



The relation between food awareness with some components of body construction for athletes at Imam Abdulrahman Bin Faisal University

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Abstract: The research aims to identify the relation between food awareness with some components of body construction for athletes at El-Emam Abdelrahman El-Faisal University. The researchers used the descriptive curriculum because of its property for the thesis nature. The chosen sample of the research consists of (20) athletes aged from 18-21 years old. The data was collected by conducting measurements on the thesis sample such as the physical measurements (e.g. length, weight, circumferences, fats percentage, body mass indicator BMI) and chemical measurements (e.g. the folic acid proportion in blood, Hemoglobin, fasting glucose proportion, the blood cholesterol proportion). One of the most important findings in the research that it shows the results of the food awareness and the young athletes' poor awareness of dietary behaviors, eating fast food regardless its uselessness, and refusing to have breakfast. The research shows the sample awareness of the body indicators in addition to the awareness that weight is not an indicator for the proper nutrition. The most important recommendations are to organize cultural courses and scientific seminars in clubs and university institutions, and that there is a necessary need for a nutrition expert in the technical staff of the football team.

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1. Introduction:

In the last few years the field of nutrition becomes a topic of interest at the national and international level, so the culture of nutrition is considered an important element for all individuals because choosing the proper food in a proper amounts which is suitable for the dual activity of the individuals from various social and economic classes and in different ages is considered an important component in preventive medicine and a main substrate for health safety (14:265).

Many scientific experiments proved that nutrition has a great effect on the human body, its growth and ability to move produce and resist diseases, the value of what a person eat is not measured with its amount or saturation but with its components and how much the body needs these food compounds which will help in growing and increase the ability to do more efforts, the integrated food also prevent nutritional deficiencies such as Anemia and Pellagra (22:242).

Both Saad Riade and Hany Abdelalem (2009) explain that nutrition has a great importance for athletes in the light of what experiments had explained

about the close relation between health in general, fitness, physical competence, the physical performing of specific motor skills and other variables (7:16).

Salah Elsaid Kadouse (1993) refers to the importance of organizing the process of nutrition as it is one of the important elements which helps in coordinate and organize the sports training process to achieve the best results after doing any sport activity in general and doing the exercises based on weights in particular (9:165 – 181).

Murphy et al (1994) emphasize the importance of food needs assessment as the lack of energy and not following a balanced diet with physical activity has a negative influence on the athletes' health (21:408). The relation between energy and physical effort or activity has a close link with the way to get it by eating food as to know some information about healthy food has an obvious importance which lead to have the food that will help in saving energy and how to choose these types, in addition to that, the exercise intensity and time plays an important role in specifying the type of food elements (10:263).

Thesis importance and problem:

After searching in the studies related to the nutritional behavior, we find how important it is to study the nutritional awareness and how much we need to have this kind of studies for athletes to explain the direct effect of food on body building. Thus we provide planners and decision makers in food formulation policies for athletes to address malnutrition and the importance of providing food programs and raise the level of the players' nutritional awareness because of its important relation to the player's performance and physical composition.

Both Yousria AbdElmouty (2007) and Magdy Kamel (1997) mentioned that when choosing foods we should know some information about them in terms of types, ingredients, nature and benefits for the body to compensate for tissues' damage at all stages of life and the amount of food needed, which varies from person to another depending on the composition of the body, weight, height, sex and also the type of physical activity performed. Food is necessary to maintain the health of individuals (5:14) (22 – 191).

The youth sector is one of the basic segments of society that must be provided with appropriate information and health behaviors that constitute the health awareness in the community. The young are the future whose ideas and experiences can change many misconceptions about health awareness. Therefore, researchers are making great efforts to identify the level of health awareness prevailing in society to be a basis for awareness of what should be done.

The research takes a fresh look at the nature of problems affecting the physical composition of athletes in terms of focusing on dietary problems as one of the important causes in the physical structure, which works to improve the level of physical performance and therefore should be subject to diet of athletes to the rules of healthy nutrition. This led researchers to identify the relationship between nutritional awareness and some components of athletes' physical structure.

Thesis objects:

The research aims to identify the relation between nutritional awareness and some structural components for athletes according to the following:

1. Identify the relation between nutritional awareness and some structural components (length – weight – body mass indicator BMI–circumferences - fats percentage).
2. Identify the relation between nutritional awareness and some chemical variables (the folic acid proportion in blood, Hemoglobin, fasting glucose proportion, the blood cholesterol proportion).
3. Identify the level of athletes' nutritional awareness.

Research hypotheses:

1. There is a statistical relation between nutritional awareness and some structural components (length – weight – body mass indicator BMI – circumferences - fats percentage).

2. There is a statistical relation between nutritional awareness and some chemical variables (the folic acid proportion in blood, Hemoglobin, fasting glucose proportion, the blood cholesterol proportion).

3. There is a statistical indication for the level of athletes' nutritional awareness.

Research procedures:

First: the curriculum.

The researchers used the descriptive curriculum because it is appropriate for the study nature as it is considered the most suitable curriculum to achieve the research objects.

Second: the sample.

The sample is chosen by the intentional method to choose the athletes listed in the Saudi universities' federation. The sample consists of 20 athletes.

Third: the domains.

1. Time domain:

- The main exploratory study was done from 26/2/2019 to 30/4/2019.

2. Place domain:

- The researchers do their study in El-Emam Abdelrahman El-Faisal University.

3. Human domain.

- The sample consists of 30 athletes.

4. Research tools.

The researchers used the following tools to measure the research variables:

First a questionnaire to measure the athletes' nutritional awareness which contains five axes:

- 1- The daily nutritional needs for the football juniors.
- 2- Nutrition and body building.
- 3- Nutrition (before, during and after) training and competition.
- 4- Balanced nutrition and meals plane for the football juniors.
- 5- The nutritional meals for athletes.

Psychometric properties of the measuring tool

To make sure that this questionnaire is honest we should follow these methods:

1- Honesty: (honest content)

The questionnaire was presented to the arbitrators with specialization from the professors of physical education and nutrition (table 3), the questionnaire axes were presented includes the percentage of their approval of the questionnaire (100%), some arbitrators have asked to change some of the statements and some others have been rewritten.

Honest arbitrators

The veracity of the content and the arbitrators were verified by presenting the questionnaire axes to the arbitrators and the percentage of their approval was (100%), then we present the elements of each axes and the approval percentage was presented in the following table (3):

Table (1) contains the percentage of the arbitrators' approval (from 80% to 100%) which is a good percentage that is a proof of the questionnaire honesty.

Internal consistency

The internal consistency is the correlation coefficient between each element and its axes degree, then measure the correlation coefficient between the degree of each axes and the total measure degree.

Table (1) the percentage of the arbitrators' approval of the questionnaire axes (N = 10)

First		Second		Third		Fourth		Fifth	
M	Honest rate	M	Honest rate	M	Honest rate	M	Honest rate	M	Honest rate
1	100	23	100	36	95	47	80	58	90
2	100	24	100	37	95	48	95	59	95
3	80	25	85	38	100	49	95	60	95
4	90	26	80	39	100	50	80	61	100
5	95	27	80	40	100	51	80	62	100
6	95	28	95	41	80	52	95	63	80
7	90	29	95	42	85	53	95	64	85
8	80	30	80	43	85	54	80	65	100
9	85	31	85	44	90	55	85	66	100
10	85	32	90	45	90	56	90	67	80
11	100	33	85	46	90	57	85	68	85
12	95	34	85					69	85
		35	85					70	90

Table (2) the correlation efficient between each element and the degree of its axes (N=10)

First		Second		Third		Fourth		Fifth	
M	Correlation coefficient	M	Correlation coefficient	M	Correlation coefficient	M	Correlation coefficient	M	Correlation coefficient
1	0.766	23	0.892	36	0.838	47	0.821	58	0.818
2	0.799	24	0.815	37	0.785	48	0.834	59	0.837
3	0.751	25	0.891	38	0.779	49	0.877	60	0.842
4	0.785	26	0.788	39	0.778	50	0.894	61	0.858
5	0.767	27	0.795	40	0.776	51	0.855	62	0.829
6	0.778	28	0.798	41	0.769	52	0.862	63	0.837
7	0.795	29	0.782	42	0.788	53	0.822	64	0.812
8	0.791	30	0.825	43	0.768	54	0.817	65	0.837
9	0.768	31	0.821	44	0.791	55	0.834	66	0.829
10	0.769	32	0.798	45	0.876	56	0.819	67	0.833
11	0.768	33	0.777	46	0.898	57	0.888	68	0.852
12	0.776	34	0.789					69	0.833
		35	0.769					70	0.809

The value of table correlations (0.01) = 0.765

Table (2) presents the values of correlation coefficient between the element degree and its axes degree, more than (0.01) which is a proof of the internal consistency.

2- Stability:

The questionnaire stability is proved by presenting the Cronbach's Alpha for each element and for the whole axes.

Table (3) the stability coefficient in the case of removing element (N=10)

First	Second	Third	Fourth	Fifth
0.879	0.905	0.899	0.898	0.893

Table (3) shows that the stability value of the elements is less than the stability value of its axes which means that all elements are stable. The element does not lead to reduce the total stability correlation of the axes. The total stability correlation of the questionnaire axes is (0.879, 0.878, 0.905, 0.899, 0.898, and 0.893) consequently which is an indicator for stability, the total stability correlation is (0.911).

From the previous procedures the researchers make sure of the honesty and stability of the questionnaire and its power in measuring the nutrition awareness.

Fifth: the tools and equipment's of measuring body structure:

- 1- The Rasta meter to measure length / cm.
- 2- Medical scale to measure weight / kgm.
- 3- Medical injections 5cm to use once for blood samples.
- 4- Sterile tubes to collect blood samples contain anticoagulant and labeled with the player's name and number.
- 5- Medical equipment to analyze the body components and the percentage of the fats and liquids in the body.
- 6- A meter to measure circumferences.

Sixth: the used measurements:

1- A data form for the players:

- A form to recognize the primary data and the independent variables of the sample.
- A form to identify the athletes' nutrition awareness which is designed by the researchers after presenting it to the experts and specialists in the field of physical education.

2- Physical measurements (anthropometry):

- Measuring height (H).
- Measuring weight (W).
- Body Mass Index (BMI).

- Measuring circumferences (upper arm – chest – belly – hip – thigh).
- Measuring fats.

3- Biochemistry:

- The folic acid proportion in blood (Hemoglobin) (N.13-17.5 G/dI).
- Fasting glucose proportion (Mg/dI N.70-110).
- The blood cholesterol proportion (Mg/dIN.up to 200).

Exploratory study:

The researchers do this study from 26/2/2019 to 30/2/2019. The sample consists of 10 athletes out of the main research sample to make sure of the psychometric properties of the measuring tools.

Eighth: the main steps of the study:

The researchers make this study according to the following steps:

- 1- Apply the questionnaire form to measure the nutrition awareness (in its final form) on the athletes in El-Emam Abdelrahman El-Faisel University in Eldamam (20 athletes).
- 2- Apply the physical measurements (height (H), weight (W), Body Mass Index (BMI), circumferences, fats).
- 3- Apply biochemistry measurements (The folic acid proportion in blood (Hemoglobin), fasting glucose proportion, the blood cholesterol proportion).
- 4- Apply the suitable statistical transactions.

View and discuss research results:

First: view the results:

1- The physical measurements for the football juniors.

Table (4) shows that there is no difference between the significant variables (length – weight – BMI) which refers to the sample homogeneity.

Table (4): The arithmetic averages, standard deviations, and the test values of Klumgrove – Smirnov for study variables (Length, weight, body mass index BMI)

variable	Measuring unit	SMA	Standard deviation	Klumgrove- Smirnov value (Z)	Significance value	Significance level
Length	Cm	173.90	6.67	0.982	0.289	Not significant
Weight	Kgm	70.55	10.83	1.006	0.263	Not significant
Body mass index (BMI)	Kgm/m	23.33	2.65	1.68	0.087	Not significant

Table (5): SMA, standard deviation and Klumgrove- Smirnov value (Z) for study variables (Upper arm – chest – belly – hip – thigh)

variable	Measuring unit	SMA	Standard deviation	Klumgrove- Smirnov value (Z)	Significance value	Significance level
Upper arm	Cm	28.75	2.51	0.853	0.461	Not significant
Chest	Cm	91.90	6.52	0.595	0.871	Not significant
Belly	Cm	83.05	8.068	0.532	0.94	Not significant
Hip	Cm	96.60	11.458	1.014	0.255	Not significant
thigh	Cm	49.95	4.19	0.765	0.601	Not significant

Table (5) shows that there is no difference between the significance values of the variables (upper arm – chest – belly – hip – thigh).

Table (6) shows that the value of Z for the fats is more than the value in the table significance level (0.05), this shows that there are differences in the

amount of fats from one individual to another. The value of Z for the amount of liquids is less than that is found in the table in the significance level (0.05), this show that there are no significant differences in the amount of liquids for the study sample.

Table (6): Standard deviation and SMA of the variables (fats and liquids in the body)

Variables	Measurements	SMA	Standard deviation	Klumgrove- Smirnov value (Z)	Significance value	Significance level
Fats	% percent	18.24	6.47	2.09	0.05	Significant (0.05)
liquids	% percent	32.565	18.81	1.167	0.131	Not significant

Z (0.05) = 1.96

Biochemistry measurements for the football juniors:

Table (7) shows that Z value is less than the table value (0.05), this is an indicator for the sample homogeneity with the study variables (the blood

cholesterol proportion - fasting glucose proportion) whereas there are differences in the significant level (0.05) in the variable of the folic acid proportion in blood (Hemoglobin).

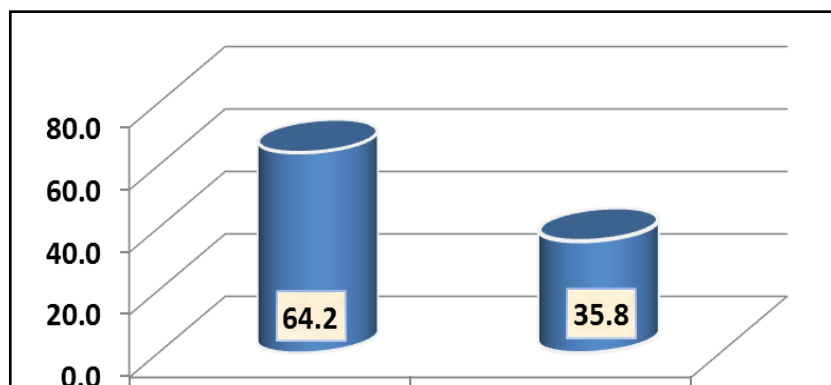
Table (7): Standard deviation, SMA and Klumgrove- Smirnov value (Z) For biochemistry variables

Variables	Measurements	SMA	Standard deviation	Klumgrove- Smirnov value (Z)	Significance value	Significance level
the blood cholesterol proportion	Mg/dIN.up to 200	151.25	29.79	0.511	0.956	Not significant
The folic acid proportion in blood (Hemoglobin)	G/dI N.13-17.5))	16.54	2.21	0.559	0.025	Significant
fasting glucose proportion	Mg/dIN.70-110))	84.05	9.95	0.642	0.804	Not significant

View the results of nutritional awareness questionnaire forms: First axes (athletes' daily nutritional needs)

Table (8): Repetition and percentage of the sample response for the first axes elements "athletes' daily nutrition needs"

M	statement	Yes		No		K2
		T	%	T	%	
1	Nutritional needs are the required amounts of carbohydrates, proteins, fats, liquids, vitamins and water that body needs	8	40.0	12	60.0	0.8
2	Youth needs amounts of calories more than old	16	80.0	4	20.0	7.2
3	When the junior has balanced meals we can give him additional amounts of vitamins and minerals depending on his effort and energy	7	35.0	13	65.0	1.8
4	Football juniors should have sufficient amounts of liquids to face sweating in hot weather	17	85.0	3	15.0	9.8
5	Have the suitable percentage of calcium for bones if it is increased it will be harmful for the kidney	16	80.0	4	20.0	7.2
6	Athlete's needs is more than non-athlete in general and increase when he did more effort and training	15	75.0	5	25.0	5.0
7	Carbohydrates must be 50-60% of the daily calories	18	90.0	2	10.0	12.8
8	Youth has more daily needs of water in training and competing in hot weather	19	95.0	1	5.0	16.2
9	Protein can turn into carbohydrates or fats but not vice versa	13	65.0	7	35.0	1.8
10	The youth needs food elements more than non-athletes in general	12	60.0	8	40.0	0.08
11	The body needs minerals daily in sufficient amounts	18	90.0	2	10.0	12.8
12	In teenager period the athlete needs 1700-1800 calories per day more than any individual in general	7	35.0	13	65.0	1.8
		13	64.2	7	35.8	1.6



The diagram (1) shows that the percentage of approval for the elements of the football juniors' daily nutrition needs is (35.8%) for No and (64.2) for Yes.

Table (9): Repetition and percentage of the sample response for the second axes "nutrition and body construction"

M	statement	Yes		No		K2
		T	%	T	%	
23	Weight is considered one of the main measurements to evaluate the nutrition level at all life stages	12	60.0	8	40.0	0.8
24	Protein is the element responsible for forming different tissues in the body	18	90.0	2	10.0	12.8
25	Physical measurements are considered the important basis to specify and evaluate the individual nutritional case	19	95.0	1	5.0	16.8
26	Body mass is an important indicator to maintain the ideal weight	20	100.0	0	0.0	20
27	There should be a suitable diet to improve performance in some sports	20	100.0	0	0.0	20
28	Weight is an indicator for the amounts of fats, muscles, bones and liquids	18	90.0	2	10.0	12.8
29	The older you are, the less calories you need	20	100.0	0	0.0	20
30	Males need more calories than females (500 calories per day)	14	70.0	6	30.0	3.2
31	The more calories are there, the more weight you will gain	15	75.0	5	25.0	5
32	The abnormal physical measurements – length, weight, skin, belly – is a significant indicator for cases of bad nutrition whether more or less	19	95.0	1	5.0	16.2
33	Weight is not always an indicator for good nutrition	20	100.0	0	0.0	20
34	Stable weight indicates stable performance	18	90.0	2	10.0	12.8
35	Consuming large amounts of proteins will not produce more power or muscles	10	50.0	10	50.0	0
		16	80.0	4	20.0	7.2

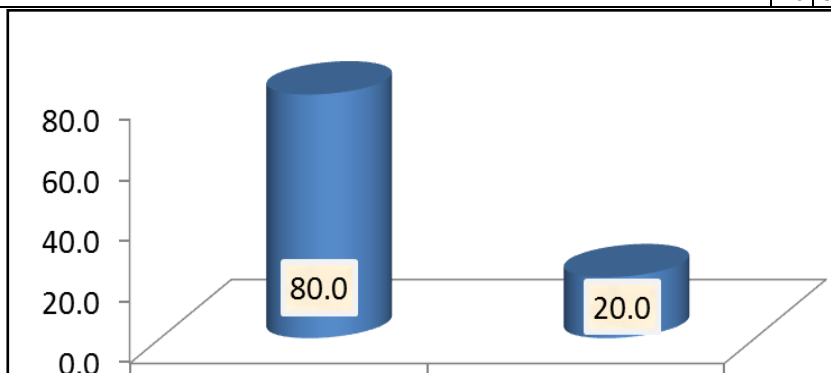


Diagram (2) shows that the percentage of approval for the elements of the axes of nutrition and body construction is (20.0%) for No and (80.0%) for Yes.

Table (10): Repetition and percentage of the sample response for the third axes "nutrition (before, during and after) training and competition"

M	statement	Yes		No		K2
		T	%	T	%	
36	Before competition the athlete should eat a piece of chocolate	15	75.0	5	25.0	5
37	Athlete should drink and eat foods with more carbohydrates during 15-30 minutes after game	8	40.0	12	60.0	0.8
38	He should have less amount of proteins in the before meal	10	50.0	10	50.0	0
39	The last meal should be 3-4 hours before the game	18	90.0	2	10.0	12.8
40	The during meal should be easy to digested and does not contain fats as possible	16	80.0	4	20.0	7.2
41	Drink water is very important before, during and after competition	20	100.0	0	0.0	20
42	Meals should not be unusual	20	100.0	0	0.0	20
43	During days of competition, meals should be increased in number but not in amounts	17	85.0	3	15.0	9.8
44	He should reduce training and increase carbohydrates in the week before competition	17	85.0	3	15.0	9.8
45	He should drink water and any other liquids many times with little amounts before game	16	80.0	4	20.0	7.2
46	He should stop eating foods rich with fats before any activity	13	65.0	7	35.0	1.8
		15	77.3	5	22.7	6.0

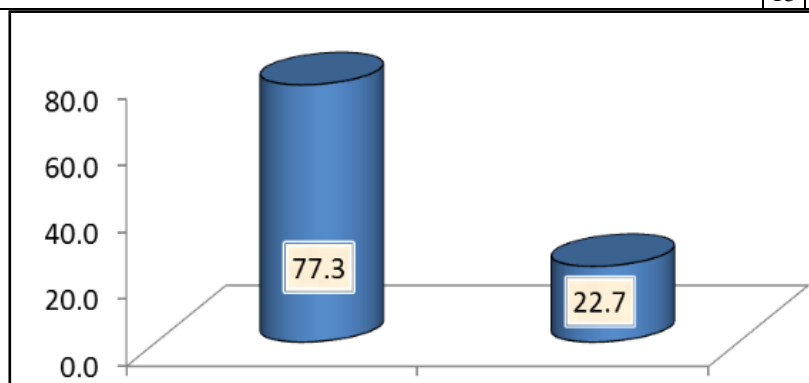


Diagram (3) shows that the percentage of approval for the elements of the axes of nutrition before, during and after training and competition is (22.7%) for No and (77.3%) for Yes.

Table (11): Repetition and percentage of the sample response for the fourth axes" balanced nutrition and meals planning for athletes"

M	statement	Yes		No		K2
		T	%	T	%	
47	The pyramid of healthy foods for the Mediterranean countries consists of six groups of nutrition. A healthy diet requires at least one ingredient from each health group	17	85.0	3	15.0	9.8
48	To have four meals is the best routine for youth	16	80.0	4	20.0	7.2
49	It is necessary to have meals regularly as possible	20	100.0	0	0.0	20
50	All kinds of fats are harmful for heart, arteries and blood vessels	16	80.0	4	20.0	7.2
51	Food is categorized according to its components and benefits into seven main groups that the young should have daily	12	60.0	8	40.0	0.8
52	The best time to drink orange juice is during or after breakfast, milk with all its products in the beginning	18	90.0	2	10.0	12.8
53	They can have proteins and fats in the same meal	8	40.0	12	60.0	0.8
54	It is better to eat salads between meals	18	90.0	2	10.0	12.8
55	In the same meal proteins and carbohydrates should be mixed	14	70.0	6	30.0	3.2
56	Lunch is one of the most important meals for youth and juniors	9	45.0	11	55.0	0.2
57	It is not appropriate to have two or more kinds of meat in the same meal	13	65.0	7	35.0	1.8
		13	65.0	7	35.0	1.8

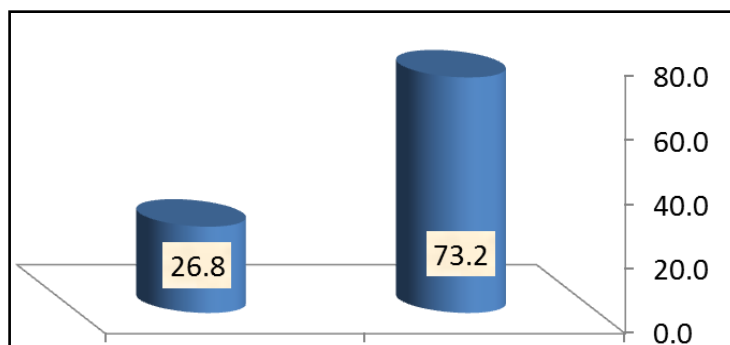


Diagram (4) shows that the percentage of approval for the elements of the axes of balanced nutrition and meal planning for football juniors is (26.8%) for No and (73.2%) for Yes.

Table (12): Repetition and percentage of the sample response for the fifth axes "athletes' meals"

M	statement	Yes		No		K2
		T	%	T	%	
58	Carbohydrates and proteins give muscles the required energy	13	65.0	7	35.0	1.8
59	Lunch should contain less calories than breakfast and dinner	14	70.0	6	30.0	3.2
60	Having most required calories in the morning decrease the desire to eat fatty foods in dinner	17	85.0	3	15.0	9.8
61	Youth should eat large amounts in breakfast and a suitable amount in lunch and little amounts in dinner, with a light snack between each two main meals	16	80.0	4	20.0	7.2
62	We should vary in the sources of proteins	20	100.0	0	0.0	20
63	The meal just before training or competition should contain liquids and less fats and more carbohydrates and it is ok if it contains proteins	13	65.0	7	35.0	1.8
64	The meal just after severe training should contain carbohydrates, proteins and fats	18	90.0	2	10.0	12.8
65	They should drink water and liquids before, during and after training	20	100.0	0	0.0	20
66	There is no standard routine or diet for any activity	15	75.0	5	25.0	5
67	Athletes are not allowed to eat large amounts of food to achieve good results in champions	19	95.0	1	5.0	16.2
68	Juniors should eat large amounts of food in lunch the day before competition	13	65.0	7	35.0	1.8
69	Bread is the most important source of carbohydrates for athletes	17	85.0	3	15.0	9.8
70	The components of the meal differs according to the performed activity	20	100.0	0	0.0	20
		17	82.7	3	17.3	8.6

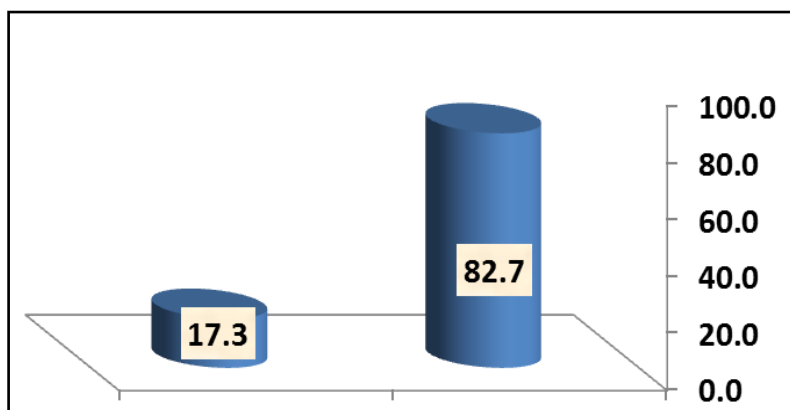


Diagram (5) shows that the percentage of approval for the elements of the axes of nutritional meals for athletes is (17.3%) for No and (82.7%) for Yes.

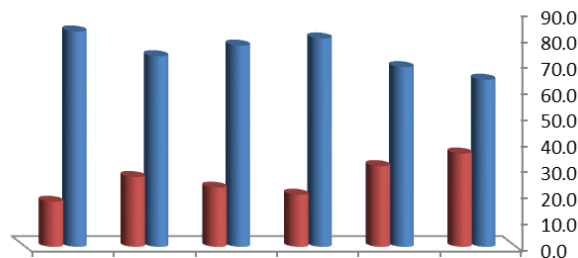


Table (13) shows that there is no relation between the body building components (length – weight – BMI – upper arm – chest – belly – hip – thigh – fats – liquids).

There is a negative relation between the elements of nutritional awareness and fats in the body. The more there is nutritional awareness, the less fats level it will be. There is a relation between elements of

nutritional awareness and the amount of liquids in body. The more there is nutritional awareness, the more the body can keep the sufficient amount of liquids. There is a negative relation between the elements of nutritional awareness and the belly. There is a relation between the elements of nutritional awareness and the body mass index (BMI).

Table (13): Correlation coefficients between nutritional awareness and the components of body construction

Nutritional awareness	Body building	first	second	third	fourth	fifth	sixth
length		0.007	0.06	0.217	0.194	0.137	0.088
weight		0.462	0.264	0.473	0.315	0.514	0.285
Body mass index (BMI)		0.469	0.585	0.515	0.547	0.555	0.509
Upper arm		-0.384	-0.308	-0.411	-0.088	-0.294	-0.411
chest		0.073	0.223	0.163	0.414	0.309	0.288
belly		-0.584	-0.505	-0.486	-0.512	-0.528	0.509
hip		0.154	0.205	0.143	0.111	0.152	0.088
thigh		0.134	0.305	0.222	0.127	0.218	0.231
fats		-0.491	-0.473	-0.509	-0.487	-0.511	-0.473
liquids		0.508	0.473	0.508	0.547	0.537	0.522

Second: discuss findings:

1- Discuss the results of the athletes' physical measurements

Table (4) presents the value of Z to be less than (0.05) in the study variables (length – weight – body mass index BMI) which is n indicator of the sample homogeneity.

Table (5) shows that there are no significant statistical differences in the variables (upper arm – chest – belly – hip – thigh).

Table (6) presents the value of Z to be less than the table value (0.05) which is considered as an indicator to the statistical significant differences in the amounts of liquids in the research sample.

The Z value of fats is more than the table value (0.05) which is an indicator that there are differences in the amounts of fats in the sample.

Hazaa Mohamed Hazaa (2006) emphasized that nutrition and physical activity has a great effect on the percentage of fats in body as eating foods rich with calories lead to over weight (17:111). These findings are consistent with Osama Kamel and Tamer Ez Eldin

study (2009) in the fact that standardized aerobic training helps to balance body fat representation through muscle cells, allowing it to be deposited in fat cells or eliminated by the liver. Also due to the increase in the number of calories consumed at the number of calories intake, which leads to increased fat burning inherent to produce the necessary energy (2:70).

Kamal Abdelhmed and Abo El-Ela AbdElfatah (2009) refer to an increase in the rate of fat leads to the occurrence of obesity and to accumulate incomplete residues of oxidation, which requires necessarily reduce the intake of fat (13:133).

The first hypothesis, which provides a statistically significant relationship between dietary awareness and some of the components of body building in the proportion of body fat in athletes, is clear. While there were no statistically significant differences between dietary awareness and some physical variables (length – weight – body mass – circumferences).

2- Discuss the results of the biochemistry measurements

Table (7) clarifies that the calculated values are less than the tabular value at the level of significance (0.05) which indicates the homogeneity of the research sample in the study variables (the blood cholesterol proportion - fasting glucose proportion) while there were significant differences at the level (0.05) of folic acid proportion in blood (Hemoglobin).

This is consistent with the study of Sherif Fayoumi (1997) where he pointed to the high average intake of nutrients and thus increases the proportion of hemoglobin in the blood in the research sample (8). Hussein Hosni Abdel Dayem (2006) points out that folic acid is an important element in the formation of some enzymes necessary for the functions of cells in general and brain functions in particular, therefore, folic acid deficiency leads to lack in concentration and attention and increase nervousness and loss of growth (4:60).

The second hypothesis states that there is a statistically significant relationship between dietary awareness and the chemical variable of folic acid proportion in blood (Hemoglobin) for athletes. While there were no statistically significant differences between dietary awareness and some chemical variables for athletes (e.g. the blood cholesterol proportion - fasting glucose proportion).

3- Discuss the results of the first axis "daily nutritional needs for athletes":

Both table (8) and diagram (1) clarify the existence of statistically significant differences at the level of significant (0.05) between the response with or without approval in the statements (3, 4, 5, 6, 8, and 11) and everyone was in favor of responding with approval for the statement, the response of the study sample for the statement number (1) in identifying the dietary needs is (65%) which indicates that the percentage of approval was more than average. This may be a result of not mentioning minerals in the identification.

Both Yousria A. EL-matey (2007) and MagdyKamel (1997) emphasize that when choosing foods we should know some information about them; their kinds, components, nature and benefits (22:191) (5:14). Abdelrahman Abd Elhamed Abo Zaher (2011) refers to the importance of vitamins for the athlete and that we should double the amount of vitamins for them during performing any physical activity because of the insufficiency of vitamins as a result for the need. The signs of vitamin's lack do not appear in the beginning of the training session but it appears after doing efforts and in the cases of tiredness as it is clarified with lack of muscles power, lack of muscular efficiency, fast fatigue and the necessity of eating various foods to

have the most cultural dietary awareness (10:223 – 225).

In this case the study of Glesias, et al, (2005) evaluates the dietary habits and the teenage football players' nutritional state. The study evaluates the dietary habits for the teenagers from high social classes. Although food contains folic acid, 48% from the individuals suffer lack of folic acid with no obvious reason which leads to anemia. It is recommended to design a good program to raise the physical efficiency to improve the healthy dietary habits for teenage football players (19).

The researchers emphasize the necessity of having a program of nutritional culture especially for athletes to improve their physical efficiency and the healthy habits. Ruiz et, al (2005) emphasizes the study results. Kamal AbdElhamed Ismail, Abo Elela AbdElfatah and Mohamed Elsaid Elamin (2009) emphasize that it is necessary to have a dietary awareness through dietary culture, forming healthy habits, a trial to present the defect in the ancient dietary habits and to be careful that each meal should contain the main elements (13:132).

EmadEldin Jamal Goma (2008) points out that the variety in the culture of dietary awareness according to many elements is doubtless different from one country to another and from one society to another and also between individuals in the same society. An individual should eat healthy uncorrupted food and follow the healthy dietary habits and choose the suitable type of food (11:32).

4- Discuss the results of the second axis "nutrition and body construction":

Table (9) and diagram (2) clarify the different statistical significant between the study sample responses with or without approval as the values of K2 are more than the tabular value (0.05) in the statements from 24 to 29 and the statements numbered 31, 32, 33, 34, and the total degree. The results of the study refer to the relation between the dietary habits and the components of body preparation such as endurance, capability, speed, fitness and some physiological changes in the footballers such as hemoglobin proportion, cholesterol and liquids proportion in the body (15).

Both Abo Elela AbdElfatah and Mohamed Sobhi Hasanin (1997) refer to the importance of body construction through presenting valuable information in the field of ideal weight that the player needs to gain in order to be fit (1:324).

5- Discuss the results of the third axis "nutrition before, during and after training and competition":

Table (10) and diagram (3) show that there are statistically significant differences in the significant level (0.05) except the statements numbered (37, 38,

and 46). The results also refer to the statements numbered (41 and 42) "drink water is a necessity before, during and after competition" and "it is not favorable to eat unusual food in the days of the competition". The study results emphasize the sample awareness of the necessity of water especially for footballers, and the necessity of not eating unusual food during or after match as this will cause stomach disorders.

The study of Clark et, al (2003) discusses what is taken from food, body composition and athletic performance before and after the season for female football players, first year at the Notre Dame University in America. The results revealed that there are no significant differences between before competition and after competition season in the proportion of carbohydrates, and that fats level was high before season. The female footballers' needs for calories increased during the time of training and decrease after (18).

Both Kamal Abdelhamed Ismail and Abo ElelaAbdElfatah (2001) also point out that the amounts of food should be increased daily from 3 kgm to 3.5 kgm. The meal before training should contain high calories with little amount and easy to be digested. The meals were given to the players according to the general daily routine of the footballer, it is forbidden to change this routine in the day of the match and the competitions, the meals should be four per a day. The meal after the match should be rich with carbohydrates and avoid meals that may contain fats (13:388).

6- Discuss the results of the fourth axis "balanced nutrition and meals planning for athletes":

Table (11) and diagram (4) show that there are statistically significant differences in the sample responses in the statements numbered (47, 48, 49, 50, 52 and 54) as the values of K2 are more than tabular values (0.05). The study of Mayfeid (1989) finds out that healthy balanced nutrition increases the internal power and the shape of body building for athletes.

As a result, the researchers find that there is a specific amount of food to be easily digested and vary in values, we should also pay attention to the tools used in cooking and the way in which it is cooked and the personal hygiene of the cookers. Salah Kadouse (1993) points out that the process of nutritional organizing is one of the most important healthy elements that help in training to achieve the best results especially in sports that depend on weight (9:165 – 18).

7- Discuss the results of the fifth axis "dietary meals for athletes":

Table (12) and diagram (5) shows that there are statistically significant differences in the sample

responses with or without approval in the statements numbered (60, 61, 62, 64, 65, 66, 67, 69 and 70). The sample approved the sentence number (65) in 100% percent, "it is necessary to drink water and liquids before, during and after training". The value of the variable K refers to the sample awareness of the necessity of water for the footballer and the sample awareness with the nutritional culture which is presented by the approval of the statement number (70), " the meal's components differ according to the performed activity", the sample approve in 100% percent which is a proof of the sample's awareness with the variety in the player's needs according to the activity that he performs.

This is different from the results of the study by Rehab Abdelmoez Ismail (2010), and the study by Amina Ali Mohamed Elbasiony (2012) which find out that there is not enough information about nutrition. This lack in information is appeared in the problems of malnutrition and the inappropriate physical measurements in female students in college. This is a critical age where female students cannot specify their nutritional needs and they do not know the healthy conditions for each meal (3) (6).

The results of the recent study are the same of the study of Khalid Mohamed MohamedBadr (2007) which refers to the effect of the program of dietary culture for the trainer (5). The results of Maha Mohamed Amin Fahmy study (2007) point out that the students know information about the necessity of fresh vegetables and fruits as main elements in the meal. But the results of the recent research is different because they find out that students do not care about the main elements to be exist in the meal and do not care about their weight. They do not watch the media programs that concentrate on the ways to lose weight. Some students become confused when they feel hungry.

8- Discuss the third hypothesis "the relation between the dietary awareness and the components of the body construction":

Table (13) clarifies that there is no relation between the components of body building (length – upper arm – chest – belly – hip – thigh). There is a negative relation between the elements of nutritional awareness and the level of body fats. The more there is a nutritional awareness the more acceptable will be the level of body fats. There is a relation between the elements of nutritional awareness and the amounts of liquids in body. The more there is nutritional awareness, the more ability the body can keep liquids. There is a negative relation between the elements of nutritional awareness and the belly. There is a relation between the elements of nutritional awareness and body mass index BMI. The researchers emphasize the honesty in the third hypothesis about the relation with

statistical significance between the level of nutritional awareness and some components of body construction for athletes.

First: conclusions:

Results of physical and chemical measurements of the juniors in football:

- Physical construction components (length, weight, body mass index BMI and circumferences) conform to age-specific characteristics.
- The fats rate is higher than normal.
- Lack of folic acid (hemoglobin) in blood than normal which leads to the fast spread of some wrong dietary behaviors and habits for athletes.
- The study results clarify the awareness of nutritional needs for the juniors.

Second: recommendations:

- Paying attention to spreading the nutritional awareness of the athletes and introducing them to the importance of balanced nutrition and healthy meals that affect the sports level.
- Organize periodic meetings with the trainers to increase the dietary awareness and train to plane food lists for the athletes in the time of training and competition.
- Organize courses and scientific seminars in sports clubs.
- There is a necessity to have at least one nutritionist in the team.
- Pay attention to the scientific feedback for the teams because of the importance of nutrition in the field of physical performance to achieve high scores.

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