

## **Building a nutritional awareness scale for physical education and sports science students**

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### **Abstract**

The purpose of this paper is to build a scale of nutritional awareness for students of physical education and sports sciences/University of Kufa, and to identify their level of nutritional awareness, as well as to reveal the differences in awareness between the first and fourth stages, by adopting the descriptive approach. The sample consisted of (200) male and female students who were chosen randomly with the use of a tool. The research (questionnaire) was used to collect information, as the scale in its final form consisted of (20) items and two alternatives (apply/does not apply), and the data was processed statistically through the statistical package (SPSS), and the results reached by the study are - the presence of a level of nutritional awareness among people. Students - There are differences in nutritional awareness between students of the first and fourth stages in favor of the fourth stage. The researcher reached several recommendations, including the necessity of spreading the culture of nutritional awareness among students of physical education and sports sciences. Also, developing a special nutrition curriculum in universities.

### **Introduction and research problem:**

Food is the basic component and cornerstone of a human being. Through it, a person moves and performs all his life duties or activities, including exercise. Therefore, it is the primary source for generating energy used and building cells of all types. (Beak.j.2012.p23)

Nutrition science studies the necessary and important nutritional components that a person requires and the extent of benefit from them according to several other variables, including economic and social status, age, gender, and others. (Kamel, 2022) Through food, a person obtains carbohydrates and fats to generate energy and protein for muscle building and repair, as well as minerals and vitamins that are important in the activity of enzymes and the formation of hormones. Correct nutrition is important for the individual's health and formation (Al-Azmi, 2020).

Nutritional awareness is defined as a set of skills, knowledge, and sufficient information to deal consciously with the various types of foods available in the markets. (Kamal. 2018)

Through the researcher's acquaintance with Arabic and foreign translated books and scientific sources, and his continued interest in food science, the researcher decided to build a special nutritional awareness scale for physical education students to know the amount of awareness and awareness of this basic component in our lives

and the pillar of sports training for the continuous physical activity that physical education students practice that reaches the stage of violence. Through college lectures and its reflection on the student's physical health, performance, and ability to continue. Regulated food is one of the health factors that helps in the training process, achieving achievement, and raising the athletic level while practicing physical activity. (Full, 2022) In addition, graduates of colleges of physical education will practice their work in universities. Alternatively, schools or centers affiliated with the Ministry of Youth for sports or socialization in private training centers and spreading nutritional culture among athletes, students and members of society. (Salama, 2011), so attention to the level of nutritional awareness and its importance is a complete reflection on society as a whole and not on a specific group.

The importance of the research comes from studying nutritional awareness, which is a person's awareness of the components of food and its direct impact on his life. It also expresses the extent of economic, intellectual and social development in which society lives, as well as the nature of individuals' growth and maintenance of good health during their lives. (Khashoggi, 1994, p. 20)

- Contributing to increasing nutritional awareness among physical education and sports science students.
- The importance of this study is that it discusses the most important elements of a person's or athlete's life.
- Developing the nutritional awareness of individuals achieves the goals of sports activity as quickly as possible.
- Increasing nutritional awareness helps students and athletes avoid sports injuries.
- Directing attention to sports and educational institutions in creating awareness programs on the importance of food.

**Research objective:**

- Building a nutritional awareness scale for physical education and sports science students.
- Identifying the level of nutritional awareness of physical education and sports science students.
- Identifying the differences in nutritional awareness between the first stage and the fourth stage for students of physical education and sports sciences.

**Definition of terms:**

Nutritional awareness: full knowledge and awareness of food and nutrition and the extent of their impact on an individual's health and determining appropriate meals during the day (Ghouth: 2013)

**Research methodology and field procedures:**

**Research Methodology:**

The researcher used the descriptive survey method because of the nature and purpose of the research.

**Community and sample research:**

The research population is students of physical education and sports sciences/University of Kufa, male and female, in the four stages for the year

2023/2024. The sample was chosen randomly, and it numbered (200) male and female students.

While the statistical analysis sample from the original community amounted to (400) male and female students, which is the best research sample for statistical analysis of the scale (Al-Zubaie, 1981).

### **Data collection methods and tools:**

#### **Scale form:**

The researcher built a nutritional awareness scale by reviewing research and references and presenting it to a group of (10) experts, five professors at the College of Education for Girls/Department of Physical Education and Sports Sciences/University of Kufa.

Five of the experts at the College of Medicine/University of Kufa took into consideration the observations of the teaching staff.

Note that the form consists of two alternatives (applies - does not apply) and consists of 24 items that were agreed upon in advance by the experts, 23 positive items that support nutritional awareness and one negative item.

#### **Validity of the scale:**

What is meant by the validity of the scale is that “the items actually measure what they were designed to measure.” (Safwat, 1989, p. 245)

The researcher used two types of validity: apparent validity and constructive validity.

#### **Apparent validity:**

What is meant by it is the general framework or external appearance of the scale or test, and it includes the type of vocabulary, its wording, degree of clarity, and objectivity (Daoud, 1990, p. 120). Through it, the scale is presented in its initial form to the experts and specialists, as was explained previously. The best way to know the extent to which the scale items represent the trait or trait to be measured is to present it to a group of experts and specialists (Ebei .1972.P55). The agreement rate was 100% on (24) items. In formulating the statements, the researcher took into account the following:

- Ease and clarity of expressions.
- Accuracy of statement selection that measures nutritional awareness.
- No duplication in writing phrases or paragraphs.

#### **Statistical analysis of paragraphs:**

The researcher used the Punnett by Cyril correlation coefficient to extract internal consistency, which is the relationship between the score of each item and the total score of the nutritional awareness scale, because it is a binary discrete scale. (Fatima. 2018) The researcher found out after conducting the correlation coefficient that all the items are significant at the level of (0.05) and the degree of freedom ( 398) and a tabular value (0.082) (Odeh and Khalil, 2000) except for 4 items, which are (6, 8, 23, 24). Therefore, they were excluded from the scale, and the scale in its final form consisted of (20) items according to the following table:

Table (1) shows the correlation coefficient between the item score and the total score for the nutritional awareness scale

No.	Correlation coefficient	No.	Correlation coefficient	No.	Correlation coefficient
1	0.185	9	0.24	17	0,35
2	0,22	10	0.31	18	0,21
3	0,26	11	0,28	19	0,19
4	0,41	12	0,18	20	0,23
5	0.35	13	0.29	21	0,15
6	0,071	14	0,19	22	0,18
7	0,215	15	0,22	23	0,066
8	0,025	16	0,27	24	0,050

**Stability:**

The reliability of the test is one of the most important basics of constructing measures, and it means the extent of consistency in the results. The researcher resorted to extracting the reliability coefficient using the Keuder-Richardson method. The goal of this method is to find the estimated value of the reliability coefficient for the food awareness scale, since its item scale is two-degree. (Al-Bahi, 1999, 5)

Note that the reliability coefficient for paragraphs (20) after statistical analysis is (0.67), which is a good reliability coefficient.

**Descriptive characteristics of the scale:**

After completing the work on building the nutritional awareness scale for students of physical education and sports sciences, and it was ready to be applied in its final form to the basic sample, which is (200) randomly selected from (4) stages, the scale became composed of (20) items and the answer alternatives (applies, does not apply) and corresponding weights. (0.1) of which (19) items are positive and (1) are negative, and thus the statistical characteristics were extracted according to the following table:

Table (2) shows the statistical characteristics of the scale

No.	Properties	Extracted value
1	sample	400
2	Arithmetic mean	14
3	standard deviation	2,9
4	Lowest degree	6
5	Highest degree	24

**Applying the nutritional awareness scale:**

After completing the construction of the scale (Appendix 1) and following all scientific steps regarding validity and reliability, the scale was applied to the research sample on the date of 1/2/2024 and the location was the University of Kufa/College of Physical Education and Sports Sciences.

**Statistical methods:** The search data was processed through the Statistical Package for the Social Sciences (SPSS).

**Results and discussion:**

First: Building a nutritional awareness scale for physical education and sports science students was achieved according to what was explained in the research procedures.

Second: Identifying the level of nutritional awareness of physical education and sports science students.

The researcher used the T-test for one sample, where the arithmetic mean was (15) degrees, the standard deviation was (2.8) degrees, and the hypothetical mean was (10) degrees, noting that the calculated T-value was (12.8) greater than the tabulated value of (1.98). ) at a significance level of (0.05), and thus we conclude that the sample members, physical education students, have a level of nutritional awareness. Table (3) shows this:

Table (3) shows the arithmetic mean and standard deviation of the research sample and the T-value

Number of sample members	arithmetic mean	standard deviation	Hypothetical mean	T value	Tabular T-value	level sig
100	15	2,8	10	12,8	1,98	0,05

Third: Identifying the differences in nutritional awareness between the first stage and the fourth stage for students of physical education and sports sciences.

To determine the statistical differences between the first and fourth stages, the researcher used the (G) test for samples of (30) and more. (Al-Tarihi Hammadi, 2013, p. 114). The number of students in the first stage was (50) with a mean of (13) and a standard deviation of (2.6), and the number of students in the fourth stage was (50) with a mean of (16) and a standard deviation of (3.1).

The calculated value of (g) is greater than the tabulated value of (1.98) at the level of significance (0.05). We conclude from this that there are statistically significant differences in nutritional awareness between the first and fourth stages in favor of the fourth stage students. Table (4) shows this.

Table (4) shows the arithmetic mean for the two groups, the standard deviation, and the calculated (T) value

Stage	Sample number	Arithmetic mean	Standard deviation	T value Calculated	T value Tabular	Level sig
First	50	13	2.6	5,2	1,98	0.05
Fourth	50	16	3,1			

**Conclusions and Recommendations:**

**Conclusions:**

- There is a level of nutritional awareness among physical education and sports science students acquired from a study environment due to the presence of the teaching staff.
- There is a difference in nutritional awareness between the first and fourth stages due to experience in the number of years of study.

## Recommendations

- Spreading the culture of nutritional awareness among students of the College of Physical Education and Physics.
- Adding a nutrition curriculum for physical education and sports science students in the first stage.
- Conduct a similar study on all Iraqi universities.
- Spreading the culture of nutritional awareness to the general community through a graduate of physical education and sports sciences.

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## Appendices

Dear student

The researcher is conducting a study on (nutritional awareness) for the research titled (Building a Nutritional Awareness Scale for Physical Education and Sports Science Students). To complete the study and achieve its goals, I ask you to answer the questionnaire paragraphs, knowing that all information will be used exclusively for scientific research purposes.

- Personal information:

Gender: Male (\_\_\_). Female (\_\_\_)

University of Kufa/ College of Physical Education and Sports Sciences

academic year (\_\_\_\_\_)

- Notes: There are some terms that we will clarify to make it easier for you, dear student, to answer.
- Refined carbohydrates: What is meant by refined carbohydrate (is all types of baked goods and pastries, including bread, cakes, cakes, biscuits, pizza, and canned goods in the markets. In other words, “everything without fat or fiber or with hydrogen added to it” (Fang, 2018).
- Hydrogenated oils: This means all canned oils with an expiration mark on them.
- Intermittent fasting: There are several types of dietary fasting, the most common of which is eating two meals a day, with the first meal starting after one in the afternoon.

No.	Paragraphs	Apply	Does not apply
1	The daily diet consists of the main elements (protein / healthy fats / carbohydrates / vitamins and minerals)		
2	I know that refined carbohydrates are harmful		

3	I know that hydrogenated oils are harmful		
4	Know that processed canned food is unhealthy		
5	Realize that food containing fresh meat is beneficial		
6	Food includes fresh fruits		
7	Realize healthy food contains vegetables		
8	i know that fast food is harmful		
9	make sure to drink enough water		
10	Drink tea or coffee 3 times a week		
11	Realize that intermittent fasting activates hormones.		
12	I constantly monitor my weight to avoid obesity		
13	Be aware that snacks between main meals are one of the causes of obesity		
14	Eating all kinds of sweets is harmful to health		
15	Eat eggs regularly		
16	Drink milk daily because it contains calcium		
17	Know the importance of nuts in food		
18	Eat available food, even if it is unhealthy		
19	I realize that soft drinks are harmful		
20	Know that fried and fatty food is harmful to health		