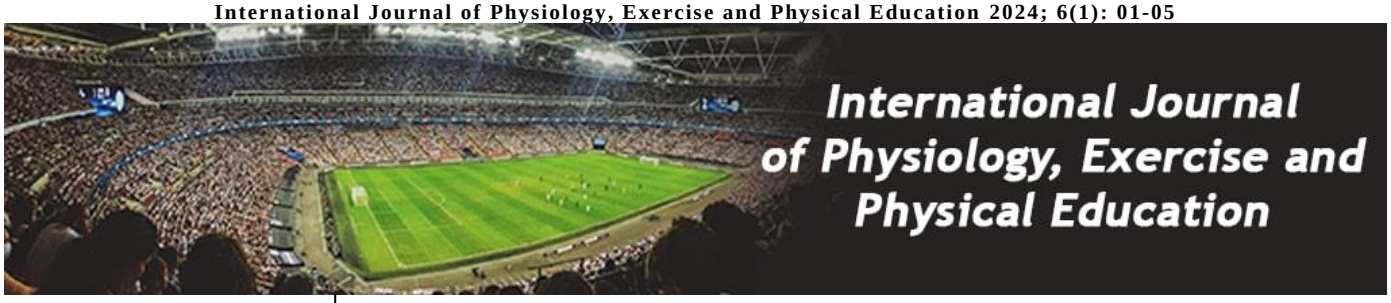

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Saif Fadel Khalil Al-Rubaie
Assistant Lecturer, Faculty of Physical Education and Sports Sciences, University of Kufa, Iraq

Corresponding Author:
Saif Fadel Khalil Al-Rubaie
Assistant Lecturer, Faculty of Physical Education and Sports Sciences, University of Kufa, Iraq

Sensory-motor perception and its relationship with serving accuracy of volleyball for female students

Saif Fadel Khalil Al-Rubaie

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Abstract
The subject of the study was: In volleyball, a serve that is not made correctly results in a point being lost and necessitates changing serves. This is a loss of a potentially crucial chance that might decide the team's destiny because many teams have blown several opportunities to win games. The researcher chose to carry out this study to determine the relationship between the degree of attentional concentration, sensory-motor perception, and the accuracy of the volleyball serve because failing to direct the ball (Accurately) during the serve could result in a loss of concentration, a deficiency in attentional concentration, and a deficiency in kinesthetic perception. The purpose of the study was to determine the correlation between the accuracy of serving with a volleyball and the degree of attentional focus as well as the correlation between the degree of sensory-motor perception and the accuracy of serving with a volleyball. Regarding the research methodology and fieldwork techniques, the investigator employed the descriptive approach due to its appropriateness and the specific character of the study. The twenty (20) fourth-year female students enrolled in the academic year 2023–2024 at the College of Physical Education and Sports Sciences/University of Kufa were designated as the research population. After they were all collected, there were twenty female students in the core research sample. Then, using a straightforward random technique (lottery), they were split into two groups: the control and the experimental. Each group consisted of ten female students, and four of those students were chosen for the exploratory experiment from within their community of origin. The key findings are as follows: There is a flaw in the level of attentional focus and serving accuracy in volleyball. Among the many recommendations made by the researcher, the most crucial ones are to focus on training that develops the proper method in training units and to repeat the serving skill.

Keywords: Sensory-motor perception, volleyball, female students

Introduction
One of the most crucial fundamental elements needed by volleyball players is mental toughness. Mental toughness works and aids in the development of motor skills, skill, and tactical performance. It also helps with linking and sequencing movements through skill development and focuses on attention and perception (Sensory-motor) in female students. With the help of the information above, we can assess the significance of researching mental skills and how they affect female pupils, which offers us great confidence and the capacity to recognize improved technical performance and a higher degree of accomplishment. Since studying mental abilities is one of the most important modern destinations in the process of progress, volleyball is a sport that requires development and modernity. The game depends as much on mental abilities as it does on physical abilities, and female players and coaches are increasingly focused on the relationship between the mental aspect and physical performance. (Muhammad Al-Arabi, Al-Gammal, Abdel-Nabishmoun, 1999, p. 27) [1]
Concentration is one of the important aspects of attention and has an effective role in preparing and preparedness before performing, as the athlete must undergo continuous training to develop psychological qualities and mental processes, as a high level of mastery of skills is not only linked to training qualifications, but must also be linked to the athlete's ability to some mental abilities, especially concentration of attention and perception. The kinesthetic sense, which is one of the important dimensions of the volleyball player's psychological preparation, Rajeh mentions, as if it were not for attention and awareness of the kinesthetic sense, the player would not have been able to remember or learn anything to think about.

In order to learn something or think about it, you must pay attention to it and realize it. (Hamad Ezztrajeh, 1977, p. 193) [2].

A key factor is the player's motor sensitivity. It has also been demonstrated that the unique characteristics of the palm muscles play a significant role in the perception of motor sensation and the development of this feature in the fine muscles of the palm. In volleyball, a skilled player differs from a normal player by a factor of 2.5 in the motor sensory characteristic of the palm muscles in particular. When compared to strikers, it performs at a pace twice as high, and the duration of training also aids in the players' improvement of this attribute. The volleyball player must be able to precisely judge the distance between himself and these changes in addition to having effective speed and awareness. In the same way, he must be able to see the ball, his teammates, and my rivals in order to determine the location and direction of play. The ability to swiftly identify and locate teammates and opponents on the court has an impact on volleyball players' performance since it influences the precision and speed at which numerous technical and tactical abilities are executed.

From the foregoing, we can infer the significance of conducting research to determine the degree and level of attentional concentration as well as the degree and level of sensory-motor perception and how these relate to the accuracy of the serve. This will add to our understanding of certain psychological phenomena and help us develop the critical components that are successful in achieving the accuracy of the serve in volleyball.

Research Problem

The idea of mental abilities is one that has emerged in the field of sports studies and in an infinite variety of sporting events. This is because studies that have examined mental abilities and how they relate to skill performance have drawn from a wide range of theories and concepts in an effort to develop this idea for the general cognitive and behavioral framework in the sports domain. He unintentionally ignored some mental skills, such as attention and kinesthetic perception, how to measure them, how to develop them, and how they relate to motor skills, which ultimately led to the skillful performance of the game of volleyball, in favor of focusing his training programs, until recently, on the physical, skill, and tactical aspects.

In volleyball, if the ball is served and not guided to the proper spot, the serve is changed and a point is lost. This is a loss of a potentially crucial chance that might decide the team's destiny. Too often in the past, teams have lost out on opportunities in games because they were unable to serve the ball in the proper location. When serving, there is a chance of losing focus, having trouble focusing attention, and having trouble with sensory-motor perception and ball accuracy. Thus, the investigator made the decision to carry out this study in order to determine the correlation between the level of attentional focus, sensory-motor awareness, and the precision of volleyball serving.

Research objective

The research aims to

1. Identify the relationship between the degree of concentration of attention and the accuracy of serving in volleyball.
2. Identify the relationship between the level of sensory-motor perception and the accuracy of serving in volleyball.

Research hypotheses

There is a significant relationship between sensory-motor perception and the accuracy of serving in volleyball.

Research fields

Human field: Fourth-year female students in the College of Physical Education and Sports Sciences/University of Kufa/ for the academic year 2023-2024.

Time field: - From 1/10/2023 to 3/1/2024.

Spatial field: Indoor sports hall/College of Physical Education and Sports Sciences / University of Kufa.

Research methodology and field procedures

Research methodology

The researcher used the descriptive method for its suitability and the nature of the research.

The research community and its sample

The twenty (20) fourth-year female students enrolled in the 2023–2024 academic year at the University of Kufa's College of Physical Education and Sports Sciences were designated as the research population. After they were all collected, there were twenty students in the primary research sample overall. Then, two groups-one for the experiment and the other for control-were created. There were ten female students in each group, chosen at random (by lottery) and four of them were chosen for the exploratory experiment from inside the community of origin.

Search tools

Tests and measurements

- Attention concentration test.
- Sensory-motor perception test.
- Serving accuracy test.

Test specifications

Concentration test

The Burdon-Anfnimov test, which (Abdel-Jawad Taha adapted in 1972), was employed by the researcher to measure each female athlete's level of concentration of attention because it is a requirement of the study. One of the tests designed specifically for athletes, this one assesses sharpness, concentration, distribution, conversion, and stability-all components of attention. (Ahmed Muhammad Khater and Ali Hilmi Al-Baik, 1978, p. 524) [3]

Scale components

The scale depicted in Figure (1) is a piece of paper with (31) lines of Arabic numbers spaced out into groups, with each group having three to five numbers. Every line has ten groups, and the total of those numbers is forty, that is to say. There are (120) numbers on the exam. This test's numbers were arranged in a prescribed order and sequence, and care was made to ensure that they were unevenly distributed and unbalanced to prevent memory problems.

How to apply the scale

The participants are given an explanation of the test by having them look at the scale paper as follows: Examine the

paper you are holding to ensure you can clearly see the numbers and combinations on it. Then, try to locate the numbers you need to cross out by drawing a slanted pencil line across them. Because of the test's duration, you must consider accuracy and speed as much as feasible. You may cross out any group that starts with the lines from left to right and concludes with the two numbers (97) in about one minute.

The player grabs the test paper that is in front of her upside down in one hand and the pencil in the other when she hears the phrase "prepare," which signals the start of the exam. The player crosses out the necessary numbers when she says the word "never." She says, "Stop," and the player underlines the line when the one-minute test period is up. The athlete in the final group she encountered does this exam twice, the first time in a peaceful environment. The researcher activates a light bulb that flashes every five seconds when the word "never" is spoken, knowing that the lamp is positioned on a table in the field of vision and one meter away from the work area. This results in the presence of a light stimulus and a controlled audio stimulus the second time. The metronome is also used to control the ocular stimuli at a pace of 60 beats per minute.

Fig 1: Shows the Burdon-Infimov test form for modified attention

Method of correction and calculation of results

The following steps were taken by the researcher in order to achieve the desired level of concentration: the test form's parameters were retrieved as follows:

- The general visible size (The amount of numbers viewed) (p).
- The number of numbers (97) that are supposed to be crossed out in the visible part, symbolized by the symbol (Z), which were extracted using the test key designed by the researcher, Figure No. (2), which is a transparent sheet of paper containing holes with the number of numbers (97) present in the measurement form.
- The number of errors (The number of numbers that were not crossed out, plus the numbers that were crossed out incorrectly, symbolized by the symbol (p).

Then the work validity factor is extracted, which is symbolized by the symbol Q.

A- Apply the following equation:

Q= (Z-K/Z) 100

Then attention acuity is extracted and symbolized by the following equation:

E = sX p

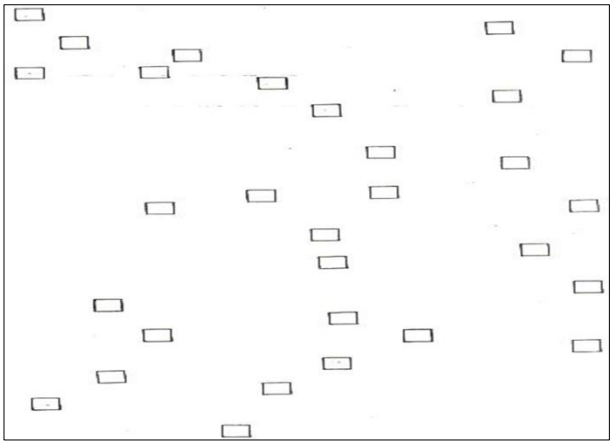

Fig 2: Correction key

Next, we compute the degree of concentration, where H1 is the network productivity when measuring attention acuity in the quiet state without it and H2 is the network productivity when measuring attention acuity in the case of obstructing and distracting situations. We compute the sharpness of the two tests (the test in a calm state and the test in the presence of light and sound stimuli). The degree of concentration, or (T), is obtained by deducting H2 from H1, as shown in the following equation:

H -H = T

Note: The lower the extracted value, the higher the concentration of the player. (Al-Khatib, Khaled Abdul Hamid, 1988, pp. 65-69) [4]

Sensory-motor perception test

Testing Sensory-motor perception of the distance of throwing the ball with the striking arm in the serving skill.

- The purpose of the test: to measure the ability to sense-motor perception of the distance of the serve ball.
- Tools: volleyball court with legal net, volleyball, blindfold.
- Performance specifications: With their back to the court, the player is positioned at the very end of the service line. It is up to the player to judge how far to toss the ball and how far to aim. Subsequently, a piece of cloth or any other opaque substance is used to blindfold her. She is instructed to toss the ball with the striking arm after being in this posture for ten seconds. From the top to the court of the other team, as seen in Figure (3), such that the ball lands in the region designated by a line at (the sixth meter). (Al-Saadi, Amer Jayar, 2002, p. 111)

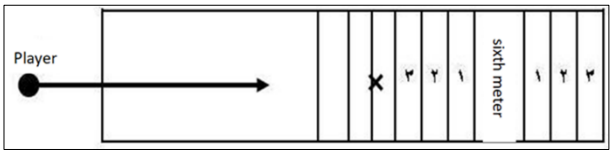

Fig 3: Shows sensory-motor perception test

Serving accuracy test

- **Purpose of the test:** To measure serving accuracy.
- **Tools:** Volleyball court, volleyballs, court layout as shown in Figure (4).
- Performance specifications
- From the place designated for serving, the player serves towards the other half of the court, so that ten serves are allocated to area (A), ten to area (B), and ten to area (C).
- **Scoring:** 4 points for each correct serve in which the ball falls into the glorious square. Two points for each correct serve in which the ball falls into the square adjacent to the designated square. (Mohamed Sobhi, Hamdi Abdel Moneim, 1997, pp. 209) [6]

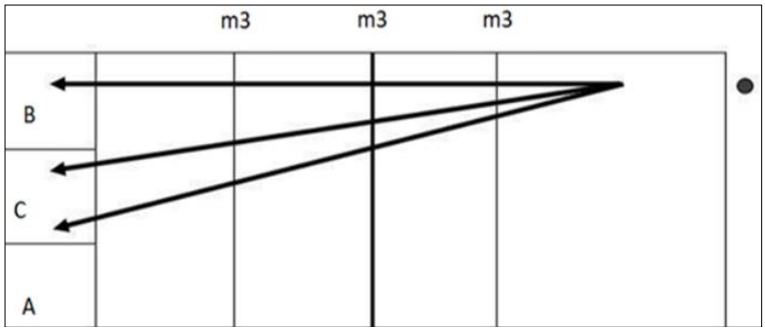

Fig 4: Serving accuracy test

Statistical methods

The data was processed statistically using the Spss program, through which values were calculated:

Presentation and discussion of the results

The following is a presentation of the results reached by the researcher and discussed in a scientific manner.

Presenting and discussing the results of the degree of focus of attention and accuracy of transmission

Table 1: The arithmetic mean shows the standard deviation and correlation for the degree of focus of attention and accuracy of serving for the research sample.

Variables	Mean	Std. Deviation	R calculated	R Tabular	Result
Degree of concentration	74.15	10.05	0.099	0.604	Negative Correlation
Serving accuracy	79	12.17			

*The tabular T value is 0.604 at 8 degrees of freedom and with an error rate of 0.05.

It appears from Table (1) that the calculated value of (R) is less than the tabular value of (R) of 0.0604, at a degree of freedom of 10 - 2 = 8, and with an error rate of 0.05. This indicates that there is a relationship between the degree of concentration of attention and the accuracy of the serve in volleyball, but it is not significant.

The research sample's accuracy of the skill performance score decreased, according to the findings. The researcher explains this vulnerability as a result of a low performance level caused by the training units' lack of instruction on the serving competence. According to Othman, "A person who becomes proficient in one of the fundamental volleyball abilities does not consider To reach the level of motor achievement in the mechanics of performance and its phases, he needs to pay more attention to figuring out where he will be guided to when doing and testing the skill. One way to explain this phenomena is to suggest that the person has mastered the material to the point that he is no longer required to concentrate on the movement's tenets. (Othman, Muhammad Abdul-Ghani, 1987, p. 57) [7]

Presentation and discussion of the results of sensory-motor perception

Table 2: Shows the arithmetic mean, standard deviation, and correlation for the level of sensory-motor perception and accuracy of serving for the research sample.

Variables	Mean	Std. Deviation	R calculated	R Tabular	Result
Sensory-motor perception	2.5	0.94	0.017	0.604	Negative Correlation
Serving accuracy	79	12.17			

It is clear from Table (2) that the calculated (R) value is less than the tabulated (R) value of 0.604 at a degree of freedom of 10 - 2 = 8, and an error rate of 0.05. This indicates that there is a relationship between sensory-motor perception and accuracy of transmission in volleyball, but it is not significant.

The results showed a weak level of skill performance, and this is the result of the lack of training in the training units on transmission accuracy, as well as the coordination ability, which is the first sense of accuracy. This means that the individual's lack of coordination ability leads to confusion and inaccuracy in his performance. (Abdel Khaleq, Essam, 1992, p.17) [8]

Conclusions and recommendations

Conclusions

1. There is a weakness in the accuracy of volleyball serving and the degree of concentration of attention.
2. Members of the research sample suffer from weakness in the accuracy of volleyball serving and the degree of sensory-motor perception.

Recommendations

1. It is necessary to pay attention to volleyball serving accuracy training.
2. Paying attention to exercises that work to develop the correct technique in the training units and repetition of the serving skill.
3. Developing mental abilities through training units.
4. Conduct similar research on players.

References

1. Muhammad Al-Arabi, Al-Gammal, Abdel-Nabishmoun. Mental Training in Tennis. 1st edition. Cairo: Dar Al-Fikr Al-Arabi; c1999.
2. Ezztrajeh, Hamad. Fundamentals of Psychology. Egypt: Dar Al-Maaref; c1977. Fathi Z, *et al*. Volleyball, Part 2. Dar Al-Maaref.
3. Ahmed Muhammad Khater and Ali Hilmi Al-Baik. Measurement in the Mathematical Field. Egypt: Dar Al-Maaref; c1978.
4. Al-Khatib, Khaled Abdul Hamid. Focusing attention before performing a volleyball serve [unpublished master's thesis]. Mosul: University of Mosul, College of Physical Education; c1988.
5. Al-Saadi, Amer Jayar. Designing and codifying kinesthetic perception tests for volleyball players. J Phys Educ. 2002;11(1): [pages]. University of Baghdad, College of Physical Education.
6. Mohamed Sobhi, Hamdi Abdel Moneim. Scientific foundations of volleyball and methods of measurement and evaluation. 1st edition. Cairo: Al-Kitab Publishing Center; c1997.
7. Othman, Muhammad Abdul-Ghani. Motor learning and sports training. 1st edition. Kuwait: Dar Al-Qalam; c1987.
8. Abdel Khaleq, Essam. Physical Education, Theories and Applications. Cairo: Dar Al Maaref; c1992.