Building and Codifying the Test of Defensive Moves and Shooting Accuracy from Jumping in Front for Handball Players Ages (15-17) Years

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Abstract

The importance of the research lies in the construction and codification of a test for defensive moves and the shooting accuracy from front jumping for handball players and placing this test under the hands of coaches to detect the levels of handball players of ages (15-17 years), and work to develop their levels through this test. And to achieve the goals, the researchers used the descriptive method in the survey method to suit it with the research problem, and the research community included handball players of (15-17 years), and the sample was chosen by the deliberate method, and their number is (60) players, which represent a percentage of (57.14%) of the research community, the researchers conducted exploratory experiments. The validity of the test was confirmed and its scientific characteristics (truthfulness, consistency, and objectivity) were verified as well as its ability to distinguish the research sample, and appropriate statistical treatments were carried out. The process of evaluating the game of handball, and contributes to raising the levels of skills (defensive and offensive) handball research subject, the researchers recommend the adoption of the defensive moves test and the accuracy of shooting by jumping forward in the process of continuous evaluation of the players in addition to this is an important factor in selecting qualified players within their clubs and the national team with handball, and building other complex tests on age groups other than the current research sample as well as complex skills (defensive and offensive) that were not discussed, as well as the interest in training the skills that were covered in the study and comprehensive scientific approaches to the complex skill aspects (defensive and offensive) together.

Key words: *Building and codifying tests, defensive moves, shooting accuracy, handball.*

Introduction

Tests and measurement are among the necessary scientific means in the field of physical education because of their importance in the process of proper planning and the continuation of progress, as objective testing and accurate [1] scientific measurement have a great role in giving the true indication of what the player has of the capabilities, as it is one of the most effective evaluation methods in arousing the player. Towards learning and training to reach the highest levels of sports and its results indicate the player's performance level in a particular skill, as the player's awareness of the level he reached helps him to stabilize the successful response and try to correct and avoid wrong attempts [2]. Among the previous studies that dealt with such a topic is the study (Muhammad Anwar, 2013)(1), in which a battery was built to test basic offensive handball skills for second-stage students in the Faculty of Physical Education at Salahaddin University, and in another study (2), in which it was reached to prepare a test battery for special physical abilities as an indicator for the selection of talented people with hand reel in Diyala province, the study (3), found the construction and codification of a test battery for harmonic abilities and its relationship to emotional intelligence among handball players aged 13-15 years, in the study (4) reached an emphasis on the necessity of linking some physical abilities and performing some individual and collective defense moves within the limits of open defense formations, the study (5) concluded the design and rationing of two batteries for a (physical-skill)

test to select five-year soccer juniors in Baghdad at ages (14-16) years, in the study [6] , it found the construction and codification of tests (physical - physical and kinetic - skills) and their use in terms of information technology to test and market handball players at the ages of (16-17) years. From the foregoing, the importance of research in building and codifying a test for defensive moves and the accuracy of correction from jumping in front of handball players shows that we put a modest test under the hands of coaches to reveal the levels of players and work to develop their levels through this test.

Research problem:

As for the problem of the study, it came through the researchers' exposure to many researches and studies that dealt with the subject of tests and measurements in handball, and it was found that what was designed was either defensive tests separately or offensively separately, no one who took into account found that there are some constants that cannot be separated, and it is very necessary for there to be a link between these tests in order for them to be integrated and their use is better and optimal, as the research problem lies in linking defensive and offensive skills with handball, which gives scientific importance in finding more accurate and reliable measurements in designing tests for handball, these tests can be a substitute for the unilateral tests to be comprehensive to measure capabilities and skill (defensive and offensive) and to shorten the time and effort and reveal the weaknesses and strengths of those components to develop immediate solutions to them. Jumping in front of handball players of the ages (15-17 years).

Research objective:

- Building and standardizing the test of defensive moves and shooting accuracy from jumping in front of handball players of ages (15-17 years).

Research methodology and field procedures:

Research Methodology:

The researchers used the descriptive method in the survey method to fit it with the research problem.

Community and sample research:

The research community included handball players of (15-17 years) age, whose number is (105), and they are of a community of origin.), two exploratory experiment players, (40) players the building sample, (10) players the scientific foundations sample, (60) players the rationing sample consisting of the main experiment sample.

Devices, tools and means used in the research: The researchers used the following devices and tools :

- Legal handball court.
- (10) legal handballs.
- (3) digital electronic stopwatches (Casio).
- A Japanese-made whistle.
- (10) signs.
- (10) collars.
- Number barriers (5).
- Computer (laptop) type (Lenovo).
- Leather tape measure (20 m) length.
- (2) Japanese-made (Nikon) video camera.
- Adhesive tape, discs (CD).

Field research procedures:

Through the researchers' exposure to a lot of studies and research in the field of handball, which examined the most important abilities in terms of physical, skill, motor and functional aspects, as well as the researcher conducted personal interviews with some experts in the field of handball, the researchers reached a test for defensive moves and shooting accuracy From jumping forward with a handball.

Exploratory experience:

The researchers conducted an exploratory experiment on the closed hall of the National Center for Sports Giftedness and Handball affiliated to the Ministry of Youth and Sports, and the aim of the experiment is:

- The time to take the test.

- The validity of the tools and devices used in the research.

- Knowing the number and competence of the assistant work team.

- Diagnose errors and obstacles that will appear in the pilot experiment and overcome them.

Psychometric properties of the test:

Validity:

The researchers used the validity of the content (the content) by distributing a questionnaire form to the experts and specialists, totaling 10, to seek their opinions in determining the validity of the defensive moves test and the accuracy of the correction from jumping front, and they unanimously agreed on the validity of the tests.

Reliability:

Reliability was found by testing and re-testing, as the two researchers applied the test on the scientific foundations experiment sample, which is part of the building sample, which is number (10) players, and the test was repeated again on the same sample after (7) days, and the reliability factor was extracted using correlation coefficient (Pearson), where the results showed high reliability coefficients by observing the significance values which are less than (0.05), which indicates the significance of the correlation.

Table (1) validity and reliability of vehicle tests (Physical _ Skilled) used in the research:

Test name	Validity			Reliability
	Agree	Disagree	Parentage	
Test defensive moves and shooting accuracy from front jumping.	10	0	100%	0.639

Objectivity

As for the objectivity of the test, it is "the extent of clarity of the instructions for the application of tests and the calculation of grades" (Mustafa Hussein Bahi, 1999) [7] , and because all the tests depend on time, distance and number in their calculation, and validity and consistency are used, they are considered highly objective.

After the pilot experiments proved the correctness and safety of the steps and procedures that were implemented and their inclusion in the scientific conditions for the tests as well as their suitability for the research sample and the surrounding conditions, the two researchers applied the tests to the building sample.

As the researchers extracted the ease and difficulty coefficient by presenting the statistical description of the candidate tests, where the arithmetic mean, standard deviation and torsion coefficient were extracted for the candidate tests as in table (2), and if the values of the torsion coefficient were confined to (1+), this indicates that the tests used are distributed normal distribution, which means that the tests are appropriate.

Table (2) values of the mean, standard deviations, and skew factor of the tests:

Test name	Measuring unit	Mean	Std. Deviation	Skewness
Test defensive moves and shooting accuracy from front jumping.	Degree/second	0. 4530	0. 1280	0.200

The discriminatory ability was extracted as the raw scores for each test were arranged in ascending order from "the lowest degree to the highest degree, and (27%) of the higher grades and (27%) of the lower grades were selected in order to identify the ability of the tests to distinguish between the group of high level high and low level, (Waheeb Al-Kubaisi, 2010)[8] , and accordingly, a (T) statistical test was used for equal, unrelated samples.

Table (3) Test defensive moves and shooting accuracy from front jumping.

Test name	Measuring unit	High level		Low level		T value	Sig level
		Mean	Std. Deviation	Mean	Std. Deviation		
Test defensive moves and shooting accuracy from front jumping.	Degree/ second	0.611	0.009	0.300	0.060	16.964	0.000

Final specifications for testing defensive moves and shooting accuracy from jumping forward:

Test name: Test of defensive moves and accuracy of correction from jumping forward.

The purpose of the test: to measure the speed of defensive moves and the accuracy of correction from jumping forward.

Tools: handball court, hand balls, tape, tape measure, electronic stopwatch, whistle, signs, registration form.

Performance description: Three signs are placed as in figure (1), and the player stands in the middle on the 6-meter area line, and upon hearing the whistle, the player starts to touch the first person in the front, which is 3 meters away, and then pulls back to rotate around the second person, which is 3 meters away from the first person and a distance of 1.5 meters from where the player is standing, and to go forward to touch the first person, and then return by pulling back to revolve around the third person and then the player goes forward to receive the ball from the teammate and perform the correction process Jumping forward from an area (9) meters, as in figure (1).

Test conditions:

- The player must take the test as quickly as possible and in the shortest possible time.
- The player is given three attempts and the best is considered.

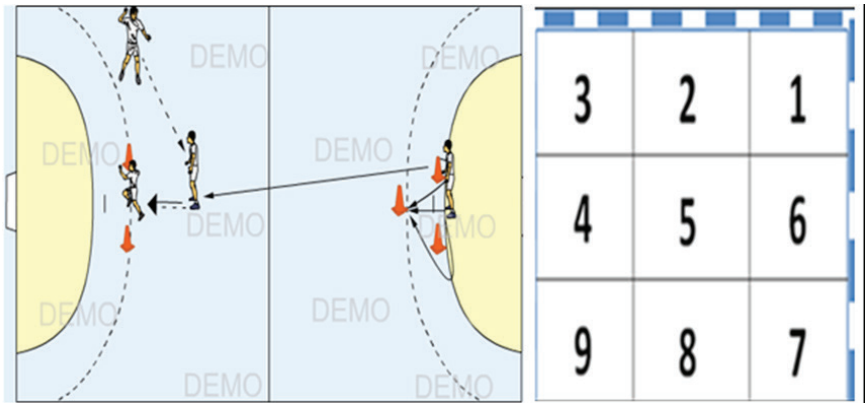

Figure (1) Defensive moves and shooting accuracy from front jumping.

Registration:

- The tester is awarded the score he gets from the precision areas in the target.
- (5) scores if the ball hits an area (1, 3, 7, 9).
- (4) scores if the ball hits an area (2, 8).
- (3) if the ball hits area (4, 6).
- Two degrees if the ball hits an area (5).
- One degree if the ball hits the edge of the squares inside the goal.
- Zero if the ball comes outside the goal.
- The time for the test is calculated by calculating the player's overall performance time from the moment the start signal is given to the ball leaving the player's hand and then the accuracy scores are calculated divided over time through the (modified FTS) law, which states: (Yaroub Khayun, 2010)[9] … Skill Performance = Accuracy / Time scores

The researchers used the statistical bag (Spss) (arithmetic mean, standard deviation, skew coefficient, percentage, simple correlation coefficient (Pearson Person), (T) test for equal asymmetric samples, standard scores (Z and T)).

Results

The researchers applied the tests on the rationing sample of (60) players. The results of the research were presented as shown in Table (4). The two researchers presented the statistical description of the candidate tests, as the arithmetic mean, standard deviation and torsion coefficient were extracted for the candidate tests, as it was found that the values of the torsion coefficient are all less than (+1), and this indicates that the tests used are suitable for the sample, as the test is appropriate if its distribution is normal, provided that the tests do not constitute a severe torsion. (Salah El-Din Muhammad, 2000) [10].

Table (4) shows the mean values of the arithmetic, standard deviations and torsion coefficient for testing defensive moves and shooting accuracy from jumping front.

Test name	Measuring unit	Mean	Std. Deviation	Skewness
Test defensive moves and shooting accuracy from front jumping.	Degree/second	0.457	0.136	0.171-

The researchers extracted the standard scores for the combined tests by converting the raw scores into standard (Zai and modified T), which indicate "the level that these individuals must reach in order for their answers to be considered acceptable (Salah al-Din Muhammad, 2000)[11] .

The criteria are a set of scores derived by certain statistical methods from the raw scores and are used in comparing the performance level of a particular individual with the performance level of the group to which he belongs, by deviating any score from the arithmetic mean of that group as the degree of an individual that he obtains in a test, (Raw score) has no meaning in itself and is not suitable for comparison with his score in other tests or with another person's score on the same test or on other tests unless it is converted into standard scores, so the criteria are important because they express how others perform on the test and thus provide a basis for that. For comparison. (Douglas N. Hasted & Alan C. 1998) [12].

Table (5) Standard scores (Z and T) for the defensive movements test and accuracy of correction from jumping forward.

Raw degree d / s	Z-degree	T degree	Raw degree d / s	Z-degree	T degree	Raw degree d / s	Z-degree	T degree
0.64	1.33765	63.38	0.57	0.82598	58.26	0.36	0.70903	42.91
0.64	1.33765	63.38	0.54	0.60669	56.07	0.36	0.70903	42.91
0.64	1.33765	63.38	0.53	0.5336	55.34	0.36	0.70903	42.91
0.64	1.33765	63.38	0.5	0.31431	53.14	0.35	0.78212	42.18
0.63	1.26455	62.65	0.49	0.24121	52.41	0.35	0.78212	42.18
0.63	1.26455	62.65	0.48	0.16812	51.68	0.35	0.78212	42.18
0.62	1.19146	61.91	0.48	0.16812	51.68	0.34	0.85522	41.45
0.62	1.19146	61.91	0.47	0.09502	50.95	0.34	0.85522	41.45
0.62	1.19146	61.91	0.47	0.09502	50.95	0.33	0.92831	40.72
0.62	1.19146	61.91	0.46	0.02193	50.22	0.32	1.00141	39.99
0.61	1.11836	61.18	0.46	0.02193	50.22	0.3	-1.1476	38.52
0.61	1.11836	61.18	0.45	0.05117	49.49	0.3	-1.1476	38.52
0.61	1.11836	61.18	0.45	0.05117	49.49	0.28	1.29379	37.06
0.6	1.04526	60.45	0.44	0.12426	48.76	0.27	1.36688	36.33
0.6	1.04526	60.45	0.42	0.27045	47.3	0.26	1.43998	35.6
0.6	1.04526	60.45	0.42	0.27045	47.3	0.24	1.58617	34.14
0.59	0.97217	59.72	0.4	0.41664	45.83	0.24	1.58617	34.14
0.59	0.97217	59.72	0.38	0.56283	44.37	0.22	1.73236	32.68
0.58	0.89907	58.99	0.38	0.56283	44.37	0.22	1.73236	32.68
0.58	0.89907	58.99	0.37	0.63593	43.64	0.2	1.87855	31.21

After it was recognized that the sample is normally distributed through the torsion coefficient, apart from obtaining its standard grades, the researcher used the kaos curve, which is considered one of the objective methods of grading assessment and is one of the most common distributions in physical education because many of the characteristics are measured in this the field is distributed naturally (Princess Hanna Morcos, 2001), the naive approach consists of (6) standard levels because the standard scores extend to (6) deviations, three of which are to the right of the arithmetic mean and three others to the left of the arithmetic mean, which

is over a period of six standard degrees corresponding to six standard levels, meaning that each standard score corresponds to six modified standard degrees (T) and it certainly corresponds to one standard level, and the standard levels are determined using the equilibrium curve through the following steps:

- We find the arithmetic mean and the standard deviation of the raw scores.
- We add the mean of the raw scores with their standard deviation and the three deviations towards the right of the curve.
- We subtract the standard deviation from the arithmetic mean of the raw scores and for three deviations to the left of the curve.
- So we get (7) standard levels and table (6) shows that.

Table (6) standard levels and ratios.

standard levels	Excellent	Very good	Good	Middle	Acceptable	Weak
Standard ratios	2.14%	13.59%	34.13%	34.13%	13.59%	2.14%

It is clear to the researchers from the above that there is a difference in the percentages of the standard levels achieved by the players according to the test compared to what is determined for them in the normal distribution curve.

The researcher explains the results as follows:

The sample on which the study was conducted is the players of the National Center for Giftedness for Handball, and the shorter training age is proportional to the levels obtained from the tests on them, as the concentration of the results and their ratios from the level (very good to average) and this shows that the sample does not have weak levels, this is a result of the players' involvement in organized training in a government institution that is interested in the game of handball and is the best in terms of support, although the presence of different proportions at these levels is due to individual differences between players, on the other hand, the players' failure to reach the (excellent) level in these tests is a clear indication of the lack of training curricula in specialized schools in handball. Training on physical abilities through skill in order to be a test for the player in achieving good results during his performance of skills in matches and this is what he indicated. (Abdel-Khaleq, 2003) "The improvement in skill performance depends on the extent of interest and development of the physical and motor aspects associated with the skill, and because most of the players' training is based on developing the skill side, this in turn helped to develop many aspects, including the physical and motor side of the player because repeated practice of the skill leads to reaching the correct performance of the skill with consistency, harmony and control without stiffness or tension. Daqqa (Wajih Mahjoub (et al.), 2000).

The researcher also attributes this to other reasons, including the difficult conditions the Iraqi sport has experienced, including the suspension and interruption of training due to the corona pandemic, as well as the lack of financial capabilities for the players, as well as the lack of continuous training camps and friendly matches at a good level through which the player can develop his skill and planning abilities In addition to the lack of complex skill tests (defensive-offensive) and the use of grades and standard levels to compare the performance of players and their skill abilities, and its adoption as a solution to judge the skill performance. the researchers concluded that the test of defensive moves and accuracy of correction is an objective test because it is more

realistic when evaluating the game of handball, and that it contributes to raising the levels of composite skills (defensive and offensive) with handball in question.

The researchers recommend the adoption of the defensive moves test and the accuracy of shooting in the continuous evaluation process for players. In addition, it is one of the important factors in selecting qualified players within their clubs and the national team with handball, and building other complex (defensive and offensive) tests on age groups other than the current research sample, as well as the skills that were not researched, as well as paying attention to training the capabilities and skills that were covered in the study and comprehensive scientific approaches to the skill aspects (defensive and offensive) together.

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Conflict of Interest: None to declare.

Ethical Clearance: "All experimental protocols were approved under the University of Baghdad and carried out in accordance with approved guidelines".

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