

Impact of competitive exercises on the development of defensive skills of junior handball players

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ABSTRACT

This study aimed at preparing competitive exercises to develop some important skills within the defensive formation of handball, and identifying the impact of competitive exercises on developing defensive skills within the formation used. The researcher used the experimental method, with one-group pretest-posttest design. The sample for the study consisted of 9 handball players from the Iraqi national team for juniors. A set of competitive exercises for both individual and group defensive skills within the defensive formation was prepared to assess successful and failed attempts in pre and post-tests. The researcher utilized the statistical program SPSS to process the data statistically and extract various parameters. The results of the study showed that there is an impact of competitive exercises on the development of defensive handball skills, through the degree of interdependence between players during performance.

KEYWORDS

Competitive Exercises; Defensive Skills; Defensive Formations; Handball

1. INTRODUCTION

The handball game has had a rapid spread and development in the world and in the Arab world in a very noticeable way, as a result of the rapid transformation of the game through performance, regardless of whether it is individual or collective (Abdulhadi Ahmed & Abdulhamza Kadhem, 2022; Majed, 2022).

For the movements to be balanced and interrelated, it is necessary that the player has skill capabilities, which makes her/him able to carry out any defensive duty within the chosen formation, whatever its type. So the competitive handball activity requires the player in all situations to overcome the opponent using specific types of defensive skills of the game, thus one can determine

that the movement is a language of communication in the sports field (Abod & AlHaddad, 2022a). Consequently, each movement consists of a sport skill, which includes the movement of defensive skills that enhances part of the general and specific skills, which are often given as a an overall dynamic that is implemented in a precise and purposeful sequence, the basis of which is to counteract the opponent's offensive movements, as each player must deal with the most important key elements during the performance of the movement, which are movement, space and time, and this necessitates that any movement must occur within a series of motor operations carried out in a sequence that can lead to motor interdependence (Wahed Chalob, 2022).

Since we see that the game is characterized by defensive effectiveness, which is more influential in determining the victory over the opponent, on the basis that the attack aims to score goals, and therefore the team that is superior in defense prevents scoring goals into its own goal and increases the motivation for the team to score during its offensive transformation at the opponent's goal, therefore, training and learning defensive skills requires physical and psychological effort that exceeds skill training (Al-Sudani & Muhammad, 2016).

Therefore, it is the duty of every defense player to perform, as individual, movements that are interconnected with the group movements, to reduce the danger of the opponents and prevent them from shooting (Abod & AlHaddad, 2022b).

The importance of this research lies in the use of competitive exercises for developing the most important defensive handball skills within the defensive formation used in handball. As for the problem of the research, through the researcher's experience in the field of the game as a player and a coach currently, a weakness is noticed in the application of some defensive skills within the formations, especially in the centers (2, 3) in the middle of the field in preventing the opponent from scoring and thwarting his movements, which made the researcher attribute the weakness in that to the movement of the individual within the group, which would not be connected with the group in performance. Therefore, the researcher tried to find some solutions to this problem.

This research aims at preparing competitive exercises to develop some important skills within the defensive formation of handball and identifying the impact of competitive exercises on developing defensive skills within the formation used. The study hypothesizes that there will be a significant impact of the competitive exercises on enhancing these crucial skills within the defensive formation.

2. METHODS

2.1. Design and participants

The researcher used the experimental method, with the one-group pretest-posttest design (Qassem & Ahmed, 2011). The design is described in Table 1.

Table 1. The working steps of the experimental design

Group	Step one	Step two	Step three	Step four
Experimental	Pretest	Competitive exercises	Posttest	Difference between the pre and post tests

The research community is represented by 20 handball players of the Iraqi national team for juniors (Table 2). The sample was homogeneous in height, weight and age.

Table 2. Research sample

	Number	Percentage
Research community	20	100 %
Experimental group	16	80 %
Pilot study	9	45 %

2.2. Instruments and materials

The instruments used were personal interviews, questionnaire, tests and metrics. The materials used were: handball court, 10 legal handballs, TV screen (LG), Nikon video camera for filming matches, colored pencils and papers, HP laptop calculator, 20 signs of different heights, whistle, and stopwatch.

2.3. Procedures

Research variables

The researcher has adopted a questionnaire prepared in advance to determine the most important defensive skills in handball within the defensive formation used. This includes skills such as attacking the attacker, covering, receipt, and delivery for the defensive formation (5-1). The questionnaire was codified and approved after interviewing a group of experts and specialists and gathering their opinions on its potential use. Finally, the agreements of the jury were approved (Al-Sayed, 2014).

The first pilot study

To prove the extent to which the questionnaire is compatible with the research variables, the researcher used the questionnaire in a match that was held in Zanko Hall in Erbil with the Shabab Al-Fatwa Club on 2/7/2022.

The second pilot study

The assistant work team, under the supervision of the researcher, carried out a second pilot study on 4/7/2022 at five o'clock in the afternoon at the Zanko Hall in Erbil, which is the team's training place inside the camp of the national team in order to know the suitability of the exercises used for the research sample, in addition to the degree of difficulty of the exercises on the pilot study. The pilot study evaluated 9 players from the Iraqi junior team in order to know the possible obstacles. The researcher observed the following: 1) The appropriateness of the training unit designed to perform the exercises. 2) The suitability of the prepared exercises.

The prepared exercises

It is also prepared a set of competitive exercises for the individual and the group for some defensive skills within the defensive formation used to know the successful and failed attempts of the pre and posttests. These exercises are used during the pre-competition period on the basis of the pilot studies carried out by the researcher, taking into account the available capabilities and the level of the sample based in its preparation on scientific foundations for training. The researcher has relied on exercises for seeking to develop the defensive skills of the individual within the group, as they are applied on 7/8/2022 on the experimental group. The training units are subjected to direct supervision by the researcher, and the exercises are applied by the assistant work team.

The exercises are applied in the pre-competition period. The number of training units reached to 12 units. Three units are applied during the week (Sunday, Tuesday and Thursday). The total volume of exercises during the training unit is 30-35 minutes from the main section. The training intensity used in the training units is between 85-100%. The researcher relied on performing the exercises on the method of repetitive training.

Exercises description

- Each defensive player stands in position No. 2 on both sides, and the rest of the attacking players are distributed on the center of the forearm, right and left, handling from one forearm to the last attack on the defender, then vice versa, and the defender must face and return continuously.

- 2 players stand, one is in the front center head and the other in the back center, and the attack is a midfielder (playmaker) with a circle to define the area and freedom of attack.
- 3 players stand in positions, 2 players on the two sides and 3 players in the middle in the back center. The area is defined by signs only in the middle of the field, and the attack is 3 players from the middle of the field when the whistle is heard, attacking 3 players against 3.
- 3 defensive players stand in a center defense 2 players on both sides, and position 3, and 1 player in a center back, and an attack consists of 4 circle players with 3 back line players, and the attack begins from the center of the field at the whistle.
- 3 defensive players stand in the position 2 for both the two sides, 1 player in the center back, and 5 attacking players, who are 2 circle players and 3 players for the back line, and the attack is from the center of the field when the whistle is heard.
- Defense 4 players distributed in front center positions with center back and center forearms 2 players on both sides, and the attack is 4 players, 1 one is a circle player and 3 back line from the center of the field. When the whistle is heard, the performance is done.
- A defender stands in the position 2 of the two sides and moves between the area (6-9 m), and the attackers stand in the center of the forearm.
- Right and left by rotating the ball, and the coach stands in the middle of the field in the Play Maker Center. When the defender gets out toward the attacker, he must return as quickly as possible to cover the circle player who is in position 2 to cut the ball that the coach passes to the circle player.
- A defensive player for each of the midfield positions, 2 players on both sides, with attackers in the positions of the right and left forearms, who are attacking and the defensive duty is to confront the attacker and stop his movement, then the exercise is repeated for position 3 as well.
- 4 defensive players stand, each 2 players on one side of the field, and each player stands in a corner, and there is a ball in the middle of the field, when the whistle is heard, the players of the two groups go to the middle, and whoever possesses the ball becomes an attacker and the other is a defender.
- Every 4 players with each other start moving from the area (6 m) by running with passes to the area (9 m) to the second side. He crosses the ball with the right corner player with the left, then handles from the left to the right forearm, and they go down to the defensive duty and the attack is 2 players on 2 players.

- Every 2 player with some player on 6m and the colleague in the middle of the field, a player runs from 6m to the middle of the field and is handled by a goalkeeper at the same time, the player who is in the middle of the field runs to the second 9m area and stands as a defender and the attack is 1 to 1.

- The team is divided into two groups, each group of 6 players, each 3 of whom stands on one side of the stadium, and the same division for the second team, so that each half of the stadium has 6 players 3 attackers and 3 team defenders, who is attacking and scoring, the ball is returned to him, and he passes to the same players in his group in the other half of the field. The performance is done continuously.

- The team will be divided into 3 groups (A-B-C). Group A will be on one side of the stadium in the 9m area, and Group B will stand on the other side of the stadium in the 9m area. Group C will initiate the attack on one of the two groups; in the event of scoring, the team remains an attacker, and in the absence of scoring, the attacker turns into a defender and the defender becomes an attacker.

Post-tests

The post-tests were conducted after completing the exercises applied for the development of defensive skills, on 13-15/8/2022. The post-tests were carried out under the same conditions as the pre-tests, and with the help of the assistant work team.

2.4. Statistical analyses

The researcher utilized the statistical program SPSS, version 23, to process the data statistically and extract various parameters, including arithmetic mean, standard deviation, skewness coefficient, and percentages.

3. RESULTS AND DISCUSSION

The results are presented in tables 3, 4 and 5. The three tables show that the competitive exercises applied have significantly improved ($p < 0.05$) the defensive skills of the junior handball players. The defensive skills improved were: the skill of attacking the attacker (table 3), the covering skill (table 4), and the receipt and delivery skill (table 5).

Table 3. The results of the pre and posttests of the skill of attacking the attacker within the defensive formation 5-1

		Success	Failure	Sum	Chi-Square	p
Pretest	Frequency	7	8	15	4.97	0.026
	Percentage	46.66	53.33	100		
Posttest	Frequency	21	4	25		
	Percentage	84	16	100		

Table 4. The results of the pre and posttests of the covering skill within the defensive formation 5-1

		Success	Failure	Sum	Chi-Square	p
Pretest	Frequency	5	10	15	5.60	0.018
	Percentage	33.33	66.66	100		
Posttest	Frequency	25	3	28		
	Percentage	89.28	10.71	100		

Table 5. The results of the pre and posttests of the receipt and delivery skill within the defensive formation 5-1

		Success	Failure	Sum	Chi-Square	p
Pretest	Frequency	5	9	14	6.62	0.010
	Percentage	35.71	64.28	100		
Posttest	Frequency	25	4	29		
	Percentage	86.20	13.79	100		

The researcher attributes this increase in the success of the number of attempts of some defensive skills (attacking the attacker, standing ready, delivery and receipt) within the specified formation to the skillful competitive exercises that included in their performance a set of defensive duties, which were individual for the player at the beginning and then interdependent in the middle of the prepared units until reaching to the group and team exercises in most of the units. The researcher has approved during the exercises that the defender is the first to initiate the attack and stop the movement of the attacker in the first step, that is, the defender during the performance is offensive and defensive through the excitement, intensity and interdependence between them.

Repetitions in exercises increase the response speed of the players and develop the reaction of the players, which increases their proper and correct timing (Al-Sayed, 2014). It is very important for the defender to be the first to take the initiative against the attacker, and this is by nature what distinguishes a good defender from others, which in turn contributes to the success or failure of the

performance. This will put the attacker under control and prevent him from entering or penetrating, whether the attacker is with or without the ball, and this can be done by placing one of the arms on the hand carrying the ball and the second in the middle of the waist, in order to push the attacker to a place or area that is not desirable to score a goal (Abdullh et al, 2022; Sha'lan, 2022). In addition to the interdependent work between the players during the exercises, it has helped greatly in determining the distance between one player and another through the correct setting and timing when receiving the attacker and attacking him until handing over to the fellow defender who is near from the first defender in a coordinated interdependent movement between them works to put the opponent under control, regardless of the type of movement with an effective ball or without the ball.

Therefore, the researcher agrees with Al-Sayed (2014) that the implementation of the defensive duty must be carried out at a high speed towards the attacker for facing during the offensive work, so that the defender is the first decision-maker in order to prevent the attacker from attacking action or taking any decision to perform whatever kind of deception or shooting. This usually happens on the area of 9 m for the back line player during the offensive performance, and this is what makes the defender put in his defensive moves a set of things, including good timing, focus, and correct expectation for the type of shooting or passing.

4. CONCLUSIONS

After conducting the statistical procedures and analyzing the results, the researcher has determined significant differences between the pre and posttests, favoring the posttest outcomes. This led to the conclusion that competitive exercises play a crucial role in enhancing defensive handball skills and fostering interdependence among players during performance and skill development. Consequently, the researcher recommends allocating considerable focus on training defensive skills, particularly attacking the attacker and covering between players, especially in midfield positions. Additionally, it is advised to incorporate specific competitive exercises tailored to each defensive formation deemed suitable by the coach and aligned with the capabilities of the players.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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