulating transmission of the experimental group. standard (0.449), and the arithmetic mean value of the differences was (1.65) and standard deviation of the differences (0.595), and when extracting the calculated (T) value of (6.203), which is greater than the tabular (T) value of (2.77) at the degree of freedom (4) and the level of Significance (0.05), which indicates the existence of significant differences between the pre and post tests and in favor of the post test.

And In the pre-test of the explosive power of the two legs, the arithmetic mean reached (30) and a standard deviation (0.326), while the arithmetic mean in the post-test was (36.25) and with a standard deviation (0.851), and the arithmetic mean value for the differences was (6.25) and the standard deviation for the differences was (2.044), and when extracting the calculated (T) value of (6.838) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

As for the pre-test of the speed-distinguished force of the two arms, the arithmetic mean was (6) and a standard deviation (0.536), while the arithmetic mean in the post-test was (9.5) and with a standard deviation (0.474), and the mean value of the differences was (3.5) and the standard deviation of the differences (0.962), and when extracting the calculated (T) value of (8.139) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

In the pre-test of the speed characteristic of the two legs, the arithmetic mean reached (14) and a standard deviation (0.867), while the arithmetic mean in the post-test was (18.75) and with a standard deviation (0.522), and the arithmetic mean value of the differences was (4.75) and the standard deviation of the differences was (1.423), and when extracting the calculated (T) value of (7.468) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

As for the tribal force endurance test for the two arms, the arithmetic mean reached (21) and a standard deviation of (1.079), while the arithmetic mean in the post-test was (33.75) and with a standard deviation (1.729), and the mean value of the differences was (12.75) and the standard deviation of the differences was (3.077), and when extracting the calculated (T) value of (9.265) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

In the pre-test for endurance of force of the two legs, the arithmetic mean reached (34.5) and a standard deviation (1.219), while the arithmetic mean in the post-test was (55.5) and with a standard deviation (2.219), and the arithmetic mean value of the differences was (21) and the standard deviation of the differences (4.533), and when extracting the calculated (T) value of (10.36) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

As for the pre-test for the accuracy of undulating transmission performance, the arithmetic mean was (18.75) and a standard deviation (1.216), while the arithmetic mean in the post-test was (32.25) and with a standard deviation (1.177), and the arithmetic mean value of the differences was (13.5) and the standard deviation of the differences (3.05), and when extracting the calculated (T) value of (9.897) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

through the table ( 1) We find that the results of the tests showed high moral differences between the pre and post tests in favor of the post test for the experimental group. It works to “shed external forces on the muscle groups working in the joint movement in performance to develop physical capabilities” (Waiting for Juma Mubarak: 2009), and that “training with weights is an important necessity in the training process as it is one of the training methods that have an effective effect in developing muscular strength in its various forms, And that the use of weights in training units has become of great importance in preparing players in various sports "(Mahmoud Rashid: 2020: 9), therefore"Those working in the field of training resort to facilitating the training process through the use of devices and auxiliary tools, as they are used

to motivate the player to perform in the appropriate conditions and in the right conditions" (Mohammed Rashid: 2018: 29).

**- Presenting the results of the tribal and remote tests of the control group in the tests of special physical abilities of the upper and lower extremities and the accuracy of the performance of the wavy transmission in volleyball, their analysis and discussion.**

**Table ( 2) It shows the arithmetic means and standard deviations of the tribal and remote tests of the tests of special physical abilities of the upper and lower extremities, the accuracy of the performance of the undulating transmission in volleyball for the control group, the calculated (T) value and the significance of the differences**

| NS | variables tests search | control group | | | | Q-q | p | Values ( T ) calculated | indication the differences |
|---|---|---|---|---|---|---|---|---|---|
| | | pretest | | post test | | | | | |
| | | s- | p | s- | p | | | | |
| 1 | Arm Explosive Strength Test | 6.6 | 0.433 | 7.2 | 0.394 | 0.6 | 0.276 | 4.878 | moral |
| 2 | Explosive force test of the legs | 30.25 | 0.349 | 34 | 0.711 | 3.75 | 1.684 | 4.98 | moral |
| 3 | Arm speed test | 6.5 | 0.621 | 8.5 | 0.432 | 2 | 0.662 | 6.756 | moral |
| 4 | Leg strength test | 14.5 | 0.795 | 17.25 | 0.693 | 2.75 | 1.042 | 5.901 | moral |
| 5 | Arm strength test | 21.75 | 1.21 | 29.25 | 1.445 | 7.5 | 2.42 | 6.931 | moral |
| 6 | Leg strength endurance test | 34 | 0.959 | 46.75 | 1.765 | 12.75 | 3.683 | 7.741 | moral |
| 7 | Wavy transmission accuracy | 18 | 1.422 | 26.5 | 1.386 | 8.5 | 2.295 | 8.284 | moral |

**Values ( T) tabular (2.77) below the significance level (0.05) and the degree of freedom (4)**

shows the table ( 2) The results of the pre and post tests of the special physical abilities of the upper and lower extremities and the accuracy of the undulating transmission of the control group. In the tribal test of the explosive force of the two arms, the arithmetic mean reached (6.6) and standard deviation (0.433), while the arithmetic mean in the post test reached

(7.2) with a deviation (0.394), and the arithmetic mean value of the differences was (0.6) and standard deviation (0.276), and when extracting the calculated (T) value of (4.878), which is greater than the tabular (T) value of (2.77) at the degree of freedom (4) and the level of Significance (0.05), which indicates the existence of significant differences between the pre and post tests, and in favor of the post test.

And In the pre-test of the explosive power of the two legs, the arithmetic mean reached (30.25) and a standard deviation (0.349), while the arithmetic mean in the post-test was (34) and with a standard deviation (0.711), and the arithmetic mean value for the differences was (3.75) and the standard deviation for the differences was (1.684), and when extracting the calculated (T) value of (4.98) ), which is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

As for the pre-test of the speed-distinguished force of the two arms, the arithmetic mean was (6.5) and a standard deviation (0.621), while the arithmetic mean in the post-test was (8.5) and with a standard deviation (0.432), and the arithmetic mean value for the differences was (2) and the standard deviation for the differences was (0.662), and when extracting the calculated (T) value of (6.756) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

In the pre-test of the speed characteristic of the two legs, the arithmetic mean reached (14.5) and a standard deviation (0.795), while the arithmetic mean in the post-test was (17.25) and with a standard deviation (0.693), and the arithmetic mean value for the differences was (2.75) and the standard deviation for the differences was (1.042), and when extracting the calculated (T) value of (5,901) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

As for the tribal force endurance test for the two arms, the arithmetic mean reached (21.75) and a standard deviation (1.21), while the arithmetic mean in the post-test was (29.25) and with a standard deviation (1.445), and the arithmetic mean value of the differences was (7.5) and the standard deviation of the differences was (2.42), and when extracting the calculated (T) value of (6.931) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

In the pre-test for endurance of force of the two legs, the arithmetic mean reached (34) and a standard deviation (0.959), while the arithmetic mean in the post-test was (46.75) and with a standard deviation (1.765), and the arithmetic mean value for the differences was (12.75) and the standard deviation for the differences was (3.683), and when extracting the calculated (T) value of (7.741) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

As for the pre-test for the accuracy of undulating transmission performance, the arithmetic mean was (18) and a standard deviation (1.422), while the arithmetic mean in the post-test was (26.5) and with a standard deviation (1.386), and the arithmetic mean value for the differences was (8.5) and the standard deviation for the differences was (2.295), and when extracting the calculated (T) value of (8.284) It is greater than the tabular T value of (2.77) at the degree of freedom (4) and the level of significance (0.05), which indicates the existence of significant differences between the pre and post tests in favor of the post test.

through the table ( 2) We find that the results of the tests showed significant differences between the pre and post tests in favor of the post test for the control group, as there was a slight development in the special physical abilities of the upper and lower extremities compared to the experimental group, and the researchers attribute the reason for this to the type of exercises used in the training curriculum followed by the trainer Which was carried out in an

emphasizing manner, and these exercises, which were contained in the trainer's approach and their quality, led to achieving the goal of the training process in the physical and skill aspect of the members of the control group, as "training is an auxiliary and necessary factor in the process of the individual's interaction with the skill and controlling his movements and achieving consistency between the movements that make up the skill In proper successive performance in an appropriate time, and continuous training alone increases the development and mastery of the skill" (Najah and Akram: 1975: 130).

**3-3 Presenting the results of the post-tests of the experimental and control groups in the tests of the special physical abilities of the upper and lower extremities and the accuracy of the performance of the wavy transmission in volleyball, their analysis and discussion.**

**Table ( 3) The arithmetic mean, standard deviation and (T) value calculated for the results of the dimensional tests show the special physical abilities of the upper and lower extremities and the accuracy of the performance of the undulating transmission in volleyball for the experimental and control groups**

| NS | Tests search variables | | the group | | Values Calculated T | indication the differences |
|---|---|---|---|---|---|---|
| | | | Experimental | the officer | | |
| 1 | Arm Explosive Strength Test | s- | 8.5 | 7.2 | 4.362 | moral |
| | | p | 0.449 | 0.394 | | |
| 2 | Explosive force test of the legs | s- | 36.25 | 34 | 4.061 | moral |
| | | p | 0.851 | 0.711 | | |
| 3 | Arm speed test | s- | 9.5 | 8.5 | 3.125 | moral |
| | | p | 0.474 | 0.432 | | |
| 4 | Leg strength test | s- | 18.75 | 17.25 | 3.464 | moral |
| | | p | 0.522 | 0.693 | | |
| 5 | Arm strength test | s- | 33.75 | 29.25 | 3.996 | moral |
| | | p | 1.729 | 1.445 | | |
| 6 | Leg strength endurance test | s- | 55.5 | 46.75 | 6.175 | moral |
| | | p | 2.219 | 1.765 | | |
| 7 | ripple transmission performance accuracy test | s- | 32.25 | 26.5 | 6.332 | moral |
| | | p | 1.177 | 1.386 | | |

**Values ( T) tabular (2.30) below the significance level (0.05) and the degree of freedom (8)**

shows the table ( 3) The post tests of the experimental and control groups in the tests of the special physical abilities of the upper and lower extremities and the accuracy of the performance of the wavy transmission in volleyball. In the test of the explosive force of the two arms, the calculated (T) value reached (4.362), which is greater than the tabular (T) value of (2.30). ) at the level of significance (0.05) and at the degree of freedom (8), which means that there are significant differences between the control and experimental groups and in favor of the experimental group.

In the explosive force test of the two legs, the value of (Calculated T ( 4.061 ) which is greater than the tabular value of ( 2.30 ) under the significance level ( 0.05 ) and at the degree of freedom ( 8 ) and this means that there are significant differences between the control and experimental groups in favor of the experimental group .

As for the speed-distinguishing strength test for the two arms, the value of Calculated T (3.125), which is greater than the tabular (T) value of (2.30) under the significance level (0.05) and at the degree of freedom (8), and this means that there are significant differences between the control and experimental groups in favor of the experimental group.

In the speed test of the two legs, the value of (Calculated T (3.464), which is greater than the tabular (T) value of (2.30) under the significance level (0.05) and at the degree of freedom (8), and this means that there are significant differences between the control and experimental groups in favor of the experimental group.

As for the strength endurance test of the two arms, the value of ( Calculated T (3.996), which is greater than the tabular (T) value of (2.30) under the significance level (0.05) and at the degree of freedom (8), and this means that there are significant differences between the control and experimental groups in favor of the experimental group.

In the strength endurance test of the two legs, the value of (Calculated T (6.175), which is greater than the tabular (T) value of (2.30) under the significance level (0.05) and at the degree of freedom (8), and this means that there are significant differences between the control and experimental groups in favor of the experimental group.

As for the undulating transmission performance accuracy test, the value of Calculated T (6.332), which is greater than the tabular (T) value of (2.30) under the significance level (0.05) and at the degree of freedom (8), and this means that there are significant differences between the control and experimental groups in favor of the experimental group.

through the table ( 3) We find that the results of the tests showed significant differences between the two post tests of the control and experimental groups and in favor of the experimental group, as a clear development appeared in the physical abilities and the accuracy of performing the skill of the wavy transmission in volleyball, and the researchers attributed the reason for this to the exercises prepared by the researchers, which were based on the foundations Accurate scientific research and in a manner commensurate with the players' abilities, which led to the development of the physical and skill side, as (Zuhair Al-Khashab, 1988: 29) indicates that "the development of the physical side is a fundamental and important factor in mastering the performance of motor skills and reaching the required technical level." As a result, the preference was In the case of the development that appeared with the transformation of the experimental group members from one level to a better level compared to the control group that was trained according to the trained training approach, which also contributed to the development of the members of the control group, but relatively less than the members of the experimental group.

**- Conclusion**

Through the foregoing, the following conclusions were reached:

1. The exercises for the use of weights prepared by the researchers contributed significantly to the development of some of the physical abilities of the limbs and the accuracy of the performance of the wavy transmission skill among the members of the experimental group.

2. The gradation in the training load and the diversity in the special exercises for using weights prepared by the researchers had a positive effect in developing some of the physical abilities of the limbs and the accuracy of the performance of the wavy transmission skill among the members of the experimental group.
3. The experimental group had an advantage compared to the control group in developing some of the physical abilities of the limbs and the accuracy of performing the wavy transmission skill among the members of the research sample.

The researchers reached several recommendations:

1. The use of exercises for the use of weights prepared by researchers in the training of volleyball teams to achieve better sporting achievements.
2. The use of tests used in research in the training process.
3. Conducting similar research on age groups and other physical and skill variables.

**Sources :**


- **Waiting for Friday Mubarak; The use of some special resistance exercises to develop the strength extension of the muscles of the arms and legs and its impact on the performance of some offensive and defensive skills in handball: (PhD thesis, College of Physical Education, University of Baghdad,2009).**
- **Bastawisi Ahmed; Foundations and theories of sports training: (Cairo, Arab Thought House,1999).**
- **Hassanein Naji Hussein; Mental perception and its relationship to the performance of some basic volleyball skills for elite club players: (Master's Thesis, College of Physical Education, University of Diyala,2007).**
- **Zuhair Al-Khashab and (others); Football: (Mosul, Dar Al-Kutub for Printing and Publishing,1988).**
- **Saad Hammad Al-Jumaili; Volleyball: (Amman, Zahran Publishing and Distribution House,2001).**
- **Amer Ibrahim Kandilji; Scientific research and the use of information sources: (Dar Al-Bazuri Scientific for Publishing and Distribution,1999).**
- **Afif Al-Ani; University curricula and ways to develop them: (University of Baghdad,1989).**
- **Sana Khalil Obaid; Using two different methods (hard - flexible) to develop muscle strength and their impact on some physical measurements and physical and functional variables: (PhD thesis, College of Physical Education for Girls, University of Baghdad2006).**
- **Muhammad Hassan Allawi and Osama Kamel Ratib; Scientific research in physical education and sports psychology: (Cairo, Arab Thought House,1999).**
- **Mohammed Rashid Latif; The effect of a training curriculum using the dummy in developing the speed of performance and some special physical abilities of throwing grips from above the chest of Roman wrestlers at ages (14-15 years: (Master's Thesis, College of Physical Education and Sports Sciences, University of Diyala, 2018).**
- **Mohamed Sobhi Hassanein and Hamdi Abdel Moneim; Scientific foundations of volleyball and measurement methods: i1 (Cairo, Book Center for Publishing, 1997).**

- **Mahmoud Rashid Saeed; The effect of using dumbbells and foam roller exercisesFoam Rolling) on some kinematic variables, physiological indicators, kinetic balance, and technical performance level for jumping basketball: (PhD thesis, College of Physical Education and Sports Sciences, University of Anbar, 2020).**
- **Qais Naji and Bastawisi Ahmed; Testing and Statistics Principles in the Mathematical Field: (Baghdad, Higher Education,1987).**
- **Najah Mahdi Shalash and Akram Muhammad Sobhi; Kinetic learning: (Basra, University of Basra, Dar al-Kutub for printing and publishing,1975 ) .**


DOI: 10.37200/V24I3/400016 