

# PHYSICAL AND FUNCTIONAL CONSTRUCTION INDICATORS AND THEIR RELATIONSHIP TO SOME ELEMENTS OF FITNESS FOR BUDDING BASKETBALL PLAYERS

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## ABSTRACT

*Basketball is a popular game in many parts of the world and many developed countries are making continuous efforts to prepare and develop their emerging players on scientific and clear bases as the basis for reaching high levels The researchers used the descriptive approach in the method of correlative studies to suit the nature of the study The ready-made software (IBM SPSS Statistics Version24) was used to perform statistical treatments The researchers concluded that there was a significant relationship between body size indicators (height and weight) with the fitness elements of the emerging basketball players The researchers recommended conducting a similar study to determine the type of relationship to the indicators of the physical structure and functional variables with other mathematical effectiveness not addressed in the current study.*

**Keywords:** Tests - Measurement – Evaluation.

## INTRODUCTION

Basketball is a popular game in many parts of the world and many developed countries are making continuous efforts to prepare and develop their young players on scientific and clear bases as the basis for reaching the high levels, and this is evidenced by observing the teams that win as the performance of their players Its technical performance is linked to many factors, including physical specifications, physical measurements and physiological foundations of different body systems as well as psychological and mental determinants, and

fitness derives its importance from being one of the components of the overall fitness that in turn qualifies the individual to live Balanced and this requires to be qualified physically, psychologically and mentally, and the importance of fitness is evident through its association with the requirements of daily life on the one hand and the exercise of sports activities on the other, and for this increased attention to physical fitness, and since the human being an integrated biological unit can not Separation of their parts from each other, therefore, articulates the dialectical link between physical and motor growth, the physical structure represented by body

size (height and weight) and body composition (fat weight and fat-free weight) and functional variables play a prominent role in demonstrating the capabilities of the body of the basketball player and that the difference in the structural structure of the body plays an important role in its performance, and the importance of this is shown by the basketball coach's understanding of the role played by the indicators of physical construction by means of determining the link between the phenomena of physical construction and fitness, which enables him to know where the imbalance, which starts correction during training programs. For basketball players, the importance of the study lies in trying to find out the type of relationship between each of the indicators of the physical structure represented by body size (height and weight) and body composition (fat weight and fat-free weight) and some function variables and some elements of fitness.

the study Problem:

The study proved the correlation of physical scales and functional variables with many physical abilities and excellence in various sports activities. By addressing all the variables that are the basis in the process of training and selection of emerging players, hence the need to provide the means of measurement that illustrate the role of physical growth in motor growth by studying the relationship of building indicators. May, which is the body size (height and weight) and body composition (fat weight and fat-free weight) and some functional variables of some elements of fitness for young basketball players so the current study is an attempt to indicate the role played by the physical and functional construction in the fitness of basketball juniors. Therefore, the problem of the study is raised by asking about the type of relationship between each of the indicators of the physical construction of the emerging basketball players with some elements of physical fitness have?

The study aimed to identify:

- Identify the efficiency of body size indicators (height and weight) for emerging basketball players.
- Recognize the efficiency of body composition indicators (fat weight and fat-free weight) for budding basketball players.
- Identify the efficiency of the fitness elements of the emerging basketball players.

- Identify the correlation of all indicators of physical construction with some elements of fitness for emerging basketball players.

Study Limitations:

Human limiter: budding basketball players for the 2018-2019 sports season. -

Time: from 13/11/2018 to 3/2/2019 m. -

Spatial: Halls and stadiums of the clubs covered by the study. -

## **MATERIALS AND METHODS:**

### **Research Methodology:**

The researchers used the descriptive method in the method of correlative studies to suit the nature of the study

### **Search community and sample:**

the sample of the study was represented by the basketball players and the participants in the sports season 2018-2019, which number (60) players.

### **Means of gathering information, tools and devices used in research:**

The researchers used (Alrstameter device to measure the total length, and a medical balance to measure the weight, and a device (calipers) to measure the thickness of the skin folds, measuring tape to measure the distance, flat, a ladder with a height of (45), a ball weight 3 kg, 8 people, timing hours.

### **Field research procedures:**

First: Determine body size indicators:

)- Overall length (15: 147-175

Weight (16: 91) -

Second: Determine the indicators of physical composition:

) Fat Weight (18: 330-331 -

Fat-free weight (22: 186) -

Third: Determine the functional tests:

) Vertical jump test of stability (17: 126 -

Test the anaerobic step (lactic oxygen capacity) (18: 221) -

Harvard Step Test (18: 275) -

Fourth: Identification of physical tests:

- Throw a medical ball 3 kg of sitting for the farthest distance / to measure the explosive force of the arms (14: 235)

Run 30 m of high start / transition speed measurement (7: 123) -

- Long jump of stability / to measure the explosive strength of the two men (19: 198)

- Sit-up squatting / set to measure the strength of the abdominal muscles (6: 209-210).

Bend the trunk forward from standing / to measure flexibility (20: 241-244 -

Shuttle / agility measurement (19: 200)

- Running - walking 800 m / to measure the circulatory and respiratory systems (20: 214)

#### : Exploration Experience

The researchers extracted the scientific bases for physical and functional tests by conducting a pilot experiment on a sample of 12 players emerging from basketball.

In order to find the stability coefficient of tests was used (test and retest) method was applied physical and functional tests on the players on 18/11/2018 and then re-applied the same tests on the same sample after three days on 22/11/2018, and using The simple correlation of Pearson between the scores of the first and second measurements was found that all tests had a high stability because the calculated values all had a high stability due to the fact that the values of the level of significance p-value symbolized by (Sig) is smaller than the value of the significance of the level of significance (0.05 (4: 36) As shown in Table.

In order to determine the objectivity of the tests used, Pearson's simple correlation coefficient between the first and second scores was calculated. As shown in Table (1), the approved (0.05)

Table (1)

Shows the scientific coefficients of the physical and functional tests nominated for application

Sig	Objective	Sig	Persistence	the exams	sequence	
0.000	0.910	0.001	0.894	Vertical jump of constancy	1	Functional
0.000	0.900	0.000	0.864	Anaerobic Step (Lactic Oxygen Capacity)	2	
0.002	0.801	0.003	0.715	Step for Harvard	3	
0.000	0.846	0.000	0.822	Throw a medical ball 3 kg of sitting for the farthest distance	1	Physical
0.002	0.787	0.001	0.731	He ran 30 m from the high start	2	
0.000	0.916	0.000	0.894	Long jump of stability	3	
0.000	0.902	0.000	0.873	Sit-up set-up squatting	4	
0.001	0.771	0.002	0.736	Bend the trunk forward from standing	5	
0.001	0.793	0.001	0.748	Shuttle Running	6	
0.002	0.746	0.003	0.740	Ran - walking 800 m	7	

#### :Main experience

The researchers conducted physical and functional tests and physical composition tests for each club for three days:

Day 1: Measurements of height, weight and areas of fatty compactness on the players with physical tests of physical elements (explosive force of the arms, the transition speed, and the strength of the abdominal muscles)

Day 2 / The rest of the physical tests that measure the elements of physical fitness (explosive strength of the legs, flexibility, agility, and the circulation of the circulatory and respiratory systems) were taken into account the recovery periods between one test and another.

Day 3: Functional tests.

All data were recorded in individual forms for each player collected and discharged after the completion of all tests to be processed statistically.

#### Statistical means:

The software (IBM SPSS Statistics Version24) was used to perform statistical treatments to extract the following (arithmetic mean, standard deviation, simple correlation coefficient of Pearson).

## RESULT AND DISCUSSION:

Note that in Table (2) the arithmetic media, standard deviations, median and torsion coefficient values for all variables of the study, and note that all values of torsion coefficients and for all variables were less than (+1) (- 1), which indicates the good distribution of variables under the equilibrium curve and homogeneity.

Table (2)

Shows arithmetic media, standard deviations, median and torsion coefficient values For all study variables

Torsion coefficient	standard deviation	Mediator	SMA	Variables	sequence
0.635	5.722	165	166.033	Overall length	1
-0.020	4.453	55.50	56.400	the weight	2
1.336	0.173	7.50	7.616	Fat weight	3
-0.245	1.052	42	41.900	Fat-free weight	4
-0.242	5.345	45	41.883	Vertical jump of constancy	5
-0.098	1.125	26	25.566	Anaerobic Step (Lactic Oxygen Capacity)	6
0.043	1.127	56	56.483	Step for Harvard	7
-0.997	0.204	3	2.906	Throw a medical ball 3 kg of sitting for the farthest distance	8
-0.039	0.690	6	6.291	He ran 30 m from the high start	9
0.518	0.254	1.750	1.916	Long jump of stability	10
-0.099	2.510	28	26.733	Sit-up set-up squatting	11
-0.558	0.288	2.400	2.401	Bend the trunk forward from standing	12
0.278	0.527	12.300	12.181	Shuttle Running	13
-0.235	0.162	3.750	3.772	Ran - walking 800 m	14

The researchers extracted the relationship between physical and functional structure variables with some fitness elements of the emerging basketball players using the law of simple correlation coefficient of Pearson. Which is denoted by the symbol (Sig) was smaller than the approved and predetermined value of (0.05), which indicates the enjoyment of all moral as shown in Table (3)

Table (3)

It shows the correlation coefficients between physical and functional structure with some elements of fitness For budding basketball players

Periodic circulation and respiratory organs	Agility	Flexibility	Stretch force to the abdominal muscles	The explosive power of the two men	Transitional speed	Explosive force of the arms	Elements of fitness Physical construction And career
0.482	0.346	0.450	0.680	0.705	0.571	0.340	Overall length
0.002	0.002	0.003	0.00	0.000	0.000	0.001	Sig
-0.467	-0.571	-0.563	0.480	0.512	-0.467	0.658	the weight
0.003	0.002	0.000	0.001	0.001	0.001	0.000	Sig
-0.442	-0.542	-0.591	0.664	0.522	-0.617	0.466	Fat weight
0.004	0.001	0.000	0.002	0.003	0.004	0.002	Sig
0.482	0.443	0.468	0.471	0.463	0.511	0.435	Fat-free weight
0.001	0.000	0.000	0.000	0.000	0.001	0.002	Sig
0.733	0.648	0.715	0.479	0.737	0.654	0.719	Vertical jump of constancy
0.000	0.001	0.001	0.000	0.000	0.000	0.000	Sig
0.732	0.452	0.644	0.717	0.642	0.586	0.626	Anaerobic Step (Lactic Oxygen Capacity)
0.000	0.004	0.003	0.000	0.002	0.001	0.002	Sig
0.766	0.734	0.722	0.684	0.718	0.684	0.728	Step for Harvard
0.000	0.000	0.000	0.000	0.000	0.000	0.000	Sig

The result is consistent with what Kassem Hassan and Nazar the student (1987) said that the increase in the weight of the pupil during throwing the ball has two benefits, one of which is that the muscle strength is directly proportional to the anatomical section of the muscle and the size of the muscle. A better investment than the light body in pushing the weight in the desired direction (9: 281)

It also agrees with (Qasim Hassan 1977) that "body weight is a factor that plays a significant role in achieving good throwing" (10: 341), and also agrees with what he also referred to (Muhammad Subhi 1987). Research has shown what is known as relative weight and specific weight, all of which are technical terms, as a result of extensive studies on the importance of weight in the fields of physical education (19: 53). As for the length of the body and its relationship to the throwing of the medical ball, the result is consistent with what he pointed out (Qasim Hassan 1979) that "increasing the length of the body plays a big role in achieving good achievement in throwing" (11: 187). As Hamed Abdelsalam, 1986, noted, "At this age, weight increases

rapidly as a result of musculoskeletal growth" (5: 309). Therefore, we find that the muscular strength in boys increases during puberty (1: 81), as it is consistent with what she pointed out (Nawal Mudar 1994) "since the weight of the body (the weight of fat and fat-free component) is a mass Uniformity represents resistance to working muscles, so increasing the fat-free component of increasing muscle mass means increasing strength To overcome this resistance "(21:24), which is also reinforced (Abu El-Ela and Ahmed Nasr El-Din 1993)" Physical composition plays a prominent role, as the proportion of fat and muscle tissue are closely related to all other components of physical fitness affects each other and is affected by the other For example, increased fat adversely affects certain components of physical fitness, such as aerobic and anaerobic abilities and flexibility, and increase muscle tissue positively affect muscle strength and muscle endurance "(1:71)

The result is also consistent with what Kassem Hassan (1998) noted: "Flexibility is of great importance in determining the level of sport in most events and sports as well as being an element of fitness where the

requirements vary from one activity to another" (12: 268)

It also agrees with (Bastawisy Ahmed 1999). "Flexibility is closely related to both physical abilities and basic motor and sporting skills. Based on the player's good mobility in the joints of the body, especially those skills, whose level of progress depends largely on the element of flexibility "(3: 225), and pointed out (Essam Abdel Khalek 1999)" that the trait of fitness must be trained in the early stages of the age so that the joints are acquired Ligament of muscle over the dynamic and wide to ensure the possibility of developing this capacity, continuous training in advanced stages "(8: 168)

This is consistent with the assertion (Abul-Ela Ahmed and Ibrahim Shaalan 1994) that "the ability of the muscle to produce energy in an anaerobic manner used by the player to perform the strong and rapid movements required by the conditions of play" (2: 282), and this also agrees with the statement (Qasim Hassan "The practice of regular sports training leads to positive functional changes in the respiratory system and these changes achieve additional flexibility in the muscles of the rib cage, which increases their ability to stretch and widen, which leads to an increase in the volume of inhaled air and thus helps to increase the amount of oxygen in the process of exchange Gases between blood and air sacs Economic and respiratory movements due to increased vital capacity "(13: 134)

The researchers also believe that the specificity of the physical structure of the basketball player contributes effectively with the training curriculum in the development of respiratory efficiency, by improving the ability of the lungs to absorb more air at inhalation or as a result of the increase in the amount of air paid at the expense of the amount of air remaining in the lungs This is due to the widening of the shoulder strap and increase the elasticity of the pectoral muscles in the stretch and increase the size, which increases the ability of the rib cage on the stretch, which enables the player to maintain the rapid rhythm to perform the skills of the game.

#### CONCLUSIONS:

- Significant relationship between body size indicators (height and weight) with the fitness elements of the emerging basketball players.
- There is a significant relationship between the indicators of body composition (fat weight and fat-free weight) with the fitness elements of the emerging basketball players.
- A significant relationship between functional variables with the fitness elements of the emerging basketball players.

#### ENDORSEMENT:

- Conducting a similar study to find out the type of relationship of physical structure indicators and functional variables with other mathematical activity not addressed in the present study.
- .Conduct a similar study on basketball players -
- The inclusion of physical and functional variables that have been identified as important in the training programs prepared by the coaches because of their importance and relationship working to develop the abilities of the emerging players basketball.

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