

DESIGN AND STANDARDIZATION OF FAST BREAK TESTS FOR JUNIOR HANDBALL PLAYER IN JORDAN**Dr. Omar A'mir¹, Dr. Maen Ahmad Mahmoud Sha'lan^{2*}, Prof. Mu'tasem Ahmad Farhan Khatatbeh²****¹Department of Basic Sciences Humanities Arts and Science faculty, Applied Science Private University, MEU Research Unit, Middle East University, Amman, Jordan; ²Physical Education Department, Faculty of Sport Science, Mutah University, Jordan****Abstract**

This study aimed to design, standardize, percentile scores and standard levels for fast break test in handball, the descriptive approach has been used. The study sample was formed of Junior handball team (born 2006-2007) whose number was 106 individuals that has been randomly selected. The researchers have conducted a set of interviews with some specialists in hand ball for building the tests of fast break in align with their actual reality. Four tests have been built for collecting data. To verify the validation of tests, the discriminant validity has been employed among the higher and lower groups, as the T value of the first test was (19.018-) and its significance level was (000.), as for the second level, its T value was (-16.994) and its significance level was (000.), while the T value of the third test was (-15.571) and its significance level was (000.), and the T value of the fourth test was (-18.903) and its significance level was (000.). To verify the reliability of the fast break tests of the juniors' handball team in Jordan, a correlation coefficient has been found in the two times of applications, as the first fast break test achieved a correlation coefficient of (.915) and its significance level was (000.), while the second test has achieved a correlation coefficient of (.805) and its significance level was (.000), and the third test has achieved a correlation coefficient of (.978) with a significance level of (000.). The Fourth has achieved a correlation coefficient of (.984) with a significance level of (000.) the standard percentile degrees have been determined from percentile 10 to 100, and the categories of the standard level have been determined based on the arithmetic average and the standard deviation between (-3 and +3). The study has recommended that the percentile degrees shall be used to reveal the weaknesses and strengths of the juniors of hand ball in Jordan in the fast break as well as conducting similar studies for the comparison of percentile degrees for the juniors of hand ball team in Jordan with the Arab and international teams.

Keywords: Fast break. Measurement. Testing**Introduction**

Indeed, drawing the goal of a training program for the development of the level of players is insufficient, unless it is accompanied by the follow-up and estimation of results, and demonstration of the effectiveness of the program developed aiming to the improvement of training, which is the motive for those who work in sports and training institutions to improve their performance, consequently, improving and developing of their

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training outputs.

Test and measurement are the means through which the physical and skilled condition of the player, or another specific determiner affecting the level of performance, therefore, specialists mastered in developing the appropriate tests and measurements of every area of physical education. The tests are restricted on being either subjective depending on personal experiences and subjective standards using recognizable and unquestionable measuring units. The world now tends to use the objective tests due to their accuracy of getting the results and noninterference of an external influence, especially, in the measurement of skills for sports through the substantive units of measurement as the units of repetition, degree, time, or distance (Tenenbaum et al., 2012).

The tests and measurements are among the necessary scientific means in the area of physical education for its prominent role in the sound design process and continuity of progress, as the substantive tests and precise scientific measurement have a big role in giving the real indicator of what kind of skills a player has, therefore, it's necessary to take advantage of it to enhance and strengthen the sports events in general and in the game of handball in particular (Saba & Sattar, 2018)

Objective tests are one of the most important means of evaluation in physical education, and also play a vital role in diagnosis, classification, evaluation, and help guide coaches and players alike to identify strengths and weaknesses in the basic skills that applicants need. Players (Obeid, 2019).

Test design and standardization in the sports field are one of the most important things that benefit teachers and trainers, as identifying the level of individuals can't be done without test, as the successful test design that achieves its objectives has to build and plan in the manner realizing a specific substantive objective as it is distinguished with sufficient clarity to all concerned parties (Sanusi et al, 2017).

Standardized tests are one of the most important methods that go back with great benefits on individuals with the aim of increasing the efficiency of their training process, moreover, building and standardization of a specific test on some samples representing the community of beneficiaries is fitter than their building on other samples representing another community, no matter how similar those communities were (Makhlouf, 2019).

A standardized test is that test whose vocabulary and instructions were

written in a manner ensures its reliability if repeated, and ensures its validity in measuring the attribute or phenomenon for its measurement it was developed. The standardized test goes through various steps before it appears in its final form that allows its application and generalization (Sabkha et al, 2020).

The test standardization is applied to samples similar to the one on which the test was designed, the results were similar in terms of validity, reliability, and objectivity (Sahib, 2016).

The researchers see that a standardized test is the test is being built with precise scientific steps and clear instructions, it was applied to the sample of design and its scientific foundations were extracted, and if applied to another sample similar to the design test, under the same circumstances, the results were similar in terms of scientific foundations (validity, reliability, and objectivity).

Handball is considered one of the games that have been greatly developed during the last years, this is noticed in international championships represented in speed of stilled and physical and planning performance, fast break, diversity in offensive and defensive tactics, it is also highly noticed in the good performance that reaches the extent in which the spectator can determine the winning and losing team only at the end of the original time of the match. All of that is only an outcome of the correlation of this game with other sciences such as tests, measurement, sports training, and other. Handball is one of the games requiring the qualification of players physically, skillfully, tactically, and physiologically reaching the best sports levels.

Fast break is one of the most effective offensive stages, and many teams rely on fast break as a good way to beat the opponent. The fast break stage starts once the defensive team turns into an offensive one. At this point, the team that possesses the ball has to think as fast as possible in a way that can enable it to reach the goal of the competitive team as fast as possible and with the least amount of time and effort (Najm, 2019).

The fast break happens when the opponent team misses the ball during passing. Players often run to the center line, aligning with the right line, then deviate inside to directly receive the passed ball from the goalkeeper or from the player controlling the ball. As the fast break can be performed by 2-3 players to score a goal, this method has to be performed fast because the more available the speed and surprising factors become, the more successful this way is and the more goals are scored (Fathallah, 2013).

The fast break is an attack distinguished with its being rapid velocity in the minute the team is moved from the defensive to offensive position towards the goal of the opponent team by a number of pivots exceeds the number of defenders trying to score a goal before the defending team organizes its defense lines (Awad, 2020).

The fast break is considered one of the best stages of attack in modern handball, and it witnesses the excellence of the teams that are good at playing the fast break. The chances of fast break increasing when the players' speed increases in moving from defense to offense, as well as the precise speed and the power with which passes and strokes are used during fast break, should be distinguished (Al-Qat, 2021).

Reliance on the scientifically standardized tests reflecting the real level is a necessity, moreover, they shouldn't stop at this step; however, they should be developed to reach the best and most accurate results. Therefore, the concern of this research in the design and standardization of the fast break tests in handball can be clarified.

With reference to previous studies that examined the design of tests in the handball game with the aim of clarifying the scientific gap that previous studies did not address, Where the study (Othman, 2017). aimed to find standard scores for stability passing tests, dribbling in different directions, stability high shooting, and jumping shooting on a sample of the Faculty of Physical Education students at Salah al-Din University, Iraq. Thus, these skills were not dealt with an integrated manner, such as the fast break skill, which combines many skills in handball.

Faisal (2014) study aimed to design a test for shooting accuracy from the wing center on a sample of youth club players in Iraq, and this was not combined with any other skill in the handball game.

Muhammad (2020) study aimed to create tests that measure the speed of offensive skills for handball players aged (14-17). These tests were applied using stations to detect the endurance of offensive skill performance and did not address the fast break skill.

Buchheit et al (2010)A study aimed at verifying the validity and reliability of shuttle run and jump test for handball players, and it did not address complex skills such as the fast break

Thus, the current study attempts to construct tests for one of the complex skills that combine many handball skills that were not addressed by previous studies.

Study problem

Sports have stepped broad steps, thus, achieving high levels of has become occupying the minds of scientists, researchers, and trainers in terms of reaching the level of achievement requiring the identification of all means contributing to realizing this level. One of the most important factors contributing to the development of this level is the adoption of standardized tests and measurement to track the level of players to develop the right standards clarifying the real level of achievement, as well as monitoring and follow-up of the development regarding skill and motor performance, given the development and change in the level of performance, the tests regarding performance should be standardized and reconstructed, because the old standards don't fit the current samples, For identifying the level that a player of any sport could reach, the necessary tests of this objective must be available, as, the tests are the substantive tests by which the training process and the level of different skills reached by players, are being evaluated, furthermore, those tests give both the trainer and players a right indicator whether negative or positive, thus, the importance of tests in the field of sports can be manifested, Handball assessment process is still suffering from some drawbacks in terms of the precision of measurement, objectivity of assessment, more, the comprehensiveness of assessment can't rely on a set of tests measuring some skills, and ignoring the other part of skills. Through the researchers' experience as instructors and trainers of handball courses, it's noted that there are some skills in handball that have no sustentative tests to measure or judge the level of the performers of those tests, in other words, they rely on the non-objective assessment and that method of measurement might not be objective, among those skills are that of the fast break which urged the researchers to conduct this study to design and develop some standard degrees for the skill of fast break in handball.

Study objectives:

1. Design and standardization of the fast break tests for junior handball Player in Jordan.
2. Setting percentile degrees and standard levels for the fast break tests for junior handball Player in Jordan.

Study questions

1. Are the tests designed for the fast break in handball distinguished with validity and reliability?
2. What are percentile degrees and standard levels corresponding to the ore grades on the tests designed for the fast break for junior handball Player in Jordan?

Study Procedures

Study approach: The researchers used the descriptive approach because it is the most appropriate approach for the study.

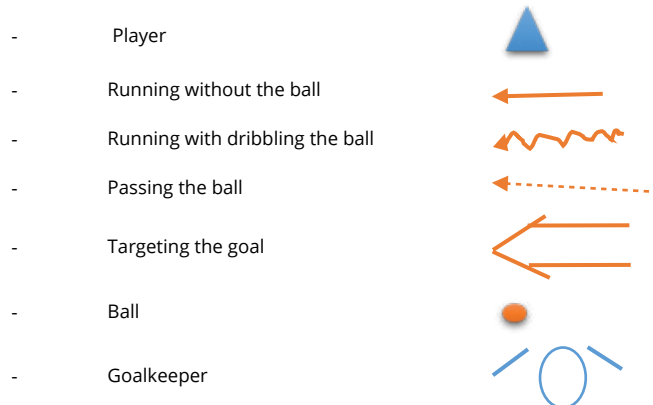
Study population: The study population has composed of the Jordan juniors of handball contributing to the Junior League for the year 2021/2022 from the (who were born in 2006-2007) counting ting (237) players, according to the statements of the Jordan Handball Federation.

Study sample: the study sample has been chosen randomly among the juniors of the handball whose number reached (106) juniors, knowing that the participation is optional and the participant has the right to withdraw from the study and secretly deal with the data, the approval of the guardian has been taken regarding the participation of the study. Table 1 shows the study sample (Table 1).

Through Table No. (1), it is clear that all moduli of torsion for the test under study have been within the limitations of (1) (-1) and this is consistent with what was referred to by Al-Manizal & Gharaibeh (2010) saying that the values of those limits are considered a prerequisite to the approval of degrees.

Designed tests:

• **The following symbols are used for the illustration of test application**



Test title: fast break (1)

Purpose: Measuring the performance speed of fast break

Equipment required: Stopwatch, handball, whistle, handball field

Procedure: The player to whom the test is applied stands at the center of the wing (outside the 9m line), then an assistant player stands at the center line carrying the ball, and when the coach whistles, the player existing at the center of the wing runs towards the player carrying the ball and then catches it from him and dribbles it towards the goal and then targets the goal and throws it on.

Measuring method:

1. Time is counted to the nearest second.

Table 1: The descriptive statistics for the fast break tests (N=106).

Test	Number	Lowest	Highest	Arithmetic Average	Standard Deviation	Torsion Modulus
First	106	5.33	7.03	6.1742	.36283	.272 .235
Second	106	4.93	6.99	5.9580	.35955	.056 .235
Third	106	5.02	7.26	6.2139	.40494	.013 .235
Fourth	106	5.31	7.09	6.0987	.34977	.276 .235

2. Time starts from the minute when the whistle is blown, and stops in the moment when the ball enters the goal.

3. If the performer makes any legal error, the trial won't be counted such as illegal dribbling, walking with the ball for more than three steps, or entering the goal area and the ball is under his control (Figure 1).

Test title: fast break (2)

Purpose: Measuring the performance speed of fast break

Equipment required: Stopwatch, handball, whistle, handball field

Procedure: The player to whom the test is applied stands at the center of the wing (outside the 9m line), then an assistant player stands outside the free-throw line, the 9m, at the center of the opposite field, carrying the ball, and when the coach whistles, the player existing at the center of the wing runs towards the player carrying the ball and then catches it from him, and takes some steps and approaches towards the goal, without dribbling the ball, then coming up to the goal and then targets the goal and throws it on.

Measuring method:

1. Time is counted to the nearest second.
2. Time starts from the minute when the whistle is blown, and stops in the moment when the ball enters the goal.
3. If the performer makes any legal error, the trial won't be counted such as illegal dribbling, walking with the ball for more than three steps, or entering the goal area and the ball is under his control (Figure 2).

Test title: fast break (3)

Purpose: Measuring the performance speed of fast break

Equipment required: Stopwatch, handball, whistle, handball field

Procedure: The player to whom the test is applied stands at the center of the wing (outside the 9m line), when the whistle is blown by the coach, the player existing in the center of the wing runs fast towards the center line and catching a ball passed by the goalkeeper, and after catching the ball by dribbling, he approaches towards the goal and throws the ball on.

Measuring method:

1. Time is counted to the nearest second and starts from the minute when the whistle is blown.

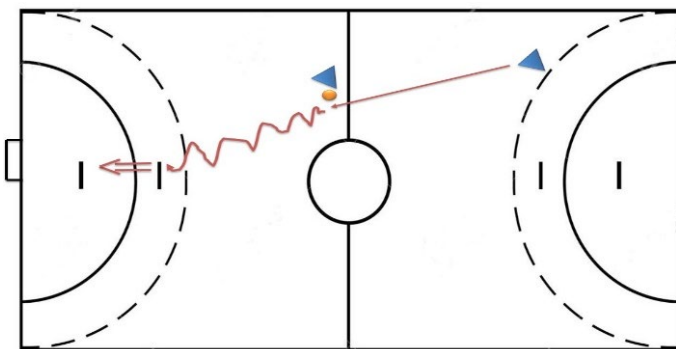


Figure 1: Fast break (1).

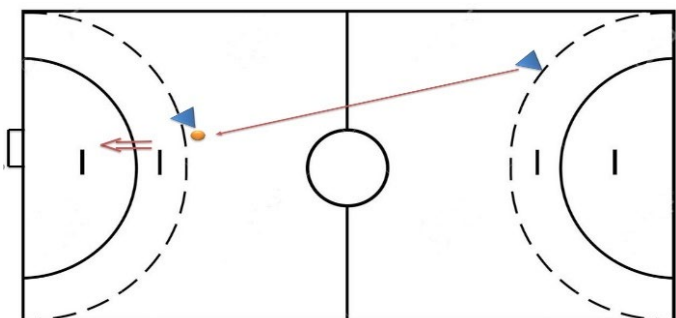


Figure 2: Fast break (2).

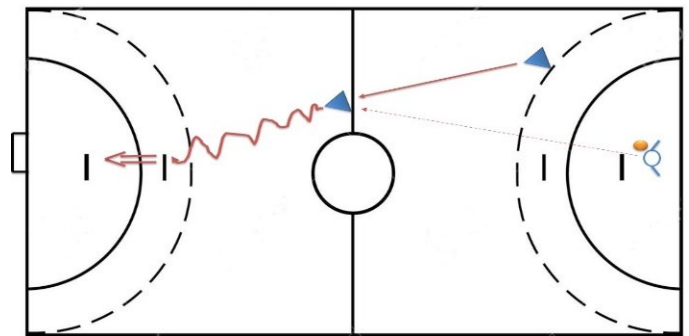


Figure 3: Fast break (3).

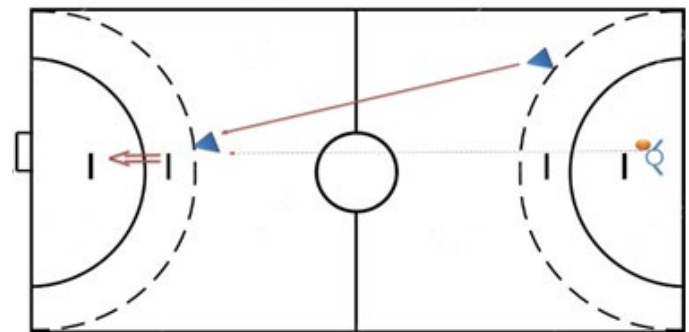


Figure 4: Fast break (4).

2. Time stops in the minute when the ball enters the goal.
3. If the performer does any legal error, the trial won't be counted such as walking with the ball for more than three steps, or entering the goal area and the ball is under his control (Figure 3).

Test title: fast break (4)

Purpose: Measuring the performance speed of fast break

Equipment required: Stopwatch, handball, whistle, handball field

Procedure: The player to whom the test is applied stands at the center of the wing (outside the 9m line), when the whistle is blown by the coach, the player existing in the center of the wing runs fast towards the free-throw line, the 9m, at the center of the opposite field, and receiving a ball passed by the goalkeeper, and after catching the ball and takes some steps and approaches towards the goal, without dribbling the ball, then coming up to the goal and then targets it and throws the ball on.

Measuring method:

1. Time is counted to the nearest second and starts from the minute when the whistle is blown.
2. Time stops in the minute when the ball enters the goal.
3. If the performer makes any legal error, the trial won't be counted such as walking with the ball for more than three steps, or entering the goal area and the ball is under his control (Figure 4).

Steps to build the proposed fast break tests

The researchers have conducted a set of interviews with the handball game specialists (coaches, academics) to develop a preliminary visualization of the nature and components of fast break in line with current reality of fast break.

Four tests have been adopted according to the recommendations of specialists, as, they are similar to the conditions of the real game, since, this kind of attack can be performed in several forms including, a pass by the goalkeeper, player, or the player controlling the ball to the individual player and performing fast break. This kind of attack can be performed through setting the advanced player away from the defense position from the opponent team and dribbling the ball towards the opponent's goal and performing the fast break, hence, the suggestion was that more than one tests should be designed to evaluate the level of players in this match.

Four tests are designed, then, submitted to a set of specialized arbiters to take their opinions and notes in terms of addition, adjustment, deletion, or any

other suggestions, they have agreed by 80% until the tests were extracted in their final form.

Pilot study

A survey has been conducted on (10) players outside the sample study, and this experiment has been applied to identify the method of applying the designed tests and the way of measurement, and identifying the most important mistakes that can happen through the process of application of those tests and training the assisting team to implement those tests. The researchers haven't encountered any significant problems.

Used tools and equipment:

(Legal handball court, handballs, whistle, data form, and stopwatch)

Statistical methods:

(Arithmetic averages, standard deviations, percentile grades, correlation coefficient, and percentages

View the results

To verify the study first question stating that" Are the tests designed for the fast break in handball distinguished with validity and reliability"?

The factors of validity and reliability of fast break tests are found by using apparent validity and showing them to a set of specialists in the handball game; after considering their views, comments, and adjustments to be made, the tests have been extracted in their final form.

The validity of differentiation has been extracted through arranging the results of the study sample and determining 27% of those who obtained the high group and 27% of those who obtained the lower group from the study sample, and then compare the results using the statistical (t) test for independent

samples, and Table No. (2) illustrates this (Table 2).

Through table No. (2), it's clear that there are statistically significant differences at the level of (2) ($\alpha \leq (\alpha \leq 0.05)$) between the lower and higher groups in the fast break test, indicating that the test can differentiate between various capabilities and can consider the principles of individual differences which signifies the validity of the test in a differentiated manner.

The reliable of the fast break tests has been verified by calculating the test reliability coefficient in the application and reapplication method to a sample composed of (20) players from the study population, if the tests are applied to the sample and after a 48-hour interval, the tests are reapplied to the same sample and under the same conditions, then the correlation coefficient is found between the two applications of the Pearson equation and the results are shown in table No. (3) (Table 3).

Statistical significance at a significance level of ($\alpha \leq 0.05$)

The results of the table No. (3) Refers to that there is a strong positive correlation coefficient between the results of the test and r-test, indicating that the tests' reliable.

To verify the second question of the study, stating "What are percentile degrees and standard levels corresponding to the raw grades on the tests designed for the fast break for Junior Handball Player in Jordan "?

The percentile degrees corresponding to the ore grades of the junior Jordanian handball players have been applied to the fast break tests. Table 4 shows the results (Table 4)

Table (4) refers to the ore grades and percentile degrees corresponding to the fast break since, the ore grade of the first fast break test is (6.72), and for the second test is (6.42), while for the third test is (6.66), and for the fourth test is (6.58) corresponding to the percentile 10.0 and the ore grade for the first fast

Table 2: (T) test for the significance of differences in the level of fast break tests (between the higher and lower groups).

Test	Group	No.	Arithmetic Average	Standard Deviation	T Value	Degrees of Freedom	Significance Level
First	Upper	29	5.7551	.15353	-19.018	56	.000
	Lower	29	6.6367	.19686			
Second	Upper	29	5.5142	.17024	-16.994	56	.000
	Lower	29	6.3786	.21460			
Third	Upper	29	5.7220	.21279	-15.571	56	.000
	Lower	29	6.6762	.25225			
Fourth	Upper	29	5.6910	.15154	-18.903	56	.000
	Lower	29	6.5437	.18988			

Table 3. The values of Pearson correlation coefficient between application and reapplication of the sample (N=20) for the fast break test.

Test	Application and Reapplication	Arithmetic Average	Standard Deviation	No.	Pearson Correlation Coefficient	Significance Level
First	Test	6.1506	.39424	20	.915	*.000
	R test	6.2024	.42200	20		
Second	Test	5.8379	.27210	20	.805	*.000
	R test	5.9013	.37321	20		
Third	Test	6.0829	.33867	20	.978	*.000
	R test	6.1009	.37903	20		
Fourth	Test	6.1560	.39758	20	.984	*.000
	R test	6.1780	.40021	20		

Table 4. Percentile grades corresponding to the ore grades of the performance of the junior Jordanian handball players on the fast break tests.

Percentile	First Time (Second)	Second Time (Second)	Third Time (Second)	Fourth Time (Second)	Points (1-10)
10	6.72	6.42	6.66	6.58	1
20	6.47	6.21	6.50	6.41	2
30	6.33	6.12	6.40	6.26	3
40	6.24	6.09	6.35	6.15	4
50	6.17	5.97	6.25	6.07	5
60	6.07	5.88	6.15	6.00	6
70	5.97	5.79	5.99	5.89	7
80	5.87	5.61	5.88	5.80	8
90	5.73	5.46	5.72	5.64	9
100	<5.73	<5.46	<5.72	<5.73	10

Table 5. Standard categories of fast break tests.

First	Second	Third	Fourth	Category
<= 5.45	<= 5.24	<= 5.40	<= 5.40	Excellent
5.46 - 5.81	5.25 - 5.60	5.41 - 5.81	5.41 - 5.75	Very good
5.82 - 6.17	5.61 - 5.96	5.82 - 6.21	5.76 - 6.10	Proficient
6.18 - 6.54	5.97 - 6.32	6.22 - 6.61	6.11 - 6.45	Intermediate
6.55 - 6.90	6.33 - 6.68	6.63 - 7.02	6.46 - 6.80	Pass
+6.91	+6.69	+7.03	+6.81	Low-level

break test is (< 5.73), and for the second test is (< 5.46) and for the third test (<5.72) , and for the fourth test is (<5.73) corresponding to the percentile 100.

The standard levels categories have also been defined based on the arithmetic average and standard deviation between (-3 and+3) for the fast break tests in junior handball) and the table 5 explains the results (Table 5).

Table (5) refers that the standard categories, based on the arithmetic average and standard deviation between (-3 and+3) for the fast break tests in junior handball, describing the performance level from (excellent) to (low-level)

The discussion of the First question's findings

The degree of validity is considered the most important factor for the quality of tests and measures. Table No. (2) indicates that the designed tests could differentiate between the group of people who have a high degree of performance and those who have a low degree in the level of skillful performance of the fast break, and this agrees with what was indicated by (Tenenbaum, 2012). that the valid test is the one that can differentiate between people who have a high degree of the characteristics or traits on the one hand, and those who have a low degree of the same traits or qualities on the other hand.

Indicates (Tenenbaum., 2012; Sabkha et al., 2020) to the necessity of applying a test once and or more to an appropriate group of individuals to determine the reliable of results using the correlation coefficient that is called reliable coefficient. The results of table No. (3) refers to that the tests under study have a high reliable degree, an indication of the value of the correlation coefficient ranging from 0.805 - 0.984. The correlation between the first and the second application scores indicates the test reliable coefficient and this method is considered one of the most appropriate methods for determining the reliable of many tests in the motor field since the tests are considered reliable if they achieve a stability factor between 0.80-0.95.

By considering the results of the tables No. (2) and (3), it's clear that those are distinguished with validity and reliable which indicated their appropriateness to application and employment by coaches in the Jordanian environment for the junior category, who were born in 2007/2008 to evaluate the performance level in the fast break. Where the results of the current study agreed with (Buchheit et al., 2010; Eqab, & Mahdi., 2021; Ahmed, & Al-fartousi., 2022).in the need for the test to be valid and reliable to be adopted to determine the level of the players and to adopt it as a criterion for judging any training programs offered to them in order to develop their abilities.

The discussion of the second question's findings

By considering the findings of the tables No. (4) and (5), referring that the percentile degrees and standard levels that can define the level of the juniors of the handball team in Jordan

Whereas, the results of the study were able to establish the percentile degrees and standard levels for judging the level of players from the low level to the high level.

The results of this study agreed with the study (Eqab, & Mahdi., 2021) which indicated the ability of the tests to distinguish between those with low and high levels, this is an indication that the tests designed for fast break are able to distinguish the physical and skillful abilities of the players. Thus, we can rely on them to identify the changes that occur to the capabilities of the players (Hassan, 2018). Through it, we can judge the effectiveness of the programs provided to them, and we can rely on the results of these tests to compare their performance with players of the same age group in other geographical locations.

Through the results of tables (4) and (5), we can later rely on them in selecting handball juniors with the aim of preparing players who may have a greater share to represent the men's national teams.

Results

1. The validity and reliable of fast break tests of junior handball players have been verified

2. Percentile standard degrees of fast break tests of junior handball players have been determined

3. It's possible to use percentile degrees to evaluate the performance of junior players of Jordanian handball

Recommendations

1. Using the percentile degrees in identifying the weaknesses and strengths of the junior players of Jordanian handball.

2. Conducting similar studies for the comparisons of percentile degrees for the junior players of Jordanian handball and to the Arab and international teams.

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