

The effect of exercises by using auxiliary means to developing the explosive power and defensive follow-up for young basketball players

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Abstract

The importance of research by use of exercises with auxiliary means and with modern sports equipment because it has a great role to development of the basketball game, which may be more effective and safe for players, especially after it has been developed in an accurate and standardized scientific manner and with suitable resistances for the sample, as for the research problem, it is represented by apparent decline in the explosive power and the defensive follow-up for young basketball players. The thesis also aimed to: Identify the effect of exercises using an auxiliary means to developing the explosive power and defensive follow-up for young basketball players, the researchers also hypothesized: Exercises by using an auxiliary means effect to develop explosive power and defensive follow-up for young basketball players.

In the third part, the researchers used the experimental method on a sample of (12) players for the Al-Hillah youth club with basketball, as the experimental group used the exercises prepared by the researchers on the aid for a period of (8 weeks) at (3) units per week, the researchers conducted the pre- tests before implementing the exercises by an auxiliary means as part of the experimental curriculum steps, after the physical and movement abilities were identified and tested, and individual and group skills were determined to initiate the attack and measured through visualization and evaluation by the arbitrators, and the tests were repeated after the completion of the exercises with an auxiliary means within steps. The experimental method, and the results were treated statistically by using the (spss) to extract the results. consequently, the results were presented and discussed in chapter four. The exercises using the aid has a clear effect on the development of the explosive ability of the players in the experimental group, as well as the use of exercises using the assistive device had a great role in developing the defensive follow-up of the players in the experimental group, as well as the use an auxiliary means with rubber ropes that saved effort and time for the coach and the player in developing explosive ability and defensive follow-up well, it is suitable for young. The researchers also recommended: By using an auxiliary means, which contains a variety of rubber ropes, in developing some of the physical and motor abilities for basketball players.

Keywords: auxiliary means, explosive power, young, basketball, players

Introduction

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The use of modern tools and devices in training in recent times has added a lot to developing skills by reducing time and effort in the training process, but the desired benefit of these means depends on the good use of these means. Therefore, the researcher emphasized studying this topic by doing exercises using assistive tools and devices and their effectiveness, and this is confirmed by recent studies that are concerned with dealing with the effect of using tools and devices in developing the physical and skill abilities of basketball, so research in this area represents an urgent necessity and an interesting field in this. The framework The study was devoted to researching the impact of exercises using an auxiliary means to develop explosive ability and defensive follow-up and in line with the trend of modern training that emphasizes the use of devices and tools in training as well as that training is similar to the same real skillful performance and this is what this study adopts as a result of exercises using an aid in developing The explosive ability and defensive tracking of young basketball players, some through the experience of field researchers, they identified the problem of their research that basketball is one of the games that is characterized by multiple skills as a basic requirement for the optimal level of performance, which players should develop and master, and that the attack initiation process is the basis for an organized offensive launch and that the attack initiation process depends mainly on the ability Players master the complex defense skills that are the basis of the beginning of the team's offensive action, and that one of the important factors for the beginning of the attack in basketball and the launch of the players with lines known to them and the movements and final defense skills are an essential part of preparing for the beginning of the attack, including how to anticipate where the ball will fall and take the appropriate place to withdraw the ball in addition to taking the rest of the team members the appropriate place and each according to its location for the beginning of the attack towards a basket The opposing team. Researchers have found that most of the young players do not have the ability to properly and organized link between the end of defense skills and the beginning of the attack, in addition to the fact that they do not have the explosive ability and the correct and good defensive form that enables the team to control the opponent and possess the ball and thus the beginning of the attack is organized and each player Knows the assignment specified and executed well. Thus, the researchers set the objectives of the research, which are: preparing exercises using an aid in developing the explosive ability and defensive follow-up for young basketball players, as well as identifying the effect of exercises using an aid in developing the explosive ability and defensive follow-up of young basketball players. Likewise, they assumed that there was an effect of exercises using an auxiliary method on the effect of developing explosive ability and defensive follow-up of young basketball players. As for the fields of research, they were represented by the players of the Al-Hilla Sports Club for the youth group, and the time of conducting the experiment was from 10/12/2019 to 20/4/2020, as for the place of conducting field exercises and experiments, the researchers chose the hall of the national center for sports talent / youth forum Hillah.

Methodology

Research Methodology:

The researchers used the experimental method to design the two equivalent groups (experimental and control) with pre and post criteria that are compatible with the nature of the research problem, and to achieve the desired goals.

Community and sample research:

The researchers identified the community with the young players in the Hilla Sports Club and the participants within the activities of the Iraqi Basketball Federation, and since "the selection of the sample is closely related to the nature of the society from which it is taken and the nature of the research problem, because it is that model of society in which the researcher is the place and focus of his work"⁽¹⁾, and by an intentional method, the players of Al-Hillah Sports Club were selected to implement the experiment related to the study topic. The sample included (12) players, and then the researcher divided the sample randomly into two control groups (6) players and experimental (6) players, thus the sample represented a percentage of (100%) of the original community (the sample is the community as a whole).

Devices, tools and methods used in the research:

Methods of data collection:

- Arab and foreign sources and references.
- Personal interviews.
- Tests and measurements.
- Special forms for recording test results for players.

Tools and devices used:

- Five signs made of plastic, 30 cm high.
- Whistle type (Fox) (2).
- Wide tape.
- basketballs number (4) legal type molten size (7).
- Computer acer device.
- stopwatch type (Casio) manual.
- Round bands with a diameter of 60 cm, count (8).

- Chinese-made Sony camera.
- A floor ladder 5 m long.
- Colorful adhesive tape.
- The auxiliary mean prepared by the researcher.

Field research procedures:

Explosive power test (Vertical jump test)⁽²⁾ :

The purpose of the test: Measurement of the explosive ability of the muscles of the legs.

Tools and Capabilities: A leather belt is wrapped around the player's waist, a tape measure, a piece of metal with a hole through which the tape measure passes, a tab attached to the belt through which the tape measure passes, an adhesive tape.

Description of performance: In the center of a circle drawn with a diameter of (50) cm, a small piece of metal is fixed through which the tape measure passes, and the metal piece must be between the feet of the laboratory who wears a belt as far as the circumference of his waist, the end of the tape measure is tied to a loop attached to the leather belt, and the tape extends to the piece of metal while it is completely taut, and the tester stands with its legs extended without bending the knees. After the reading is determined in centimeters in the middle of the metal piece. The athlete is asked to jump with the feet together, and the arms can be weighted. The tape measure moves to the top and then there will be a new reading in the middle of the coin, and the difference between the two readings is the result of the athlete's explosive ability. (It is noticed that the result of the jump that ends outside the drawn circle is not taken into account)

Administer the test:

Registered: He calls the players and records results.

Judgment: He calculates the scores and notes the call.

Calculate the marks: The score player gets is the number of centimeters between the first reading while standing and the second reading after it jumps.

To obtain accuracy in measuring the explosive power, the researcher will use an imaging camera to obtain accurate results depending on both the player's mass and momentum as well as the distance that the player jumps⁽³⁾ :

Vertical explosive power = Distance / time x mass/ push time

The vertical explosive power is calculated in units of measurement (watts).

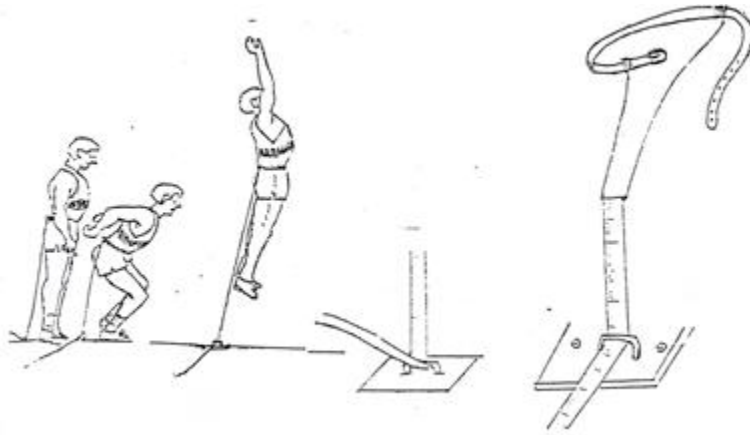


Figure (1) represents the vertical jump test of stability using an Abalakov belt

Defensive follow-up test:

The defensive follow-up test is through photography and given to the referees to evaluate performance and that through a special form.

Exploratory experience:

The exploratory experiment is one of the important steps in the implementation of scientific research, as the researcher obtains through it many information and notes related to the implementation of his research procedures, and the exploratory experiment is defined as a preliminary experimental study that the researcher performs on a small sample before carrying out his research with the aim of testing research methods and tools, so the researchers By conducting an exploratory experiment on Thursday and Friday (19-20/12/2019) on a sample from Al-Hilla club, which numbered 6 players, and the purpose of which was:

- 1- Knowing the time taken to perform the test.
- 2- Ensuring the scientific basis for the tests.
- 3- Identify the difficulties that the researcher may face in the course of his work and develop appropriate solutions to them.
- 4- Ensure the validity of the devices and tools used.
- 5- Ensuring the adequacy of the auxiliary work team.
- 6- Identify errors in advance before performing the main experiment.

The main experience:

Pre-tests:

The pre-tests were conducted on Sunday and Monday, 29-30 / 12 /2019 at four o'clock in the afternoon in the Al-Hilla gymnasium for the research sample according to the following procedures:

- Organizing and arranging the testing site and preparing the tools and equipment used.
- Arranging the players using a special form for each test.
- Conducting the explosive power test on Sunday 29/12/2019.
- Conducting and photographing the defensive follow-up test in order to evaluate it 30/12/2019.

Preparing and implementing exercises using the auxiliary means:

The application of the auxiliary exercises during the training unit and in a part of the main section only on Saturday (4/1/2020), and the training will be in the form of stations and on the basis of the positions of all players on the stadium, and the exercises ended with the aid on Wednesday (4/3/2020).

- The duration of the trial is (8) weeks.
- The number of units per week is (3) units represented by days (Saturday, Monday and Wednesday) or according to the team's training schedule.
- The total number of training units is (24) units.
- The researchers used the method of high-intensity interval training and the method of stations.
- The time for carrying out the exercises with the aid ranges between (20-30) minutes from the time of the main section of the training unit.
- Work in the special preparation period.
- Exercising at the beginning of the main section.
- Main section time 60 minutes.
- The time of the training unit is 90 minutes.
- The auxiliary means as shown in Figure (2).

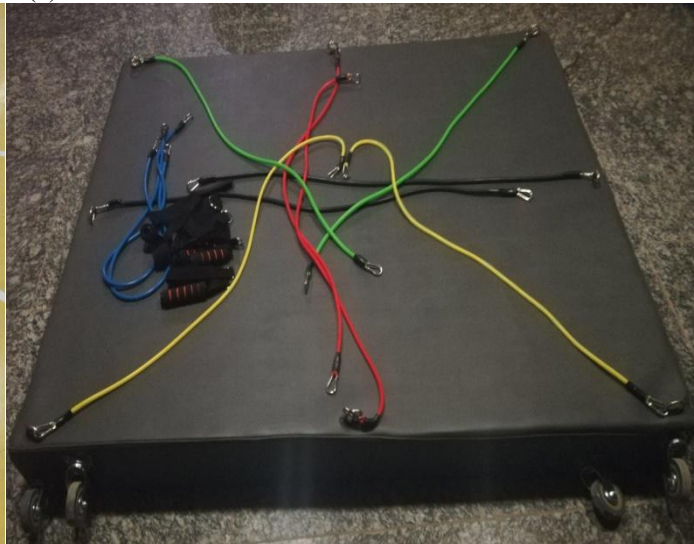
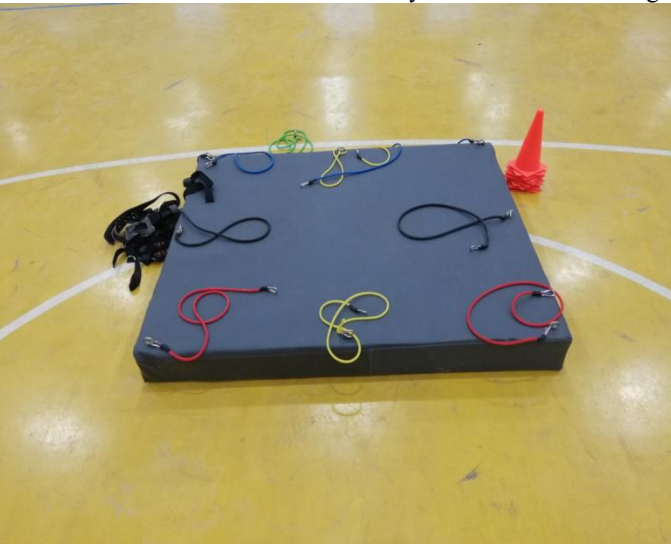




Figure (2) Explains the auxiliary method

Auxiliary device specifications:

The auxiliary device was manufactured by the researcher and with the follow-up of the supervisor, and he made a great effort in order to bring out the aid in the best way and the expected benefit from it, taking into account the safety of the players when carrying out exercises in it, and this method with special specifications was used in the process of giving exercises to the sample, this method is used in the world to train teams from juniors to higher levels and this method contains a platform with a length of (150) cm, a width (120) cm and a height of (20) cm, and a sponge platform located under the skin that envelops the method, which the player can use during the jump for its ability to absorb the jump. The shoes are used correctly and all shoes are used except for the (spikes) that cause damage to the vehicle, and its weight is (100 kg).

On the sides of the platform there are fixed rings that work to connect the ropes in the platform and the ropes are mobile and the rope can be fixed to any loop as needed, and a rope can be tied with another rope in order to benefit from it in exercises that need space and more freedom of movement, it is possible to carry out more than one exercise in the auxiliary means at the same time and with more than one goal so that more than one player is trained, as it contains five pairs of ropes, so there is the possibility of lengthening the rope as needed and thus the means is available to carry out individual and group exercises that contain tactics and move with the ball and without the ball for start-up skills Attack with basketball.

Post- tests:

After completing the training with auxiliary means, the post-tests were conducted on Saturday and Sunday (7-8 / 3/2020) at four o'clock in the afternoon and at the national center for sports games on the control and experimental groups, taking into account the same organization and conditions for the implementation of the tests and under the same conditions and capabilities used for pre-tests.

The statistical means used: The researchers used the statistical bag (spss) in analyzing the research results, including: -

- Arithmetic mean .
- standard deviation .
- T-test for correlated samples.
- T-test for independent samples.

Presentation, analysis and discussion of results:

Presentation of the results of the pre and post tests for the control and experimental groups of the variables under study:

Table (1) shows the arithmetic mean and the standard deviation in the results of the pre and post- tests of the experimental and control groups for physical and motor capabilities and individual and group skills to initiate the attack.

Tests	Measuring unit	Pre-test				Post-test			
		Experimental		Control		Experimental		Control	
		Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation

Explosive power	Watts	443.71	39.01	410.37	73.46	709.67	78.41	519.31	41.95
The player who follows the ball	Mark	4.16	0.75	4.16	0.98	7.50	1.37	4.16	0.75

Presentation and discussion of the results of the differences between the experimental and control groups in the post- tests of the studied variables:

Table (2) shows the differences of the arithmetic mean for the post-tests of the search variables for the experimental and control groups:

Tests	Measuring unit	Experimental		Control		T value test	Sig level	Sig Type
		Mean	Std. deviation	Mean	Std. deviation			
Explosive power	Watts	709.67	78.41	519.31	41.95	5.24	0.000	Sig
defensive follow-up	Mark	7.50	1.37	4.16	0.75	5.19	0.000	Sig

The degree of freedom (10) and the level of significance (0.05).

Discuss the results:

Through what was presented in table (1), we note the presence of significant differences in the dimensional tests. The researchers attribute the reason for the development of the performance level of the experimental group in the post-test measurement of the tests of the explosive power and the defense follow-up due to the method adopted by the researchers in the numbers of exercises using an auxiliary means with different resistances within the framework the training unit and the length of the implementation of these exercises by the experimental group, and the continuous directions by researchers in giving motivation to the players in implementing these exercises by repeating the programmed repetitions originally placed in the unit to be implemented by the sample contributed to positive effects on the level of the players' performance, and the exercises prepared by researchers, which were developed scientifically and accurately, and moving away from randomness through the formation of the training load and changing its percentage and types according to the goal of training, which made the development of the level of the experimental group members quickly and effectively in the results of the tests, which is an indicator of the development of explosive ability and defensive follow-up to start the attack in a form. Notable as well as the implementation of the duties of these exercises by the research sample on the length of the training units and giving appropriate rest between exercises and between groups of exercises, This is confirmed by (Hani El-Desouki, 2013), "The devices and tools that the coach uses in the training process help the player in developing his physical ability, as well as they are used to improve the skill and physical state of the players related to the skill⁽⁴⁾ .

Ahmed Hussain Al-Laqaï (2013) also affirms that auxiliary tools and tools have an important and effective role in the training process through the following: And basic skills, and works to increase the element of excitement and suspense among individuals participating in the performance in a positive and active manner in the training)⁽⁵⁾. The researcher attributes the reason for this moral difference to the exercises prepared by the researchers, which led to the development of physical and motor capabilities by focusing on raising the efficiency of the working muscles to enable the explosive ability to be developed according to the training vocabulary, making the differences in the values of these variables tending to the results of the post-tests and the exercises that were applied the aim was to develop the muscle capacity of the two men by shining the elastic resistance of the two legs and continuing to release this ability as quickly as possible, This is what was confirmed by (Ben Buckley, 2013), "Organized and programmed training and the use of types of standardized intensity in training and the use of optimal rest types between repetitions lead to the development of achievement and the process of overcoming resistance through performing a specific movement and completing it as quickly or as short a time as possible is achieved in service explosive power⁽⁶⁾.

The experimental group also showed a significant development in the skillful performance of the defensive follow-up of the player who pulled the ball as a result of the effect of exercises using the auxiliary method that the researchers were inspired by the actual situations of competition. The auxiliary means make the player able to remedy the deficiencies, especially those whose skill performance is slow and also increases the effectiveness of the training unit⁽⁷⁾. The researchers also attribute these differences to the selection of appropriate exercises for the development of the physical capabilities represented by the explosive ability, which works to develop the skillful performance and this is what Makram Al-Saadoun confirmed, "The individual's possession of a high level of physical and movement capabilities helps him to successfully practice sports activities⁽⁸⁾. As well as choosing special exercises that were characterized by focusing

on the movement path of skill, linking more than one movement at the same time, and diversity in technique and tactics in the individual and collective skill performance of the player who pulled the ball. Exercises using the aid method with the goal set, as the front thigh muscles and calf muscles, which work mainly in high jumping ability, have been developed, as well as the use of exercises similar to skill performance and using (rubber resistors) for the players of this group, the researchers also attribute the reason for the development of the good harmonic movement between the speed of the ball bouncing off the goal board and the jumping of the young players, "The defensive player's success in receiving the rebound ball from the basket depends on his ability and ability to jump"⁽⁹⁾.

Through what was presented in table (2), we note that there are significant differences between the experimental and control group in the post tests of the explosive ability tests and the defense follow-up and for the benefit of the experimental group. These exercises develop in the physical and movement capabilities of young basketball players. The exercises were performed in an orderly and orderly manner, effective repetitions and adequate rest periods, and were characterized by diversification and a focus on the physical and movement capabilities to be developed, and this is what was confirmed by (Abdul Hamid Sharaf, 2013) that the auxiliary means and tools have an important and effective effect on the training process through the following: (The devices and aids in training work to attract the attention of the participants and increase their interest in the subject of training, and increase the development of the player and make him more conservative and less forgetting as it leads to the consolidation of what the trainee learns, and it facilitates the training of certain topics without which it may be difficult to train with the same high efficiency, and contribute to the development of the physical capabilities and skills of the trainee, and contribute to increasing the cognitive knowledge of the player and also increases his attention and mental perception)⁽¹⁰⁾. The researchers believe that the development in the level of physical and motor capabilities as a result of the use of exercises on the auxiliary method, which includes various jumping exercises with fixing resistance to conducting the body, led to the development of the ability of working muscles. , But to increase the acceleration of the work at height by increasing the work of the flexor muscles in the thigh and leg, and the resistances of the assistive device can be used, especially the connection of the legs with ropes and rubber bands, which provides the advantage of developing work on motivating players, this is confirmed by (Ben Buckley, 2014) that the rubber cords (help to isolate and improve the speed of different muscle groups from the body and the elastic band is ideal because of its resistance that changes according to the distance that the tape is stretched, and it has unique properties in maintaining a certain length of the muscle and as a result the speed will increase muscles to contract when moving, and when applying rubber band exercises to the extensor and second muscles of the man, it will result in an increase in running speed and ability, and this type of training increases the size of the muscle in a short time, and the elastic property of the muscle is consistent with the elastic property of the ropes, which makes both work with great harmony, muscles become very fast and respond at high speed)⁽¹⁰⁾.

As for the reason for the difference between members of the two groups in the defensive follow-up test, it is due to the following points:

1. The effect of skill exercises using the various and different auxiliary means related to those skills, so that these exercises prepared by the researcher in a scientific way in terms of planning, organizing and applying helped the individual and collective skillful performances of the player who pulled the ball. This is what Hanafi Mahmoud Mukhtar confirmed. To develop physical qualities and at the same time serve to perfect the player basic skills and digest play plans⁽¹¹⁾.
2. These exercises are inspired by the researcher from the actual situations of the competition. They are complex exercises and are carried out using the auxiliary method as they are applied by linking many movements before receiving and after receiving and performing these exercises in different areas similar to the places where the player moves during the competition, which are three areas of the focal area The depression is from the right side of the forbidden area and the low anchor area from the left side of the forbidden area and the high focal area at the free throw line and this is consistent with what Muhammad Hassan Abu Ubayya said, as they are taught how to properly link skills to each other to become complex, and the exercises must be selected and placed. Miscellaneous working to achieve game skills and in a manner identical to what happens in the game⁽¹²⁾.
3. The use of training tools had an effective impact on the development of the individual and collective skillful performance of the player who pulled the ball for the members of the experimental group because "the auxiliary means make the player able to deal with deficiencies, especially those whose leg movements are slow and also increases the effectiveness of the training unit.
4. The organized planning and the use of the gradient in giving exercises and the gradual using the ropes in the aid device from easy to difficult and from stability to movement, and this is what Muhammad Hassan Allawi confirmed, "that increasing the difficulty of exercises to the state of play is one of the most effective things to develop the athletic level"⁽¹³⁾.

Conclusions and recommendations:

Conclusions: Based on the research results reached within the limits of the research community, the following conclusions have been reached:

- 1- The exercises using the auxiliary means has a clear effect on the development of the explosive ability of the players in the experimental group
- 2- Also, the use of exercises using the auxiliary means had a great role in developing defensive follow-up for the players of the experimental group.
- 3- In addition to using the aid with rubber ropes, save effort and time for the coach and the player to develop explosive ability and follow-up defensive well, and it is suitable for the youth age group.

Recommendations:

- 1- Emphasis on the use of the auxiliary means, which contains a variety of rubber ropes, in the development of some physical and kinetic capabilities of youth in basketball.
- 2- Using the exercises prepared by the researcher on the aid with different resistances in training young players.
- 3- The necessity of optimal use of devices and tools to ensure that they are used in the process of training, development, and the diversity of the player's experiences.
- 4- Conducting similar studies on other individual and group activities, and on different age groups.

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