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Evan Nimah Kazem

Department of Physical
Education, AL- Iraqia
University, Baghdad, Iraq

Naseer Mazhar Abboud

Department of Physical
Education, AL- Iraqia
University, Baghdad, Iraq

The effect of exercises similar to playing according to the aerobic energy system on the enzyme (GPX) and peaceful shooting for female basketball players

Evan Nimah Kazem and Naseer Mazhar Abboud

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Abstract

The research included the introduction and the importance of the research, as progress in the game of basketball in particular and group games in general is the result of the interest of a group of researchers and specialists in the sports field, as well as the problem of the research in the presence of weakness in shooting peacefully with basketball, goals and assignments. It also included the research methodology and its field procedures and used The researchers used the experimental method for its suitability to solve the research problem with the experimental and control groups and the research community and sample, where the research population reached (30) players from the College of Education girls' team, and they were divided into two groups (10) experimental, (10) control, and (8) female players for the exploratory experiment. Two injured players were excluded, and the presentation of the results was also included. It was analyzed and discussed, and the conclusions included are the presence of positive differences between the pre-test and post-test for the experimental group, and in favor of the post-test, due to the effect of play-like exercises. Likewise, the recommendations are to adopt play-like exercises according to the aerobic energy system prepared in other studies because they have an effective role in developing female athletes in different fields.

Keywords: Psychiatric disorders, suicide, suicide attempt

Introduction

Progress in the game of basketball in particular and team games in general is the result of the interest of a group of researchers and specialists in the sports field, as well as from various studies and theories of the principles and foundations of physiology and sports training for practical application and scientific experiments to reach higher levels and development.

The process of sports training with exercises is similar to playing according to the aerobic energy system in order to bring the players to a good level in terms of skills, as well as improving the work of enzymes in order to be able to reach good tactical performance in order to achieve the applied plan and the offensive movement of the players in the required and good manner and to achieve the desired and basic goal of the coach in the first place in Developing the performance of female players and their access to playing and competition situations. Therefore, the researchers resorted to training exercises similar to playing in order to achieve the desired and good level of sports.

From the above, the importance of research is highlighted in identifying the effect of exercises similar to playing according to the aerobic energy system, developing peaceful shooting, and improving the GPX enzyme for female basketball players.

Research problem: Basketball is one of the team games that require high physical fitness in order to achieve victory, as traditional exercises have a weak effect on the player's ability to show a good level. Through the researchers' access to scientific sources, as well as following up on some university championships for female players' teams, it was found that most coaches rely on Traditional training, so the researchers decided to develop training similar to playing according to the aerobic energy system for female basketball players.

Corresponding Author:

Evan Nimah Kazem

Department of physical
education, AL- Iraqia
University, Baghdad, Iraq

Research objectives

1. Prepare exercises similar to playing according to the aerobic energy system.
2. Identify the effect of exercises similar to playing according to the aerobic energy system in the enzyme (GPX) and peaceful shooting for female basketball players.

Research hypotheses

1. There are statistically significant differences between the pre-test and post-test for the two research groups and in favor of the post-test for the experimental group in the enzyme (GPX) and peaceful shooting for female basketball players.
2. There are significant differences with statistical significance between the two post-tests for the control and experimental infusion groups, and in favor of the experimental group in the enzyme (GPX) and the peaceful shooting of female basketball players.

Research areas

- **Human field:** College of Education girls' basketball team players/University of Kufa.
- **Time range:** (3/1/2023) to (5/23/2023).
- **Spatial area:** College of Education Stadium for Girls / University of Kufa.

Research methodology and field procedures**Research Methodology**

The researchers adopted the experimental method as it is the most appropriate in solving the research problem because the problem is what determines the method used to obtain accurate information and results. The method is ((the method followed by the researcher to determine research steps through which a solution to the research problem can be reached) (1) where it was the basic approach for developing solutions in an organized manner.

Society and research sample

The research community is the basis for organizing the steps of the research, as the research community consisted of the players of the basketball team in the College of Education for Girls/University of Kufa, who numbered (30) players. The research sample was divided into two groups (experimental - control), where the number of the experimental group was (10) and the number of the experimental group was (10). The control sample was (10) and the exploratory sample was (8), and the infected people were excluded, as the percentage of the research sample was (66%), which represents the community most faithfully.

Methods, devices and tools used in the research

- Scientific sources and references.
- The questionnaire.
- Testing and measurement.
- Note.

Auxiliary tools and devices

- Legal basketball court (1).
- Basketballs (5).
- Chinese-made Lenovo computer (1).
- Colored adhesive tapes (5).

- Chinese-made electronic stopwatch (2).
- Number of signs (10).
- Whistle number (2).
- 5cc tubes (50).
- Static treadmill.
- Cooling box for transporting blood samples (1).
- -Medical scale for measuring weight (1).

Determine the tests used in the research

The researchers identified the tests that are related to the required skills, as they are experienced and specialized in the field of sports training and physiology in team games.

Description of the tests used in the research

1. Test of tapping and then shooting a basketball: (1).
2. Measurement of the enzyme glutathium peroxidase (GPX) (2).

The enzyme was measured by drawing blood from the players (5 CC) when they got off the treadmill and directly after completing exercises similar to playing in order to maintain the effect of the exercises on the enzyme.

Exploratory experience

The exploratory experiment was conducted on a sample outside the research sample, which is a preliminary experiment for the researcher. The number of players reached (8) on Thursday (3/2/2023), and they were selected randomly, as they were excluded from the main experiment, and its purpose was:

1. To know the ability of the assistant work team.
2. Knowledge of tests and their suitability for the research sample.
3. Preparing the tools and devices used in the tests.
4. Determine the appropriate time for enzyme tests and measurements.

Pre-tests

The pre-tests were conducted on (5/3/2023) on Sunday at ten o'clock in the morning, where the aiming skill test was conducted after performing the tap. After that, the blood sample was drawn immediately after completing the test, and the blood was placed in tubes, and then it was placed in the cold box to prevent clotting. After that, he transferred it to the laboratory to obtain the data.

Main experience

After conducting the pre-tests, the researchers applied the curriculum, which consisted of (8) weeks, with two training units per week, where the curriculum was applied from exercises similar to playing according to the aerobic energy system, and after data was collected from the main experiment, i.e. from the post-tests on Thursday (4/27). /2023) as the conditions were fixed as much as possible to reach the results that solve the research problem.

Statistical methods

Statistical means were extracted using the SPSS program to obtain accurate results.

Presentation, analysis and discussion of the results

Table 1: Shows the arithmetic mean, standard deviation, and t-value calculated for the control group for the research tests

Variables	Pre		Post		Calculated value	Statistical significance
	S	A	S	A		
Peaceful correction after plump	1.78	0.83	3.45	0.65	4.12	Moral
GPX enzyme	776.5	0.89	789.3	0.83	3.15	Moral

The tabular value is 2.62, degree of freedom (9), and significance level (0.05)

Table 2: Shows the arithmetic mean, standard deviation, and t-value calculated for the experimental group of the research tests

Variables	Pre		Post		Calculated value	Statistical significance
	S	A	S	A		
Peaceful correction after plump	1.87	0.72	5.77	0.59	4.76	Moral
GPX enzyme	872.2	1.23	882.9	1.12	2.97	Moral

The tabular value is 2.62, degree of freedom (9), and the significance level (0.05)

Table 3: shows the arithmetic mean, standard deviation, and t-value calculated for the control and experimental groups for the post-tests.

Variables	Controller		Experimental		Calculated value	Statistical significance
	S	A	S	A		
Peaceful correction after plump	3.45	0.65	5.77	0.59	3.20	Moral
GPX enzyme	789.3	0.83	882.9	1.12	3.02	Moral

Discussion of the Results

Table (3) shows that there are significant differences between the results of the post-tests of the research variables for the control and experimental groups and in favor of the experimental group. The significance of the differences was identified using independent samples, and through the results it was shown that the calculated value was significant, and the researchers attribute the existence of significant differences in favor of the experimental group. Between the post-tests of the experimental and control groups, the members of this group applied and carried out exercises similar to playing in an aerobic energy system, which led to this change.

It was also shown that the calculated value of (T) is greater than the tabulated value of (26.2) at a significance level of (0.05) and degree of freedom (18) and in favor of the dimensional measurement of the GPX enzyme. This result is consistent with the findings of Spodaryk.1993 regarding the increase in the activity of this enzyme in athletes when training on Endurance (aerobic training) (1).

The main functions of enzymes are the process of accelerating chemical reactions within the muscle cell to release the necessary energy, and this was confirmed by Safaa Al-Muhareb when he pointed out that muscle activity is accompanied by a series of reactions in which enzymes contribute as auxiliary factors, an active and effective contribution, and thus the activity of enzymes increases clearly. Which act as catalysts in the metabolism process due to training (2).

Shooting skill is the first basic skill in terms of importance among all the basic skills, and with its importance in this game, it must eventually bring the player to a position that makes it easy for him to hit the opposing team’s basket, “as shooting the basket is the final result of mastering all basketball skills, training programs, and game plans.” (3).

Conclusions

1. There are positive differences between the results of the pre-test and post-test of the experimental group due to the effect of the game-like exercises that the researchers used, adding the spirit of competition between the players of the research sample and performing the skill of shooting basketball correctly and accurately.
2. The exercises similar to playing and diversifying them, which were used for the experimental research sample,

added a factor of suspense to the players of the experimental research sample, which removed the boredom factor from repeating traditional exercises.

3. Exercises similar to playing according to the aerobic energy system gave positive comfort to the female players in the research sample by increasing playing experience.

Recommendations

1. The need to focus on exercises similar to playing according to the aerobic energy system for female basketball players to develop basic skills.
2. Focus on giving exercises that emphasize aerobic energy because of its importance in obtaining high achievement and reaching higher levels.
3. Conduct similar studies for different group and individual activities and different age levels.

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