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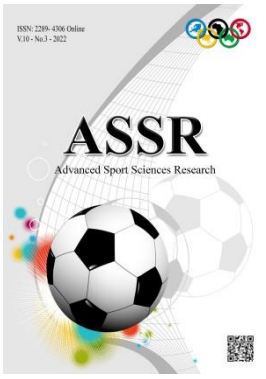

"Effect of skillful physical effort on some functional variables of paddle tennis players"

Dr. Atheer Abdullah Hussein Tanish[1], Dr. Alaa Abdel-Wahhab Ali Malallah[2] Omar Abdel-Wahhab Ali[3]
Iraq - Al-Qadisiyah University - College of Physical Education and Sports Sciences
Atheer.allami@qu.edu.iq Alaa.abdallwhab@qu.edu.iq
Omer.abdulwahab1987@gmail.com

The researchers noticed a problem that exists among the paddle tennis players, which is the fatigue that appears on most of them in training and competitions. The researchers attribute this problem to not undergoing specialized training programs that lead to the development of functional and functional variables for the players, due to the novelty of this game and its recent spread in some countries. Most of the training curricula focus on The skill aspect, therefore, the researchers wanted to study this problem by examining the impact of physical effort and skill on some functional variables of the paddle tennis players.

The research aimed to identify some of the functional variables of the sample and to identify the effect of skillful physical effort on some of the functional variables of the paddle tennis players, and the researchers assumed that the physical effort had a statistically significant effect on some of the functional variables of the sample under study.

The number of the research sample was (10) players, and they constituted 50% of the research community of (20) players, and the sample was in a good health condition.

The researchers concluded that the increase in heart rate, lactic enzyme, and triphosphate enzyme increased after the skillful physical effort compared to the rest periods, and that the levels of both blood oxygen and sodium ions decreased in the padel tennis players compared to the rest periods, and the skillful physical effort of the paddle tennis players was consistent with The lactic system prevailing in racket games, and that the ratio of O2 at rest and after the physical and skillful effort of the padel tennis players was close in values as a result of the adaptation in the player's oxygen susceptibility and did not show any differences.

Keywords: physical effort, functional variables, paddle tennis.

1.Introduction

The tremendous development that is taking place in the scientific field, which led to a boom in the various fields of science, including the mathematical field, some of which are linked to technical development and others to the scientific development that you are experiencing, especially the sciences that are concerned with the career field of players. And this development in the sports field, especially the high levels achieved by the world champions in the recent world championships, as the specialized process leads to an upgrade in the level of functional aspects (functional through the development of the work of the circulatory and respiratory systems). Paddle tennis is a racket sport, different from the sport of tennis. Known in the United States and Canada, paddle is usually played in pairs on a closed court of about 25% gram. The main differences are that the court has walls and balls can be played on it.

The paddle tennis game is one of the games whose practice leads to a set of functional and physical changes as a result of continuous training. These physiological variables are (the number of heart beats in the blood, the enzyme and the sodium ion).

The functional variables that occur to the body's vital systems and its various organs under the influence of the physical effort performed for one time and through the emergence of a group of functional variables of the body's systems and its vital organs. Sports programs with specific exercises that include the activities of walking, jogging and running, the purpose of which is the advancement of individuals and societies to physical sophistication, hence the importance of research in improving the physiological, physical and motor aspects of the player through research throughout the day (the effect of a skillful physical effort on some functional variables among exchange tennis players in an attempt Serious researchers to advance scientific research in the sciences of physical education.

As for the problem of the research, the researchers noticed a problem that exists among the paddle tennis players, which is the fatigue that appears on most of them in training and competitions. Most of the training curricula are on the skill side, so the researchers wanted to study this problem through researching the impact of physical effort and skill on some functional variables of the paddle tennis players.

Search aimed to:

1 Identify some of the functional variables of the sample
2 Identifying the effect of skillful physical effort on some functional variables of paddle tennis players

The researchers assumed that the physical effort had a statistically significant effect on some functional variables of the sample under study

As for the areas of research

The human field: a sample of (10) paddle tennis players.

Time range: 15/1/2022 - 15/6/2022.

Spatial domain: College of Physical Education, University of Baghdad. International hospital laboratory for pathological analyzes

2- Research methodology and field procedures

2-1 Research methodology

The choice of the research methodology is commensurate with the research problem and how to solve the problem. In addition, the nature of the phenomenon that the researcher addresses is what determines the type of method used and its objectives. Therefore, the researcher adopted the descriptive method and the survey method, due to the nature of the research problem and its objectives.

2-2 Research community and sample

The number of members of the research sample is (10) players, and they constitute 50% of the research community of (20) players, and the sample was in a good health condition.

2-3 The means of collecting information, the equipment used, and scientific research tools

1 1 Player data dump forms.
2 hours timing number (3).
3 heart rate monitor (wrist) English.
4 An electronic device (dastameter) to measure height and weight.
5 Jordanian-made thermometers for measuring air temperature and humidity.
6 tubes of blood, number 40.
7 syringes for drawing blood, number 40.
8 (1) photography cameras.
9 (1) DELL computer
10 Oximeter device to measure the percentage of oxygen in the blood.
11 Arabic and foreign sources and references.
12 the internet.
13 scales.
14 personal interviews.
15 auxiliary staff.*

2-4 Field research procedures

2-4-1 Exploratory experience

The exploratory experiment "is a scientific method for discovering the obstacles that researchers may face while conducting the main experiment, and a prior preparation for the requirements of the experiment in terms of time and cost, auxiliary personnel, validity of equipment and tools, etc." (1: 65) (2: 90) and it is a preliminary study conducted by the researcher On his eyes are small before doing his research with the aim of testing the research methods. Accordingly, the researcher conducted the exploratory experiment on Tuesday corresponding to (1/3/2022) at nine o'clock in the stadium of the College of Physical Education, University of Baghdad Al-Qadisiyah, on a sample of (4) players from the paddle tennis players.

* Support staff:

- Yasser Muhammad, PhD in Physical Education - Handball, Al-Qadisiyah University - College of Physical Education
- Muhammad Hassan, Ph.D. in Physical Education - Racket Games, University of Baghdad - College of Physical Education and Sports Sciences
- Ahmed Mohamed, Associate Medical Officer, Al-Kadhimiya Hospital

2-4-2 Physical and skill test in paddle tennis

After the researcher looked at many sources, references, and scientific research in the field of tests and measurement, as well as many interviews with experienced people in this field to find a special field test in the game of paddle tennis, due to the absence of any field test in the game and the lack of resources around it, prompted the researchers to design a test For a skillful physical effort that contains (24) stations that include all the basic skills of paddle tennis and some other motor qualities such as agility, flexibility, speed of motor response, special length, arm strength...etc., among the qualities that a paddle tennis player needs.

This test was designed in line with the capabilities and capabilities of the tennis players. This test was applied to the players with the maximum intensity, that is, the maximum that the player can provide during the performance.

After presenting the test for physical and skillful effort to those specialized in the field of tests, measurement and sports training in racquet games, as well as to the coaches of tennis club teams to show the validity of this test, then the discriminatory ability test was conducted (30) players representing the first club teams and after statistical treatments so that time was taken Or the real time for each player of those teams, that is, the maximum physical and skill performance in the least possible time.

And after arranging them according to the times recorded for each player in descending order and dividing the sample into two parts based on the adoption of (50%) of the sample and through finding the discriminatory ability using the law (T), its calculated value appeared (11.989), as its tabular value reached (2.148) at a degree of freedom (28) and its level of significance (0.05), and this indicates that the designed test has a high discriminatory ability for the testers of higher levels. Therefore, an inverse significant correlation appeared and its capacity was (0.88), meaning that the longer the time taken for performance in the test, the less the actual skillful time in the half or match and vice versa.

2-4-3 The main experiment of the research

The researchers conducted the main experiment by preparing a skillful physical effort in the paddle tennis game consisting of a set of stations that were prepared according to the nature of the game, the positions of the players and the energy system prevailing in the game on 3/15/2022, as the measurements for the research were made before any effort was made Measurements of height and weight were taken, and the biological and training age of each player was recorded, and then heart rate measurements were taken by (wrist) on the forearm of the left hand and an oximeter device to measure the level of oxygen in the blood. Also, samples of venous blood are taken from the forearm of the hand with an amount of 3 mm while the player is in a sitting position Then the skillful physical effort test prepared by the researchers was conducted, and after each player finished the skillful physical effort test, he went directly to a special place near the indoor tennis court where there are specialists. Functional measurements are taken after the effort (the number of heartbeats and the percentage of O_2 in the blood). Taking samples of venous blood immediately after the effort from the forearm of the hand, with an amount of 3 mm, knowing that the players are in a sitting position. DAD to find results for blood enzyme and sodium ion variants PH-LDH-AST.

2-5 Statistical means

The SPSS statistical bag was used and the following were extracted from it:

1 arithmetic mean. 3 percent.

2 standard deviation. 4 T-test for corresponding samples.

3- Presentation, analysis and discussion of the results

3-1 Presenting the results, analyzing and discussing the physiological variables of the physical and skillful effort of the paddle tennis players

Table (1) shows the arithmetic mean, standard deviations, calculated m (T) values, and the significance of the difference between the two measurements before and after the effort for the studied research variables.

Functional Variables Biochemical	Measuring Unit	Before Effort		After Effort		Calculated T-Value	Indication
		M.	STD.	M.	STD.		
The number of heart beats	beats/minute	69.66	10022	189.16	0.852	266.88	moral
O_2 level in the blood	mm3/g	97.38	0.881	99.85	0.986	1.458	moral
LDH enzyme	U/L	189	9.81	248	20.64	6.754	moral
AST enzyme	U/L	34.33	1.32	42.836	1.69	8.659	moral
blood pH	milliliter/liter	836.	0.065	831.	0.045	3.898	moral
Sodium ion	milliliter/liter	156.10	1.398	14306	1.629	2.850	moral

Table (1) shows that there are significant differences for the functional variables (the number of heartbeats) before and after the effort, and the researchers attribute the reason to the increase in the number of heartbeats resulting from the increase in effort over rest periods. Well-trained individuals can respond and adapt to the functional changes that occur in the body's systems as a result of muscular effort and continue with this effort, and one of these changes is the increase in the heart rate.

The randomness of the differences for the variable of the percentage of O_2 in the blood before and after the effort is due to the fact that the performance in the skillful physical test of the paddle tennis players is characterized by the fact that the player makes a maximum effort for him. Therefore, many sources confirm that the effort is using exercises according to the lactic energy system, which is the energy system prevailing in the game of tennis and leads To an adaptation in the oxygen susceptibility of the player, so there is a decrease, but it is small compared to the non-athlete, as the sports training has a significant effect in raising the activity of blood circulation in the nerve and muscle cells and the speed of oxygen transfer. (3:1001)

While the differences in the results of the biochemical variables for each of the two enzymes (AST.LDE) before and after the effort showed significant differences. (4:30)

The emergence of significant differences before and after the effort was the reason that the enzyme must work to enter the aerobic system (availability of oxygen), as this enzyme works to transfer the amine group resulting from protein metabolism from an amino acid of the type alpha to a keto acid of the same type, and it is converted into an amino acid. (5: 65), which works to increase lactic acid in the blood during physical and skillful effort.

As high-intensity exercises lead to the production of large amounts of lactic acid as anaerobic energy waste, which leaves the muscles into the bloodstream. And lactic acid, as the intensity of training increases, the concentration of lactic acid in the blood increases to 6.8, which is the point of physical stress, PH. (6:38) (7:84)

We find that the sodium ion variable showed significant differences before and after the effort. The researchers explain this to the effort of the physical skill test for the paddle tennis players located on the internal organs of the player's body, which was accompanied by a slight decrease in sodium. Therefore, this effort affected the rise in the temperature of the working muscles, by increasing the processes Metabolism that is accompanied by the process of sweating during physical effort, which should increase or maintain sodium concentration. Despite the activity of the desterone enzyme, we notice a slight decrease in sodium due to its excretion outside the body without control. As for the organs controlling the sodium ion, there are more than 12 organs, including (the gland adrenal glands that release aldosterone, cortisol, and oxydysterone

Gayton also confirms that the loss of fluids through sweating leads to the permanent secretion of a large amount of aldosterone from the two adrenal glands, so that the excessive increase of aldosterone secretes all the transfer enzyme dairy for all types of sodium absorption in the epithelial cells of the intestine, which leads to an increase in the preservation of sodium and this effect that aldosterone secretes in The gastric tract is the same effect that an enzyme activates in the renal tubules, which also serves to maintain salt and water in the body when the athlete becomes dehydrated. (8:1001)

4 conclusions

1 Increase in heart rate, lactic enzyme, and triphosphate enzyme after skillful physical effort compared to rest periods.
2 The levels of blood oxygen and sodium ions were decreased for the paddle tennis players compared to the rest periods.
3 That the skillful physical effort of the paddle tennis players was compatible with the lactic system prevailing in the racket games.
4 The percentage of O2 at rest and after the skillful physical effort of the paddle tennis players was similar in values as a result of the adaptation in the player's oxygen susceptibility and did not show any differences.

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