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THE EFFECT OF SPECIFIC EXERCISES UNDER COMPETITIVE PRESSURE ON DEVELOPING THE ELEMENTS OF AGILITY, MUSCULAR STRENGTH AND THE LEVEL OF COMPLEX SKILL PERFORMANCE FOR JUNIOR HANDBALL PLAYERS

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ABSTRACT
The importance of the research lies in using a training method that depends on simulating the reality of the game, and this is done by preparing specific exercises that include playing positions and in the presence of defensive players and according to the training goal and playing areas, whether from the corners or the middle of the game, and each player must perform the exercise with strength and speed similar to the performance during the game to bring players reach high levels agility, muscle power and complex skill performance throughout the match. As for the research problem: Through the researchers' Observation and field experiences in the game, they found that there are many mistakes made by players during the required motor performance for offensive skills and under opposing pressure, in addition to slowness and lack of movement and dealing with the ball or without it during defensive pressure, which negatively affects the result of the match. Therefore, researchers tried to study this problem by finding solutions to it by putting specific exercises under opposing pressure to raise the level of agility and muscle power and complex offensive skill performance for junior handball players. The study aimed Well: Effect specific exercises under opposing pressure in developing the elements of agility and muscle power and the level of complex skill performance for junior handball players. As for the research hypothesis: The qualitative Have practice a significant Influenced by developing the elements of agility and muscle power and the level of complex skill performance for junior handball players. As for the research methodology: The researchers used experimental methods two equivalent groups (control and experimental) with pre- and post-tests to suit the research objectives. As for Research Group and its sample, they were chosen intentionally, and they are players in the professional center are interconnected with the Najaf Governorate, numbering (24) players, and (16) players were chosen from them and randomly divided (by drawing lots) into two groups (control group and experimental group), each group has (8) players.

KEYWORDS: Qualitative exercises, agility ,muscle power, and skill performance.

INTRODUCTION

Handball is one of the team games that have been included in modern training methods and have begun to attract the attention of many followers and researchers due to its competitive excitement among players in performing physical fitness elements and performing various offensive skills, in terms of technical requirements and containing the variables of defense and attack, it requires the player to perform different movements on the field due to the diversity of its offensive skills in playing situations, so the specificity of its training comes through training methods that serve the type of game and the nature of the performance that players need. In handball, the player needs the most important elements of physical fitness, including agility and muscular ability due to their importance in the level of performance of complex skills of various types to overcome defensive formations, and among these exercises is the use of specific exercises that aim primarily to develop and improve the correct performance of motor skills among players, so that these exercises are similar to the performance and nature of muscular work in handball on the one hand, and on the other hand, these exercises work to develop and improve skill performance and its accuracy to overcome the changing and multiple conditions of the match under the pressure of the competitor due to its realistic importance in training programs, as it is necessary for the exercises to be Sports activities stem from the nature of skill performance, and training using specific exercises under pressure from the opponent is a means of developing the individual's potential to accomplish the required motor task. [1]

Here lies the importance of the research in using a training method that relies on simulating the reality of the game, and this is done by preparing specific exercises that include playing positions and in the presence of defensive players and according to the training objective and playing areas, whether from the corners or the middle of the game, and each player must perform the exercise with strength and speed similar to the performance during the game to enable the players to develop the elements of agility, muscular ability and complex skill performance throughout the match.

RESEARCH PROBLEM

Through the researchers' observation and field experience in the game, it was found that there are many mistakes made by players during the required motor performance of offensive skills and under pressure from the opponent, in addition to slowness and lack of movement and dealing with the ball or without it during defensive pressure on the attacking players and causing them to make many mistakes during the performance, which in turn negatively affects the outcome of the match and gives the opposing team the opportunity to overcome the course of the matches. The reason for these mistakes may be due to weakness in some elements of physical fitness, especially agility and muscular ability, which affects The level of complex offensive skills of the players during the attack and under defensive pressure from the opposing team. Therefore, researchers tried to study this problem by finding solutions to it by putting specific exercises under pressure from the opponent to raise the level of agility and muscular ability and complex offensive skill performance for young handball players.

RESEARCH OBJECTIVES

1. Preparing specific exercises under pressure for junior handball players.
2. Identifying the effect of specific exercises under pressure of the competitor in developing the elements of agility and Muscle capacity and level complex skill performance for junior handball players.

RESEARCH HYPOTHESES

1. Specific exercises under pressure of the competitor have a significant effect in developing the elements of agility and Muscle capacity and level complex skill performance for junior handball players.

RESEARCH METHODOLOGY

The study of the problem determines the method chosen by the researcher to find the solution to the research problem and obtain accurate information and results. The researcher uses the experimental method, divides into two groups of equal size (control group-experimental group) and conducts pre- and post-tests.

Research Group and sample were certainly. Players specialized centers in the central Euphrates governorates were determined, with ages under (17) years, and their number was (86) players, distributed among the specialized center affiliated to the governorate (Najaf - Karbala - Babylon - Diwaniyah). As for the research sample, the research sample was chosen intentionally, and they are the players of the specialized center affiliated to the governorate of (Najaf - Karbala - Babylon - Diwaniyah). As for the research sample, the research sample was chosen intentionally, and they are the players of the specialized center affiliated to the governorate of Najaf, and their number is (24) players who represent the research community. After excluding the exploratory experiment sample and the goalkeepers due to the specificity of their exercises, the number of the sample was (16) players who were divided randomly (lottery) into two groups (control and experimental) with (8) players for each group. Thus, the percentage of the research sample is (18%).

Homogeny and similarity of the sample

In order to verify the homogeneity of the two groups and to avoid indicators that may affect the research results In terms of individual differences between players, homogeneity was conducted to control the extraneous variables (height,

weight, chronological age, training age). Therefore, statistical methods were used through the mean and standard deviation using the skewness coefficient for morphological measurements to determine the reality of the difference or not, as it became clear that the value of the skewness coefficient ranged between (-0.375/0.202) and is limited to (±1), which indicates that the sample is distributed normally, which indicates its homogeneity. As for the equivalence of the two groups, the appropriate statistical method was used through the t-test for independent samples between the two groups (experimental and control) and before applying the qualitative exercises using the play method.[2] The results showed the randomness of the differences between the two groups because The significance level (Sig) values of all the tests used in the study were greater than (0.05), which confirmed the equivalence of the two study groups.

Information collection methods, devices and tools used

The methods, devices and tools were used through the tests used by the researcher in his research procedures, in addition to personal interviews conducted by the researcher with some experts and specialists in handball.

FIELD RESEARCH PROCEDURES

Identifying the most important compound offensive skills and their tests, in addition to the agility and muscular strength test, the researchers chose the most important compound offensive skills and tested them, relying on sources and references for scientific studies similar to these tests, although these tests are objective and standardized because they were used in previous studies similar to the current study, where the most important of the following were chosen

First: Agility and muscular strength Leg and arm tests

- Semo agility test (to measure agility).
- Vertical jump test (Sargent) to measure the explosive ability of the legs from jumping upwards)
- Chair-seated test with a heavy (800) gram medicine ball thrown for the preferred arm to the maximum possible distance (measuring the explosive ability of the preferred arm).

Note: The muscle Leg and arm strength was measured in watts according to the following equation:[3]

- For vertical explosive power= (Mass*9.8* Distance/Flight Time)/ Force push time.
- The explosive power of the arms=(Throwing arm mass + ball mass * ball distance / flight time)/ Force push time.

Second: The most important offensive skills in handball and their tests

- Test of the skill index for Jump Shot Accuracy after passing and receiving.
- Test of the skill index for Jump Shot Accuracy after dribbling.

CONDUCTING THE EXPLORATORY EXPERIMENT

Two exploratory experiments were conducted on Sunday and Monday, corresponding to 5-6/9/2021, Kufa Sports Club Hall. The purpose of Exploratory Experiments was (to ensure the efficiency of the devices and tools, to know the time taken for each test in addition to the overall tests, the suitability of the form for the purpose of analyzing offensive play cases and the time taken to analyze the match and to develop a method of analysis to empty the data to avoid errors in the main experiment.. and others).

After identifying some of the research variables and their tests, Researcher leadership two exploratory studies on a sample consisting of (4) players from the Specialized Center for Handball, who were randomly selected from the research sample. The goal of this experiment was (to ensure the validity of the tests, the availability of appropriate tools for the tests and their time taken, and to identify the suitability of the exercises for the sample, and to find the scientific weight of the nominated tests in terms of stability, honesty and objectivity. These goals were achieved without any problems.

Main Experiment Procedures

The pre-tests were conducted on the research sample of (16) players representing the two groups (control and experimental), on (4/23/2024) in the hall of the Solidarity Sports Club in Najaf Governorate. The researchers gave a brief explanation of how to perform the tests and their sequence. The researcher also established all the conditions related to the tests in terms of time and climate to be able to create similar or similar conditions when conducting the post-tests.

As for implementing the qualitative exercises used for the experimental research sample: The exercises focused on including the development of all the variables studied, based on the scientific evidence and scientific sources and references of sports training. The exercises were performed in the preparation phase, 3 training sessions per week (Saturday - Monday - Wednesday), the duration of the experiment was (8) weeks, divided into (24) training sessions with an intensity ranging from (85% - 100%).

After completing the application of the exercises prepared by the researcher, the researchers began applying the post-tests on the research sample on Sunday (6/29/2024), which numbered (16) players. The researchers provided, as much

as possible, the same conditions in terms of place, time, tools, and the assistant team as in the pre-test, except that the application of the test was In the closed halls of the Kufa Sports Club at five o'clock in the afternoon.

RESULTS AND DISCUSSIONS

- **Displaying, analyzing and discussing the results**
- Displaying and discussing the results of the pre- and post-tests of the research variables for the two groups (control and experimental)

Table 1. shows the values of the mean, standard deviation, calculated (T) value and sig value for the pre- and post-tests for the two groups (control and experimental)

Variables	Groups	Units	Pretest		Posttest		t.test	Sig.	Indication
			Mean	STD	Mean	STD			
Agility	Control	Sec.	11.037	0.981	10.125	0.4086	3.267	0.014	Sig.
	Experimental		11.073	0.947	9.655	0.464	4.299	0.004	Sig.
Muscular strength of the arms	Control	Watt	69.272	6.569	73.072	4.247	1.815	0.112	Sig.
	Experimental		69.491	6.997	78.667	2.784	4.035	0.005	Sig.
Muscular strength of the legs	Control	Watt	257.548	12.89	280.233	9.533	6.430	0.000	Sig.
	Experimental		254.148	9.271	291.111	6.7877	7.715	0.000	Sig.
High jump shooting after passing and receiving	Control	Degree/Sec.	0.0394	0.017	0.0565	0.0122	4.708	0.002	Sig.
	Experimental		0.042	0.016	0.0781	0.0083	5.040	0.001	Sig.
High jump shot after tapping	Control	Degree/Sec.	0.0415	0.019	0.0635	0.0149	6.036	0.001	Sig.
	Experimental		0.0426	0.018	0.086	0.0071	6.272	0.000	Sig.

The table above shows that there were significant differences between the pre- and post-tests of the control and experimental groups in favor of the post-tests for all research variables. The researcher attributes this development that occurred for the two groups to the effect of the method developed by the trainer and the researchers, which includes the performance of developing agility and muscular strength, as the exercises were characterized by jumping, running, and various movements with many repetitions. [4]During training and playing, this was certainly accompanied by a noticeable development of most elements of general and specific physical fitness, agility and muscular strength of the legs and arms In addition to the continuity and regularity of the players' training, which plays a clear role in the development of bio-motor skills, experts believe that no matter how different the sources of scientific and practical culture may be, training programs inevitably lead to the development of skills. offensive skill performance. In addition, the coach works on the foundations of the organized training process for his group, which played a role in making that difference. Also, continuing the training process and what is consistent with the modernity of sports training from the components of the training load, which contributed effectively to creating functional adaptations, which depend on the strong and fast movements performed by the player from the physical aspect of an explosive nature. This is what (spriet) confirmed, [5]The release of high energy represented by the (CP - ATP) system requires adaptation to high-intensity explosive exercises with rapid transition. The adaptation resulting from muscle strength training of all kinds, especially explosive ability and strength characterized by speed, works basically to develop and improve the processes of anaerobic energy production significantly.[6]

The results presented in Table (1) also showed that there were significant differences between the pre- and post-measurements in the complex offensive skills tests in favor of the post-test for the control and experimental groups. The researchers attribute this remarkable development of the complex offensive skills in handball that were trained under the supervision of trainers with a precise specialization in handball and from the elite trainers and former handball players in addition to their academic experience and knowledge of the number of training units during the week and their ability to determine the number of repetitions in a manner that is appropriate for the ages of the players. This was confirmed by "that repetition is the basis for learning and determining the number of times to repeat the performance of the movement is an important matter, as it depends on the trainer's intelligence and experience to a large extent in determining the number of optimal repetitions appropriate for each age group."[7]

- Displaying Differences in post-test results between the control and experimental agility groups, muscular ability and complex skill performance

Table 2. shows the means, standard deviation of independent samples and calculation of (T) value, significance level of (Sig) test and significance of difference in post-test results between control group and experimental group

Variables	Units	Control group		Experimental group		t.test	Sig.	Indication
		Mean	STD	Mean	STD			
Agility	Sec.	**10.125**	**0.4086**	**9.655**	**0.464**	**2.171**	**0.048**	Sig.
Muscular strength of the arms	**Watt**	**73.072**	**4.247**	**78.667**	**2.784**	**2.502**	**0.025**	Sig.
Muscular strength of the legs	**Watt**	**280.233**	**9.533**	**291.11**	**6.7877**	**2.629**	**0.020**	Sig.
High jump shooting after passing and receiving	Degree /Sec.	**0.0565**	**0.0122**	**0.0781**	**0.0083**	**4.128**	**0.001**	Sig.
High jump shot after tapping	Degree /Sec.	**0.0635**	**0.0149**	**0.086**	**0.0071**	**3.859**	**0.002**	Sig.

While the researcher observed the means in Table (2) for the results of the dimensional variables as well as the (T) values calculated for independent samples of the two groups (control and experimental), we found significant differences between the two tests in favor of the experimental group in all the tests examined. The researchers attributed this superiority of the members of the experimental group who relied on qualitative training in their training to the use of game-related exercises that provided fun and excitement to the players, which led to an improvement in their physical fitness and hand strength. The performance of the skills training tasks, in turn, affects the level of the dimensional test results, as the players must show a high level of competence when training as required by the game of handball, in addition to their physical, skill and tactical capabilities in order to raise the level to the highest levels. The nature of exercises under pressure also develops the ability to be agile and muscular by introducing excitement and suspense, "Introducing various exercises into training curricula in a precise manner in order to maintain the athlete's desire to carry out the requirements of strenuous training and transform them from a state of boredom and tedium to a state of happiness, joy and enjoyment during training."[8]

In addition, the nature of the exercises under defensive pressure contributed to recruiting larger motor units and synchronizing neuromuscular coordination and the ability to coordinate between contracted and extended muscles as a result of developing the muscular capacity of the arms and legs, as the neurological coordination within the muscle between the fibers and the neurological coordination within the muscle are among the most important factors associated with strength characterized by speed, "As raising the efficiency of the nervous and muscular systems contributed to improving the nerve signals received by the muscles and reducing the appearance of extra movements, which led to the appearance of fluidity in movement and increasing the body's coordination while changing its positions and directions."[9]

As for (agility), the specific exercises under pressure, which were performed with high rebound and different modes of motor responses, and linking agility exercises with complex offensive skills and decision-making during performance and under pressure from the opponent, contributed to making this difference and creating a spirit of determination and insistence for the players to implement those exercises, as they were performed in a more difficult situation than the exercises of the control group in terms of performance and form of the exercises and in the presence of defenders and providing an element of competition between the members of the research sample in implementing those duties in the best way, so that most of the exercises were collective and not individual, as well as in the presence of defenders so that the training would simulate the reality of the matches. Many scientists and researchers have pointed out the importance of the element of competition and the extent of its contribution to developing the skills and abilities of the individual for any game "providing an element of competition in the training unit will increase the motivation of the players."[10]

In discussing the complex offensive skills in the post-tests, we find that the development achieved in the test (high jump shooting after passing and receiving, high jump shooting after dribbling, high jump shooting after deception) between the two groups and in favor of the experimental group can be attributed to the success of the qualitative exercises and under defensive pressure in different areas and places on the field and high focus on target accuracy, in addition to a good level in applying the attack with the quality and location of the players at a high level of discipline in taking appropriate places and performing at a tactical level that gave the sample a major role in the success of many attacks, in addition to the researcher's observation when performing the duties for offensive play situations during the application of the exercises,[11] it was highly efficient for the experimental group about not applying the repetition of different situations while the defenders were present, which requires determining an appropriate place according to the data of the defensive situation, as well as the ability to control the ball in different circumstances without looking at it, which contributed to the handball players' ability to confront the competitor's circumstances while implementing the duties for offensive play situations, in addition to performing any offensive tactic that requires the players to work with different sensory-motor awareness. Sometimes it requires him to be aware of the place and other times to be aware of the time in choosing the appropriate time for his movement inside the field. All these exercises helped him to raise the level of many skill performances in various sports activities. This type of exercise in which we reach the highest levels of specialization in developing skill and physical performance in quantity, quality and timing of performance according to the momentary uses of skill and physical performance of its practitioners in the type of sports activity.[12]

CONCLUSIONS

1. The specific exercises under defensive pressure prepared by the researchers and implemented by the experimental group achieved a significant development in all variables (agility, explosive power of the legs, explosive power of the arms, high jump shooting after receiving and handing over and shooting after bouncing) among junior handball players.
2. The exercises prepared by the coach and implemented by the control group achieved a significant development in all variables (agility, explosive power of the legs, explosive power of the arms, high jump shooting after receiving and handing over and shooting after bouncing) among junior handball players.
3. The superiority of the specific exercises under defensive pressure prepared by the researchers over the exercises prepared by the coach in all variables (agility, explosive power of the legs, explosive power of the arms, high jump shooting after receiving and handing over and shooting after bouncing) among junior handball players.

RECOMMENDATIONS

1. Paying attention to using specific exercises and under pressure from the defender according to scientific training foundations to raise the physical efficiency of handball players while applying complex offensive game situations.
2. The necessity of applying specific exercises under pressure from the defender during training units due to their similarity to the match conditions, which creates a positive competitive atmosphere that helps players to be motivated to perform the exercises.
3. Conducting similar studies on different age groups.

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