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Strong ability exercises for the upper extremities and their relationship to shooting accuracy from a standstill in basketball

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Research Summary :-

This study highlighted on prepare exercises to develop the explosive ability of the upper limbs and its impact on scoring accuracy for the female students of the fourth stage of basketball. The study also aims to identify exercises for the explosive ability of the upper limbs with the scoring accuracy from stability for the female students of the fourth stage.

To achieve research objectives, the researcher used the descriptive method of correlations because it is concerned with revealing the relationship between two or more variables. Also this method used to find out the extent of the relationship between these variables and express them in a digital form. The research population was determined by fourth stage- female students at the College of Physical Education and Sports Sciences / University of Maysan in academic year (2023/2024) about (25) students. Accordingly, the sample was chosen intentionally which was represented by these female students. The researcher based the aiming accuracy test on consistency. After applying the test and showing the digital results, the SPSS statistical package, version (25), was used. The researcher reached the most important The conclusions are that explosive training ability of the upper limbs has an impact on the accuracy of shooting from a standstill in basketball. The use of medicine balls in training contributed to raising the explosive ability of the upper limbs which helped to

increase the accuracy of scoring from a standstill. The use of different sizes squares' had a significant impact in developing Scoring accuracy.

Identification of the research: -

1.1 Research introduction and its importance: -

Basketball is one of the most popular games in the world after football. women and men can play it within the same rules and skill rules. Basketball is one of the big team sports although it is not an old sport. It has gained great popularity because its skill is attractive and its goal is distinct from other sports goals. The field is relatively small, the goals scored in one match are many exceeding (100) goals which makes it enjoyable both in practice and even in watching. This beautiful sport develops the team spirit, cooperation and cohesion among individuals as one team.

Learning and acquiring physical, kinetic and skill abilities can be acquired effectively by continuing with the correct scientific training. This training adds more beauty and enjoyment to the game after mastering it. Performing various sports skills, including the skill of scoring, depends on the availability of sufficient and effective physical abilities. The most important of these abilities is the explosive ability of the upper and lower limbs. It plays a fundamental role for developing the athlete's ability to perform the skill effectively depending on the emerging of coach's ability to raise it.

Basketball requires many physical qualities and abilities because it depends on speed and agility in moving the ball. Its success and victory

requires mastering its combined skills, the most important of which is the scoring skill because it is the final result. To succeed in it, we need important physical abilities, including explosive power which the upper limbs need to complete the scoring skill continuously and effectively and the lower limbs in the speed of movement, the ability and speed of jumping to implement it. the importance of research lies in using training to develop the explosive ability of the upper limbs to perform the execution of the scoring skill appropriately by directing the ball accurately towards the basket to achieve points. The failure to direct the ball accurately will make failure prevail in the work, thus the loss may occur. (Ahmed Amin Fawzy: 2002, 14)

1.2 Research problem

Today, the world is witnessing a remarkable development in basketball and what sports teams offer in terms of high technical and tactical performance. This is a result of the development in the science of high-quality and skilled sports training. Therefore, we notice the difference in basketball lies in the enjoyment of the fans in the technical and skill level performance.

Physical fitness is a basic element for all sports activities especially basketball because it increases the body's functional efficiency. Among these elements is explosive ability which has a great impact on motor performance. Since the researcher is a basketball practitioner especially in the preliminary study that's why the researcher noticed a clear weakness in completing the scoring skill clearly due to the lack of explosive ability of the upper limbs by most students. Thus the inability

to put the ball in the basket in the shortest time and with the greatest accuracy. Thus negatively affected the achieved result and directed it accurately. This prompted the researcher to delve into current research.

1.3 Research objectives

1- Preparing exercises to develop the explosive ability of the upper limbs and its effect on the scoring accuracy for fourth-year female basketball students.

2- Identifying the explosive ability exercises for the upper limbs with scoring accuracy from a stationary position for fourth-year female basketball students.

1.4 research hypotheses

1.There are significant differences between the pre- and post-tests in the explosive ability of the upper limbs of fourth-year female students at the Faculty of Physical Education and Sports Sciences.

2.There are significant differences between the pre- and post-tests in the accuracy of goal-scoring from a standstill for fourth-year female students at the Faculty of Physical Education and Sports Sciences in basketball.

1.5 Research areas

1.5.1 Human field: Fourth-year female students, College of Physical Education and Sports Sciences, University of Maysan.

1.5.2 Time field: From (2/1/2024) to (1/4/2024).

1.5.3 Spatial field: Basketball court, College of Physical Education and Sports Sciences, University of Maysan.

1.6 Definition of terms

1.6.1 The ability

The ability is the muscular system to perform movements in a certain short time or it is the result of forces that can be imposed at a certain speed by movement. While the explosive ability is the ability to impose the greatest possible forces in a specific and explosive period of time. (Helmy Hussein: 1985, 45)

1.6.2The Motor abilities

Motor abilities mean the readiness of motor skills, their accuracy, speed and strength. In addition, the concept of motor abilities represents the achievement of performance and form. (Adel Turki Hassan Al-Dalawi: 2011, 215)

1.6.3 The explosive motor ability

It is the ability to release maximum muscle forces in the shortest possible time. While MacLoy's definition is (as the ability to explode the power of speed. (Helmy Hussein: 1985, 46)

1.6.4 The basketball shooting skill

It is the actual and serious attempt of the attacking player to put the ball into the opponent's goal, investing in that his psychological and mental abilities within the framework of the law. (Thamer Mohsen Ismail: 1984, 33)

2.1 Research methodology

In keeping with the research nature and to achieve its objectives, the researcher used the descriptive method with correlational relationships. The researcher used this method because it is concerned with revealing the relationship between two or more variables to know the extent of the association between these variables and expressing them numerically. The descriptive method determines and estimates the thing as it is, i.e. describes what is existing or occurring.

2.2 Research community and sample

2.2.1Research community

The research community was determined by the fourth-year female students / College of Physical Education and Sports Sciences/University of Maysan, academic year (2023/2024), 25 female students.

2.2 Research sample

One of the most important things that the researcher faces in choosing the sample that the selected sample truly represents the original community. This is one of the basic matters that the researcher should pay attention to.As this sample should be relatively large in size and sufficient to represent the original community to give more reliable results "as the researcher collects his data and information either from the entire original community or from a sample representing this community. (Kazem Karim Al-Jaberi: 2012, 33). Based on that, the sample was chosen intentionally which was represented by fourth-year female students/ College of Physical Education and Sports Sciences/University of Maysan,academic year (2023/2024).

2.3 Devices, tools and means of collecting information

2.3.1 Means of collecting information

((ersonal interviews, testing and measurement, observation, sources and references, the international information network, the Internet)).

2.3.2 Devices and tools

((Personal calculator, CDs, markers, legal balls, tape, cones, chalk, pens and papers, registration form)) .

2.4 Determine the test used

Test name: Standing shooting accuracy test.

Purpose of the test: Measure the standing shooting accuracy.

Devices and tools: Basketball court, basketball goal, basketball.

Number of attempts: The player shoots the ball at the basket in three groups, each group (5) consecutive shots from the middle of the free throw field and on the sides. each player is given one appropriate period between each group and the next.

Two points are awarded for each ball that enters the basket. One point for each ball that touches the ring and does not enter. The tester's points are equal to the total points obtained in the fifteen attempts noting that the maximum number of points is 30 points

2.5 Exploratory experiment

The exploratory experiment is a mini-experiment for the main experiment must have the same conditions and circumstances as the main experiment. Therefore,

the researcher conducted the exploratory experiment on Sunday (2/4/2024) on a sample of 4 female students who were randomly selected in basketball at afternoon two o'clock in the Physical Education Hall at Maysan University. The purpose is to identify the obstacles and difficulties that the researcher may face during the implementation of the main experiment. Some organizational aspects also are identified and the extent. These tests are suitable for the sample, the efficiency of the work team and ensuring the validity of the devices and tools used in performing the tests. In addition to the suitability of the tests for the basic skills in basketball and the visual vision skills that the researcher addressed.

2.6 Main experiment

2.6.1 Pre-tests

The pre-tests were conducted on Wednesday (2/14/2024) on fourth-year female students in the College of Physical Education and Sports Sciences / University of Maysan, in the college's basketball court. These tests conducted in the presence of a team and assistant staff through the application of the research tests.

2.7 Statistical methods

The statistical package SPSS was used to extract the results, version (25).

3.Presentation, analysis and discussion of the results

3.1 Presentation, analysis and discussion of the Shooting skill's results from a stability with a basketball: -

3.1.1 Presentation, analysis and discussion of the accuracy test results of the shooting skill from a stability with a basketball for the experimental group that (used the specific trainings to explosive power):-

shows the arithmetic means, standard deviations, and the calculated and tabular (t) values between the pre- and post-tests for the accuracy test of the shooting skill from a stability with a basketball for the experimental group (used the specific trainings to explosive power)

Type of significance	Calculated t-value	Post-test		Pre-test		Statistical parameters / Variables
Incorporeal	3,63 , 6	A+	$\bar{S}$	A+	$\bar{S}$	Accuracy test for shooting skill from stability
		6 , 3 3,6	2,36	12,4	7	
Tabular value (t) = (2,26) at significance level (0.05) and degree (9)						

Table (1) shows the arithmetic means, standard deviations, and the calculated and tabular (t) values for the pre- and post-tests of the accuracy test for the shooting skill from a stability with a basketball for the experimental group (explosive power training was used). The results showed that the arithmetic mean in the accuracy test for the experimental group itself in the pre-test is the post-test, which is (12.4), with a standard deviation of (2.36), while the calculated (T) value is (36), which is greater than the tabular (T) value of (2.26), under a degree of freedom (9) at a significance level (0.05), indicates the existence of a significant difference between the two tests in favor of the post-test.

3.1.2 Displaying, analyzing and discussing the results of the accuracy test for the shooting skill from a stability with a basketball for the control group (the curriculum prepared by the teacher).

Table (2)

shows the arithmetic means, standard deviations, and the calculated and tabulated values (1) between the pre- and post-tests for the accuracy test for the shooting skill from a stability with a basketball for the control group, the curriculum prepared by the teacher.

Type of indication	The calculated value of (t)	Post-test		Pre-test		Statistical landmark / Variable
		3,12	**9,7**	**2,36**	**12,4**	

Table (2) shows the arithmetic means, standard deviations, and calculated and tabular (T) values between the pre- and post-tests of the accuracy test for the shooting skill from a stability with a basketball for the control group (the curriculum prepared by the teacher). The results showed that the arithmetic mean for the control group, the curriculum prepared by the teacher, in the pre-test is (5.7), with a standard deviation (3.33), the arithmetic mean in the post-test is (97), with a standard deviation (312). The calculated (T) value is (2.63), which is greater than the tabular (1) value (2.26) with a degree of

freedom (9). At a significance level (0.05), this indicates the existence of a significant difference between the two tests in favor of the post-test.

3.1.3 Displaying the results in the post-tests differences to test the accuracy of the shooting skill from a stability with a basketball between the experimental group (the explosive power exercises and the control group used the curriculum prepared by the teacher) and analyzing and discussing them.

Table (3)

shows the arithmetic means, standard deviations, the calculated and tabulated (t) values in the post-tests between the experimental group (the explosive power exercises and the control group used the curriculum prepared by the teacher to examine the accuracy of the shooting skill from a stability with a basketball

Type of indication	The calculated value of (t)	Post-test		Pre-test		Statistical landmark / Variable
		3,12	**9,7**	**2,36**	**12,4**	

Table (3) shows the arithmetic means, standard deviations, and the calculated and tabular (T) value in the post-test between the experimental group that (used explosive power training and the control group, the curriculum prepared by the teacher) to examine the accuracy of the shooting skill from a stability with a basketball. The results showed that the arithmetic mean for the experimental group that used explosive power training is (12.4), with a standard deviation (2.36), while the arithmetic mean in the same test for the control group, the curriculum prepared by the teacher, is (97), with a standard deviation (3.12), while the calculated (T) value is (3.03), which is greater than

the tabular (T) value (2.10) with a degree of freedom (18) at a significance level (0.05). This indicates the existence of a significant difference between the experimental and control groups in favor of the experimental group that used the special training which develops explosive power. For the upper limbs).

3.2 The results Discussion

When reviewing the post-tests results for the experimental and control groups in the shooting skill accuracy from a stability position, it was found that there were significant differences between the two groups in favor of the experimental group. The training method used by the researcher had a clear impact in achieving this, as the researcher used medical balls and squares drawn on the wall with other exercises that helped to increase the arms explosive ability and increase the shooting accuracy from a stability position. As a result of continuous practice in a scientific manner, this percentage of development occurred.

The researcher attributes this improvement in the results of the upper limbs' explosive power to the special exercises used. They included various exercises for muscular power and most of the upper body's muscles generally and the upper limbs particularly. Thus, it will increasing the production of muscles strength of the upper part, in addition to giving these exercises at the appropriate time during the main section of the training unit which led to a positive impact in developing explosive power, (as muscles are the source of movement in humans, they are the source of the force causing movement and the performance of most sports activities depends on them, individuals who have muscular power can record a high degree of general physical

ability) (Kamal Abdel Hamid and Muhammad Subhi Hassanein: 1997, 57) Basketball players depend entirely on the arms' strength in their movements to perform all basic skills. Therefore, the development in explosive power as a result of special exercises contributed greatly for developing the scoring performance accuracy from a stability position among the research sample members. This is what many studies have confirmed on (the importance of the arms' explosive power and its positive impact on the performance of motor skills in various sports activities) (Shahinaz Ezzat Al-Barouni, 1994, 34)

4. Conclusions and recommendations

The researcher reached the following conclusions:-

4.1 Conclusions

1- The explosive power training of the upper limbs has an effect on the shooting accuracy from a standing position in basketball.

2- The use of medical balls in training contributed to raising the explosive power of upper limbs which helped increase the shooting accuracy from a standing position.

3- The use of squares of different sizes had a great effect in developing the shooting accuracy from a standing position.

4.2 Recommendations

1- Emphasizing the training of the upper limbs' explosive power to increase the ability in addition to complete the shooting process effectively.

2- A similar lesson can be conducted on the explosive power training of the upper limbs for other activities and other age groups.

3- Emphasizing on teachers to use various ways to develop the accuracy of scoring.

4- The necessity of using special exercises for the explosive power of the upper limbs due to their positive effect on scoring from a stability position in basketball.

5- Conducting research and studies on other physical abilities due to their great importance in developing the skill accuracy performance of basketball players particularly and other games generally.

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Appendix (1)

Training Program Model

(First week)

Rest Between Groupss	Groups	Rest Between Repetitions	Performance Time	Intensity	Exercise Type	Training Unit
3 د	2	3 : 1	4 × 10 ثا	% 60	1-Bend press (from a lying position, bend your arms at a 90-degree angle and hold the position). 2-Front press (from a standing position, bend your arms at a 90-degree angle and hold the position). 3- Throwing a medicine ball (3 kg) on squares of different sizes	1
3 د	2	3 : 1	4 × 10 ثا	% 60	1.Bench press (from a lying position, bend your arms at a 90-degree angle and hold the position) 2. Front press (from a standing position, bend your arms at a 90-degree angle and hold the position) 3. Throwing a medicine ball (3 kg) on squares of different sizes	2
					1.Bench press (from a lying	

3	position, bend your arms at a 90-degree angle and hold the position) 2. Front press (from a standing position, bend your arms at a 90-degree angle and hold the position). 3. Throwing a medicine ball (3 kg) on squares of different sizes.	% 60	4 × 10 ثا	3 : 1	2	3 د

(second week)-:

Training Unit	Exercise Type	Intensity	Performance Time	Rest Between Repetitions	Groups	Rest Between Groupss
1	1.Bench press (from a lying position, bend your arms at a 90-degree angle and hold the position) 2. Front press (from a standing position, bend your arms at a 90-degree angle and hold the position) 3. Throwing a medicine ball (3 kg) on squares of different sizes	% 65	4 × 9 ثا	4 : 1	2	3 د
2	1.Bench press (from a lying position, bend your arms at a 90-degree angle and hold the position) 2. Front press (from a standing	% 65	4 × 9 ثا	4 : 1	2	3 د

					position, bend your arms at a 90-degree angle and hold the position) 3. Throwing a medicine ball (3 kg) on squares of different sizes	
3 د	2	4 : 1	4 × 9 ثا	% 65	1.Bench press (from a lying position, bend your arms at a 90-degree angle and hold the position) 2. Front press (from a standing position, bend your arms at a 90-degree angle and hold the position) 3. Throwing a medicine ball (3 kg) on squares of different sizes	3