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Physical dimensions and their relationship to the accuracy of fixed shooting from a distance of (7 m) for handball backline players

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ABSTRACT

The upgrading of the level of players requires effort and continuous work and scientifically and in various scientific fields and harnessing all sciences to serve the sports process, including the game of handball, in which specialists seek to upgrade according to specific goals, and this study aims to explore the relationship between physical dimensions and accuracy of correction of stability for backline players handball. Data were collected by measuring the physical dimensions of the players, including height, weight, etc., and analyzing their performance in shooting from stability by means of Determining a test with high scientific laboratories, and the descriptive approach was used in the style of correlation relations on the research sample consisting of (34) frontline players for the clubs of the central region represented (Army Club, Karkh Club, Popular Mobilization Club, Police Club, Diyala Club) Handball They represent the relevant research community for the sports season 2024-2025., the results showed a positive relationship between physical dimensions and aiming accuracy from stability, as players with better physical measurements were more accurate in aiming than stabilization. The results also showed that players who had a greater height were more accurate in aiming than steady, and these results indicate the importance of physical dimensions in determining the performance of players in shooting from stability, and can be used to improve training programs and physical preparation of players. These results can also be used to determine the physical standards required for players in the back line of handball.

1. Definition of the research:

1.1 Introduction and importance of research:

Researchers always strive to keep pace with the phase in all fields and in our research this specializes in the sports field and we seek to provide the best accurate scientific information that serves the sports process and raise the sports teams to the highest levels and harness what the test and measurement provides from measurement methods and statistical means that give a clear picture of what the players must reach or what they possess of qualities and abilities, whether physical or skillful to work on exploiting and developing them by coaches to improve the performance of the players, but And even knowing the relationships between the skills of the game and other abilities to gain those relationships in a way that serves the optimal performance of the players, and that handball is one of the team games that researchers seek to develop its players to keep pace with the development of the game as it is characterized by high rhythm throughout the game and this requires that the players be able to make a high effort and mastery of the skills of handball, so coaches seek to select players who have special abilities that qualify them to play handball, and most importantly they have physical measurements of lengths And oceans give the player a special advantage to be a handball player, especially the back-line players who are characterized by special physical measurements to occupy the center of the back line (cranks, playmaker), and because the physical dimensions are very important in the player's ability to perform handball skills, including the skill of correction, which is the most important offensive skills in handball and because of its relationship to physical dimensions, hence the importance of a search for finding the relationship between physical dimensions and accuracy of correction of stability for back-line players Handball, a service to the game of handball and by providing accurate and scientific information to coaches to develop their players and raise their level for the better.

2.1 Search problem:

The problem is the basis of each research and the more the identification of the problem scientifically and accurately, the solutions reached by the researchers are real and honest and can rely on the results of the research, and in our research the research problem was identified on what are the things that affect negatively and positively on the skill of correction handball, especially the relationship between physical dimensions and the skill of correction as it gives performance indicators and mastery and clarifies the strengths and weaknesses in it and the appropriateness of these dimensions accurately the skill of correction, Therefore, this study came to

develop some scientific solutions by clarifying the importance of the relationship between physical dimensions and the accuracy of the shooting skill, which may contribute to the development of handball backline players.

3.1 Research Objectives:

1. Determine the most important physical dimensions of the handball backline players.
2. Know the relationship between physical measurements and the accuracy of the shooting skill of handball backline players.

4.1. Research Areas

1. Human field: back-line players advanced to clubs (Karkh, Army, Diyala, Police, Popular Mobilization).
2. Time range: from 4/1/2024 to 9/1/2025.
3. Spatial field: Selected club halls.

2. Research Methodology and Field Procedures:

1.2 Research Methodology:

The method is "the scientific path taken by the researcher in solving the problem of his research, the nature of the problem dictates a certain method to reach the truth".[1] The researchers work the descriptive approach in the method of correlational relationships to solve the research problem and achieve its objectives.

2.2 Research community and sample:

"The researcher should choose a sample in which he believes that it represents the original community that he is studying honestly[2]", so the research community was determined by handball players in the category of applicants for the sports season 2024-2025, and the research was conducted on a sampleconsisting of (34) players of the moral line of the clubs of the central region of handball, represented by bandia (Karkh, the army, Diyala, the police and the Popular Mobilization). As shown in Table (1)

Table (1) shows the distribution of the sample

Main experiment sample	Sample exploratory experiment	Total Number	Clubs
6	-	6	Army
7	-	7	Karkh
8	-	8	Popular Mobilization Forces
5	-	5	The police

1Nouri Ibrahim Al-Shawk, Rafi Saleh Al-Kubaisi: **A Researchers' Guide to Writing Research in Physical Education**, (Baghdad, University of Baghdad, College of Physical Education, 2004), p. 5.

[2]Muhammad Hassan Allawi and Nasr al-Din Radwan: **Measurement in Education and Sports Psychology**, (Amman, Dar Al-Fikr Al-Arabi, 2000), p. 222

6	2	8	Diyala
32	2	34	Total

3.2 Means, devices and tools used:

- ❖ Arab and foreign references and sources.
- ❖ Tape measure.
- ❖ Plastic signs.
- ❖ A legal handball goal in the indoor halls of selected clubs.
- ❖ Multi-dimensional shooting accuracy squares are made of iron (4).
- ❖ Whistle.
- ❖ Legal handballs size(3).

4.2 Field Research Procedures:

1.4.2 Identify the most important physical dimensions:

After reviewing the scientific sources and reliable references, the researchers determined the special physical dimensions that must be available to handball players, and a questionnaire form was designed in which the physical dimensions were placed, and the questionnaire form was presented to the experts and specialists numbering (7) experts and asked them to determine the physical dimensions that must be available in the back-line handball players, After collecting the forms, unpacking them and processing them according to the statistical laws, the physical dimensions that must be available in the handball backline players were determined, as shown in Table (2). Note that only the physical dimensions that were accepted were placed.

Table 2
The relative importance of physical measurements

Selected measurements	Materiality	Total Grade	Unit of measurement	Physical dimensions	t
√	94.25%	33	kg	Weight	
√	85.71%	30	poison	Overall height and arms high	
√	100%	35	poison	Palm length	
√	88.57%	31	poison	Leg length	
√	100%	35	poison	Palm width	

2.4.2 Conditions for the implementation of physical dimensions: -

In order for the success of the representation of physical dimensions and to obtain accurate data, it is necessary to take into account the requirements that require attention to them when implementing the dimensions successfully[3], namely: -

- Perform physical dimensions in a uniform manner.
- Conducting physical dimensions at a unified daily time.
- Implementation of physical dimensions with the same tools.
- Wear shorts when making the measurement.
- Not to conduct any sports training before conducting physical distancing.
- Figure (1) shows the methods of measuring body parts.

3.4.2 Determination of the aiming accuracy test from stability from a distance of (7m)[4]:

Purpose of the test: Aiming accuracy of stability .

Tools: (8) handballs, curtain to close the goal, (4) squares each of40×40 cm

Performance specifications: The tester stands behind the 7 m throw line holding the ball, and when the signal is given, the tester shoots at the square (1), then (2), then (3) and then (4), and then repeats the performance again.

Test instructions: Take into account the stability of one of the tester's feet and not to move it during the throw, the ball is played within three seconds of the start of hearing the signal.

Scoring: A point is calculated for each shot within the designated box, zero if you do not enter.

4.4.2 Exploratory experiment:

Qasim Hassan Hussein and Fathi Al-Mahshahsh Youssef: **op. cit**., 1999, p. 225.[3]

[1]. Diaa Al-Khayyat and Nawafel Muhammad Al-Hayali, **previous source**, p. 509

The researchers conducted the exploratory experiment on 22/1/2024 on the late Salam hall of Diyala Club on a sample consisting of players, and the aim was to find out the suitability of the tools to the level of the sample members and ensure the adequacy of the assistant work team.

5.2 **Main experience:**

After completing the procedures to be carried out to consolidate the research, which is to determine the physical dimensions of the back-line handball players, test the accuracy of correction of stability, experiment with devices and tools, and train the assistant team through the exploratory experiment, the researchers conducted the main experiment with the tools and supplies for conducting physical dimensions on the components researched on the research sample, which numbered (32) players representing the back-line players (cranks players and playmakers), and then measured the accuracy of their correction of stability and was conducted in the halls The clubs that are included in the research sample on (5/3/2024).

6.2 Statistical methods:

The researchers used the statistical bag spss.

4. Presentation and discussion of results:

After the main experiment was conducted and the required scores were obtained in the study, the researchers processed it using the necessary statistical laws to reach the results.

4.1Display metadata results for search variables:

Table 3

Shows arithmetic media, standard deviations, torsion coefficient and standard error

Standard error	Torsion coefficient	Standard deviation	Arithmetic mean	Unit of measurement	Physical dimensions	t
0.897	-0.478	3.25	78	kg	Weight	1
0.357	0.987	9.51	197	poison	Overall height and arms high	2
0.384	0.752	1.11	21	poison	Palm length	3
0.975	0.548	3.28	92	poison	Leg length	4
0.672	0.781	1.87	16	poison	Palm width	5
0.891	1.26	2.87	4.52	number	Aiming from stability	6

4.2 Presentation of the results of the correlation between the nominated physical dimensions and the accuracy of the correction of stability:

Significance	Error rate	Pearson Link	Standard deviation	Arithmetic mean	Physical dimensions	t

Moral	0.001	0.87	3.25	78	Weight	1
Moral	0.000	0.91	9.51	197	Overall height and arms high	2
Moral	0.002	0.82	1.11	21	Palm length	3
Moral	0.001	0.88	3.28	92	Leg length	4
Moral	0.000	0.97	1.87	16	Palm width	5

3.4 Interpretation of the results:

The data in Table (4) and derived from the physical dimensions addressed by the current study that was applied to the research sample with the skill test for the accuracy of correction of stability, and after processing them statistically and extracting correlations to know the nature of the relationship between (weight, height, arms high, palm length, leg length, palm width, palm width and accuracy of correction from a distance of (7 m) back-line players , which The values of the Pearson correlation coefficient reached the accuracy of correction of stability with weight (0.87) and with height and arms high amounted to (0.91) and with the length of the palm of (0.82) and with the length of the man reached (0.88) and with the width of the palm amounted to (0.97) and all correlation relations were of high values through which we note that the physical dimensions of the weights of lengths and symptoms of the basics in the game of handball because the skills of the ball play by hand so the handball player needs to length and to the length of the upper limbs and the length of The lower limbs and the width of the palm to control the ball and perform the skills correctly and elaborately, as "holding the ball with one arm or arms is one of the basic skills whose success depends on the lengths of the limbs of the body as well as the rest of the skills [05] The physical measurements are of great importance in the performance of various motor duties, especially the back-line players in the game of handball, such as participating in the defensive wall or getting rid of the defensive wall of the opposing team during shooting and moving on the field, the weight is The strength of handball players, the shape and size of the body and the athletic performance, confirms this (Youssef Al-Sheikh), as "the way the body is built as well as their weight are factors that cannot be ignored, but it is necessary to pay attention to them if we want to achieve record results".[6] He confirms (Mohamed Matar) "when he stressed the great importance of

1. Muhammad Matar and others: The factor construction of physical measurements for handball players aged (15-17) years, research published in Al-Muthanna Journal of Physical Education Sciences, Volume Two, Issue Two, 2014. p. 22

6Youssef Al-Sheikh Weis Al-Sadiq: The Psychology of Sports and Training, B.I.: (Alexandria, The Spring of Thought, 1996), p. 194.

height in many sports activities, whether the length of the body or the length of some parts such as the length of the arms or hands" (1)

5. Conclusions and recommendations:

1.5 Conclusions:

1. Using the appropriate statistical means, the most important physical dimensions of the back line players were reached.
2. The researchers concluded through his current study that weights, lengths and widths of body parts contribute to improving the level of performance.
3. The results proved that the correlations between the research variables were of high values and indicate their importance for handball skills, especially for back-line players.

1.5 Recommendations

1. Emphasizing the importance of physical dimensions associated with the accuracy of correction from stability.
2. The need for back-line players to possess physical dimensions that showed moral relations with the accuracy of correction of stability.
3. Conducting other studies on different age groups with physical dimensions that have not been researched.

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