

THE PERCENTAGE OF OXYGEN AND THE APPROPRIATE HEART RATE AND ITS RELATIONSHIP TO TESTING THE ACCURACY OF TARGETING AMONG PLAYERS FUTSAL YOUTH

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ABSTRACT

The research aims to identify the levels of oxygen and pulse change in different efforts, to identify the scoring accuracy of young players in the difference in the level of oxygen and pulse. And to identify the relationship between the accuracy of targeting and the rate of oxygen and the appropriate pulse rate. The researchers chose the descriptive method by the intentional method for its suitability to solve the research problem, as well as the selection of the research community.) and their average weight (63.33) kg and their ages (17.45) years, then he conducted oxidative pulse tests for them by means of the oximeter in various stressful situations, and the researchers did not see any change in the oxygen ratio, unlike what is found in previous research. As for the second test Measuring the heart rate with an oximeter in three cases, once when the rate was between 80-100, 100-120, and 120-140 z. In each measurement of the rate, a scoring test is performed. For the purpose of extracting the results, the researchers used a number of statistical methods (spss bag). What are the results of the research? The physiological indicators have a direct impact on the accuracy of scoring among the players. The appropriate method has a direct impact on that accuracy, and through that, the researchers recommended relying on modern equipment in conducting tests and linking physiological variables to tests.

Keywords: oxidative stress, heart rate, scoring accuracy.

INTRODUCTION

The futsal game is a sports game similar to open football, but it is held inside the sports halls intended for this sport. Professional practitioners and fans, and this game dates back to more than 2500 years BC, when the ancient Chinese practiced it, but the game is in its practiced form today, then it appeared in England in 1016 and during their celebration of the evacuation of the Danes from their country. A futsal coach does not have to be fully aware of the technical and physical aspects only, but he must also be aware of the physiological aspect and its impact on the performance of tests for the player through the use of pulse rates for the heart and blood pressure and how the body performs its functions when performing physical effort and working to notice the changes that occur For these devices, such as an increase in breathing rate, an

increase in heart rate, an increase in sweat secretion, and a rise in temperature, as well as internal changes resulting from the performance of physical effort. One of the modern physiological devices is the oximeter, which is a device used to measure the pulse oximeter to know indirectly the blood oxidation rate and the heart rate in The importance of the research lies in identifying the appropriate pulse rate to perform the best performance in the scoring accuracy test. The research hypothesized that there are statistically significant differences in the relationship between the appropriate pulse rate and scoring accuracy. The researcher used the spss statistical bag to identify the homogeneity and stability and extract the final results to test the accuracy of the scoring according to the pulse rate that was determined by the experts. The human sphere: Futsal players, youth of Al-Hilla Club. Time range: from (1/12/2022 to 4/25/2023).

Keywords: Pulse oximetry (Pulse oximetry) is a technique used to know the percentage of blood oxidation indirectly, as the device measures the number of heart beats. Pulse rate is the heart rate or the number of times the heart beats per minute.

RESEARCH METHODOLOGY

The method by which a person arrives in a scientific, logical, coordinated way from reality, to realizing one of the facts that he was ignorant of, which is the way to acquire certainty knowledge (). Accordingly, the researchers used the descriptive approach for its suitability to solve the problem.. The researchers chose the descriptive approach with the intentional method for its suitability to solve the research problem, as well Regarding the selection of the research community, it was from the players of the middle Euphrates region of the Republic of Iraq, and the research sample was chosen by a lottery method, through which (15) players from Al-Hilla Club were chosen, their heights ranged from (170.53 cm) and their weights were (63.33) kg and their ages were (17). , 45) years, then he conducted oxidative pulse tests for them using a device: oximeter. Methods, devices and tools used in research: Research tools are among the most important aspects that must be taken care of in order for the research to reach the desired results, so the researchers used. Equipment used: oximeter (to measure heartbeat and oxygen in the blood). computer type

Tools used: electronic watch. Whistle, futsal court, football size (4), number (8) clothes, divider board

Methods of collecting information: questionnaire form, information collection form, research test form, results writing form.

SEARCH PROCEDURES

Interview: The researchers conducted an interview with a number of specialists and experts in the field of physiology, physical education and sports sciences for consultation on the subject of the research. Oximeter: It is an oxygen measuring device that measures the amount of blood oxygen saturation in the arteries by calculating the light absorption of the vascular tissue pulse in two wavelengths. The purpose of the measurement: measuring the level of oxygen in the

blood. Description of the measurement: The person should be in a calm state, fix the device on the index finger of the hand, press the button, and then take the reading. Recording: The reading taken from the device is recorded. Measurement instructions: The laboratory measures the level of oxygen in the blood by placing a sensor on a thin part of the body, usually the tip of the finger or the earlobe, as shown in Figure (1). With the help of a specialist, he read the measurement of the device, and the reading was close .



Figure No. (1) A device that measures the percentage of oxygen saturation in the blood and measures the number of heart beats per minute (Oximeter).

Heart rate test by (Oximeter): It is a device used to measure the heart rate and the percentage of oxygen in the blood ().

The aim of the test: to measure the number of heart beats per minute during scoring.

Measurement Description: In the test, the female player is in a calm state. The device is placed at the bottom of the index finger, then a reading is taken for one minute. As shown in Figure (2). In order to ensure the validity of the device, the researchers, with the help of a specialist, read the pulse.

Futsal Dribbling and Scoring Test:

Scoring: It is the effective method used by the attacking player to overcome the clusters and the numerical abundance of the players of the opposing team to defend within the penalty area. The scoring tests were prepared by the researchers after conducting an interview with the specialists. The effort was determined into three phases, the stage before the warm-up, the rest phase after the warm-up, and the relatively high effort phase. The same test and method, but with a difference in the effort, as the scoring was measured with a pulse rate of (80-100) times. Another test ranged from (100-120) and the last test was between (120-140) beats per minute. The aim of the test: scoring by rolling ().

Abilities and tools: (10) futsal balls, a futsal goal, a stadium, and a whistle. Description of the performance: The futsal goal is divided into three equal rectangles. The first and third are divided into two parts, and there are degrees on it at a distance of (12 m) a line with a length of (5 m) before the scoring point, as shown in Figure (2). Method of performance: The player advances when he hears the signal by rolling for a distance of (5 m), and then targets from the target mark, and the player is given (10) attempts. The grade is calculated according to what is shown in Figure No. (2)

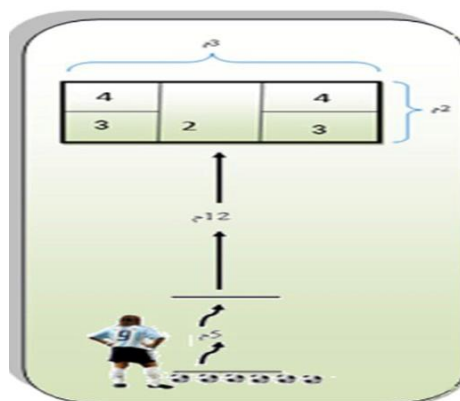


Figure No. (2) Demonstrates scoring test

Exploratory experiment: For the purpose of ensuring the efficiency of the work and ensuring the integrity of the special procedures, the researchers proceeded to conduct the exploratory experiment on 20/2/2023 on four players from the same research community, from the players of the youth team of Al-Hilla Futsal Club, who were not members of the sample, at ten o'clock in the morning. The test was repeated on 27/2/2023. The purpose was: to ensure the suitability of the equipment and tools used to ensure the extent to which the tests could be implemented by the sample members. Conducting this experiment, the most important of which are: The suitability of the devices and tools used The possibility of carrying out the tests by the sample members The time required to implement the test is two hours The suitability of the amended form for registration The tests have a high degree of stability Scientific foundations:

First: Truth: The researcher used the truthfulness of the content

Second: stability: To calculate the stability coefficient of tests, the researchers adopted the method of testing and re-testing. What is meant by the stability of the test: (If something is repeated on the same individuals under the same conditions with a reasonable time interval, then it gives the same results or they are close) () It has been used The researchers used the (test and re-test) method to verify the stability of the candidate group of tests, as the tests were applied to a sample of four players (the goal of the same reconnaissance experiment) 20/2/2023, and after six days had passed, the test was re-tested on the same sample on the corresponding date (27/2/2023). Under the same conditions and variables, and by processing the data statistically, the simple correlation coefficient (Pearson) was extracted between the results of the first test and the second test to know the stability of the test. The results showed that the correlation is high between the scores of the two tests. As shown in Table (1). Third: Objectivity: Objectivity is one of the necessary conditions for a good test, which means that subjective judgments are not affected by the experimenter (researchers), or that objectivity is available without bias and subjective interference by the experimenter, i.e. everything that does not affect subjectivity in judgments Objectivity increased (), as the tests were taught, i.e. they were set up with reliable devices, namely the oximeter device for measuring the level of oxygen in the blood, and the oximeter device for measuring the heartbeat, i.e. the pulse rate, through that the error rate in these tests may be non-existent, then The researchers extracted the mean scores of two judges for the test, and then the results of the correlation coefficient were calculated, and

the degree of objectivity of the test was calculated. Table No. (1) shows the degree of reliability and objectivity.

Table No. (1) Shows the degree of stability and objectivity

| Variable | "Unit of Measurement" | "Degree of Stability" | "Degree of Objectivity" |
|---|-----------------------|-----------------------|-------------------------|
| Futsal scoring with a pulse rate of 80-100 | Degree | 0.94 | 0.98 |
| Futsal scoring with a pulse rate of 100-120 | Degree | 0.98 | 0.98 |
| Futsal scoring with a pulse rate of 120-140 | Degree | 0.92 | 0.98 |

The main experiment: Before conducting the main experiment, the researchers noticed that there was no change in the level of oxygen in the blood, no matter how much effort was increased, contrary to what was found in previous sources. Therefore, the researchers excluded the variable of measuring the level of oxygen in the blood and its relationship to scoring. The main experiment was conducted on 3/5/2023. On the same day mentioned, the performance of physiological tests, the scoring test before and after the warm-up process, and a higher effort than the warm-up. The results were collected for those tests, and the results were empty in special forms, and then those results were classified, and they were fully equipped to be presented to the statistical means. The researchers excluded from the testing process the change in the oxygen level in the blood, after conducting a test on a group of players and players of different ages.

Statistical means:

The researchers used the SPSS bag to process the data obtained by the tests. The researchers used: arithmetic mean, correlation (Person), standard deviation, torsion.

Table (2) Shows the correlation values between scoring accuracy and pulse rate (80-100 beats/min).

| The test | Mean | Sd. | "Torsion Rate" | Person correlation | Sig. level | Sig. type | Contribution Ratio |
|--|------|------|----------------|--------------------|------------|-----------|--------------------|
| Scoring accuracy test at 80-100 pulse rate | 15 | 1.44 | 0.51 | 0.82 | 0.36 | Moral | 0.656 |

Table (2) indicates the indicators of central tendency and dispersion of the variables studied. The pulse rate of the Hilla youth team was (80-100 z/d) in futsal football, with an arithmetic mean of (15) degrees and a standard deviation of (1.44), and the rate of torsion was (0.51) for (Person) correlation (0.82), while the level of significance was (0.36), and the type of significance was (significant because it was less than 0.5), while the percentage of contribution was (0.656).

Table (3) Shows the correlation values between scoring accuracy and pulse rate (100-120 beats/min).

| Variable | Mean | Sd. | Torsion rate | Person correlation | Sig. level | Sig. type | Contribution ratio |
|--|------|------|--------------|--------------------|------------|-----------|--------------------|
| Scoring accuracy test at a pulse rate of 100-120 | 20 | 1.25 | 0.61 | 0.89 | 0.03 | Moral | 0,792 |

Table (3) indicates the indicators of central tendency and dispersion of the variables studied. The pulse rate of the Hilla youth team was (100-120) z / d) in futsal, with an arithmetic mean of (20) degrees and a standard deviation of (1.25), and the rate of torsion was (0.61), and the correlation rate was (Person 0.89), while the level of significance was (0.03), while the type of significance was (significant because it was less than 0.5), while the percentage of contribution was (0.792).

Table (4) Shows the correlation values between scoring accuracy and pulse rate (120-140 beats/min).

| Variable | Mean | Sd. | Torsion rate | Person correlation | Sig. level | Sig. type | Contribution ratio |
|--|------|------|--------------|--------------------|------------|-----------|--------------------|
| Scoring accuracy test with a pulse rate of 120-140 | 14 | 1.82 | 0.42 | 0.72 | 0.49 | Moral | 0.518 |

Table (4) indicates the indicators of central tendency and dispersion for the variables studied. The pulse rate of the Hilla Club youth team was (120-140 beats / d) in futsal, with an arithmetic mean of (14) degrees and a standard deviation of (1.82), and the rate of torsion was (0.42), and the correlation rate was (Person 0.72), while the level of significance was (0.49), and the type of significance was (significant because it was less than 0.5), while the percentage of contribution was (0.518).

Discussing the results of the scoring accuracy test with a pulse rate (80-100 beats/min)

It is well noted that Table No. (2) indicates that there are positive and significant results in scoring accuracy during the test, but these results do not indicate the real level of the students on the subject of scoring accuracy. Their scoring is due to lack of motivation, lack of arousal, lack of high temperature, elasticity of the muscles and flexibility of the joints, in addition to lack of concentration due to the players enjoying high inertia due to not conducting the warm-up. This is indicated by Dr. Moayad Al-Taie, as he said the warm-up is especially important for players in increasing blood temperature, increasing concentration and attention, joint flexibility and elasticity. muscle() –

Discussing the results of the scoring accuracy test with a pulse rate (100-120 beats/min)

As noted, Table No. (3) indicates through the researcher's observation that there are statistically significant differences in the relationship of scoring accuracy with the pulse rate and a high level of contribution, as the best results compared to the test were the accuracy of scoring when the pulse was (80-100 beats / d), as well as the percentage of contribution Higher

than the third test, which was the pulse rate (120-140 beats/d). The researcher attributes the reason to that the players were at a high mental level and broke the barrier of inertia through a state of readiness, elastic muscles, flexibility of the joints, and moderate excitability towards myself towards the accuracy of scoring with high responses and toward the psychological means. The group of the person's tendencies and desires is a specific exciting direction and it has three components: the cognitive component, the emotional component, and the procedural component. When the pulse rose to a rate between (100-120 beats / minute), oxygen reached the most remote areas in a moderate manner in the body, and the rate of lactic acid was at a normal level, as the amount The oxygen used by the body in breaking down blood sugar is higher or equal to the amount of oxygen needed by the body, and thus a barrier was built that prevents the accumulation of lactic acid that hinders more than normal, and thus the player with a high physical level qualifies him for accurate scoring Better than before when the pulse rate ranged from (80-100 beats/min), and confirms what the researchers mentioned, Abdel-Fattah Abu El-Ela () the male. The muscles working with energy in the aerobic system are supplied through the percentage of glycogen present in the muscles and liver resulting from the breakdown of carbohydrates in the body. Moderate energy can be produced without affecting the level of mental concentration, as well as in aerobic work, the hindering lactic acid cannot accumulate, and as Ahmed Youssef mentioned, aerobic exercise breaks down glucose molecules, liberates pyruvic acid with a small amount of (ATP), then the pyruvic reacts with hydrogen and thus prevents the accumulation Lactic acid and residues left

Discussing the results of the Threat Accuracy Test with a pulse rate (120-140 beats/min)

By observing Table (4), which shows the results of the scoring accuracy tests when the pulse was (120-140 against), it was found that there is a significant contribution percentage less than the scoring accuracy test when it was (100-120 z / d). The pulse rate and the occurrence of a state of fatigue led to a lack of accuracy in scoring compared to the previous test, as the researchers attributed the occurrence of this fatigue to the low percentage of oxygen entering the muscles compared to the percentage of need, which led to a defect in a part of the internal metabolism processes that led to a rise in temperature and a percentage of sweating. All this It led to a relative weakness in the muscles and a large amount of blood was directed to the muscles. If this led to a lack of oxygen reaching the brain and thus a lack of concentration, this negatively affected the accuracy of the scoring, as it confirms what Dr. In general, as it increases blood pressure, reduces the amount of oxygen reaching the nervous system, increases the pH, accumulates carbon dioxide, and increases the oxygen debt, all of this leads to reducing the players' effort and feeling tired.

Conclusions and recommendations

Conclusions:

From the results reached by the researchers, the following points were concluded that the youth of the Middle Euphrates Futsal have good efficiency with accurate scoring, and that physiological adaptations have an impact on the accuracy of scoring. The blood oxygen remains

in constant proportions, no matter how different the effort. The difference in the pulse rate affected the scoring accuracy.

Recommendations:

Based on the findings, the researchers recommended the following: conducting laboratory blood tests to identify the oxygen level, conducting field tests with determining the pulse rate. Benefit from the specialist in sports physiology during the training process. Using pulse rate measuring devices in other games to identify the physical level. Conducting various researches using different times according to the pulse rate or others in physical education research and training research.

Sources

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Appendix (1)

Expert Opinion Survey on Research Variables

Respected Professor.....Esteemed Scholar,

The researchers aim to conduct a study titled "The Relationship between Oxidative Pulse and Appropriate Heart Rate with Shooting Accuracy among Indoor Soccer Players." Given your scientific expertise in this field, we kindly request your opinion regarding the suitability of the paragraphs you find appropriate for the research. Please note that the researchers have based their work on primary sources and previous studies.

With utmost gratitude and appreciation.....

Signature:

Name:

Academic Degree:

Specialization:

Place of Work:

Physiological variables presented to the experts

| | Physiological variables | Suitable | Not suitable |
|---|--|----------|--------------|
| 1 | Pulse rate | | |
| 2 | Vital capacity | | |
| 3 | Lactic acid | | |
| 4 | The number of breathing times at rest | | |
| 5 | The number of respirations during the effort | | |
| 6 | The number of heart beats during exercise | | |
| 7 | lactic sample | | |
| 8 | The percentage of oxygen in the blood | | |
| 9 | Vo2max | | |

Accessory (2) Expert Names for Test Validity”

| | The name | Scientific title | Specialization | Workplace |
|---|-----------------------------------|------------------|----------------|--|
| 1 | Moayad Abdul Ali Al-Taie | Prof.Dr. | Physiology | Physical education and sports sciences / University of Babylon |
| 2 | Haider Mohammad Jassim Al-Khikani | Asst.prof.DR. | Physiology | Physical education and sports sciences / Al-Muthanna University |
| 3 | Hassan Abd al-Hadi Lahims | Asst.prof.DR. | Physiology | Physical Education and Sports Sciences / Al-Qadisiyah University |
| 4 | Hikmat Adel Aziz | Prof.Dr. | Physiology | Al-Qadisiyah University / College of Medicine |

Accessory (3) names of the assistant staff

| | The name | Specialization |
|---|-------------------------|---|
| 1 | Alaa Hassan Al-Jubouri | Ph.D. in Physical Education and Sports Sciences. |
| 2 | Aban Abdul Karim Mazhar | Ph.D. in Physical Education and Sports Sciences |
| 3 | Hussein Ali Takleef | Bachelor's degree in Physical Education and Sports Sciences |

Appendix No. (4) Experts interviewed and contacted

| | The name | Specialization | Workplace | Type of Interview |
|---|----------------------------------|--------------------------|--|--|
| 1 | Prof.Dr. Atheer Abdullah Al-Lami | Handball training | College of Physical Education and Science Sports / Al-Qadisiyah University | Handball shooting accuracy test advice |
| 2 | Prof.Dr. Samir Yousi | Kinesthetic learning | College of Physical Education and Science Sports / University of Babylon | Consultation on the phases of the handball shooting test |
| 3 | Dr. Alaa Al-Badiri | Internal Medicine Doctor | Imam Al-Sadiq Hospital | Borrowing a Spirometer |
| 4 | Prof.Dr.Hikmat Adel Aziz | Physiology | University of Al-Qadisiyah / College of Medicine | Consultation regarding some information about measuring heart rate and vital capacity. |