The Effect of Special Strength Training on Developing Handball Scoring Accuracy

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Abstract

The aim of the research is to identify the effect of special strength training in developing the accuracy of handball scoring, to identify the effect of special strength training in developing some physical abilities related to the accuracy of handball scoring. The researchers used the experimental method which fit the research problem so that the sample is consistent with the phenomenon studied. On this basis, the research community was chosen in a deliberate way from the players of the Karkh Sports Club handball youth category, as the research sample amounted to (20) players from the youth category (16-18 years). Where the sample was divided into two control and experimental groups by drawing the names in a random way and choosing one experimental and the other controlled by lottery, each group 10 players. The following tests were conducted: a test of maximum muscular strength, a test of strength characterized by speed, and a test of shooting on suspended squares at the target 50 cm x 50 cm, where the researchers reached the following results. And their superiority over the development of players who trained without it, special strength training contributed to the development of the speed characteristic of the arms of the young handball players who trained with special strength training, and their superiority over the development of the players who trained without it, there is a clear development in the accuracy of scoring among young handball players who received special strength training, and it did not improve in players who trained without it.

KeyWords: special strength, developing and scoring accuracy.

Introduction

Sports training, its sufficiency, and its purpose have become one of the things that have received great interest in the methods of science, and this matter prompted researchers and coaches to conduct numerous research and studies in order to identify the problems facing the training process in various sports and then solve those problems. The handball game is one of the fun team games that has spread rapidly and has helped to learn and progress in its skills. Its simplified law. It is practiced by both sexes and of all ages as it is interesting for both the player and the spectator, in addition to its comprehensive benefit for the development of all parts of the body as a result of its constant speed and struggle. Between attackers and defenders, it is in line especially with the nature and vitality of the youth, and one of the basic and important skills of handball is shooting, which is the final culmination of all the efforts made by the players and because the main goal of the game is to score as many goals as possible.

Research problem

Offensive training is one of the big problems that occupy handball coaches all over the world for many reasons, including that they are conducted with a ball and also require great physical effort, mental preparation and excellent psychological preparation.
Research Aims

1- Recognizing the effect of special strength training in developing handball scoring accuracy.
2- Recognizing the effect of special strength training in developing some physical abilities related to handball scoring accuracy.

Hypothesis

There are statistically significant differences between the results of the pre and post tests for the experimental and control groups in favor of the posttests in some physical abilities related to the accuracy of handball scoring.

Research Methodology

The researchers used the experimental method in a controlled manner (experimental + control) The pre and posttestsfor its suitability and the nature of solving the research problem, as this method is one of the most accurate, best and most efficient types of methods in reaching accurate results.

The research sample

The research community was selected according to scientific bases that fit the research problem so that the sample is consistent with the phenomenon studied. On this basis, the research community was chosen in a deliberate way from the players of the Karkh Sports Club handball youth category, as the research sample amounted to (20) players from the youth category (16 - 18 years) . Where the sample was divided into two control and experimental groups by drawing the names in a random way and choosing one experimental and the other controlled by lottery, each group 10 players.

Equipment, tools and means used in the research

Arab and foreign sources

Questionnaire form.
Statistical means.

A device for measuring height and weight, of English origin
2 Chinese-made electronic stopwatches.
Colored adhesive tape.
Sony Japanese-origin video recording camera.
2 Compact discs (CDs).
4 Legal men's handballs.
Legal handball court.
2 Legal handball goals.
2 whistles.
4 rubber cords.
4 Medical balls weighing (2) kg

Tests

Maximum muscular strength(1-45):
Test name: throwing a medicine ball from stability, weighing 2 kg.
Purpose of the test: to measure the maximum muscle strength of the arm and shoulder.
Tools used: medical balls weighing 2 kg, and a long measuring tape.
Performance: the laboratory stands in a fixed area and places the medicine ball above the head with both hands. The laboratory throws the ball over the head from a stationary position.
Registration: the distance the ball falls to is recorded, and the tester has three attempts the best attempt counts.

Speed power(2-86)
Test name: bending the arms from the front position (push up) within 10 seconds.
Purpose of the test: to measure the speed characteristic of the arms and shoulders.
Tools used: empty yard, electronic stopwatch.
Performance: The laboratory puts the front support (push up) and the body weight is on the arms and shoulders, and bends the arms and lowers the body until the chest touches the ground, then the laboratory extends the arms to return to the starting position and the laboratory continues to repeat the previous performance as many times as possible within 10 seconds.
Registration: the number of performance times within 10 seconds.

Aiming at squares hanging at the target 50 cm x 50 cm(3-111):
Test name: shooting accuracy.
Purpose of the test: to measure the accuracy of shooting the ball into the goal from one step.
Tools used: an indoor handball court, a handball goal, (5) handballs and 2 iron squares, each of which measures 50 cm x 50 cm, suspended in the two upper corners of the goal.
Performance: The shooting is done from a point located at a right angle with the middle of the goal line away from it by (9) meters, provided that the shooting is preceded by taking one step, so that the player does not cross the specified area trying to enter the ball in the squares, and the shooting is on the right square, and on the left box once.
Conditions: The player gives (5) five attempts, two on the right, two on the left and the last one is optional.
Registration: Each ball that enters the suspended
box in the goal counts a hit and records the number of correct hits for both squares from those five attempts.

**Pre-tests**
The researchers conducted pre-tests for the research sample in the Maysan Sports Club Hall. On the first day, physical tests were performed, and on the second day, the scoring accuracy test was conducted. The researchers worked to establish the conditions related to all tests in terms of time, place, tools used, method of implementation and the assistant work team in order to control as much as possible. Possibility to create similar conditions when conducting post-tests.

**Training Curriculum**
After completing the pre-tests of the research sample, the implementation of the training units for the control and experimental groups was started. The researchers, taking advantage of modern scientific sources and the opinions of experts specialized in the field of sports training, built a training curriculum, as the researchers prepared special exercises for strength training that were included in the main section of the group's training units. The experimental, which aims to develop physical abilities and the skill of handball scoring, by three training units per week, that is, the implementation of (24) training units for each group, as follows:
The first group (the control group) implemented the trainer's training curriculum.
The second group (experimental) implemented the training curriculum for strength training or exercises within the main part.
The method of applying the exercises within the training units was by the high intensity and low intensity interval training method. As explained below:

The duration of the training program (8 weeks) for two months.
The total number of training units (24) training units.
The number of training units per week (3) training units.
Weekly training days, Friday, Sunday and Tuesday.
The duration of the training unit is (90) minutes.
The time of the main part of the training unit is (70) minutes.
For an introduction to the training curriculum, it includes the following:
1 -The principle of individual differences was taken as a basic factor in training to develop the components of the training load.
2 -The training methods used in the curriculum and its main section varied as follows:
A - Low-intensity phased (interval) training method to develop the skill aspects.
B - High intensity phased (interval) training method in functional strength training to develop physical abilities.
3 -The training methods used in the training curriculum varied, as they included medical balls and rubber ropes due to the nature of the research sample and the purpose of the research, the appropriate severity was determined and graded from (mild to moderate to above moderate, moderate, above average and below extreme), with intensity ranging from 60% to 95% of the maximum severity.

**Post-tests**
The researchers conducted post-tests for the research sample and the same pre-test conditions were established

**Statistical means**
The statistical system (SPSS) was used.

<table>
<thead>
<tr>
<th>No</th>
<th>Test</th>
<th>Mean</th>
<th>Std</th>
<th>Range</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maximum muscular strength</td>
<td>5.80</td>
<td>1.316</td>
<td>4</td>
<td>13.931</td>
</tr>
<tr>
<td>2</td>
<td>Speed power</td>
<td>7.40</td>
<td>1.578</td>
<td>5</td>
<td>14.833</td>
</tr>
<tr>
<td>3</td>
<td>Aiming at squares</td>
<td>2.70</td>
<td>1.337</td>
<td>4</td>
<td>6.384</td>
</tr>
</tbody>
</table>

Table 2: Experimental Group
The researchers attribute this result between the pre- and post-test to the special strength training that helped develop the work of the muscle cells in training the working, auxiliary and stabilized cells, all of which contributed to producing maximum strength, improving neuromuscular work and developing articular ligaments, and that this improvement required directing training in the curriculum mainly towards The means that play a role in the development of maximum muscle strength as one of the active physical abilities, in addition to the methods of developing strength are limited to two methods, the first is the effect on the muscle cells themselves, the second is the effect on the nervous system, and the first method increases the cross-section of the muscle, while the second method depends on the high intensity that were used in the training curriculum; This view is reinforced by what was confirmed by (Kamal Jamil Al-Rabadi) that muscular strength is the most important component of physical fitness, and if the player is not strong, he cannot step forward with his physical abilities, and there is a direct relationship to the size of the muscle. The larger the muscle, the greater its strength. (4:27).

As for the speed-distinguished strength test for the two arms, the researchers attribute this result in the pre- and post-test to the fact that the special exercises in which large resistance is used are one of the appropriate means for developing speed-distinguished strength. (5:113)

And with the presence of the stage of contraction by lengthening in (ECCENTRIC PHASE), it is immediately followed by the stage of contraction by shortening (CONCENTRIC PHASE), which is called the cycle of lengthening and shortening (THE STRENGTH SHORTENING) and this includes the skills of throwing - jumping, and the similarity of special strength exercises with the skills in the curriculum.

Adel Abdel-Baseer states, “The strength characterized by speed is the ability of the nervous muscular system to overcome resistances with speed, high contractions, and the muscular strength characterized by speed is seen as a composite of strength and speed.” (6:98)

As for the scoring accuracy test, researchers attribute this result between the pre and post-tests to the interest in training the muscles at the level that matches the spatial accuracy and according to the requirements of the handball game. The explosive power of the muscles of the legs and the explosive power of the arm muscles and the strength characteristic of speed when scoring in handball, which the researchers invested in giving accuracy with speed at a low intensity because accuracy training precedes speed training and is inversely proportional to it.

Talha Hussein states, "In order to achieve the success of the performance at a high skill level, each of the elements of ability has a direct impact on the accuracy of the performance" (7:11).

This is confirmed by the opinion, "Kamal Aref and Saad Mohsen Ismail," where accuracy in shooting is one of the most important basic offensive skills that a handball player reaches to the stage of creativity. The accuracy of the successful shooting (scoring) represents the player's ability to choose the appropriate angle and in violation of the goalkeeper’s tactic to block the ball, whether in the presence of defenders or when unilaterally. (8:83) The handball player needs great accuracy, as the change in body positions, handling and shooting has become one of the important things that characterize the modern game of handball. (9:34)

### Results

1. Special strength training contributed to developing the maximum strength of young handball players who trained with it, and their superiority over the development of players who trained without it.

2. Special strength training contributed to developing the speed characteristic of the arms of young handball players who trained with special strength training, and their superiority over the development of players who trained without it.

3. There is a clear development in the scoring accuracy of young handball players who received special strength training, and it did not improve for players who trained without it.

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