



Article

# Effectiveness of Developing Technical Methods of 13-14 Year Old Goalkeepers During Handball Training

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**Abstract:** In this article, the accuracy of ball passing, rebounding and passing of 13-14-year-old goalkeepers was analyzed, and a set of training microcycles and exercises was developed to increase the efficiency of ball passing, rebounding and passing of young goalkeepers. and these exercises were applied to the participants in the experimental group. The developed set of exercises had a positive effect on the efficiency of ball passing, rebounding and passing of the participants in the experimental group. It was studied why it is important to pay special attention to the correct formation of technical techniques of ball passing, rebounding and passing of young goalkeepers at the initial stage of training, and the results of the conducted study proved to be of particular importance.

**Keywords:** training process, goalkeeper, ligaments, correlation analysis, handball.

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## 1. Introduction

Attention to sports in our country is growing day by day [1, 2]. Therefore, it is necessary to improve the training of young goalkeepers at a high level in order to educate them in accordance with the requirements of the time and soon join the ranks of world-class teams. [1,2]. Therefore, it is important to pay special attention to the development of the technical methods of young goalkeepers in the game of handball. Therefore, it is necessary to create a special set of exercises for the development of the technical methods of catching, returning and passing the ball by young goalkeepers and implement them in the training process.

Since it is important to educate goalkeepers in the game of handball, it is natural that each team wants its goalkeeper to be well-developed. Therefore, the goalkeeper is considered to be the one who eliminates the attack. The absolute only goal of the goalkeeper is to rationally repel the organized attack. Currently, the game of handball is characterized by an increase in the effectiveness of offensive shots from day to day. In modern handball, the speed and accuracy of goalkeepers' technical skills are improving day by day. As a result, the time required to perform technical skills is decreasing [4,5].

## 2. Methodology

We set out to study and analyze the accuracy of 13-14-year-old goalkeepers in catching, returning and passing the ball during training, to determine their level of development and to provide practical recommendations.

In order to successfully implement the goal we set, we set the following tasks:

- ☉ To determine the level of development of the accuracy of goalkeepers in catching, returning and passing the ball during handball training;
- ☉ To determine the effectiveness of selected exercises in developing the technical methods of practicing goalkeepers;
- ☉ To determine the accuracy of goalkeepers in catching, returning and passing the ball during training through tests and to analyze the results obtained;
- ☉ To determine ways to improve the accuracy of goalkeepers in catching, returning and passing the ball based on the analysis of training and competition activities.

To provide methodological guidelines for developing and improving the accuracy of catching, returning and passing the ball of young goalkeepers using exercises given during training.

### 2.1. Participants

We conducted the study at the Samarkand city sports and athletics specialized sports center. In this study, 13-14-year-olds (n=10 young goalkeepers) who were engaged in the initial training stage were selected and the research was conducted.

### 2.2. Process

The theoretical aspects of the problem were analyzed, and as a result of scientific theoretical research, the current state of the problem was determined and the necessary aspects were identified.

1. The purpose of the pedagogical experiments during the period of time was to study the accuracy of goalkeepers' catching, returning and passing the ball during the training of young handball players, and an experiment was conducted for this purpose.

2. The final results of the study were obtained. At this stage, the results of the study were summarized and analyzed, and practical recommendations were given.

### 2.3. Test norms to be obtained

The participants of the research group were introduced to the procedures for taking test norms before conducting the experiment. The test norms were organized in five directions. Each test norm was developed together with experts and its analytical basis was studied. It was proven that these test norms correspond to the methods of catching, returning and passing the ball of young goalkeepers and are useful for future use. These are:

- ☉ Accuracy of rebounds from the 7-meter penalty line;
- ☉ Accuracy of rebounds from the 9-meter free throw line;
- ☉ Accuracy of rebounds from the 6-meter line on the move;
- ☉ Distance and accuracy of the goalkeeper passing the ball for a quick attack (off-the-ball); (cm)
- ☉ Accuracy of rebounds from consecutive shots from both corners of the goal;

Table 1

Evaluation of goalkeepers' accuracy in catching, rebounding and passing the ball based on special tests

(n=10 before the study)

№	Player	Accuracy of returning balls shot from the 7-meter penalty line	Accuracy of rebounding balls from the 9-meter free throw line	Accuracy of returning balls that bounce from the 6-meter line while moving	Goalkeeper's passing distance and accuracy for a quick attack (break) (cm)	Accuracy of returning consecutive shots from both corners of the goal	
Number of executions		10 times	10 times	10 times	cm	5/5 times	
1	M.Sh.	4	4	3	21	2	2
						4	
2	N.A.	4	4	3	20	1	2
						3	
3	M.A.	3	4	3	17	2	1
						3	
4	R.A.	5	6	4	18	3	2
						5	
5	A.D.	4	4	4	22	1	3
						4	
6	M.S.	5	5	3	22	2	2
						4	
7	A.Z.	3	5	4	20	1	1
						2	
8	S.N.	5	5	4	19	3	2
						5	
9	E.O.	4	4	3	17	1	3
						4	
10	T.U.	3	4	2	20	2	1
						3	
$\Sigma X_i$		40:10=4.0 %	45:10=4.5%	33:10=3.3 %	196:10=19.6 %	37:10=3.7%	
Min-max		3/5	4/6	2/4	17/22	2/5	
$X \pm \sigma$		5.0±0.2	6.0±0.2	4.0±0.2	22.0±0.5	5.0±0.3	

The test results recommended in the table above did not give the results we expected. Therefore, the experimental group was recommended to use the sample set of exercises developed by us.

The methods are improved with the description of a specific game ampule. The previously studied game methods improve the game ampule in the team, physical fitness and individual mastery of the material.

It is worth recalling once again that it is recommended that the independent performance of individual movements in the training process of young goalkeepers be the main thing not only in the initial period, but also in the improvement period. Training of young goalkeepers should be carried out under the constant supervision of the coach. Unfortunately, most coaches develop technical methods during general team training, but neglect individual training. This is not enough training for training goalkeepers. Coaches focus on training their teams, and goalkeepers often stand idle. During such training, the workload of goalkeepers is very low [5, 6, 7].

2.4. A set of sample exercises designed to develop and improve goalkeepers' techniques for catching, returning and passing the ball.

1. In the initial position, quickly raise your hands up at the signal of the coach.
2. Imitation of returning balls thrown from above at different heights.
3. Performing a jump kick with different feet to return a ball coming from the side and above the head.

4. Performing a step kick to the side to return a ball coming from a distance of 1-1.5 meters to the side.
5. Stepping forward, backward and to the sides, placing the inside of the foot on a straight line.
6. Jumping from foot to foot while standing, turning the knee and palm of the free leg forward.
7. Two goalkeepers stand parallel to each other at a distance of 6-8 meters. They pass and receive the ball in various ways: first from above, below, from the floor. During the exercise, the distance between them is gradually increased to 20-25 meters. The exercise is performed at an average pace for 10-12 minutes.
8. The goalkeeper, standing in front of the wall, hits the ball against the wall, catches the ball that bounces off the wall or slows down the ball. The exercise is performed for 3-5 minutes.
9. Two goalkeepers stand between two players. Each player has a ball in their hands. One player throws the ball up in front of him, the goalkeeper standing next to him quickly goes to catch the ball. The second goalkeeper also performs the same movement. Each goalkeeper performs the exercise 10-12 times.
10. The goalkeeper stands at the goal. His partner throws the ball into the lower corners of the goal from a distance of 7-8 meters. The goalkeeper moves, takes a step and blocks the ball using the "jumping with his foot" method (vipad) or slows down the ball. Then he takes the initial position.
11. The goalkeeper stands in the middle of the goal. His partner, from a distance of 5-6 meters, tells in which direction to throw the ball. The goalkeeper turns 180° and returns the ball with his feet and hands. The blows are first given slowly, from a distance, and then the blow is given with force from a closer distance. The exercise lasts 2-3 minutes.
12. Perform an accurate pass to a target drawn on the wall from a distance of 10-15 meters.
13. Accurately hit the ball to the targets placed on the center line of the field
14. The players stand in the corner of the field with the ball in their hands. The goalkeeper throws the ball to the goalkeeper and runs from the right wing to the opposite goal. When the player reaches the center line of the field, the goalkeeper passes the ball from the 6-meter zone to the running player. After receiving the ball from the center line, the player jumps to the ground and performs a shot at the goal.
15. As in the above exercise, only from the left wing he runs towards the opposite goal. When the player reaches the center line of the field, the goalkeeper passes the ball from the 6-meter zone to the running player. After receiving the ball from the center line, the player jumps to the ground and performs a shot at the goal.
16. The players stand in the goalkeeper's area with the ball. The player throws the ball to the goalkeeper and runs with his back to the opposite goal. The goalkeeper goes to the 6-meter zone and throws the ball to the running player. The player receives the ball thrown by the goalkeeper, turns to the front and jumps to the goal, jumping and performing a shot at the goal.
17. The players are positioned on both sidelines and in the center of the field. According to the coach's instructions, the goalkeeper passes the ball accurately to the player in the center. The player in the center passes it to one of the wing players to take a shot at the goal. If no signal is given, then the player takes the shot himself.
18. The goalkeeper is positioned 3-4 meters from the wall. His partner, who is behind him, throws the ball in his hand to the wall. He returns the ball that bounces off the wall with his hands. The exercise is performed for 2-3 minutes.
19. The goalkeeper stands 4-5 meters from the wall. The goalkeeper returns the ball thrown by his partner to the wall with the inside of his heels. The exercise lasts 3-5 minutes.
20. The goalkeeper stands 5-7 meters away. The partners throw the ball to the goalkeeper by giving a sound signal. The goalkeeper turns 180° and returns the balls with his hands. After 1-2 minutes, the goalkeepers change places.

21. Several goalkeepers stand in a "circle". One goalkeeper stands in the center. He must protect the stuffed ball placed in the middle with his feet. The partners forming the "circle" pass the ball to each other and must try not to touch the stuffed ball and return the balls with their feet. At the appointed moment, the goalkeeper in the middle changes.

22. The partners stand facing each other at a distance of 5 m. The first partner, holding the ball, unexpectedly throws the ball to the second partner. The partner, who is the goalkeeper, returns the ball using the "split" or "half-split" method. The exercise is repeated for 3-5 minutes.

23. The goalkeeper stands next to one of the goal posts. The partner begins to roll several balls alternately towards the goalkeeper (to the right or left). The goalkeeper returns the balls using the "half-split" and "split" methods. The exercise is performed several times.

24. The goalkeeper stands at the goal with both hands raised above his head. His partner throws the ball from a certain distance to the upper corner of the goal. The goalkeeper performs the movement of returning the thrown balls alternately with both hands. The exercise is performed several times

25. The goalkeeper is positioned in the middle of the goal. The ball is hung in the upper right corner of the goal and the ball is placed in the lower left corner. The players on the field form a line and try to hit the balls hanging in the goal and on the floor in turn. The goalkeeper uses his feet and hands to return the balls hanging and on the floor without touching them. The exercise is performed several times

26. The goalkeeper stands in the middle of the goal with his legs wider than shoulder width apart. His partner tries to put the ball into the goal between his legs. The goalkeeper quickly brings his legs together and tries not to let the ball pass. The exercise is performed several times

27. The goalkeeper is positioned closer to the left post. His partner throws the ball with force into the upper right corner of the goal. The goalkeeper throws the ball and falls back. After repeating the exercise several times, the goalkeeper changes his previous position. His partner kicks the ball into the upper left corner of the goal.

28. The goalkeeper stands 20-30 cm away from the goal post. His partners take turns throwing the ball with force into the space that has appeared between the goal post and the goalkeeper to score a goal. The goalkeeper, in turn, returns the ball. The exercise is performed several times.

29. The goalkeeper stands closer to the right corner of the goal. The partner throws the ball into the lower corner of the opposite side with a kick. The goalkeeper returns the ball, moving step by step in the "half-split" and "split" methods. The exercise is performed several times

30. Attack from the wing. The goalkeeper stands on the side of the goal with his arms lowered. The partners throw the ball into the goal from above. The goalkeeper returns the balls with his arms. The exercise is performed several times.

31 The goalkeeper stands in the middle of the goal with his arms raised. The players throw the ball into the goal from a distance of 7 m. The goalkeeper returns the ball with his feet and hands.

32. The goalkeeper stands in the middle of the goal with his arms raised. The goalkeeper steps to the left, the attacker throws the ball to the right. The goalkeeper, sensing the movement of the player throwing the ball, quickly returns the ball. The same exercise is performed on the other side. The exercise is performed several times on each side.

33. Same as exercise 2, only the goalkeeper stands 2-2.5 meters in front of the goal with his arms raised.

34. Returning a 7-meter free kick. The players, according to the coach's instructions, throw the ball into the goal, the goalkeeper tries not to let the ball pass (the speed of the ball is gradually increased).

35. The goalkeeper takes his place. His partner attacks with 8-12 balls. When his partner swings, the goalkeeper sharply swings both arms down and immediately raises his arms up to hit the ball thrown to him. When performing the exercise, it is required to throw the ball with maximum force and at the shortest distance.

36. With his arms raised, the goalkeeper stands in the main position 2-2.5 meters in front of the goal. His partners throw the ball into the upper corners of the goal without jumping from a distance of 7 meters. The goalkeeper throws the ball and returns it. The exercise is performed several times.

The program provides instructions on the use of technical methods and physical training of goalkeepers depending on their age and qualifications. The requirements (exercises) of the program also require attention to the development of the individual characteristics of goalkeepers. Therefore, the number of completions of the three stages in the program gradually increases, and thus the level of the load also increases.

1. Starting from a starting position (lying down, sitting, standing, etc.), run 10-12 meters and catch the ball.

2. Hitting the ball against the wall in the basic stance and returning the ball that has bounced off the wall with the hands.

3. Hitting the ball against the wall in the basic stance and returning the ball that has bounced off the wall with the feet.

4. Sit on a gymnastic bench and bend back.

5. Swing forward and backward (fly) on the horizontal bar, bending the arms

6. Perform a step-by-step movement from the main position.

7. Return the ball by performing the "half-split" and "split" movements with the balls placed near the goal posts.

8. Return the given shot after the forward roll.

9. Reduce the speed of the ball by jumping on the thrown balls.

10. Return the ball by jumping over obstacles of different heights.

11. Jump and catch the ball that bounces off the wall.

12. Perform an accurate delivery of the ball when organizing a counterattack.

Table 2

The program provides the stage and amount of exercise to be performed.

Program No	Exercises	Doing		
		First Step (times)	Second Step (times)	Third step (times)
1	Starting from various positions (lying down, sitting, standing, etc.), run 10-12 meters and catch the ball.	10	12	14 more
2	In the basic stance, hit the ball against the wall and return the ball with your hands after it bounces off the wall.	40-60	60-70	70 more
3	In the basic stance, hit the ball against the wall and return the ball with your feet after it bounces off the wall.	40-60	60-70	70 more
4	Leaning back while sitting on a gymnastic bench	20	25	30 and more
5	Writing with folded arms, swinging back and forth (flying) on the brush	5-7	8-10	11-12 and more
6	In the basic Turkish position, perform a step-by-step sliding movement.	40-45	45-55	65 and more
7	Return the ball by performing the "half-split" and "split" movements with the balls placed near the goal posts.	20-25	25-30	30 and more
8	Return the shot after the ball has rolled forward.	8	10	12 and more
9	Reduce the speed of the ball by jumping on the thrown balls.	15-20	20-25	30 and more

10	Return the ball by jumping over obstacles of various heights.	20-25	25-30	30 and more
11	Jumping and catching the ball that bounces off the wall.	40-45	50-60	60 and more
12	Performing a precise delivery of the ball when organizing a counterattack.	13-15	16-20	20 and more

In addition to the above-mentioned set of standard exercises, equipment, devices, tennis balls (regular and weighted), special rubber bands, spring-loaded devices, bandages worn on the legs and arms, and other types of equipment and devices were also used during the training.

Over a period of 6 months, control tests were again taken with the participants of this group to determine the effectiveness of the exercises included in the training sessions.

Table 3

Evaluation of goalkeepers' accuracy in catching, rebounding and passing the ball based on special tests

(after the study n=10)

№	Player	Accuracy of returning balls shot from the 7-meter penalty line	Accuracy of rebounding balls from the 9-meter free throw line	Accuracy of returning balls that bounce from the 6-meter line while moving	Goalkeeper's passing distance and accuracy for a quick attack (break) (cm)	Accuracy of returning consecutive shots from both corners of the goal	
Number of executions		10 times	10 times	10 times	cm	5/5 times	
1	M.Sh.	6	7	5	28	4	2
						6	
2	N.A.	6	7	5	26	2	3
						5	
3	M.A.	5	6	5	23	4	1
						5	
4	R.A.	7	8	6	24	4	3
						7	
5	A.D.	6	7	6	27	3	3
						6	
6	M.S.	7	7	5	27	4	2
						6	
7	A.Z.	5	6	6	26	2	2
						4	
8	S.N.	7	7	6	25	5	2
						7	
9	E.O.	6	6	5	24	3	3
						6	
10	T.U.	6	6	4	26	3	2
						5	
ΣXi		61:10=6.1 %	67:10=6.7%	53:10=5.3 %	256:10=25.6 %	57:10=5.7%	
Min-max		5/7	6/8	4/6	23/28	4/7	
$\bar{X} \pm \sigma$		7.0±0.2	8.0±0.2	6.0±0.2	28.0±0.5	7.0±0.3	



### 3. Results

#### 3.1. Analysis of the achieved results

According to the comparative analysis of the research results, it was found that the post-study performance of young goalkeepers significantly increased compared to the pre-study performance. It is no exaggeration to say that the effectiveness of the model set of exercises and training microcycles recommended by us in the training process of young goalkeepers in developing the accuracy of catching, returning and passing the ball is significant.

According to the current point of view, training exercises for the development of the accuracy of catching, returning and passing the ball by young goalkeepers are carried out using two main methods, namely continuous and interval methods. Both of these methods can be used both uniformly and in a variable manner.

Thus, the main analysis of the goalkeepers' efforts to develop the accuracy of catching, returning and passing the ball is to determine the effectiveness of the returned and passed ball. Undoubtedly, the difference between the results obtained in competitive activities and the results obtained during the training process serves as a key tool [7,8].

Based on the results obtained and the correlation analysis of the main classification, it was found that the goalkeepers' performance in catching, returning and passing the ball improved from  $5.0 \pm 0.2$  before the study to  $7.0 \pm 0.2$  after the study. The accuracy of returning balls from the 9-meter free throw line improved from  $6.0 \pm 0.2$  before the study to  $8.0 \pm 0.2$  after the study. The accuracy of returning balls from the 6-meter line on the move improved from  $4.0 \pm 0.2$  before the study to  $6.0 \pm 0.2$  after the study. The distance and accuracy of the goalkeeper's passing the ball for a quick attack (break) (cm) improved from  $22.0 \pm 0.5$  before the study to  $28.0 \pm 0.5$  after the study. The accuracy of returning balls shot consecutively from both corners of the goal improved from  $5.0 \pm 0.3$  before the study to  $7.0 \pm 0.3$  after the study. The accuracy of catching, returning and passing the ball of young goalkeepers was also studied during the competition period and the results obtained were compared with the test results. In addition, it was observed that young goalkeepers performed more and faster individual technical and tactical actions than other players. In order to comprehensively increase the accuracy of catching, returning and passing the ball of young goalkeepers, it was proven that paying more attention to the training process has proved its worth. Therefore, it has been proven that the application of the results of this study to the process of handball training is important.

#### 4. Conclusion

Nowadays, goalkeepers of the best modern teams are required to be agile, physically strong, and tall. Therefore, the selection and training of goalkeepers is of great importance.

The most important stage in the training of goalkeepers is the initial training group. At this stage, the rational formation of the technique of rational movements of young goalkeepers, as well as the effective development of their skills, is the key to the training of highly qualified goalkeepers.

Therefore, according to the above research results, making changes to the system of training processes at this stage creates a need to eliminate typical mistakes in the technical training of goalkeepers. Such mistakes indicate the need for an individual approach, in particular, an increase in scientifically based training and exercises.

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