

The Effect of Training Using the Pre tests of Pettlep Visualization Technique on The Handling Accuracy and Rapid Collective Attack of Female Handball Players

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ABSTRACT

This study examines the impact of the PETTLEP model-based imagery intervention on passing accuracy and collective fast break performance among female handball players at Al-Khalis Sports Club. Imagery intervention, a modern mental training method, enhances motor imagery and improves technical and tactical performance, essential for effective offensive play. Using a one-group experimental design with pre- and post-tests, the research involved 14 players, with 12 forming the main sample after excluding two for irregular attendance. A pilot study ensured test validity. Post-intervention data analysis via SPSS showed the effectiveness of the imagery training in enhancing players' performance. Recommendations include integrating imagery training in women's handball club practices and exploring its effects on various skills and age groups to further validate its benefits.

Keywords: Imagery intervention, Passing accuracy, Fast break, Handball.

1-Introduction

Handball is a team sport that has witnessed widespread popularity in many countries around the world. It has garnered significant attention from athletes, fans, and those interested in sports due to its competitive nature, which combines strength, speed, and impressive skill. This interest has led specialists to systematically develop the sport through planned training and educational programs that contribute to improving performance levels and achieving success.

noted , " Handball is a team sport that enjoys widespread interest from Jassim (2002, p. 2) As athletes and those interested in the sports field throughout the world. " Its technical and kinetic characteristics give it a distinctive character in performance and competition. It combines speed, enthusiasm, and continuous interaction. This makes playing and watching it an enjoyable and engaging experience at the same time . Passing in handball is considered one of the basic skills that the team relies on to build the attack and organize the game on the court ; it is the main means of moving the ball quickly and accurately between players. This contributes to creating scoring opportunities and breaking down the opponent's defensive organization.

Furthermore, mastering the passing game reflects the level of harmony and collective understanding within the team and directly impacts the effectiveness of the offensive

performance and achieving success . The fast collective attack in handball is an offensive style that relies on a number of players – often three, four, or more – rushing at high speed towards the opponent's goal as soon as the ball is intercepted or recovered. This style aims to exploit the moment of disarray in the opponent's defense before they can reorganize. By achieving numerical superiority, a guaranteed scoring opportunity can be created within a short time.

Al- Sudani and Kazem (2017, p. 162) state that " a rapid collective attack requires a set of basic elements, which are represented by the high speed in transitioning from defense to attack." Accuracy of passes and good player positioning on the field In addition to achieving a high degree of group harmony and speed of decision-making This makes it one of the effective offensive methods in accelerating the pace of play and enhancing the team's scoring Visualization intervention is one of the influential variables in developing skill .effectiveness performance, as it is used as a method that relies on conjuring up an accurate mental image of the skill and reviewing it mentally without actual execution.

This method contributes to enhancing the perception of correct performance by re-enacting the technical movements in the best way, which helps in discovering and correcting errors mentally before applying them practically.

„Also, individuals who have a clear understanding of the stages of executing the skill can through mental visualization, compare their performance to the ideal level and thus modify inaccurate responses and improve the quality of execution(hecker.2008.66) " Pettlep's model consists of a set of interconnected elements including the physical aspect, the surrounding environment, the nature of the task, timing, the level of learning, and the emotional state, in addition to the perspective from which the mental image is evoked. This model is based on functional interpretations in neuroscience indicating that the effectiveness of motor visualization is related to the degree of integration of these components within the mental structure of the skill.

This process is also classified – according toLang's theory – as an interaction between training experience and the cognitive structure of the mental image in the player's mind. This interaction is a fundamental factor in forming an accurate visual image that contributes to improving performance ." Mental requirements are a fundamental element in the performance of female players during a match. Its importance increases as the level of competition rises. Especially in critical moments that require quick decision-making and emotional stability , mental preparation has become a pivotal part of modern training programs, as trainers are keen to develop it alongside physical, skill-based, and tactical aspects. It is noted that advanced handball teams are characterized by a high degree of harmony and understanding on the court. This reflects the effectiveness of organized mental preparation , and hence the importance of research in highlighting the role of mental methods, especially conceptual intervention, in enhancing performance accuracy and developing offensive effectiveness among female players.

1-1 :Research problem

By followingAl- Khalis Club's matches for the 2024 sports season It was observed that the team suffers from a lack of harmony and understanding among the players during the ,execution of the collective fast attack through incorrect passes or incorrect positioning which leads to a reduction in the effectiveness of attacks and difficulty in exploiting

available scoring opportunities. This indicates a need to develop training methods that enhance collective coordination and speed of decision-making during attacks. Can training according to the conceptual intervention method (PETTTLEP) contribute to improving harmony and understanding among the players during the collective fast attack in handball?

1-2 :Research objectives

- 1- Designing a conceptual intervention program using thePETTTLEP model to develop handling accuracy and collective fast attack for Al-Khalis Sports Club handball players
- 2- Studying the effect of training according to the conceptual intervention method (PETTTLEP) on improving harmony and understanding between players during the collective fast attack in handball.

1-3 :Research hypothesis

There are statistically significant differences between the pre- and post-tests of the research sample in the accuracy of handling and the fast collective attack of the female players.

1-4 :Research areas

- 1- .Human field: Al-Khalis Sports Club handball players for the 2024 sports season
- 2- .Time period: From 3/2/2024 to 12/3/2024
- 3- .Spatial area: Al-Khalis Club handball court

1-5 :Defining the terms

The PETTTLEP a mental-motor visualization technique that **visualization intervention** is simulates physical and skill performance. It can be used for various cognitive and motivational functions by using a set of elements of thePETTTLEP model physical : condition, environment, tasks, sense of timing, learning, emotion, and perspective through realistic influences in the visualization intervention program.

2 -Research Procedures

2-1 :Research Methodology

The experimental method was adopted with a single-group design with pre-tests and post-tests to suit the research problem.

Research population and sample 2-2:

The research community was represented by the players of Al-Khalis Sports Club in handball, numbering (14) players. The main sample consisted of (12) players for the 2024 sports season after excluding (2) players statistically due to non-compliance with training units and frequent absences. Meanwhile, the exploratory experiment was conducted on (2) players from outside the main research sample in order to ensure the validity of the tests and organize the application procedures.

2-3:Methods of gathering information

- ❖ Note.
- ❖ Arabic and foreign sources.
- ❖ The World Wide Web (Internet).
- ❖ Data entry form.

- ❖ Testing and measurement.

2-:Devices and tools used 4

- ❖ Laptop calculatorHP .quantity (1)
- ❖ (1)Nikon D3300 . camera
- ❖ .legal handballs (12)
- ❖ .A measuring tape for measuring distances
- ❖ ,One (1) manual electronic calculatorSony brand.
- ❖ .Stationery

2-) The Conceptual Intervention Program 5PETLEP):

The researcher relied on theWright) model) of visual intervention elementsPETTLEP and Table1 shows this ((Wright, 2007).

Table (1)

The conceptual intervention program shows

Examples	How to implement	elements	T
The players can stand on the handball court wearing shoes and training equipment, with the handball being used, and then visualize executing the pass accurately and moving within the fast attack line.	The players must adopt the correct movement posture during visualization, while wearing the sportswear used and the training equipment accompanying the actual performance.	Physical	1
Players can visualize passing and quick attacks on the club's field or in the starting area, or watch videos of similar group attack situations to practice the skill.	The visualization should take place in the same environment as the match or ,training session, and videos photographs, or an environment similar to the actual performance venue can be used.	the environment	2
The players envision executing a precise and quick pass and then moving within the collective attack to find ,scoring opportunities focusing on the precise elements of handling and quick attack.	The envisioned task should be exactly the same as the task that will actually be performed, with the envisioned task being modified to reflect the level of skill improvement.	The mission	3
The players visualize the handling and collective attack at the same time that the skills will be practically executed, with the correct counting of passes and movements during the fast attack.	The visualization should be done in real-time, so that it takes the same duration as the actual task during physical execution.	Time	4

The players review their vision after each practice or match to correct mistakes and improve handling accuracy and speed of movement during the collective attack.	The perception needs to be updated to reflect the players' level and the ,development of their performance taking into account the equality of perception with physical ability.	Learning	5
The players imagine the feeling of excitement when succeeding in an accurate pass or when executing a fast attack collectively, or experiencing the control of psychological pressure during the match.	Integrate emotions associated with play during visualization, such as enthusiasm, focus, and psychological motivation.	emotions	6
The players visualize the movement of their hands and feet during passing and ,movement in a quick attack with the possibility of watching a teammate perform the group attack correctly to improve understanding of the overall performance.	It is preferable to visualize from an internal perspective (through the eyes of the players) with the possibility of using an external perspective when needed to observe group movements.	Perspective	7

- ❖ Providing an opportunity for female players to express the problems that hinder the actual performance and to work on addressing them, while introducing them to the conceptual training program.
- ❖ Using visualization to simulate the physical condition that the players will be in during the actual performance.
- ❖ Imagine the skill at the same level of performance as the players will actually perform it.
- ❖ Implementing the skill concept within the same time period allocated for the actual performance.
- ❖ Enhancing the feelings and emotions associated with performance during visualization practice to improve mental engagement.
- ❖ 'Practicing visualization from an internal or external perspective, according to the players wishes and their ability to concentrate.
- ❖ Integrating all elements of the(PETTLEP) model to ensure comprehensive conceptual training and maximize performance benefits.

2-(Al-Khashali, 2019, 76-77) :Tests used in the research 6

Firstly: Test name: : Overhead handling performance

The purpose of the test: Measuring the accuracy of handling execution.

Testing tools:

- Standard handball.
- Draw an oval on the wall at a distance of 3 meters from the starting point.
- Stopwatch.



Method of performance:

1. The player stands on the starting line, 3 meters away from the wall.
2. The attempt lasts for 30 seconds, with the goal of scoring as many accurate shots as possible inside the oval shape.

Registration method:

- ❖ Based on the number of successful shots that accurately hit the oval shape within 30 seconds.

:Second: Testing the rapid collective attack

- **Purpose:** To measure the speed of transition from defense to collective attack, and the accuracy of passing the ball and shooting.
- **Tools:**
 - 3 legal handballs
 - Stopwatch

Method of performance:

1. The players are divided into three groups (A, B, C) distributed on both sides and in front of the goal, with the balls placed near the goalkeeper.
2. **When the start signal is triggered:**
 - Group (B) is running towards the left side of the other goal.
 - Group (A) moves forward.
 - Group (C) passes behind the player of Group (B) towards the center to receive the ball from the goalkeeper, then passes it to player (A).
 - Player (A) passes the ball back to player (C), who passes it to player (B) who is close to the goal to shoot it at the accuracy squares.

Test requirements:

- Each player is given two correct attempts.
- The attempt is repeated if the ball is not delivered correctly, falls, or a foul is committed.

Registration:

- The performance time is calculated from the starting signal until the moment of shooting at the goal.

2-:Exploratory Experiment 7

The pilot study was conducted on Saturday, February 3, 2024, on (2) female players in order to determine the suitability of the testing tools and the validity of the planned training procedures. Adjusting the execution times and making the instructions easy to understand. This experience helped the researcher to modify some practical details and ensure the accuracy of procedures before actual application, which increases the reliability and effectiveness of the research results.

2-8Pre-tests:

Pre- tests were conducted on Tuesday, 6/2/2024, on the research sample under the supervision of the researcher and implemented by the assistant work team, with care to document all the circumstances surrounding the tests to ensure accuracy and consistency in data collection.

2-:Main Experiment 9

The main trial began on Saturday, February 10, 2024, with three training sessions per week (Saturday, Tuesday, Friday) for four weeks, totaling 12 sessions.

Each training unit lasted 120 minutes, of which 45 minutes were dedicated to visualization intervention sessions . The players practiced mental visualization of passing and team fast-paced attacking skills. The correct execution of each skill was explained in detail, including instructional videos and illustrations demonstrating the precision of passing, transitions, and delivery movements during team fast-paced attacks. Emphasis was placed on timing, passing angle, and movement patterns on the field. The sessions also encouraged the players to visualize their own performance and compare it to the ideal. With the aim of enhancing motor organization and increasing confidence in performance Correcting potential errors before the practical application in the main part of the training unit.

In the main part of the training unit The exercise, which lasted 50 minutes, involved the practical application of handling skills and rapid group attacking techniques. With a period of 15 to 20 minutes allocated to focus on the accuracy of execution and the speed of group coordination between the players , the main experiment concluded with the last unit on Friday, 8/3/2024.

2-10 post-tests:

After completing the main experiment, the post-tests were conducted on Tuesday, March 12, 2024 Under the supervision of the researcher and implemented by the assistant work team, the same conditions that accompanied the pre-tests were taken into account, in terms of the test location, the tools used, and the instructions given to the players, to ensure the accuracy of the results.

2-11 :Statistical methods

SPSS .to extract and analyze the results statistical package

:Presenting and discussing the results -3

:Presenting the results of the research sample 1-3

Table (2)

The results of the pre- and post-tests of the research sample show handling accuracy and .rapid attack

Significance	Error rate	Calculated value of t	$\xi \pm$	-Q	$\xi \pm$	-Q	unit of measurement	Variables
moral	0,000	15.14	1.32	20.92	0.80	14.17	several	Handling
moral	0.000	32	0.06	4.88	0.15	6.37	Tha	Rapid attack

:Discussion of the results 2-3

Table (2) shows that the post-test results are better than the pre-test results for the research sample in the test of passing accuracy in the fast group attack for the players. The researcher attributes this to the effectiveness of the training method based on the visualization which was applied within the players' realistic performance environment. The ,intervention method was designed to simulate actual situations related to passing accuracy and the execution of the fast group attack in handball. The program was based on the theoretical foundations of the(PETTLEP) model which is based on the principle of functional , similarity between motor visualization processes and the neural activity accompanying real performance, thus enhancing the connection between mental processing and motor response.

Wakefield & Smith (2012) believe that " visualizing the skill performance and presenting it to each player individually contributed to improving the level of skill execution by enhancing awareness of errors and reinforcing positive aspects . Furthermore, the application "...of the visualization intervention program within the realistic performance environment ,The presence of factors accompanying the competitions, such as the competitor, the referee and the coach's guidance, helped achieve a complete sensory and emotional integration between the mental and motor aspects, which enhanced the realism and effectiveness of the visualization in developing the players' skill performance.

Furthermore, the diversity of elements in the visualization intervention... And the mechanism for presenting it to the players It had a clear effect on enhancing their interaction with the seven elements of the model and achieving a high level of integration between them during the visualization process , as well as guiding the players to recall their physical state during the actual performance. In addition to understanding the nature of the task and the dynamic conditions accompanying its execution. In line with the reality of competition This has contributed to creating a simulation that closely matches the actual performance level in all its aspects.

This supported the program's effectiveness in developing skills , as confirmed by (Youssef et al., who emphasized the need to consider the preferences of the practice environment (2020 when designing training programs. To ensure effective interventions that integrate both theoretical and practical aspects by training players to achieve valuable goals It contributes to linking real emotional experiences with memories associated with performance . Based on the above, the researcher believes that training based on the conceptual interference strategy is an effective method in developing skill performance because it provides integration between mental and motor aspects and contributes to enhancing the readiness of female players by simulating real performance situations and linking them to the experience and emotion accompanying the execution.

:Conclusions and Recommendations -4

:Conclusions 1-4

- 1- Training based on conceptual interference has significantly contributed to developing the players' skill performance level. The result of the integration between mental processing and motor execution within an environment that simulates actual competition conditions.

- 2- Adopting the elements of the(PETTLEP) model in an interconnected manner within the training program enhanced the realism of motor perception, which positively impacted the improvement of performance accuracy and response speed in different skill situations.

4-2 :Recommendations

- 1- The researcher recommends adopting the conceptual interference strategy according to the(PETTLEP) model within training programs because of its positive impact on developing skill performance and achieving integration between mental and motor aspects.
- 2- The researcher recommends that trainers be trained to systematically employ motion visualization within a realistic performance environment. By providing stimuli similar to competitive conditions to enhance the effectiveness of the application and achieve the best results.

Sources:

- ✓ _Ahmed Khamis Al-Sudani and Muhammad Mahmoud Kazem (2017) ; Modern Handball: Skillful and Tactical Principles : (Baghdad, Al-Mizan Press)
- ✓ Laith Ibrahim Jassim (2002) ; The effect of the proposed training method on developing speed endurance in handball players: (Master's thesis, College of Physical Education, University of Diyala
- ✓ Magdi Hassan Youssef, Reda Mohamed Ibrahim and Abdel Khaleq (2020); The effect of thePETTLEP program .on some sensory-motor abilities of swimmers .Article 4, Volume 10, Issue 55
- ✓ ;Nizar Nazim Hamid Al Khashali (2019) The effect of visual perception exercises on ,PhD thesis) developing some offensive tactical skills among young handball players .(College of Physical Education and Sports Sciences/University of Diyala
- ✓ Hecker (2008), Under Standing Psychology for Sport Theory and Practice of Elite Performance. John Wiley & Sons
- ✓ Wakefield caroline & smith Dived (2012) perfecting practice: applying the PETTLEP model of motor Imagery, Journal of sport psychology in Action, 3:1-11, Association for Applied sport psychology.
- ✓ Wright, Carolin & Smith, David .K(2007) Effect of a Short-termPETTLEP Imagery Intervention on a Cognitive Task, Journal of Magery Research in Sport and Physical Activity, Volume 2, Issue 1. ticle DOI:10.2202/1932-0191.1014

Appendix (1)

.A model of a visualization intervention session is shown

Duration (45) minutes	First session
Preparing the group members	the topic
Introducing the group members to the conceptual program	Needs related to the topic
❖ Introducing the group members to the instructions for the visualization intervention sessions according to the(PETTLEP) model , which aims to improve visualization	Goals related to needs

interventions by maximizing the overlap in brain .activity between visualized and real behaviors ❖ The main focus is on how to link the model to .performance ❖ .Encouraging group members to discuss	
❖ The players stand inside the field in a circle to create a training atmosphere and enhance team .spirit ❖ Getting to know each other among the group members and emphasizing the principle of .cooperation and harmony among them ❖ The researcher explained the importance of conceptual interference programs and their role in developing handling accuracy and executing the collective fast attack, while explaining the concept of conceptual interference and the .mechanism of its application in handball ❖ 'Watch videos that include handball players experiences with applying visualization intervention and how it contributes to improving skill performance and dealing with fast and .stressful playing situations	Practical application of the session
❖ The lecture (15 minutes) ❖ Group discussion (10 minutes) ❖ Reinforcement ❖ Modeling (20 minutes) ❖ feedback	Strategies used
❖ A data projector with a computer as an .audiovisual aid	Assistive devices
❖ Al-Khalis Sports Club Handball Court	Place of conceptual intervention
❖ players 12	Number of players