

Emotional Arousal and its Correlative with an Enzyme (LDH) and the Performance of some Offensive Skills Compound for Female Students in Basketball

Hasan Saleh Mahdi Al-Okbi¹, Hayder Naji Habash Alshawi², Zainab Najeh Hassan³

Republic of Iraq/University of Kufa-Faculty of Education for Girls - Department of Physical Education and Sports Sciences.

Abstract

The importance of the research is that its results may reveal the development of motor abilities and support learning the offensive skills of basketball in the first stage students through the use of more than one method in the educational unit, as well as determining the importance of research in the need to study and research in the development and teaching of offensive skills basketball. Because the game has a variety of skills, and the study aimed to identify the relationship between emotional arousal and enzyme (LDH) through some variables related to basketball students. Laboratory tests were conducted on a sample of 34 female students from the Faculty of Physical Education and Sports Science for Girls at the University of Kufa. After obtaining the results, they were treated statistically and presented in tables. The results were reached, which is the high level of emotional arousal in individuals the study sample is the result of their psychological effect. Decreased enzyme activity (LDH) due to high level of emotional arousal was inversely associated with the resulting slow work and sending of instructions. Low performance of basketball offensive skills due to high level of emotional arousal.

Keywords: *Emotional arousal, Enzyme (LDH), Compound offensive skills and basketball.*

Introduction

Emotional arousal is an important aspect in the implementation and performance of sports events and the importance of arousal stems from the rapid changes and the flow of information that has no limits in our time, it invites us to think about new ways and methods to keep pace with these changes and developments and the majority of psychologists and educational researchers have confirmed that the ability to excite the emotional is a common among all people and that the difference between them lies in the degree or level of these capabilities, where the basketball game is one of the games that have seen a great development and took the rapid spread of the contain technical skills and educational variety can be counted from the Games that promote the spirit of cooperation and unity of effort for the purpose of access to the high level of sports as it develops the abilities of motor skills and teach basketball offensive. Arousal is the physiological and psychological state of being awoken or of sense organs stimulated to a point of perception. It involves activation of the ascending reticular activating

system (ARAS) in the brain, which mediates wakefulness, the autonomic nervous system, and the endocrine system, leading to increased heart rate and blood pressure and a condition of sensory alertness, mobility, and readiness to respond [1].

Arousal is mediated by several different neural systems. Wakefulness is regulated by the (ARAS), which is composed of projections from five major neurotransmitter systems that originate in the brainstem and form connections extending throughout the cortex; activity within the ARAS is regulated by neurons that release the neurotransmitters acetylcholine, norepinephrine, dopamine, histamine, and serotonin. Activation of these neurons produces an increase in cortical activity and subsequently alertness [2]. The Yerkes-Dodson law states that an optimal level of arousal for performance exists, and too little or too much arousal can adversely affect task performance. One interpretation of the Yerkes-Dodson Law is the Easterbrook cue-utilization hypothesis. Easterbrook states

that an increase of arousal decreases the number of cues that can be used [3]. Therefore, the importance of research indicates that its results may reveal the development of motor abilities and support the learning of the offensive skills of basketball in the students of the first stage through the use of more than one method in the educational unit and the importance of research in the need to study and research in the development and teaching of basketball offensive skills. Given the diversity of the game.

Material and Methodology

The researchers used the descriptive approach in a manner relational relations suitability to the nature of the problem on the second stage students in the Department of Physical Education and Sports Science in the College of Education for Girls at the University of Kufa for the academic year (2018-2017) totaling (34) Student,.

The Tests

Emotional arousal scale:

First

Measure the level of emotional arousal

The researchers used the emotional arousal scale prepared by Issam Mohammed Abdul Reda and mastered by Alia Hameed Abdul Abbas. The scale consisted of (31) paragraphs by calculating the total number of scores obtained by each player in his answer to each paragraph of the scale, So that the highest possible value on the game to get is (63) degrees and the lowest value is (31) degrees on the scale, and presented to a group of experts and specialists in the field of sports psychology and testing and measurement to express their views and suggestions on the validity of paragraphs of the scale and suitability to the same level search

Second

Testing the level of anemia level (LDH):

Objective of the test: Measure the level of the level of the enzyme (LDH).

Tools used: enzyme-specific cores and AISA analysis.

Method of registration: The device gives the result of the enzyme from the blood sample that was withdrawn from the sample in advance.

Third

Measuring the offensive skills compound basketball:

The researchers relied on the identification of offensive skills based on sources and previous studies on complex skills, as well as personal interviews. In order to identify the most important offensive skills based on their priorities and importance, a questionnaire was distributed to poll experts and specialists to select the most complex offensive skills by marking the importance of and then add the other skills they consider appropriate for the sample and in favor of the research.

The researchers then collected the data and emptied it and calculated the percentage of each composite offensive skill, after which the skills were accepted and studied (Receiving + handling from above the head), (receiving + high dribble + two-handed chest handling), (receiving + high dribble + jumping) and (receiving + high dribble + stairway stairs) to determine the tests for the composite offensive skills selected for the basketball, a test was tested for each skill of composite offensive skills. These tests were selected from the Farsi Sammy test battery to measure some of the offensive skills of the youth basket.

First Test

Receiving and handling from above the head: [4]

Purpose of the Test

To measure the ability to perform offensive skills.

Tools: Basketball court, bunkers, one person, two precision instruments, 8 legal basketball balls, 20 gauge leather tape, adhesive tape, electronic timer, three booklets, and whistle.

Measures

- A central point below the basket is determined to mark the main points. A forward point, which lies away from the center point (8.35 m), represents the player's pause.
- Two points on each side (8 m) are separated from the center point and represent precision measuring instruments, and are removed from the side line of the stadium (1.50 m) facing the laboratory player.

- Two walls (200 cm high and 100 cm high and 50 cm wide) were placed on both sides, each of them on the front and towards the measuring instrument (1.25 m).
- Place a person behind the front point and at a distance (2 m) in order to rotate around it.
- A member of the team who delivers the ball on the right side of the laboratory player stands away from the measuring instrument (1.50 m).

Performance Description

The laboratory player stands on the front point pointing to the ground, while at the same time a member of the team stands with the ball on the specified point (the right side of the lab player). At the start of the whistle, the ball is handed over to the laboratory player, which leads to the receiving end from the head directly towards the precision measurement instruments, as shown in steps 1, 2, 3.

Once again on the right and once again on the left until the end of the eight attempts. The eight attempts are divided into four attempts of stability, and the last four occur after the rotation of the person behind the front point, and back to the same point.

Test Conditions

The speed of performance, the rotation around the person is free and the way the player wants the laboratory, and helps the player (the alarm) to start the rotation around the person, and each player only two wrong attempts.

Test Management

Timer

It gives the start signal as well as the time it takes to perform the test.

Caller: A member of the color team calls for the eight attempts on precision instruments.

Registered

Call the names first and indicate both colors and time second.

Account Grade

- Calculates the time since the player receives the lab's ball until the end of the eighth attempt after touching the mesh measuring instrument.

- Divide time on (60 second).
- The player is calculated (3) for red, two for blue, and for green.(2), (1.5) for blue and green (plural/2), blue for blue (plural/2), for blue and green (plural/2), for blue squares , 0.5 degrees for green half, 0.75 for half blue and half green for collection (plural/2).
- Approximate final number of colors (precision) to the nearest integer if any.
- **Total (final):** Division of the output of precision over time.

Second Test

Receiving, high dribble and Chest handling with both hands:[4]

Purpose of the test

Measuring the ability to perform three offensive skills.

Tools

Basketball court, two persons, two precision instruments, four legal basketball balls, a leather measuring tape (20m), adhesive tape, electronic timer, three booklets, and a whistle.

Measures

- Set a central point below the basket depends on the marking of some key points.
- Two points for the precision measuring instruments are located on the sides and 8 meters away from the center point, which are both separate from the side line of the stadium (1.50 m) and facing the central circle.
- Sets a volleyball court within the basketball court.
- Two points (directly behind the line) are located three meters away from the midline and the second at 9 meters. They represent the position of the player in the middle, as well as two points on the left side of the first and second laboratory players. The first and second points (4.60 m) represent a member of the team with the ball at each point.
- Place two persons on the center line and on both sides of the central circle (representing the allowable limits of execution).

Performance Description

- The player stands on the first point set in the middle and the pointer behind the line,

while at the same time standing a member of the team with the ball beside him from the left.

- At the start (whistle), the ball is delivered by a team member at the first point of the laboratory player, which leads to high reception and discarding directly towards the midline of the chest shoulder handling in the direction of the instruments of accuracy measurement (alternately), The same point to repeat the attempt, and then quickly back to the second point to repeat it twice.
- Once on the right and again on the left until the end of the four attempts.
- The four attempts are divided into two attempts from the first point and towards the midline as in step (1). The last two attempts are from the second point and towards the midline as in step (2).

Test Conditions

The player has the right to cross the midline after performing hand-to-hand handling, as well as to adhere to the specific zone between the two players, and each player has two wrong attempts.

Test Management

Timer

It gives the start signal as well as the time it takes to perform the test.

Caller

A member of the color team calls for the four attempts on precision instruments.

Registered

Call the names first and indicate both colors and time second.

Account Grade

- Calculates the time from the time the player receives the ball until the end of the fourth attempt after touching the precision instrument network.
- Divide time on (60 second) .
- A score of 3 for red, two for blue and one for green.(2), 1.5 (blue and green) (plural/2), and half for the four squares (plural/4), (2.5) for the red and blue colors (plural/2) Blue color, 0.5 degree for green half color, 0.75 degree for half color blue and half green color (plural/2).

- Approximate final number of colors (precision) to the nearest integer if any.
- Total (final): division of precision output over time.

Third Test

Receiving, High dribble and scoring Jump (two points): [4]

Purpose of the Test

Measuring the ability to perform three offensive skills.

Tools

Basketball court, four barriers, basketball basket number (10) legal, leather tape measure (20 meter), adhesive tape, electronic stopwatch, two chairs, whistle.

Measures

- Set a central point below the basket based on the marking of the main points.
- The first and second points on the sides of the central point are set at 4.63 meters and at the same time they move away from the free throw line (30 cm), third, fourth and fifth points in front of the central point (2.33 meter, 4.44 meter, 8.35 meter) Pause the lab player.
- Four barriers (height of each column 2 meter and the hanged suspension on each one of them, length 100 cm from the top and width 50 cm) at a distance of 75 cm and towards the laboratory player.
- Two points are placed on the sides and 8 meters away from the center point, which is separated from the side line of the stadium (1.50 meter) and represents the pause of a member of the team that delivers the ball to each point.

Performance Description

- The player stands on the forward and pointing point on the ground (the point far from the center point), while at the same time standing two team members with the ball on the specified points.
- At the start of the whistle (ball whistle) the ball is delivered from the right side of the laboratory player, which leads to the high reception and discarding directly to the side point (on the right) outside the free throw line to perform the jump (two points) Right side), and then return to the same point to

perform another attempt towards the side point (on the left) (delivery is on the left side), and then return to the front point to complete the four attempts in the same way and in exchange. At the end of the sixth attempt, Front end The format of the free throw line (delivery is part of the right) to perform four consecutive attempts, and as shown in the steps (1, 2, 3).

- The player performs ten attempts divided into (three attempts from left and right alternately four consecutive attempts from the front point above the free throw line).

Test Conditions

Speed performance, help the player laboratory (alarm) to perform the attempts of precise locations, and is a member of the team standing on the side point (on the right) hand over (7) balls and according to the description of the performance, and then (3) balls by a member of The second team (from the left), and each player has two wrong attempts.

Test Management

Timer

It gives the start signal as well as the time it takes to perform the test.

Registered

Call the names first and indicate both successful and unsuccessful attempts and time by second.

Account Grade

- Calculates the time since the player receives the ball until the end of the tenth attempt after the ball left the hand of the player tested.
- Division of time on (60 second).
- A score for each successful jump is calculated for the player.
- Calculate the player (zero) of the grades for each failed jump correction.
- Collecting degrees (accuracy) of successful attempts.
- Total (final): division of the output of precision over time.

Fourth Test

Receiving, high dribble and stairway stairs: [4]

Purpose of the Test

Measuring the ability to perform three offensive skills.

Tools

Basketball court, three barriers, basketball basket number (10) legal, leather tape measure (20 m), adhesive tape, electronic timer, two chairs, whistle.

Measures

- Set a central point below the basket based on the marking of the main points.
- A forward point (4.44 m) is located from the center point and represents the player's pause.
- Three hurdles (height of 200 cm each and 100 cm in length and 50 cm in width), one and two meters (2.21 m) facing the laboratory player, and the third one (75 cm) from the front point.
- A forward point and a distance (8.35 m) are located from the center point, representing the pause of a member of the team that delivers the ball.

Performance Description

- The laboratory player stands on the front and pointing point on the ground, facing a member of the team with the ball, and stands on the point set for him.
- At the start of the whistle, the ball is delivered to the player in front of the player, which leads to the high reception and discard directly towards the basket and to the right of the existing barrier to perform the peaceful shooting for one attempt. Then, return to the same point to perform another attempt towards the basket and to the left The existing barrier (delivery is from the front point), and then return to the same point to complement the eight attempts in the same way and in exchange, as shown in steps (1,2,3,4).
- The player performs ten attempts divided into (five attempts from the right and five attempts from the left and in exchange).

Test Conditions

The player has to hand over 10 balls in exchange, according to the performance description, the correct steps and the right arm for the peaceful correction. The player has the right to start entering the arm. Favorites and each player have only two wrong attempts.

Test Management

Timer

It gives the start signal as well as the time it takes to perform the test.

Registered

Call the names first and indicate both successful and unsuccessful attempts and time by second.

Account Grade

- Calculates the time since the player receives the ball until the end of the tenth attempt after the ball left the hand of the player tested.
- Division of time on (60 second).
- A score for each successful jump is calculated for the player.
- A score (zero) of score is calculated for each failed jump or wrong performance.
- Collecting degrees (accuracy) of successful attempts.
- Total (final): division of precision output over time.

Main Experience

The researcher conducted the main experiment at the University of Kufa College

of education for girls department of physical education and sports sciences on 13/2/2018 on the members of the research sample and before the experiment was carried out as follows:

- Subjects were asked to take a minimum of (7) hour of sleep before the examination.
- 2 - The condition of eating breakfast.
- All external and internal variables are controlled within the psychological laboratory (temperature 13-18), noise control and lighting were appropriate.

The emotional excitation scale was distributed to the sample and blood was then drawn to be sent to the laboratory for analysis. The level of performance of the composite offensive skills was then measured.

Results and Discussion

This axis included the presentation of the results of descriptive statistics between emotional arousal and the level of enzyme (LDH) and the performance of some offensive skills compound for basketball students after the treatment of statistical and in line with the goals.

Table 1: Shows the values of the arithmetic mean and the standard deviation of emotional arousal and the level of the enzyme (LDH) and the performance of some of the compound offensive skills of female students

Variables	Unit measurements	Mean	STD, EV	Emotional arousal	(LDH)Enzyme	Receiving + handling from above the head	Receiving + high dribble + two-handed chest handling	Receiving + high dribble + jumping	Receiving + high dribble + stairway stairs
Emotional arousal	Grade	191.74	14.69	1	0.58	0.51	0.44	0.39	0.45
Enzyme)LDH(mg/dl	352.72	34.23		1	0.55	0.57	0.51	0.56
Receiving + handling from above the head	Grade	21.23	5.44			1		0.77	0.85
Receiving + high dribble + two-handed chest handling	Grade	16.57	3.45				1	0.72	0.78
Receiving + high dribble + jumping	Grade	4.32	1.36					1	0.79
Receiving + high dribble + stairway stairs	Grade	3.21	0.98						1

The enzyme LDH helps in the metabolism of lactic acid, so any increase in activity of this enzyme is accompanied by an increase in the elimination of lactic, and must be taken into account that the activity of the enzyme (LDH) decrease as a result of increased acidity [5]. Hussein said that "emotional arousal works in the activity of physical activity as it leads to increased activity of enzymes responsible for the metabolism of lactic acid in the working muscles and functional organs"[6].

Refers (Kahribt and Turkish) "to the changes in enzymes affect the level of effectiveness of the use of energy-rich materials that regulate the oxidation process or in other words, an increase in the level of ability to oxidation and then on the ability of the completion of endurance, as well as the ability to continue to work with the high pH of blood , Where the increased concentration of LDH means increased anaerobic capacity, which is one of the measures of physical adequacy as indicated (Batsur, 1989) [7]. The results of the study showed that the level of the

enzyme was low in the sample of the research because of the high level of emotional arousal, which affected the level of the enzyme as it works emotional arousal, which is one of the psychological stresses that face the individual in general and sports in particular and cause many Of problems and reduces his focus on the environment in which he lives, and refers (Alkayal) by Al-Jubouri as "temporary signs of illness and in response to the superiority of power on the personal in sites that weaken the personality "[8].

The autonomic nervous system affects the body during emotional arousal, especially emotional stress, which is affected by the energy that the body is required to exhaust in order for the body to return to its normal state.[9]This explains the player's loss of power during performance before physical exertion. Based on the above, the practical exams are associated with many emotional situations, requiring (as in the case of sports competition) [10].

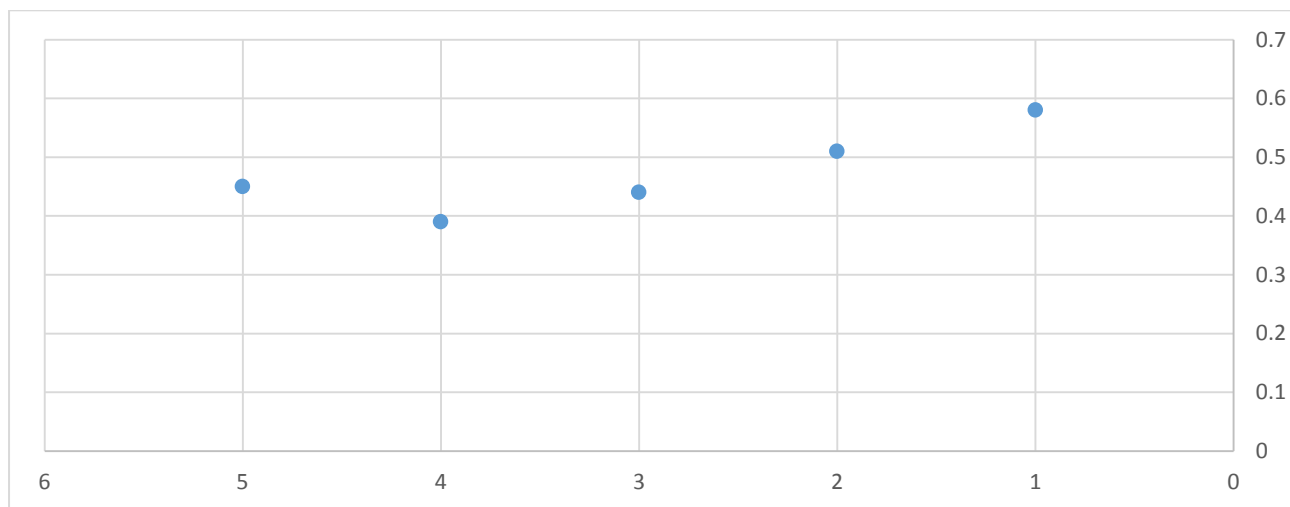


Figure 1: Explain the correlative of emotional arousal with the variables under study

The practical exams are associated with many different emotional attitudes that may sometimes reach situations of intense and positive arousal. Allawi refers out that emotional traits play an important role that depends (to a large extent) on achieving success. Practical exams (like sports competition) To the need to have some positive emotional features, and with regard to the offensive skills compound basketball has been the relationship with emotional arousal high inverse, the more emotional arousal the lower the level of performance of skills in general, despite the researchers did

not perform physical work before the measurement process, but the level of performance of complex skills was relatively low because of the high level of arousal, which led to an increase in energy exchange because of muscle tension, and as the psychological state of importance on the level of performance of players joy and pleasure and fear and anxiety and tension Are all cases of feeling and passes by the player when competing in a special competition when this is important and is of great importance for players was a final match or competition in order to reach a high level as

an international player or to participate in an international tournament will be the psychological situation and what it contains N tension and emotion and provoke a major role in the psychological state of the player rises pulse rate and this was confirmed by (Marwan Abdul Majid and Mohammed Jassim al-Yassiri), "the psychological state of a person affects the heart rate when special cases of anger and emotion of fear and anxiety.

References

1. Mickley Steinmetz, Katherine R, Schmidt Katherine, Zucker Halle, R Kensinger, Elizabeth A (2012) "The effect of emotional arousal and retention delay on subsequent-memory effects". *Cognitive Neuroscience*, 3 (3-4): 150-159.
2. Zajenkowski Marcin, Goryńska Ewa, Winiewski Mikołaj (2012) "Variability of the relationship between personality and mood". *Personality and Individual Differences*, 52 (7): 858-861.
3. Mirr, MichaelenePheifer (2001) "Abnormally Increased Behavioral Arousal". In Kunkel, Joyce A.; Stewart-Amidei, Chris. *AANN's Neuroscience Nursing: Human Responses to Neurologic Dysfunction* (2nd ed.). Philadelphia: W.B. Saunders, 119-136. ISBN 9780721622880.
4. Fares Sami Yusuf (2006) *Building and Standardizing a Test Battery to Measure Some Complex Attacking Skills for Youth Basketball*, PhD Thesis, College of Physical Education, University of Baghdad, 158.
5. Thorpe WR, Bray HG (1994) *Biochemistry for Medical students*. 8th ed: (London, Churchill .1TD.) 243.
6. Qasim Hassan Hussein (1990) *physiology (principles and applications in the field of sports)*, Mosul, Dar al-Hikma Press, 52.
7. Risan Khreibt, Ali Turki (2002) *Physiology of Sports*, University of Baghdad, 101.
8. Zeinab Hassan Fleih Al-Jubouri (2000) *emotional arousal and personality traits of young and advanced players in the field and field in Iraq*, Master's thesis, University of Babylon, Faculty of Physical Education, 14
9. Mohamed Hassan Allawi, Mohamed Nasrradwan (1998) *Measurement in Physical Education and Mathematical Psychology*, Cairo Rose Al Yousuf Foundation, 371.
10. Abu kiosk, Mohamed Ali Khuyllh, Qassim Mohammed (1998) *the impact of a proposed program of mental training on the stability of the emotional state and the level of student achievement on the course gymnastics for students of the Faculty of Physical Education*, *Journal of Physical Education*, 18 in, 1-23.

Conclusions

The high level of emotional arousal in the sample of the research result of the impact of psychological factor. Decreased enzyme activity (LDH) due to high level of emotional arousal was inversely associated with the resulting slow work and sending of instructions. Low performance of basketball offensive skills due to high level of emotional arousal.