



A comparative study of explosive power and speed endurance for some players of the National Center for the Care of Sports Talent for Handball at the ages of (12-16) years

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ABSTRACT

Keywords:

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The evaluation process depends on the accuracy of the tests used in all sports, including handball, and the physical abilities are one of the most important requirements of handball players in order to develop significantly in offensive and defensive methods of play, and the importance of the research is the presence of tests selected in an accurate scientific way for physical abilities if accompanied by standards that make the process of evaluating players more accurate and objective, which through these tests a comparison The most important physical abilities among the players of some centers specialized in handball, either the problem of research is summarized in answering the following question (Are there differences for the most important physical abilities between the players of some national centers for the care of sports talent in handball?) Identify the differences of strength, explosiveness and speed endurance for the players of some centers specialized handball, either impose the research there are differences for the explosive ability and speed endurance of the players of some centers specialized handball, the researcher used the descriptive approach in a survey method, either the research sample amounted to (45) players from the centers (Karbala, Diyala and Baghdad) and tests were conducted and data were obtained and were processed statistically, and one of the most important conclusions is that there are no differences in Withstand the speed and explosive power of the two men for the research sample and the existence of differences in the explosive power of the arms between the players of the center of Baghdad and the center of Karbala and in favor of the center of Baghdad, and through the conclusions of the research recommends the researcher the use of research tests in knowing the level of physical fitness of all players, and conduct similar studies on individual games teams

1 Definition of research:

1.1 Research Introduction and Importance:

The accuracy and safety of the evaluation process depends on the accuracy of the tests used in all sports, including handball, and physical abilities are one of the most important requirements for handball players. The development is great in the offensive and defensive methods of play, as it was characterized by rapid performance by moving from the defensive process to the offensive, which requires the players to have high physical abilities, which required the workers in the training process to raise the level of physical ability of the players and this is what qualifies them to carry out their defensive and offensive duties during the match as an irreplaceable basis in The game of handball, and the importance of the research lies in the presence of tests selected in a way or an accurate scientific method of physical abilities if accompanied by standards that make the process of evaluating the players more accurate and objective, which through these tests a comparison of the most important physical abilities between the players of some centers specialized handball, either the problem of research Physical fitness is an important aspect of a good player, through which he can perform skills well and appropriately in order to reach the highest levels, and through the researcher's follow-up to competitions held by workers in specialized schools and after conducting personal interviews with some workers in those centers, it was found that there is a discrepancy in the level of physical abilities between the players of some handball centers, so the research problem is summarized in answering the following question (Are there any differences? What are the most important physical abilities among the players of some national centers for nurturing sports talent in handball?) The objectives of the research is to identify the degree of the most important physical abilities of the players of some centers specialized handball, compared to the most important physical abilities of the players of some centers specialized handball, either impose the research there are differences for the most important physical abilities of the players of some centers specialized handball, as for the human field: players of the national centers for the care of sports talent handball and Spatial field: halls of the national centers of the Ministry of Sports and Youth, time range: from 1/2/2025 to 10/3/2025.

2- Research Methodology and Field Procedures:

2.1 Research Methodology:

The researcher used the descriptive approach in a survey style to suit the research problem and objectives "because the descriptive approach is one of the best and easiest approaches to reach the achievement of the objectives of the research, the survey provides the researcher with information that enables him to analyze, interpret and make decisions, and reveal to him the relationships between the variables studied" (Hussein and Abu Al-Helou: 2009: 233).

2 2 Research community and sample:

The current research community was represented by the players of the National Centers for the Care of Sports Talent for Handball for the sports season 2025-2024, numbering (5) centers (Baghdad, Diyala, Karbala, Nineveh, Qadisiya) by (105) players, while the sample is "the part that represents the community of origin or is considered the model on which the researcher is the overall focus of his work" (Al-Hashemi: 2012: 84), and the research sample reached On the players of three centers (Diyala, Baghdad, Karbala), which numbered (45) players, and the percentage reached 42.56%, as shown in Table (1).

Table (1)
Shows the distribution of the research sample

Research Sample	Exploratory sample	Sample Number	Governorate
15	5	20	Diyala
15	-----	25	Baghdad
15	-----	20	Karbala
0	-----	20	Nineveh
0	-----	20	Qadisiyah
45	-----	105	Total

3-2 Devices, tools and means used in research:

- ❖ Arab and foreign sources.
- ❖ Interview.
- ❖ Observation.
- ❖ Computer (laptop) type HP Korean origin.
- ❖ Manual calculator type (CASIO).
- ❖ Pens.
- ❖ Signs
- ❖ Medical Balls

❖ Handballs Size 2

2.4 Main research procedures:**1.4.2 Identify the most important physical abilities:**

After reviewing the sources and previous studies and after conducting personal interviews with the experts, in addition to the experience of the researcher being a specialist in the game of handball, it was chosen (explosive power of the arms, explosive power of the two legs, bearing speed).

2.4.2 Determination of physical aptitude tests:

In order to determine physical tests for each physical ability, the researcher designed questionnaire forms Appendix (2) to poll the opinion of experts in the field of physical education and handball and were presented to the experts Appendix (1) of (7) experts, and after collecting and unloading the data, the tests that obtained less than (60%) were excluded and according to the opinion of experts, and as shown in Table (3)

Table 2
The relative importance of physical tests and according to experts

Select ed Tests	Materi ality	Total Grad e	auditions	Physical abilities
√	85.71 %	30	Test of throwing weight (900 g) from shoulder level	Explosi ve power
×	57.14 %	20	Medical ball throwing test weighing (1 kg) from sitting on a chair	
×	42.86 %	15	Medical Ball Throw Test (3 kg) Over the Head	
√	100%	35	Sargent test for the two men.	
×	42.86 %	15	Running Test (200m)	Bearing speed
√	85.71 %	30	Shuttle Running Test (25m×5)	
×	57.14 %	20	Shuttle Running Test (20m×5)	

2.4.4 Scientific foundations of tests:**2.4.4.1 Validation of the test:**

Truthfulness is "the accuracy with which the test measures the purpose for which the test was developed" (Kammash: 2002:149), the researcher presented the contents of the physical tests to a group of experts, and thus the researcher obtained the truthfulness of the content.

2.4.4.2 Stability of the test:

In order to extract the second scientific factor for physical tests, it is necessary to apply principle Static test "It is that test that gives close results or the same results Just in case dish more From time in similar circumstances " (Al-Zayoud and Alyan: 2005:145) , the researcher was used to calculate the stability coefficient (test method and redo testing) .

2.4.5 Testing:

After the researcher completed the basic requirements for conducting a currency in detail, it was ensured that the physical tests were suitable for the research sample . Tests performed For the period from 1-15/3/2025 on Research Sample (Diyala, Baghdad, Karbala) and their number (15) Player.

2.5 Statistical methods

The researcher used the statistical bag for social and educational sciences (SPSS) to analyze the results of the study.

3 Presentation, analysis and discussion of results:

3-1 Presentation, analysis and discussion of the results of research variables:

The researcher used the appropriate statistical means for the results of the research tests, and for the purpose of reaching the achievement of the objectives of the research and verifying the validity of its hypotheses, the results were presented, analyzed and discussed to find out the reality of the differences and their statistical significance according to the accurate scientific perspective between the three research groups, as the arithmetic means and standard deviations were extracted for all tests, and then the law of analysis of variance (F) was used) to address the results of the post-tests of the three research groups to identify the statistical differences and their significance between the groups. To identify the effectiveness of the three research methods, the researcher used the law (L.S.D) to find out the least significant difference, and in order to give a clear perception of the extent to which the research hypotheses were achieved, the results were presented, analyzed and then discussed according to the data of the statistical means mentioned for each group.

3.2 Presentation, analysis and discussion of the results of the analysis of variance for post-tests in the physical test:

For the purpose of studying the reality of the differences between the three research groups in the post-tests, the researcher used the (F) test to analyze the variance between the three groups, as in Table (3).

Table (3)

The analysis of variance and calculated and tabular (F) values between and for the three groups

Variable s	Contrast source	sum squares	Degree s Freedom	medium squares	Value (F) Calculated	Significance Statistics
Bearing speed	Between groups	14.978	2	7.489	0.724	0.491
	Inside groups	434.667	42	10.349		
Explosive power arms	Between groups	46.711	2	23.356	14.655	0.000
	Inside groups	66.933	42	1.594		
Explosive power two men	Between groups	10.711	2	5.356	2.644	0.083
	Inside groups	85.067	42	2.025		

Through Table (3), we found that there were no significant differences between the research sample for the three groups in bearing the speed and explosive power of the two men, and that there are significant differences between the research sample for the three groups in the explosive power of the arms, which required the researcher to find the differences between the groups through the use of the choice (L.S.D).

3-3 Presentation, analysis and discussion of the results of (L.S.D) for the explosive power test of the arms of the research groups:

Table (4)

Shows the values of the mean, standard deviation and error percentage of the results of the (L.S.D) test

Standard error	Standard deviation	Arithmetic mean	Groups	t
0.248	0.961	10.267	Karbala	1
0.327	1.265	12.200	Diyala	2
0.388	1.502	12.600	Baghdad	3

Table (4) shows the arithmetic means, standard deviations and standard error of the three research groups, if the arithmetic mean of the center of Karbala reached (10.267) with a deviation of (0.961) and a standard line (0.248), while the center of Diyala reached the arithmetic mean (12.200) and a standard deviation of (1.265) and the standard error reached (0.327), while the center of Baghdad reached the arithmetic mean (12.600) and a standard deviation (1.265) and the standard error (0.327), and through arithmetic circles found the researcher that the center of Baghdad came in first place, then the center of Diyala and the third center of Karbala.

Table (5)

Shows the values of the average differences and the percentage of error for the results of the test (L.S.D), to find out the least significant difference

Significance	Error rate	p f	SSF	Totals
Moral	0.000	0.461	-1.933*	Flights Karbala - Diyala
Moral	0.000	0.461	-2.333*	Flights Karbala - Baghdad
Intangible	0.390	0.461	-0.400	Diyala - Baghdad

Table (5) shows the values of the average differences for the media, deviations, error ratio, and the significance ratio of the three groups of the explosive power test of the arms, if the difference in the media between (Karbala and Diyala) is (-1.933*) and the difference of deviations (0.461) and the error rate (0.000), which is smaller than the level of significance (0.05) and this is an indicator of the significance of the differences between the two centers and in favor of the Diyala Center, and the difference in the medians between (**Karbala - Baghdad**) is (-2.333*) and the difference of deviations (0.461) and the error rate (0.000), which is less than the level of significance (0.05) and this is an indicator of the significance of the differences between the two centers and in favor of the center of Baghdad, and the difference in the medians between (**Diyala - Baghdad**) is (-0.400) and the difference of deviations (0.461) and an error rate of (0.390), which is greater than the level of significance (0.05) and this is an indicator of the lack of significance of the differences between the two centers.

3.4 Discussion of the results (L. S . D)

In Table (5) for the (L.S.D) test, we note the values of the average differences and the error ratio of the test , the speed endurance and explosive power of the two men, the absence of a significant difference between the three research groups , and the researcher attributes this result to the fact that the training units of the two teams are regular in terms of attendance as well as in terms of exercise, and that this result confirmed the results of the championships held by the National Center for

the Care of Sports Talent in handball because these teams presented in all the championships of the National Center To nurture talent.

When comparing the three research groups in the explosive power test of the arms, it was shown that there are significant differences between the Diyala Center and the Baghdad Center, and the researcher attributes this result to the fact that the training units of the two teams are regular in terms of attendance as well as in terms of exercise.

The results also confirmed that there are differences between the center of Karbala and the center of Diyala and in favor of the center of Diyala, and the existence of differences between the center of Karbala and the center of Baghdad and in favor of the center of Baghdad.

He points out (Ahmed Oraibi), (1999): "The physical preparation of handball is the second stage of the stage of preparation of the player and this stage of preparation lasts from (4-6) weeks and is largely based on the first stage of the preparation stage and the training tends to the exact specialization of the game of handball, and work is done to develop special fitness taking into account the development of special muscle groups, which are more used in the game" (Oraibi: 2002: 208) Therefore, it became necessary for the coach to pay attention to the special abilities that must be characterized by the player practicing that activity, so it was necessary to identify the most important special physical abilities (Darwish et al.: 1998: 22).

4- Conclusion:

At the end of his current research, the researcher reached the following conclusions:

- 1- The results showed that there were no differences in the speed endurance and explosive power of the two legs for the research sample
- 2- The results showed that there were differences in the explosive power of the arms between the players of Diyala Center and Karbala Center and in favor of Diyala Center.
- 3- The results showed that there were differences in the explosive power of the arms between the players of the Baghdad Center and the Karbala Center and in favor of the Baghdad Center.
- 4- The results showed that there were no differences in the explosive power of the arms between the players of Baghdad Center and Diyala Center

Through the conclusions of the research, the researcher recommends the following:

- 1- Conducting periodic tests in order to know the level of physical abilities of the players under research.
- 2- Conducting similar studies on other physical abilities not addressed by the research.
- 3- Conducting similar studies on other abilities such as offensive skills and motor abilities

4- Circulating the results to all trainers of the centers under research.

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