



Specific Physical Performance Assessment and some of Combined Offensive Skills in Handball Players

Raheem Ateia, Mohammed M.

Faculty of Physical Education\ University of Misan
Faculty of Physical Education\ University of Misan
dr.mohammed@uomisan.edu.iq
Mohammed_mijad@yahoo.com

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ABSTRACT

The aim of this study was to investigate specific physical performance assessment and some of combined offensive skills in handball players. Eleven male handball players were selected intentionally aged more than 20 years were assigned into one group (n=11). A descriptive research design was used because it is suitable to the nature of the study. Goalkeepers were not included. The descriptive group was subjected to 2 testing periods (specific physical performance tests and combined offensive skills tests) divided into two days. Specific physical performance comprised: explosive strength of arms, explosive strength of legs, speed strength of abdomen, endurance of speed strength, and speed endurance. Combined offensive skills comprised accuracy in shot and dribble speed, and zigzag dribble and then throwing from jumping. Specific physical performance tests were conducted on December 2, 2013 and combined offensive skills tests were run on December 15-17, 2013. Data was analyzed by using SPSS. A significant relation between explosive strength of arms, explosive strength of legs, endurance of speed strength and accuracy in shot and dribble speed, and zigzag dribble and then throwing from jumping (Tabulate $R= 0.582$) (0.682, 0.681, 0.814, 0.799, 0.901, 0.932) respectively. No significant relation between speed strength of abdomen, speed endurance and accuracy in shot and dribble speed, and zigzag dribble and then throwing from jumping (Tabulate $R= 0.582$) (0.576, 0.325, 0.342, 0.260) respectively. Study concluded that the tests were designed in present study have an ability to evaluate of specific physical performance and combined offensive skills, where showed a significant relation among specific physical performance and combined offensive skills but no significant relation between speed strength of abdomen, speed endurance and accuracy in shot and dribble speed, and zigzag dribble and then throwing from jumping.

Keywords: Specific physical performance, assessment, combined offensive skills, handball.

1. Introduction

Sports movement is taken strides in all areas in the last century and depended on the precision scientific basis as approach for the development and creativity. The result of this developing is a high level of the sport in the early of twenty first of century. The scientific development included all areas of life and also involved physical field was a result of the use of objectivity tools such as measurement and tests. Measurements and tests consider important tools that aim to consolidate the programmer doing as well as evaluation of different side of life generally and aspects related to sports activity specially (Marwan, 1999). Practice in the field of Physical Education has shown many sorts of tests, for example, field tests which including laboratory tests. Field tests consider the type that distinguishes the sports activities being measure large numbers of persons accurately and efficiently during a short time. In addition it is participating to get a result of physical performance and skill performance speedy.

Physical and skill tests which are used in the evaluation process, are one of the important means by which can evaluate the case of the player or the team objectively thus knowledge of the strength and weakness points in which identifying indicators of the player status or team and compare that with aims of training process to achieve it. Measurements and testes in handball help to know the case of training generally whether basic skills or physical characteristics (Kamal & Mohamad., 1980).

Many of evaluation studies are done at recent years but no study has investigated sides of this important subject and still an urgent need to achieve other studies in the areas of tests and measurements, such as an evaluation according to certain limitations. Present study is focused on evaluation the best determinants for the handball players, for example, physical limitations or merging offensive skills and determine scientific aims for this testes so as to make ensure of their accurate in measuring the physical characteristics as require by analysis process through its consistency with distinguishing factors and in accordance with the conditions which make by the tester.

Current study will give early picture for the specialists and people are interesting on this subject and also will open the horizon to more studies which serve physical movement in generally and handball specially because the directors, coaches and people are interesting in the educational process as well as training in urgent need to understand the determinants of tests and measurements which plays an active role in the process of improving individual to be in high levels, and the role of these determinants of high effect in the training process. However, the aim of this study was to investigate specific physical performance assessment and some of combined offensive skills in handball players.

2. Methodology

2.1 Participates:

Eleven male handball players were selected intentionally aged more than 20 years were assigned into one group (n=11). A descriptive research design was used because it is suitable to the nature of the study. Goalkeepers were not included.

2.2 tests:

The descriptive group was subjected to 2 testing periods (specific physical performance tests and combined offensive skills tests) divided into two days. Specific physical performance comprised: explosive strength of arms, explosive strength of legs, speed strength of abdomen, endurance of speed strength, and speed endurance. Combined offensive skills comprised accuracy in shot and dribble speed, and zigzag dribble and then throwing from jumping. Specific physical performance tests were conducted on December 2, 2013 and combined offensive skills tests were run on December 15-17, 2013.

2.2.1 Throwing medical ball weighted (800g):

This test aims to measure explosive strength for arms. Each player was achieved three endeavors and recorded the best one. Player will try to throw the ball to the maximum possible distance and measure the distance from the throwing line to the place of ball touch (Dya & Nawfal., 2001).

2.2.2 Stability high jump test:

This test aims to measure an explosive strength for legs. Player puts his fingers into Wight powder and then extends his arm up with jump and doing a mark to the blackboard. Player will do two marks first of mark before jumping and second mark after jumping, researcher will measure the distance between two marks which explain the explosive strength for legs (Mohammad., 2001).

2.2.3 Lie down sit test for a period (20) second:

This test aims to measure speed strength for abdomen muscles. Tester lying on his back and hands intertwined behind the neck (the colleague install two legs), and when tester hears the signal to start, he bend the trunk to get into a sitting position in length, he repeats many times as possible in 20 seconds. Researcher will account the number of performance during 20 second (Ahmad & Ali., 1996).

2.2.4 Run and jump test for 50 m:

This test aims to measure endurance of speed strength; Player is jumping on the 9 m line with high strength as at match, player has not to run in an arc, but running in a straight line to the end of the middle of the court. The spend time is recorded for each player (Emmad, 1999).

2.2.5 Test of running confrontation and back for a distance of 252m:

This test aims to measure endurance of speed. Player is standing on the line (6) meters when hearing signal the start, the player is running from the line (6) meters to the line of the (9) meters (3) meters, then ran back to the back (the back) until the line (6) meters (3) meters, and then the player starts from the line (9) meters of the other goal (22 meters) after that ran back up to the back center line (11 meters), and then starts the player to the line (6) meters of the goal, the other (14 meters) and then back ran the back line up the 9-meter (5) meters, then run until it reaches the line of (6) meters (3) meters high, and thus the player has led the test once and for distance (84 meters) repeats this work (3) consecutive times. Total time is recorded for three circles (Dya & Nawfal., 2001) .

2.2.6 Merge offensive tests:

2.2.6.1 The accuracy of the far away shoot from jumping after straight dribble to the distance of (5m) two ways\ 8 balls test:

The goal of this test is to measure the accuracy of the shot and speed of dribble. The player Stands behind the starting line and the ball with his hand on the remote (12m) of the goal and when he hears the start signal the referee running the stopwatch, then tester starts straight dribble for a distance of (5m) and when he is arrival at the pillar turn around to the line of implementation and then shot from the jump, after that receives the ball from assistant and performance is continuing to compliment (8) consecutive repeats then stop the stopwatch, as shown in fig (1). The total degree of shot accuracy test is (40) degree.

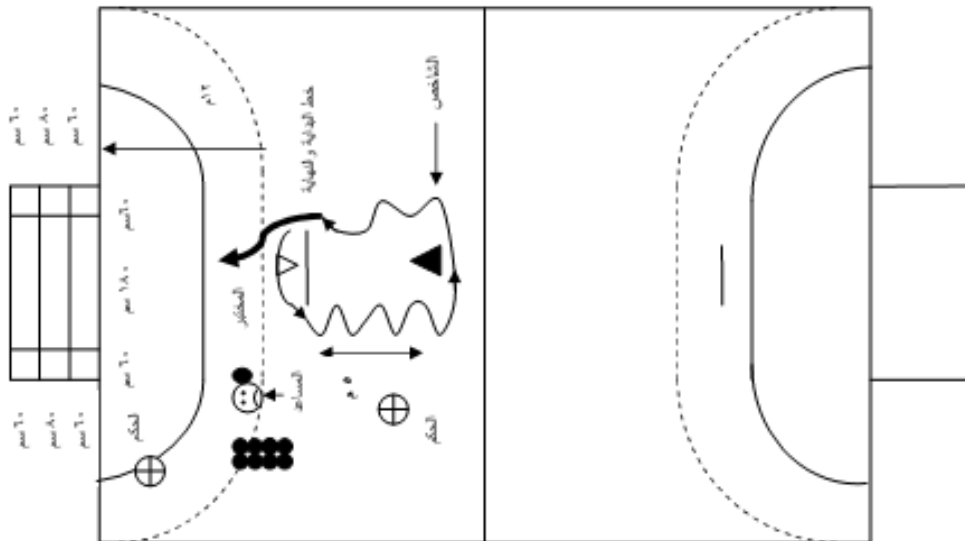


Figure 1. Shows accuracy shot test

2.2.6.2 Test of dribble and shot:

The aim of test is to measure zigzag dribble and shot from jumping. the tester stands in the middle of the half line where five medical balls on the ground when he hears the signal from the arbitrator, tester picks up ball then starts zigzag dribbling between the medical balls to be up to the bar set at a height of (2 Mali 2.5 m) for the shot of the ball above using the shot of the jump, then back again to pick up a second ball and repeat the same action to be aiming for the five balls. Time of the performance is recorded until complete the five balls, figure (2) shows the test.

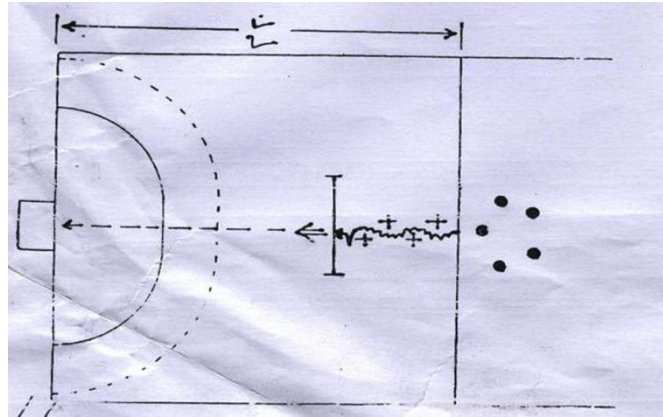


Figure 2. Shows test of dribble and shot

2.3 Main experiment:

Main experiment was conducted after determining of the most important of tests such as physical performance test on December 2, 2013 and merge offensive skill tests on December 15, 2013.

2.4 Statistical analysis:

SBSS was used to analyze the data of present study and we used following statistical.

1- Mean 2- Standard deviation 3- Dependent T test 4- Independent T test and 5- Correlation coefficient.

3. Results and Discussion

Different results were showed in present study as shown in table (1, 2, 3, and 4).

(Table 1)**Shows mean, standard deviation, the lowest and highest value of the research variables**

Performance tests of physical and combined offensive skills	Measure	Statistical values		Low value	High value
		Mean	SD		
The explosive power of arms	M	28.727	1.190	26	30
The explosive power of legs	CM	49.818	1.834	47	53
Speed-strength of the abdominal muscles	Repeat	16.908	0.831	15	18
speed-strength endurance	S	38.909	1.921	36	44
Speed endurance	S	86.363	0.924	84	88
Shoot accuracy and fast of dribble	Degree	16.363	1.120	15	19
Zigzage dribble and shooting from jump	S	35.909	1.513	33	40

(Table 2)**Showed the correlation array for the physical performance with each**

Specific physical performance	The explosive power of arms	The explosive power of legs	Speed-strength of the abdominal muscles	speed-strength endurance	Speed endurance
The explosive power of arms	-	*0.708	0.276	*0.731	**0.826
The explosive power of legs		-	0.447	**0.818	0.574
Speed-strength of the abdominal muscles			-	0.182	0.308
speed-strength endurance				-	0.358
Speed endurance					-

At (9) degrees of freedom and the level of 0.05%, the value of the table's correlation is (0.582).

(Table 3)
Showed specific correlation array for tests of merged offensive skills with each

Merged offensive skills	zigzage Dribble and shooting from jump	Value R tabulate	Significant
Shooting accuracy and speed dribble	**0.922		S

At (9) degrees of freedom and the level of 0.05%, the value of the table's correlation is (0.582)

(Table 4)
Shows correction array relate to specific physical performance with merged offensive skills

Variables	Accuracy correction The speed dribble	Significant	Zigzag dribble and jump shot	Significant
The explosive power of arms	*0.681	S	*0.681	S
The explosive power of legs	**0.799	S	0.799	S
Speed-strength of the abdominal muscles	0.576	No S	0.325	S
speed-strength endurance	**0.901	S	**0.932	S
Speed endurance	0.342	No S	0.260	No S

At (9) degrees of freedom and the level of 0.05%, the value of the table's correlation is (0.582).

Tables (1,2,3,and 4) are showed a high correlation between specific physical performance and merged offensive skills, whenever physical performance of the player is increased the mastering of the merged offensive skills will be increased and he can control of the tactical and offensive duties with the best image during the match without the appearance of tiredness. Mayouf and Amer (1988) referred that specific physical characteristics are one of the sides which help the player to do the perfect performance and aim to display certain physical characteristics and prefer according to the requirements of the skill or effectiveness. Nabeel (1990) sees that players who are characterized by high physical performance with the ability to perform skills in the all of match conditions).

Explosive power of arms is one of the physical characteristics which handball player has to have them, it is a combination of strength and speed made by the player through offensive or defensive performance, when player is performance the movements such as jumping, throwing, and shot in handball, he needs to show the maximum possible force and at very high speed to perform these skills, some studies are mentioned that the players of handball using this physical characteristic by achieving movements or motor skills performed through a few repeating.

The explosive power of the muscles of the legs have an effective impact in the game of handball because the player through performance specific physical test has gained the required balance while performing various skills, especially during the implementation of the integrated skills which need to varied movements, it is one of the basic requirements of the handball players when performing component motor skills such as jumping through perform the shot from back line, in the same time, defense players is jumping up to do a block wall to prevent opponent players of jump into their goal, we understand from this that the players need this physical characteristic in the case of offensive and defense during the match.

The importance of speed-strength in handball is appeared when player carried out fast and powerful moves in attack through the optimal use of the arm in the process of handling and shot or through fast start and a sudden stop to let the opponent can't unexpected the movements of player as well as doing movements of deception, whether with or without ball. Player of handball must have of the possibility of performance speed endurance; it is a characteristic which helps the player to exert high physical effort relatively and quickly. "The element of endurance itself in different forms contributes to the mastery of offensive skills' (Matnejewl., 1978).

Dribble skill has an important role in handball if we use it well; it is coordination neuromuscular between all members of the body where it is performed harmonically and control without stiffness or tension as it is used when we do not find any colleague in a suitable place to pass the ball and when we are uniquely with goalkeeper but we don't have in front of us only the goal. However, Ggermanaiscu (1997) said that dribble skill is one of the offensive skills in special circumstances as a player starts dribble and there is no free colleague of surveillance can be handling the ball, dribbling is one of the key factors to keep playing in offensive.

The shot is an essential motor skill in handball which is a final motion of all technical efforts which is used to access the player to position of shot as well as the purpose of all movements of the offensive to finish the shot successfully on the goal of the opposing team whenever the game is divided into flexible and dynamic and was characterized by streamline and accuracy in terms of performance increased the happiness of players, especially if we are merged the movement with shot, Al-Hashimy (1981) showed that shot is an offensive technical skill the purpose of it to shot the ball into goal.

4. Conclusion

Study concluded that the tests were designed in present study have an ability to evaluate of specific physical performance and combined offensive skills, where showed a significant relation among specific physical performance and combined offensive skills but no significant relation between speed strength of abdomen, speed endurance and accuracy in shot and dribble speed, and zigzag dribble and then throwing from jumping.

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