The most important physical building indicators in predicting some physical traits of handball players cubs

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Abstract

Physical building indicators and classification as well as the age of time are important things that should be highlighted because it is one of the most easy and available physical variables that can benefit the coaches of clubs or national teams in handball within the scope of their players or teams and within the limits of limited possibilities and accordingly The physical characteristics of the priorities of interest to the players of crib handball, and here crystallize the problem of research during some of the questions related to the possibility of these indicators in the creation of predictive equations representing simulations, which in turn reflect the proportions of contributions to the physical construction of the elements of physical attributes to know The extent of the individual progress in the level of these elements through the application of the equation and the extraction of the result and the matching of what is being through the practical and what should be through the output equation, the research aim to **i**dentify the direct indicators of body size (the longest, weights) and the age of time in predicting the physical characteristics of the players of handballs.

The researchers used the descriptive method in the method of associative studies to suit the nature of the study. The research community determines the cubes of handball in the clubs of Babil province for the sports season 2017-2018 (Al-Qasim Club, Al-Musayyib Club, Babylon Club, Al-Hilla Club, Al-Kifl Club), and 150 (150) players were randomly selected by (120) players. *The most important conclusions were:*

1.Obtaining (20) predictive equation with body size and age-related indicators of physical characteristics exceeding (2) percentage contribution of (25%) and above.

2 . Obtain a predictive equation with physical composition indicators and the age of the elements with physical characteristics exceeding (2) the contribution rate (25%) and above.

Keywords: physical building indicators, handball.

1.Introduction

1.1 The significant

Physical qualities are part of the general fitness is necessary for the performance of daily work and continue without feeling tired or stress, and continue to increase production and development and reduce the state of disability and daily effort, the multiple ability of the individual to perform work throughout the day efficiently and without feeling tired quickly While maintaining the energy that helps him to enjoy during his free time. It should also be noted that most physical characteristics scientists put most of their interest in the preparation of plans and curricula for their development through the association with the requirements of daily life on the one hand and the exercise of sports on the other hand For the physical structure of the individual and strengthen the health and within the goals of sports clubs seeking to achieve at the present time because it is one of the basics of sports work within the curriculum aims to consolidate the assets of the programmed scientific work and the availability of modern knowledge. This has made the world's scientifically developed countries pay attention to physical fitness, develop methods to measure it and find tests for all age groups to develop their physical and mental abilities. And that tests and measurements is one of the scientific means necessary to continue progress and solve the problems faced by all workers in the field of sports as well as give the real indicator of the players' abilities, which is an objective assessment of them and their achievement, so it was necessary to benefit from the advancement in handball game. Hence, the need to provide the means of measurement that show the role played by physical growth in the growth of motor through the equations of prediction and determine the proportions of their contribution as evidenced by the importance of this by absorbing the difference trainers role of the indicators of physical construction by means of determining the correlation between these phenomena physical construction and qualities Which can explain the reservoir of defect and provide us with the point from which treatment can begin during the training programs. Body weight indicators (weight length) as direct measurements, body composition and rating indicator are shown as indirect measures that can be used as variables Independent affect the dependent variable elements of physical attributes to find some equations to predict.

1.2 The problem

Physical building indicators and classification as well as the age of time are important things that should be highlighted because it is one of the most easy and available physical variables that can benefit the coaches of clubs or national teams in handball within the scope of their players or teams and within the limits of limited possibilities and accordingly Physical characteristics are priorities of interest to the players of handball, and here the problem of research is formed during some of the questions concerning the possibility of these indicators in the creation of predictive equations represent the scales, which in turn reflect the proportions of contributions to the physical construction of the elements of physical characteristics to know The individual progresses in the level of these elements by applying the equation and extracting its result and matching what is being through the practical and what should be through the output equation.

1.3 The Aims

1.Identify the direct indicators of body size (the longest, weights) and the age of time in predicting the physical characteristics of the players of handballs.

2 . Identification of the role of physical composition (weight of fat and weight without fat) as indirect measurement and the age of time in the prediction of the physical qualities of players cribs handball.
3.Identifying the role of classification indicators in predicting physical characteristics.
4.To identify the sequence of the three trends in the search through the proportions of contribution to the physical qualities of players cribs handball.

1.4 The hypothesis

1. Predictive equations that reflect high efficiency can be obtained by means of the contribution ratios (*) which are important in the common variation between the indicators (body size, body composition, classification) on the one hand and elements of physical characteristics on the other hand.
2.Body size indices (height, weight) and age-time combined the most efficient variables through the contribution rates in the elements of physical characteristics. As measured by physical composition and the rating index as indirect measurements.

1.5 Study fields

1.5.1 *The human field:* players Cubs in the clubs of Babil province handball for the season 2017-2018.
1.5.2 *Time field*: (20/12/2017) until 25/5/2018.
1.5.3 *Spatial field* : halls of Babil province club for handballs

3. The procedures of study :

3.1 Research Methodology:

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

3.2 The research society and its design: The research community defines the cubes as handballs in the clubs of Babil province for the season of 2017-2018 (Al-Qasim, Musayyib, Babel, Hilla Al-Madhatiya, Hashimiyah, Al-Saddah, Mahaweel, Kefal). In a random way with (120) players.

3.3 Devices and tools used:

Medical weight scale for the nearest 1/2 kg. - Measuring device of grease (calipers) to measure the thickness of the skin folds. - Stopwatch. - Measuring tape for measuring distances. – Pieces of wood cubes number (2).

3.3.1 Methods of data collection: The researchers used tests and measurements as a means of collecting data according to objectives:

- Measurements: Some were direct and indirect measurements as follows: Age. - Body length .- Body weight .- Body composition indicators include weight of fat and fat-free weight. - From rating.

3.4Determination of the validity of elements for the physical characteristics of Handballs players :

For the purpose of obtaining the elements of the physical characteristics for the players of the handball balls in the clubs of the governor of Babylon, the researchers surveyed the sources, references, letters and details of the handball and was included in a questionnaire form and presented to the experts and specialists and identified components that obtained more than (25%), For the variance of the studied phenomenon and table (1) it is understood.

Table (1) shows the proportions of agreement on elements of physical characteristics of handballs

No.	*Elements of physical characteristics*	*Ratio of agreement*	*Percentage*
1	The power of speed	3	23%
2	The explosive power of the arms	13	100%
3	Tension force of the abdominal muscles	8	61%
4	The kinetic speed	2	15%
5	Transition Speed	10	76%
6	The explosive power of the feet	11	84%
7	Flexibility	9	69%
8	Fitness	8	61%
9	Rotation of the circulatory and respiratory devices	9	69%

Based on Table (1), the two power elements were removed by speed and motor speed. The researcher then presented another questionnaire to the experts to nominate one test for each of the elements approved by the researchers after the questionnaire. The following tests were obtained as shown in Table (2).

Table (2) shows the candidate tests elements of the physical characteristics of the handball cores:

No.	*Elements of physical characteristics*	*Tests*
1	The explosive power of the arms	Test throws the medical ball 3 kg of sitting
2	Transition Speed	Running 30 m from the high start
3	The explosive power of the feet	Long jump forward of stability
4	Tension force of the abdominal muscles	Sit down from supine and knees so flexed tired
5	Flexibility	Bend the trunk to the front of the stand
6	Fitness	Jogging
7	Rotation of the circulatory and respiratory devices	Running - walking 800 m

3.5 Methods of physical measurements: The measurement is as follows:

1. Age **2.** Body weight. **3.** Body length.

3.6 Physical Configuration Indicators: To find indicators of physical composition, follow these steps:

- The measurement of areas thickness of the skin folds to each age stage as required by the equation of finding the body density.

- Find body density. - Find the percentage of fat. - Find the fat weight. - Find fat-free weight as it comes:

- Tuck thickness (behind the humorous, below the plank, at the chest, under the chin, at the iliac crest, at the middle axillary line).

Finding the body density: We use the equations according to age: Determination of the percentage of fat: obtained from the following equation: fat ratio = 457 / density - 414.2, where 457 fixed number and 414.2 fixed number.

Finding the weight of fat in the body: We get it from the following equation: Fat weight = fat ratio × weight / 100.

Finding fat-free weight: We get it from the following formula: Fat-free weight = (weight - fat weight).

3.7Classification: Calculated according to the Mecloy rating index for the intermediate stage. From rating = (20 × age) + (6 × height) + weight.

3.8 Exploration Experiment: The researchers conducted the experiment on a sample of the players of the handball from the research community of (8) players on (20/1/2018) and at 5 pm for the variables studied and the same experiment was repeated after 7 days on (27 / 1/2018), taking into consideration the circumstances in the first experiment. Its purpose was to:

1.Difficulties that may face the researcher.

2.Test the validity and efficiency of the devices used.

3. Train the staff and check their efficiency.

4.Determine the time taken to perform tests and physical measurements.

3.9 Scientific Foundations of Tests:

1.Honesty: it is defined as "the ability of the test to measure what was set for it or the attribute to be measured" (Abdul Majeed and Mohammed Jassim, 2010, p. 35). It is the honest test that accurately measures the phenomenon that it is designed to measure, so that it does not measure anything in its place or in addition to it (Louay Ghanem Sumaidaie et al., 2010, p. 120). The validity of content or content was used for testing based on a group of experts and specialists.

2.The constant: means that the test which gives the same results or approach to the same sample or similar and under the same conditions is statistically constant if the correlation coefficient was significant (Sami Mohamed Melhem, 2002, p. 128). The stability is obtained in several ways, including the application of the test, the re-application, the extraction of the correlation coefficient, and the table (2).

3 .Objectivity: The researcher relied on the registration of arbitrators and found the coefficient of correlation values between the grades of the first provision and the degrees of the second sentence, because "we can judge the degree of objectivity of the test by finding the coefficient of correlation between the final score applied by two independent judgments each other" Marwan Abdel-Majid Ibrahim, 1999 (p. 15). After processing the data for the two sentences, the objective factor for the tests was extracted. Scientific results for all tests were shown in Table (2).

Table (2) shows the stability and objectivity coefficients of the tests

No.	*Elements of physical characteristics*	*stability*	*objectivity*
1	The explosive power of the arms	0.924	0.932
2	Transition Speed	0.882	0.912
3	The explosive power of the feet	0.862	0.891
4	Tension force of the abdominal muscles	0.894	0.922
5	Flexibility	0.942	0.885
6	Fitness	0.862	0.882
7	Rotation of the circulatory and respiratory devices	0.912	0.932

3.10 Basic Experience: After making sure that all the necessary conditions are met, the researchers implemented the basic experiment for the period of time (10/2/2018 to 20/3/2018) and according to the time plan set for each school as follows:

Statistical methods: The researchers used the following statistical means (Mohd Jassim, 2010, pp. 160-169) (Ayed Karim2009S 180-193)

- Standard Variables - Modified Standard Degrees. - Pearson correlation coefficient. - Regression analysis.

4. Presentation, analysis and discussion of the results

4.1 Statistical description of the research variables:

Table (3) Statistical description of the variables of physical research

No.	*Physical variables*	*measuring unit*	*Arithmetic mean*	*Standard variation*
1	The age	Month	154.90	7.11
2	The length	sm.	158.60	10.30
3	The weight	Kg.	47.41	10.23
4	The weight of fat	Kg.	6.59	3.80
5	Weight-free of fat	Kg.	40.82	7.18
6	The classification Indicator	degree	3745.20	105.26

Table (4) Statistical description of the elements of physical characteristics

No.	*Physical variables*	*measuring unit*	*Arithmetic mean*	*Standard variation*
1	The explosive power of the arms	Meter	2.37	6.41
2	Transition Speed	Second	6.09	0.61
3	The explosive power of the feet	Meter	1.60	2.41
4	Tension force of the abdominal muscles	Repetition	25.92	8.67
5	Flexibility	S.M.(*)	2.57	7.03
6	Fitness	Second	12.03	0.85
7	Rotation of the circulatory and respiratory devices	Minute(**)	3.62	0.32

Table (5) Matrix of correlations of physical variables with each other

		The age	The length	The weight	The classification Indicator	The weight of fat	Weight-free of fat
		1	2	3	4	5	6
The age	1		**0.356	**0.416	**0.368	0.146	**0.465
The length	2			**0.632	**0.7.44	0.074	**0.767
The weight	3				**0.571	**0.676	**0.891
The classification Indicator	4					0.119	**0.666
The weight of fat	5						**0.326
Weight-free of fat	6						

** A significant error rate of ≥ 0.01 where the value of the tab in front of the freedom degree of 118 = 0.22.

Table (6) Matrix of correlations between physical variables and Elements of physical characteristics

Measurements / tests	The explosive power of the arms	Transition Speed	The explosive power of the feet	Tension force of the abdominal muscles	Flexibility	Fitness	Rotation of the circulatory and respiratory devices	Physical character istic-ctics
Age	**0.465	**0.346-	**0.322	0.081	0.28	**0.248-	0.16-	**0.0420
Length	**0.460	*0.166-	*0.150-	0.043-	*0.149-	0.135-	0.60-	*0.177
Weight	**0.465	0.002	0.010	*0.153-	0.087-	0.076	**0.217	0.140
Weight of fat	**0.249	*0.155	0.025-	0.114-	0.031-	0.137	**0.386	0.121
Free weight of fat	**0.457	0.107-	0.035	0.124-	0.111-	0.000	0.072	0.105
Classification Indicator	**0.512	0.077-	*0.178	0.048-	0.023-	0.134-	0.002	**0237

(*) The standard deviation exceeds the arithmetic mean for the specificity of the measurement on this test as the scores are negative and positive.

(*) The data for this element were processed after converting the results to the second for statistical necessity.

*A significant error rate ≥ 0.05 where the value of the t-table in front of the degree freedom 118 = 0.17

** A significant error rate ≥ 0.01 where the value of the tab in front of the freedom degree 118 = 0.22

In the table (6) we notice that there are (13) significant correlation at the rate of (error ≥ 0.01) while we find (7) significant links at the ratio (error ≥ 0.05), and since the objective of the research focuses on the equations of prediction, The links will go on to find prediction equations.

4.2 Present the results of contribution and prediction of the variables of body size and age

4.2.1 *Present the results of the contribution and prediction of the exploding force of the arms.*

Table (7): Contribution rates of body size and age variables in the explosive force of the arms:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The weight	111.383	2.548	49.207	6.634	1-118	0.465	21.7%
Regression Gradient	The weight The age	194.578 -	1.108 2.091	38.906	4.605	2-117	0.553	30.5%
Regression Gradient and all Variables	The weight The age The length	325.753-	1.068 1.926 1.255	29.732	3.781	3-116	0.58	33.6%

The value of (F) of the tabular when the error ratio ≥(0.01)

4.2.2 *Presentation of Contribution Results and Prediction of Transition Speed:*

Table (8): Contribution rates of body size and age variables in the transition speed:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The weight	9.596	0.00218	24.172	6.634	1-118	0.346	12%
Regression Gradient	The weight The age	9.888	0.0265- 0.009586	15.058	4.605	2-117	0.381	14.5%
Regression Gradient and all Variables	The weight The age The length	11.123	0.0249- 0.01649 0.0118	12.310	3.781	3-116	0.416	0.173%

The value of (F) of the tabular when the error ratio ≥(0.01)

4.2.3 *Presentation of the results of the contribution and prediction of the explosive force of the foot:*

Table 9: Contribution rates of body size and age variables in the explosive power of feet:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The age	33.314	0.771	20.631	6.634	1-118	0.322	10.4%
All Variables	The age The length The weight	15.422	0.871 0.376 0.528-	9.740	3.781	3-116	0.377	14.2%

The value of (F) of the tabular when the error ratio ≥(0.01)

4.2.4 *Presentation of Contribution Results and Prediction of Force Tolerance of Abdominal Muscles:*

Table (10): Contribution rates of body size and age variables in the strength of the abdominal muscles:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The weight	36.565	0.217-	4.251	3.841	1-118	0.153	2.3%
Regression Gradient	The weight The age	5.968-	0.321- 0.291-	4.535	2.995	2-117	0.221	4.9%
Regression Gradient and all Variables	The weight The age The length	15.322-	0.279 0.08947- 0.373-	3.158	2.604	3-116	0.226	0.05.1

The value of (F) of the tabular when the error ratio ≥(0.05)

4.2.5 *Presentation of Contribution Results and Flexibility Forecasting:*

Table (11): Contribution rates for body size and age variables in flexibility

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The length	16.482	0.0900	4.23	3.84	1-118	0.149	2.2%
All Variables	The age The length The weight	7.992	0.06808 0.104- 0.114-	1.800	2..604	3-116	0.173	3%

The value of (F) of the tabular when the error ratio ≥(0.05)

4.2.6 *Presentation of contribution results and prediction in fitness:*

Table (12): Contribution rates of body size and age variations in fitness

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The weight	15.625	0.0217	11.664	6.634	1-118	0.248	6.1%
Regression Gradient	The weight The age	16.119	0.0294 0.0162	9.878	4.605	2-117	0.317	10%
Regression Gradient and all Variables	The weight The age The length	18.136	0.0270- 0.02753 0.0193	9.509	3.781	3-116	0.373	13.9%

The value of (F) of the tabular when the error ratio ≥(0.01)

4.2.7 *Presentation of the results of the contribution and prediction for Periodic and respiratory organs:*

Table (13): Contribution rates of body size and age variables in the rotation of the circulatory and respiratory organs

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The weight	3.242	0.007189	8.804	6.634	1-118	0.217	4.7%
Regression Gradient	The weight The age	4.586	0.01404 0.0109-	11.131	4.605	2-117	0.334	11.2%
Regression Gradient and all Variables	The weight The age The length	5.056	0.00362- 0.0104- 0.01503	7.915	3.781	3-116	0.345	11.9%

The value of (F) of the tabular when the error ratio ≥(0.01)

4.2.8 *Presentation of contribution results and prediction of physical characteristics:*

Table (14) Contribution percentages of body size and age variables in physical characteristics (*)

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The age	91.157	1.579	30.206	6.634	1-118	0.42	17%
Regression Gradient and all Variables	The age The weight The length	9.801	1.700 0.654 0.0808-	16.107	3.781	3-116	0.464	21%

The value of (F) of the tabular when the error ratio ≥(0.01)

Table (15) The order of elements of attributes according to the contribution of body size indicators and age

Elements of physical characteristics	Contribution Ratio	Ranking
The explosive power of the arms	% 33.6	The first
Transition speed	% 17.3	The second
The explosive power of the feet	% 14.2	The third
Fitness	% 13.9	The fourth
The rotation of the two organs (periodic and (respiratory	% 11.9	The fifth
Power activity of the abdominal muscles	% 5.1	The sixth
Physical flexibility	% 3	The seventh

4.4 *View the results of contribution and prediction of the physical variables composition and age:*

4.4.1 Presentation of the Contribution and Prediction Results in the Explosive Power of the Arms:

Table (16): Contribution ratio of the variables of physical composition and the age in the explosive power of the arms

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The age	249.326-	2.964	49.21	6.63	1-118	0.460	21.6%
Regression Gradient	The age The weight of free fat	188.712-	2.053 2.148	36.110	4.60	2-117	0.538	29%
Regression Gradient and all Variables	The age The weight of free fat	190.389-	2.058 1.536 1.884-	25.322	3.78	3-116	0.549	30.1%

The value of (F) of the tabular when the error ratio $\geq(0.01)$

4.4.2 *Presentation of contribution and prediction results in the transition speed*

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The age	9.596	0.0218-	24.172	6.634	1-118	0.346	12%
Regression Gradient	The age The weight of free fat	9.701	0.0238- 0.02787	17.187	4.605	2-117	0.403	16.3%
Regression Gradient and all Variables	The age Weight of fat The weight of free fat	9.701	0.0238- 0.02788- 0.0000134-	11.393	3.781	3-116	0.403	16.3%

The value of (F) of the tabular when the error ratio $\geq(0.01)$

4.4.3 *Present the results of the contribution and prediction of the explosive power of the feet:*

Table (18): Contribution percentage of the physical composition variables and the temporal life in the explosive power of feet:

The method	Measurement	Fixed amount	Parameter	The method	Measurement	Fixed amount	Parameter	The method
Regression Gradient	The age	0.074-	0.147-	Regression Gradient	The age	0.074-	0.147-	Regression Gradient
All Variables	The age Weight of fat The weight of free fat	22.650	0.934 0.195- 0.352-	All Variables	The age Weight of fat The weight of free fat	22.650	0.934 0.195- 0.352-	All Variables

The value of (F) the tabular when the error ratio $\geq(0.01)$

4.4.4 *Presentation of the Contribution and Prediction Results in Force Tolerance of Abdominal Muscles:*

Table (19): Contribution Ratio of Body Composition Variables and Age in the Strength Stability of the Abdominal Muscles:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient								
all Variables	The age The weight of fat The weight of free fat	6.115-	0.294 0.282- 0.328-	2.829	2.604	3-116	0.214	4.1%

The value of (F) the tabular when the error ratio ≥(0.05).

4.4.5 *Presentation of results of contribution and predicting of flexibility:*

Table (20) Contribution Ratio of Physical Composition Variables and Age in Flexibility

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient								
all Variables	The age The weight of fat The weight of free fat	4.116-	0.07147 0.008703 0.124-	1.219	2.604	3-116	0.143	2%

The value of (F) the tabular when the error ratio ≥(0.05).

4.4.6 *Presentation of results of contribution and prediction of fitness*

Table (21): Contribution Ratio of Physical Composition Variables and Age of Fitness:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The age	15.625	0.0217-	11.664	6.634	1-118	0.248	6.1%
Regression Gradient	The age The weight of fat	15.747	0.0239- 0.03252	8.983	4.605	2-117	0.304	9.2%
Regression Gradient and all Variables	The age Weight of fat The weight of free fat	15.993	0.0276- 0.02779 0.009354	6.445	3.781	3-116	0.315	9.9%

The value of (F) the tabular when the error ratio ≥(0.01)

4.4.7 *Presentation of the contribution results and forecasting in the periodic and respiratory devices:*

Table (22): Contribution percentage of the physical composition variables and the temporal age in the rotation of the circulatory and respiratory devices:

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	The weight of fat	3.356	0.03129-	31.71	6.634	1-118	0.386	14.9%
All Variables	The age The weight of fat The weight of free fat	3.784	0.00234- 0.03285 0.00135-	10.740	3.781	3-116	0.393	15.5%

The value of (F) the tabular when the error ratio ≥(0.01)

:Presentation of results of contribution and prediction of physical characteristics 4.4.8

Table (23) Contribution Ratio of Physical Composition Variables and Physical Age in Physical Characteristics

The method	Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Regression Gradient	age	91.157	1.579	30.206	6.634	1-118	0.42	%17 %19
All Variables	The age The weight of fat The weight of free fat	80.387	1.750 0.669 - 0.293 -	13.831	3.781	3-116	0.437	%19

(The value (f) of the tabular at the ratio (error < 0.01)

5.4.Discussion of the results of contribution and prediction of the variables of physical composition and temporal life:

In the above mentioned , the researchers obtained (9) short equations and (7) long equations and when reviewing the percentages of the contribution which is a reliable importance in the variance of the phenomenon based on the proportion (25%) and more that were approved by the researchers, we find that the number of equations have shrunk to (2). This represents the variables (2). The variables of age and fat-free weight (3) represents the variables of age, weight of fat and fat-free weight, and once again highlights age as a variable that reacts with the fat-free weight to obtain an acceptable percentage in the explosive force For the arms, at this stage the weight increases rapidly as a result of the growth of muscles and bones Therefore, muscle strength in children increases during puberty (Abdel-Fattah and Sayed, 1993, 81). The fat weight variable is shown as a contribution that increases the ratio when forming Equation includes three variables does not mean this contribution to the positive, but that means that the common contrast with the predicted nature (explosive force of the arms) apparent disparity through the high and low level of achievement even if this variation is negative, and plays body composition prominent role as the proportion of fat The muscular tissue has a close relationship with you Other physical

characteristics of the components. The increase in fat negatively affects some components of physical properties such as aerobic, anaerobic and elastic capacities. The increase in muscular tissue also positively affects muscle strength and muscular endurance (Abdel Fattah and Sayed, 1993, 71). Because the weight of the body (the weight of the fatty component and the fat-free component, is a unified block represents resistance to deal with.

The increase in the fat-free component of the muscle mass increases the strength to overcome the resistance (Jumaili, 1994, 24). The researchers obtained predictive equations with significant values, with low contribution rates. This is due to the effect of the variables of the body composition which can not be ignored However, the incomplete growth of the research sample due to the period of growth experienced by it is a reason for the limited impact that appeared in this study. Although we have two predictive equations of explosive force and other equations, the contribution rates reflect the low capacity of age variables and physical composition here to provide us with Adlat strong and reliable in predicting the elements of other physical attributes or prediction of physical fitness in general, that we can arrange elements of the physical attributes according to indicators influenced by physical composition and chronological age depending on the contribution or ratios as follows:

Table (24) The order of fitness items according to the contribution of the indicators of the physical

Elements of physical attributes	**Elements of physical attributes**	**order**
The explosive power of the arms	301%	first
Transition speed	16.3%	Second
Periodic and respiratory circulation of the organs	15.5%	Third
The explosive force of the two legs	12.2%	fourth
Fitness	9.9%	fifth
The power rating	4.1%	sixth
Physical flexibility	02%	seventh

6.4Display the contribution and prediction results of the rating index

1.6.4.Present the results of the contribution and prediction of the explosive force of the arms

Table (25): The percentage of contribution of the classification index in the explosive force of the arms

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	149.255-	0.305	63.373	6.634	1.118	0512	%26.3

The value (F) of the tabular at the ratio (error < 0.01)

Table (26): Contribution rate of the rating index at the transitional speed force (26.3%). The calculated value (P) was 63.373, which is significant value at (0.01) .error

The following prediction equation can be obtained: Explosive power = - 149.255 + (0.305 ×Classification index) Equation (1).

4.6.2.Presentation of results of contribution and prediction in transitional velocity

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	-6.588	0.000452	1.051	3.841	1-118	0.077	%0.06

The value (P) of the tabular at the ratio (error < 0.05)

from the table (26). In the study of the variable (classification index), the percentage of contribution in the transitional speed (0.06%) and the value (P) calculated (1.051) which is insignificant value because it is smaller than the value of the scale (error < 0.05). Thus, the resulting prediction equation can not be adopted.

4.6.3 Present the results of the contribution and predict the explosive force of the two men

Table (27): Share of the rating index in the explosive force of the two men

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	109.499	0.03968	5.798	3.8415	1-118	0.178	3%

The value (f) of the tabular at the ratio (error < 0.01)

from the table (27). In the study of the variable (classification index) the percentage of contribution to the explosive force of the two men (3%) and the value of (P) calculated (5.798) which is significant value at the rate (error < 0.01). The following equation can be obtained: Explosive power = 109.499 + (0.0968 × classification index) Equation (2).

4.6.4.Presentation of the results of contribution and prediction of the strength of the abdominal muscles:

Table (28): Contribution ratio of the rating index in the strength of the muscles of the abdomen

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	35.326	0.00746	0.414	3.841	1-118	0.048	%0.2

The value (f) of the tabular at the ratio (error < 0.05)

from the table (26). In the study of the variable (rating index), the percentage of the contribution in the force (0.2%) and the value (f) calculated (0.414), which is insignificant value because it is smaller than the value of (f) , So that the resulting prediction equation can not be adopted.

4.6.5.Presentation of results of contribution and prediction of flexibility

Table (29): Shares of the rating index in the elasticity

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	- 4.502	0.00154	0.097	3.841	1-118	0.023	0.1%

The value (f) of the tabular at the ratio (error < 0.05)

from table (29). In the study of the variable (classification index), the percentage of contribution to the elasticity (0.1%) and the value of (P) calculated (0.097) which is insignificant value because it is smaller than the value of (P) The resulting prediction equation cannot be adopted.

4.6.6Presentation of results of contribution and prediction of agility

Table (30) Percentage of contribution to the rating index in agility

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	13.454	0.00109	3.242	3.841	1-118	0.134	18%

The value (f) of the tabular at the ratio (error < 0.05)

from the table (30). In the study of the variable (classification index), the percentage of contribution to fitness (0.18%) and the value (P) calculated (3.242) which is insignificant value because it is smaller than the value (P) The resulting prediction equation cannot be adopted.

4.6.7.Presentation of results of contribution and prediction in the periodic and respiratory systems

Table (31): Share of the rating index in the rotation of the periodic and respiratory organs

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	3.58	0.000006972	0.001	3.841	1-118	0.002	0.000

The value (f) of the tabular at the ratio (error < 0.05)

from the table (31). In the study of variable (classification index), the percentage of contribution to the rotation of the periodic and respiratory devices (0.000%) and the value of (f) calculated (0.001) which is insignificant value because it is smaller than the value of (f) 0.05), so that the resulting prediction equation can not be adopted.

4.6.8. presentation of results of contribution and prediction of physical characteristic:

Table (32): Contribution ratio of the classification index in physical characteristics

Measurement	Fixed amount	Parameter	F Calculated	F tabular	The degree of freedom	Coefficient of correlation	Contribution Ratio
Classification indicator	244.897	0.08317	10.594	3.841	1-118	0.237	5%

The value (f) of the tabular at the ratio (error < 0.05)

from the table (32). In the study of variable (rating index), the percentage of contribution to fitness (5%) and the value of (f) calculated (10.594) and the value is : (insignificant at the rate (error < 0.05

Fitness = 244.897 + (0.08317 × Classification Index) Equation (3)

4.7.***Discussion of the contribution and prediction results of the rating inde***x

In the course of the above mentioned, the researchers obtained three equations and when reviewing the percentages of the contribution that represent reliable importance in the variation of the phenomenon based on the percentage (25%) and more. we find that one equation falls within the limits of this ratio. The rating index is an equation representing three variables: age, height, and weight. These are measured directly as variables in the equation, which in turn give us the results of the rating index, which can be considered as an indirect measure, even if we examine the result of the contribution .we obtained for this variable in all elements of physical characteristics. We compared the results of the contribution to the body size and age indices in the elements of the corresponding physical characteristics. We find that the contribution rates of the body size and age measurements give better results than the use of these direct measurements when it comes to the common contrast with the elements of qualities Without the use of the classification index except the process of classification into groups, noting that these equations do not represent a small contribution to the common contrast with the elements of physical characteristics except the explosive power of the arms and it is noted that the contribution of the rating in the physical attributes in general did not appear to encourage the adoption, Elements of Physical Characteristics Depending on their impact on the rating index, we can obtain the following:

Elements of Physical Attributes	percentage Contribution	Ranking
The explosive force of arms	26.3%	first
The explosive power of the two legs	3%	second
Fitness	18%	Third
Transitional speed	0.06%	fourth
The strength of the abdominal muscles	0.2%	fifth
Flexibility	0.1%	sixth
Rotation of the circulatory and respiratory devices	0.000	seventh

4.8.Discuss the results of the effectiveness of the prediction equations according to the type of indicators:

By matching the prediction equations as an indicator of their efficiency (percentage of contribution), we find that the indicators (body size, age and time) have achieved the best prediction equations by observing their contribution relative to the body composition indicators and classification indicators.

Table (34) Percentage of the contribution of the indicators included in the research on the elements of physical characteristics

No.	Elements of Physical Characteristics	Body size ,time and age index	physical configuration, time and age index	classification indicators
1	Explosive force of arms	33.6%	%30.1	26.3%
2	Transitional speed	%17.3	16.3%	0.06%
3	Explosive force of the legs	14.2%	12.2%	3%
4	Power activity	5.1%	4.1%	0.2%
5	Flexibility	3%	002%	0.1%
6	Fitness	13.9%	9.9%	18%
7	The rotation of the circulatory and respiratory devices	11.9%	15.5%	0.000

Table 34 shows that the periodicity of the circulatory and respiratory devices represented an exception to the rule. The variables of physical composition and age (age, the weight of fat, fat-free weight) represented the most influential variables. The researchers believe that the indicators of body size and age in general compared to the rest of the measurements covered superiority is due to the type of measurement used for this variable as the indicators of body size and direct measurement, while the physical configuration measurements and the index of indirect measurement and measurement depends accuracy of the results obtained on the nature of the variables through which we get On the output and the indirect measurement increase in the rate of error, as for the variables of physical composition and its impact in the rotation of the circulatory and respiratory, it is due to the nature of this component, which depends primarily on the ability to supply the working muscles Oxygen and muscle strength of the second class, and certainly the physical composition indicators, which represents the weight of fat and weight-free Of fat, it affects in a different way fat is dead cells do not produce energy and does not extend the muscle motility of the bones - which represents the weight free of fat - the oxygen needed for the handling of the circulatory and respiratory, and may come the strength of the contribution of the physical configuration of the variables of rotation of the periodic and respiratory devices through the convergence of large measurements The combination is determined by taking measurements of the thickness of the skin folds from several specific places in the body (fat aggregation areas). The result of these measurements is then collected and divided by the number of areas from which measurements were made or by using certain equations. (Hassanein, 1995b, 54). In this research, the equations were used for these measurements, which represent the weight of fat, which expresses one of the components of the physical configuration. Thus, the researcher has achieved the goals and hypotheses of his research relatively by obtaining a number of equations that approved a section of them and neglected the other section by the proportion adopted (25%) of the common variation, while the indicators of body size (height and weight) and age were the most effective variables through the contribution rates.

5. Conclusions:

1. Obtaining (20) predictive equation with body size and age parameters with physical .characteristics exceeding (2) percentage contribution of (25%) and above.
2. Obtain a predictive equation of physical composition indicators and the age of the elements of physical characteristics exceeded (2) of which the contribution rate (25%) and above.
3. Obtain three predictive equations of the classification index by the elements of physical characteristics, one of which exceeded the contribution rate (25%) and above.
4. Not showing all the variables of research ability to predict the total number of physical qualities.
5.The indicators (body size and age) represented a large potential for predicting physical characteristics compared to indicators (physical composition and classification), except for the periodic and respiratory handling component.
6. Prevalence (body size and temporal order) by their contribution to the elements of physical characteristics in relation to physical composition and classification.

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