

The use of physical exercises specialized for with aids of developing explosive power for arms and legs and their effect on free throw and jump shooting skills for advanced basketball players

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Abstract

The research aims to develop physical exercises with auxiliary training tools that work to develop the explosive power of the arms and legs, and then find out their effect on the accuracy of shooting from free throw and correction from jumping of advanced basketball players, as the researchers found a problem that these players have weakness in the skill of throwing Free throwing and shooting by jumping calculated with two points as a result of adopting unhealthy physical and technical positions, which led to a lack of focus and accuracy, and thus negatively affected the performance technique of free throw and jump shot, as most teams use traditional exercises without the use of auxiliary training tools, and this topic gave researchers the perception of a need for Study and research to prepare exercises with training aids in a manner similar to the form of performing a skill. It works to increase the percentage of shooting accuracy from the free throw and the correction from the jump by giving it a greater role in the training process. The researchers used the experimental approach with the design of the one experimental group and the two pre and posttests to suit the nature of the research, and the research sample was represented by the players of the Sports Club in basketball for the applicants and their number (12) players representing (20%) of the original community, and after applying the exercises to the research sample , it emerged that there are A positive effect of physical exercises using training tools to assist in developing the accuracy of correction from free throw and correction from jumping, and the results of the study found that the more physical exercises are close to the shape of skill performance with the gradual increase in strength and the maintenance of the speed factor, this led to its development better and faster With regard to the physical aspect, the skills of the free throw and the correction by the two-point jump , the researchers recommend the need to gradually give the resistors according to the movement path for shooting basketball while preserving the speed factor in performance, and the use of physical exercises that are similar to the way they perform basic movements with basketball as much as possible .

Key words: *physical exercise, burst strength, arm, free throw, jump shot, basketball*

Introduction

The development of physical level and skill in any game is linked to programming and proper planning of the curriculum of training, and basketball game is one of the games that have received this development, and a n a means to develop and improve the proper performance of this game is to diversify the use and tools through training through which they can Those concerned judge the extent of their development and the extent to which they achieve the set goals. The auxiliary tools have a basic positive effect in various sports, including the game of basketball, as it helps players to improve their performance level for various skills,

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including the skill of shooting from the free throw as it is one of the basic skills in basketball because it is performed without a defender and this skill must be taken care of and developed as the basis later to install and develop the skill of shooting by jumping. It was repeated many times during the game, from here the researcher went to develop physical exercises with the tools of training assistance and working to develop the explosive power of arms and legs and then see their impact on the skills of the free throw and correction jumping among basketball players applicants. The aim of the research is to use physical exercises for auxiliary training tools to develop the explosive power of the arms and legs of advanced basketball players, and then to identify the effect of physical exercises for training tools assisting in developing the explosive power of the arms and legs of advanced basketball players and its reflection on the accuracy of the two correction skills of The free throw and the two-point jump shot of the advanced basketball players.

Literature review

From previous studies that have dealt with such a topic, a study of (Wasan, 1998) concluded that the auxiliary means have achieved an improvement, but this development differs from one skill to another, and that the use of auxiliary means helps the student to attend seriously, and works on his impulse towards the lesson. The use of means (tools) strengthened the student's drive towards re-training without getting bored. Auxiliary tools can be manufactured locally in a way that is no less effective in achieving their goals than the tools imported from abroad. The study of (Moayad, 2006) found out that the impact of the proposed training curriculum actively in the basic skills of offensive and defensive and in responses that need to use the speed and accuracy for the skills of basic offensive (speed and accuracy of scoring by jumping, speed handling ball, and speed change direction), and basic defense (speed and accuracy of offensive defensive, the speed of the player movement defender), and use varied repetitions developed the speed and accuracy of basic skills (offensive and defensive) experimental group form and type of exercise was a great influence in the development of the track motor where the strands of speed and accuracy. Then by informing researchers on previous studies found a lack of physical exercise affecting the development of skill, as well as not to address utilities and exercise, which is similar to training the technique of performance, and this made it necessary for them to place physical exercises Ba tools training and working on the development of power The explosiveness of the arms and legs, and then know its effect on the accuracy of the correction from the free throw and the jump shot of advanced basketball players.

Methodology

A used researcher experimental approach with the design of a single experimental group with pre and post tests for suitability and nature of the problem to be solved, and agree researchers with (Abdullah, 1999) curriculum pilot earliest methods of research to solve the problems of scientific way as it means "follow the steps logical given in dealing with problems or phenomena or address scientific issues to get to the discovery of the truth", represent a society that p research teams clubs Baghdad LED Lori excellent for the sports season (2019 _ 2020) totaling 5 teams; (Adhamiya, police, Baghdad oil, electricity, the lines) and by (601) players, and the sample was chosen by the deliberate method, which was represented by (12) advanced players from the Al-Adhamiya Sports Club, and the homogeneity of the research sample was extracted in the scale of height, weight, age and training age, and as shown in Table (1) and extracting the value of the torsion coefficient (± 1) To denote the homogeneity of the research sample.

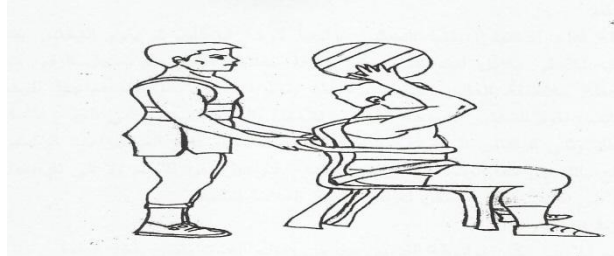
Table (1) homogeneity of the research sample

Variables	measuring unit	Arithmetic mean	Mediator	standard deviation	Coefficient of torsion
Age	Year	25.20	25.50	0.918	0.473
Age of training	Year	10.30	10.5	0.823	0.687
the weight	Kg	88.60	88	4.857	0.886
Length	cm	186.50	186.5	7.337	0.461

Represented the tools used to search (balls basket number (5), contraindications jumped different heights number (12), different terraces rise number (2), Cones number (12), various medical balls weights number (10), stopwatch, tape measure).

- **Throwing a 3 kg ball with two hands from a seated position**
- *The aim of the test:* to measure the explosive force of the muscles of the arms and shoulders.
- *The tools used:* a medicine ball weighing (3) kg, a measuring tape, and a chair with a fixing strap for the torso.

- *How to perform the test* : The laboratory sits on the chair and the medical ball is carried by hands over the head and the torso is adjacent to the edge of the chair, the belt is placed around the trunk of the laboratory and held from the back in a controlled manner for the purpose of preventing the laboratory from moving forward during the course of the ball with the two hands, so that the process of throwing the ball with two hands without using the stem as In the figure, each laboratory is given 3 attempts to score the best .
- *Date*: calculates the distance between the front edge of the chair and the nearest point put the ball on the ground. **(Muhammad , 1982)**



• **Sargent's vertical jump test**

- *The aim of the test*: to measure the muscular capacity of the two men.
- *Devices and tools used*: a wall height (3.50 m), a tape measure and a blackboard fixed to a wall of (0.5 m) width and length (1.50 m), on which lines are drawn in white and the distance between one lines is (2 cm), and pieces of chalk and pieces of cloth are also used. To wipe the blackboard after reading every attempt made by the laboratory, the blackboard can also be used so that it is fixed on the wall and its lower edge is high from the ground (1.50 m), and the blackboard can be movable and fixed according to the length of the laboratory with the arm, after which the laboratory is jumped.
- *How to perform the test*: The laboratory holds a piece of chalk and stands facing the blackboard, then the tester extends his arm holding the piece of chalk up to its full extension to make a mark on the blackboard and then records the number after that the laboratory swings the arms down and back with the torso bending forward and down with the knees bent, then he extends Knees and push the feet together to jump up with the arms swinging strongly forward and up to reach them to the highest possible height as he places a mark with chalk on the board at the highest point it reaches.
- *Conditions of the test*: The jump to the top is done by the feet together from a stable position and not by taking a step. Measurements should be taken to the nearest cm. Each laboratory has two attempts to score the best of them. Do not extend the piece of chalk outside the fingers of the hand. When performing the first mark, the heels should not be raised from the ground, and the shoulder of the arm leading to the movement should not be raised above the level of the other shoulder.
- *Registration*: The record is made by the number of centimeters reached by the laboratory from the standing position and the mark reached by the result of the jump up, where the mark (the distance between the first mark and the second mark is about the amount of muscle capacity of the two men). **(Winner, 1987)**



• **Shooting test by jumping from to the center and right**

- *The purpose of the test*: (Measuring the accuracy of shooting by jumping).
- *Necessary tools*: a basketball court, a tape measure, two (2) legal basketballs, a basketball goal, a magic pen.
- *Procedures*: As in Figure (3), three points are drawn in the form of small circles of (15) cm in diameter as signs indicating the three areas through which the test is performed as follows: The first mark is to the left of the end of the free throw line and at a distance of (30) cm . The second mark is the middle of the free throw line and at a distance of (90) cm towards the far line (the three-point throw). The third marker is to the right of the end of the free throw line and at a distance of (30) cm. **(Risan , 1989)**

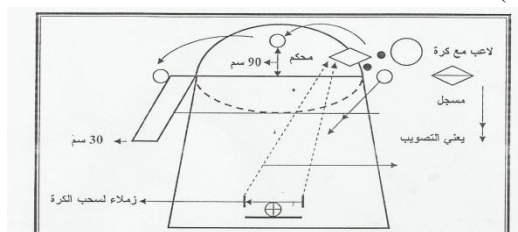


Figure (3) Shooting test by jumping

Performance description: The player takes a standing position in the position specified outside the free throw area and on the left side (first mark) and the ball is flashed. The player performs the correction by jumping with one hand and directly towards the basket without the ball touching the goal board. The player takes (15) throws in three groups, where each group has five shots. The first set is made from the marker in the middle of the free throw line and at a distance (90 cm) towards the far line (three-point throw). The third set is taken from the mark on the right side of the free throw line at a distance of (30 cm). The player leaves the possibility of correction by jumping after each group, he moves in a semi-circle to the middle and right. Before starting the second set, another player is allowed to play his first set, and so on alternately for all players and for the rest of the players. Each player has only one pre-performance training throw.

- *Test Instructions:* - Taking the correct position (the exact position on the left side with the ball). - The player has the right to take (15) throws in three groups, and each group has (5) consecutive throws. - It is possible for a player to take only one step before performing the correction by jumping, noting not to exceed the mark on the ground. Each player has only one attempt. - The number recorded by the next player shall be declared as a guarantee of the competition factor.
- *Test administration:* Recorder: He calls first and records the results of the throws second. Referee: stands near the player to give him the ball and note the correct performance.
- *Score calculation:* For every successful throw (the ball enters the basket), two points are calculated and scored for the player. - For every throw the ball touches the ring and does not enter the basket, a score is calculated and scored for the player. - No scores are awarded when the ball hits the board and does not enter the basket. - A player's score is equal to the total number of points earned on throws (15). The maximum score for the test is (30) points.
- **Free Throw Test**
 - *Objective of the test:* To measure free throw skill.
 - *Tools and equipment used:* basketball, basketball goal.
 - *method of performance testing:* The performance of throws from behind the free throw line and each laboratory Twenty attempt, and a laboratory that performs free throws by using any method of scoring, that lead throws twenty in the form of groups of five throws to be in the form of a circle Or, to let another tester perform the first set and so on, and some throws are allowed before the performance as a test.
 - *Test conditions:* 1- Every laboratory has the right to make (20) throws. 2- The throw must be done from behind the free throw line.
 - *Registration:* a score is calculated for each correct injury performed by the laboratory, and zero is calculated if this is not achieved. **(Muhammad, 1984)**

The E. result of tests physical and skill tribal experimental research sample on the Saturday and Sunday , a brief summary of ¥ 1 3 _1 4 / 7 / 20 19 At exactly five o'clock in the evening at the Sports Club of Adhamiya Hall, the first day of tests technique and the second day of physical test, as installed conditions Related to the tests in terms of place, time, selection method, and auxiliary work team in order to achieve the same conditions as possible when conducting the post tests of the research sample . The researcher yen set up physical exercises to develop the explosive power of the arms and legs of the group experimental , taking into account the temporal and spatial conditions and the age level and physical players and dependent on the availability of scientific sources in order to be the level of a scientific proportion to the different conditions of the sample, as well as the possibilities available from the tools and the training suit and access the sample to a higher level The exercises included the following : The aim of the exercises is to develop the explosive power of the arms and legs and the task for advanced players in basketball . The training period lasted eight weeks, the total number of training units (24 training units) - the number of training units per week (3 training units). Weekly training days (Saturday - Monday - Wednesday) Exercises are given both within the main section and in the special preparation period. The training time was (3 5 - 45) minutes, and within the main section of the training unit. The east ministers of training pulsation high intensity, it was highly gradient exercises in the training modules according to the viability of the players and this was confirmed by **(Bastawisi, 1999)**, and ranged from (80_95%) change the exercise of medical balls and terracing barriers type. The training pregnancy was 1: 2 i.e. two weeks of increase in intensity and one week of recovery. It was to begin the implementation of the exercise on Saturday, a brief summary of 2 0/7/2019. The completion of the exercise on Wednesday 11/9/2019 The tests were conducted physical and skill dimensionality of experimental research sample having finished the implementation of the exercise and so on Saturday and

Sunday , a brief summary of ¥ 14 _ 15 / 9 /20 19 and the same time and the manner and the circumstances in which conducted tribal tests .

Results

Table (1) Statistical treatment of the pre and posttests of the examined tests and their analysis

The test	measuring unit	The pretest		Post test		Then	P. P	Values t Calculated	Error level	of difference
		s	P	s	P					
The power of E.Nfjarih armrests	M / cm	5.50	4.97	7.60	1.65	2.10	0.65	16.55	0.0	moral
The power of E.Nfjarih for two men	cm	34.30	3.55	58.80	1.77	24.50	0.82	18.35	0.0	moral
Shooting by jumping from three areas around the free throw area	Degree	18.90	4.20	25.10	1.42	6.20	0.95	22.19	0.0	moral
Free throw	Degree	11.50	2.981	17.80	2.116	6.30	0.62	17.82	0.0	moral

* Significant at the significance level (0.05) if the error level is less than (0.05). * Degree of freedom (12 - 1 = 11).

Discussion of the results : seen from the table (1) the effectiveness of training Ba tools help (terracing and barriers) Medical balls of the arms and legs , as brought about moral differences in favor of the post test, and this is evident in the difference between the circles calculation, and why evolution is due to follow the scientific method when setting exercise in terms of gradient intensity and times of rest and this was confirmed by Mahmoud Abdullah (**Mahmoud, 1991**) "Giving regular exercise according the correct scientific approach enhances the efficiency of the joint work of groups of muscle in the performance of different motor skills and physical characteristics acquired by the player during training" , as the gradient and work out the quality of exercise and suitability of the capabilities of this group has contributed to this development, as was the use of appropriate Alhdd and sizes and adequate rest periods and needed by the player the basketball. table (1) shows that there were significant differences in the E. Chtbarren pre and post and in favor of the E test posttest for both E. Chtbara explosive power of the arms and legs, as a n This gives an indication of the development of explosive power of the muscles of the arms and legs, and that the exercise had given Benefit in influencing the development of the working muscles in the test yin and in the correct manner for the work of the muscle groups , as well as the optimal use of the type of exercises that worked to increase the explosive power of the arms and legs, and this was confirmed by Abu Al-Ela (**Abu Al-Ela, 2003**) "Under the influence of strength training exercises the capacity of the device increases nervous to recruit the largest number of motor units to participate in muscle contraction and thereby increasing muscle strength " , as used researchers different medical balls weights different and the conditions as well as exercises jumping varied on different steeplechase heights and terraces boosting exercise on the one hand and to move away from traditional training on the other hand, it is Performing the vertical jump test of stability and the medical ball throwing test from sitting is one of the most important tests that are used to assess the explosive force of the muscles involved in scoring basketball, and this means Similarity tracks motor in this test and track motor skill scoring , as *T. Izzo* researcher of that E. Li the effect of physical exercise for which a Stkhaddmt in training modules, exercises jumping for a Mam and top on the terraces, barriers and land , as well as medical balls , and this course has helped develop the explosive power of the arms and legs, and this is what confirmed it (**Elham, 1997**) as one of " a are physical and key capabilities which have to be their presence in activities that require the a where jump performance vertical" , e n e use

exercises jumping was his effective role except in this development that has occurred, especially when they are in accordance with the funds determined in advance in order to be effective and exercise is not dangerous . As for the testing technique, the results significantly came to use the exercises properly and therefore worked on the development of the explosive power of arms and legs and reflected on the performance skills to correction of the free throw and correction of jumping injury two points , e n a fake develop explosive power of the arms and legs of the basketball players show clearly through the types of correction jumping and correction of stability , the fact that the player who has the power of Nfjarah good in a NH can a n lead skill right path kinetic and economic effort muscular, as the exercises for the development of explosive power of the arms and legs shows its impact , especially in the nature of skills Which necessitates the player to focus and properly prepare for the initial position in the movement performance, as is the case when throwing the medical ball and vertical jump, which is similar in its path to the kinetic path of the basketball correction movement , and these exercises were emphasized in terms of intensity and size while maintaining the factor of speed in performance , and that all this development reflected on the offensive skills under study, as *Aa Zou* researcher yen reason for this to the influence of *Walt Marenat* last forever The intention of the proposed special tools for the explosive force of the arms and legs, which was appropriate for the sample, as he confirms (**Qasim, 1988**) . Muscular strength is one of the motor abilities that can be developed through various exercises, whether using resistance or without resistance, and according to the training method followed, taking into account the gradient of exercises, it is easy. The difficult one, as "the resistance must gradually increase while maintaining that it is more than a certain degree of the resistance that the player encounters during the game."

Conclusions

1. Contributed to exercise own physical and proposed in the evolution explosiveness strength of the arms and legs.
2. The development of explosive power of the arms and legs contributed to the improvement in the level of shooting performance from the two-point jump and the correction and the stability from the free throw.
3. The more physical exercises are close to the form of skill performance and the way it is performed is similar to the methods of performing basic movements in basketball with the gradual increase in strength and maintenance of the speed factor, this leads to its better and faster development.
4. The gradation by giving resistors and according to the kinetic path for aiming with basketball while maintaining the speed factor in performance had a great impact on development.

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Appendixes

Appendix (1) shows examples of the exercises used in the training modules

Training unit number: (1) week and month: first - first

Training time: 35 minutes jumping on terraces and barriers. Day and date: Saturday 7/20/2019

Venue: Al-Adhamiya Club Indoor Hall

Section	Allocated time	Type of exercise	the size	Intensity	Rest between repetitions	Rest between groups	Total performance time
the main	35 M	Vertical jump over hurdles with a height of 60 cm.	3 x 8	80%	1_2 M	2_3 M	6 M.
		Lateral jump over a 40 cm high barrier.	3 x 8				6 M.
		Double jump (front _ side) on the number 6 barriers, the height of the front inhibitor (60), height of the side inhibitor (30)	3 x 8				6 M.
		The player stands on a box with a height of (60), facing the goal of the basketball, then jumps down the box and directly jumps over a barrier of height (60 cm), then jumps to the top and performs the process of scoring the medical ball (2 kg)	3 x 8				6 M.
		(Deep jump) The player stands on the box at a height of (60 cm) and is directed at the basketball goal, and then he jumps down the box and immediately jumps to the top trying to reach or hold the basket with both hands in every attempt.	3 x 8				6 M.
		Holding the medicine ball, a weight (3 kg), at the level of the chest and the legs bent (the arms and legs are extended and bent continuously), similar to scoring.	3 x 8				5 M.

Appendix (2) Shows examples of the exercises used in the training modules
Training unit number: (24) week and month: Eighth - Second
Training time: 45 minutes with pads and medicine ball. Day and date: Wednesday 9/11/2019

Section	Allocated time	Type of exercise	the size	Intensity	Rest between repetitions	Rest between groups	Total performance time
the main	45 M	Throwing a 5 kg medicine ball from chest up.	3 x 10	95 %	1_2 M	3_5 M	8 M
		Holding the medicinal ball 5 kg at chest level. Vertical jumping over a bench with a height of 60 cm and descending.	3 x 10				8 M.
		The medicine ball was tossed 5 kg from the back and the top of the head forward.	3 x 10				8 M
		Holding the medicine ball weighing 5 kg in front of the chest and legs bent (jumping up with arms extended up)	3 x 10				8 M
		Constantly making chest manipulations with a 5 kg medicine ball between two players.	3 x 10				8 M
		Holding the medicine ball, weighing 5 kg, at the level of the chest and the legs bent (extend the arms and legs and bend them continuously)	3 x 10				5 M