

The level of nutritional and health awareness among female athletes in Jordan

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ABSTRACT

The study aimed to identify women's awareness levels in Jordan about food nutrition and health due to the importance of her being the head of the family and directly responsible for feeding the entire family. Starting with the child and the rest of the family members, where the descriptive approach was used, which was done through the use of a questionnaire that consisted of seven domains as a tool for the study, which was applied to a sample of (1,000) married women from the governorates of Ajloun, Irbid, Jerash, Mafrq, and the capital, Amman, who was selected in a simple random way. Where the study concluded, that the general level of nutritional and health awareness for women was average. In addition, their level of awareness was low in the following areas: (carbohydrates, fruits, and vegetables, children's nutrition, while moderate in adult nutrition, milk, and its products, proteins, and pregnant women's nutrition. The study also found that there is a positive and significant correlation between the level of women's awareness and their subjective factors represented by (their level of education, economic status, children's education, cultural contact, and husband's education), while the correlation was negative and significant with (age and number of children).

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1. INTRODUCTION

Human needs are many and renewable, including food, which is one of the necessary elements in preserving life and its continuity, as obtaining appropriate food since the beginning of creation is the most important factor that prompted man to leave the caves to improve his nutritional status. Over the ages, food has become one of the most important factors in enjoying a healthy life [1]. Food is one of the fundamental factors for preserving and promoting health, which is essential for human well-being, achieving economic and social development, and ensuring a better life for humans. As a result, since it comes before it, everyone places health at the top of their priorities Busy [2].

A person eats when he feels hungry, so satisfying hunger is one of the functions of food, and food has three, other basic and important functions for the human body which are [2], [3]: i) They provide the necessary energy for warmth, movement, muscular activity, and involuntary muscle movements such as the heart and respiratory system; ii) It provides the body with the requirements for growth and building and replaces damaged tissues and cells; iii) It protects the body and enables it to resist diseases.

A person needs food to provide the body with more than 40 nutrients, so all these elements must be available in the quantities that the body needs through foodstuffs that vary in their content and proportions [4]. Therefore, food is considered a double-edged sword, one of which brings benefit to the human being and the other carries within it a poison for him, and this means that the human being must eat the nutrients in the ideal amount that brings him the maximum degrees of benefit, represented by good health and a perfect body and the resulting feeling of happiness and bliss. Less or more nutrients than ideal cause countless problems and end in ill health [5], [6]. Food is necessary for the continuation of life, and the materials in it that have an essential role in preserving life are called nutrients, which include the following materials [7]:

- a. Proteins: It is necessary for the growth process because it contains nitrogen, oxygen, Hydrogen, and carbon. Which are also necessary to repair damaged tissues and heal wounds, as they are involved in building muscles and synthesizing and functioning body hormones. The animal protein sources are meat, fish, chicken, eggs, and dairy products (milk, cheese, yogurt, cream), and its plant sources are legumes (peas, beans, lentils), nuts, and grains of all kinds [8].
- b. Fats: It consists of oxygen and carbon, and it is one of the most important food sources that generate energy. A high amount of calories compared to carbohydrates and proteins, and each gram of them is equivalent to nine calories. So it is considered an important food, and it is either from a vegetable source such as (olive oil, cotton oil, sunflower oil, corn oil, soybean oil) or From an animal source such as dairy products such as butter, margarine, cream, fish oil, and grease [9].
- c. Carbohydrates: They are starchy sugar compounds composed of oxygen, carbon, and Hydrogen, that a large part of food is in the form of carbohydrates. Which are important in building cells in the body and are an essential source in the production of direct and indirect energy. Foods that contain carbohydrates, such as fruits and grains (rice, wheat, starch pasta), potatoes, and sugary substances such as jam, honey, juices, and various sweets, contain a high amount of carbohydrates [10].
- d. Vitamins are organic substances that the body needs and are found in vegetables, fruits, and milk. The formation of the body and its vital functions, and the body needs small amounts of it. Vitamins are divided into two groups: Fat-soluble vitamins (A, D, E, K) and others that dissolve in Water and include (groups B and C) [11].
- e. Minerals: It is considered one of the main substances for many body processes, and there are about twenty of them Calcium, iron, sodium, iodine, potassium, zinc, and others, and each one of them has a unique role, and in general they are involved in building the skeleton of the body, and they have chemical functions such as iron is necessary for the formation of hemoglobin in the blood, and it has physicochemical tasks by maintaining the osmotic and alkaline pressure and acidity of blood fluids [12].
- f. Fiber: It is part of the Food we eat, but it is not absorbed and is excreted with the waste. It is important to maintain the softness of the stool and prevent constipation. It also helps to reduce the absorption of substances harmful to the body and keeps the non-proliferation of harmful germs in the intestines [13].
- g. Water: Everyone knows Water, but few of us drink a sufficient amount of it, and it helps the kidneys to get rid of waste, and it is necessary for all vital and chemical processes in the cells, and it is the basis for the tissues of the body so that it can perform its functions [14].

Women need to exercise more than men, as this is evident through physiological and physical changes during the different stages of growth and development [15]. There are significant challenges facing women that may prevent them from practicing sports, and this, if anything, indicates a lack of understanding and knowledge raising children and other household chores that fall on the shoulders of women, make them need to get rid of the pressures of work, home, and husband, and this can only be done through the practice of various sports activities [16].

In addition, the operations women undergo during pregnancy and lactation work to lengthen the abdominal muscles and back muscles, and repeated pregnancy weakens the muscles. Accordingly, women's exercise after childbirth contributes to maintaining strong, solid, and balanced muscles to maintain their strength [1], [9]. Preparing food is a female activity, as the woman is responsible for essential decision-making, from choosing certain items and determining their quantities to preparing them to present them to family members. That is why, you say the woman prepares food depending on the information and skills she obtains from her family and society. It is based on her region's or community's food habits, which are part of human behavior and include all the food preparation processes. Members of the community inherit food habits. Within the same neighborhood, there are food habits in different environments and at different economic, social, and cultural levels; each community has food habits consistent with its values, principles, and economic conditions [17].

Health and nutrition are two sides of the same coin and are closely interrelated. Children's growth, their natural formation, the strength and vitality of adults, and their ability to produce efficiently and successfully depend primarily on what they eat. Health problems are also due to imbalances or the wrong nutrition in an individual's food and drink. Therefore, more than undernutrition is needed to improve individual's ability to develop their skills. It reduces their productivity at work, and its deficiency in childhood will affect their mental and physical development and disrupt their learning ability [18]–[20].

From here, we find the seriousness of the woman's role because she is responsible for preparing food and feeding all family members, basing that on the knowledge and skills she possesses, which depend on what she got from her community and her family, especially since she did not receive nutritional scientific advice other than the food habits that are generally accepted in her region [21]–[26].

That's the problem with this study. It stems from the reality of nutrition in international and Arab societies as a whole, and Jordanian society in particular, which is represented by malnutrition resulting either from the lack of components and requirements of the body of various food stuffs or because of women's ignorance and lack of culture in the field of nutrition, even though what is related to the type, quantity and how to prepare and serve food of decisions and responsibility and core interests of women in her family; Therefore, this study is concerned with identifying the level of nutritional and health awareness for women and then families, and stand on the most important factors Social and economical for women related to their level of food awareness, and try to make some suggestions that will work to prepare healthy nutritional programs to educate women, based on the actual need that this study targets [12], [26], [27].

And based on the above, the current study seeks to find an answer to the following questions: i) What is the nutritional and health awareness level among female athletes in Jordan? ii) Is there a correlation between the level of Nutritional and health awareness in female athletes in Jordan attributed to the variables (bitter, educational level, Economic situation, Children's education, number of children, degree of cultural contact, Spouse's educational level)?

The objectives of the study are the final outcome that studies and research seek to examine and verify in order to try to reach a comprehensive and general perception of the desired benefit. Accordingly, this study mainly aimed to determine the levels of nutritional and health awareness among women who practice sports activities in Jordan. This goal can be achieved through the following objectives:

- a. Determining the general level of nutritional and health awareness for women through seven axes: i) Nutritional awareness (adults, children, and pregnant women); ii) Awareness of some nutrients (proteins and carbohydrates); iii) Nutritional awareness of some food groups (milk and its products, fruits, and vegetables).
- b. Determining the level of nutritional awareness for women in each of the seven axes.
- c. To identify the relationship between women's nutritional awareness level and some of their factors.

The importance of studies and research in its various fields appears towards achieving and serving two basic aspects, which are the theoretical aspect, through which we can provide comprehensive and general information about the problem under study. The practical application aspect, through which information is provided for the possibility of benefiting on the ground from the results reached by the study; Therefore, the importance of the study appears in the following areas:

- a. The importance of the target group, which represents an essential segment in society through the accumulation of experiences gained in life, in addition to the adverse psychological, health, and social adaptive problems that this social segment may suffer from.
- b. Applied importance by benefiting from the results of this study in the possibility of crystallizing targeted national strategy to present targeted means and methods to its general public to increase the level of nutritional and health awareness among women.
- c. The study of food and health awareness in this group is of an important aspect that there is a relationship between health awareness and general health, given that the individual enjoys health awareness accompanied by a set of healthy behaviors, which can contribute effectively to reducing the risk factors for infection with many diseases.
- d. The results of this study can be used to provide information on the nutritional and health behavior of women in various sectors related to their health and psychological care, especially the Jordanian Ministry of Health and the Ministry of Social Development.

2. METHOD

2.1. Study approach

Since the aim of the study is to identify the level of nutritional and health awareness among female athletes in Jordan, the best approach that can be followed is the descriptive approach due to the nature of this type of study, as this approach studies the phenomenon as it is in reality by collecting information and then organizing and expressing it. About them quantitatively and qualitatively, which facilitates understanding the relationships between the phenomenon under the current study and other studies. Study population and sample:

The study sample consisted of married women who practice sports in Jordan. The study sample, consisted of (1,000) married women from the governorates of Ajloun, Jerash, Irbid, Mafrqa, and Amman. The (200) married women from each governorate were chosen randomly, so the study sample consisted of 1,000 women. Table 1 shows the distribution of the study sample according to its variables.

Table 1. Characteristics of the study sample women according to their variables

Variable	Class	The number	Percentage
Age	18-28	211	21%
	29-39	368	37%
	40-50	257	26%
	51 and over	164	16%
	Total	1,000	100%
Educational level	Illiteracy	58	6%
	Basic education	106	11%
	High school education	163	16%
	Collegiate	431	43%
	Postgraduate	242	24%
	Total	1,000	100%
Economic situation	Low	317	32%
	Middle	436	43%
	Good	247	25%
	Total	1,000	100%
Children's education	Low (1-5 years)	321	32%
	Intermediate (6-11 years old)	377	38%
	High (11-16 years old)	302	30%
	Total	1,000	100%
Number of children	1-3	319	32%
	4-6	417	42%
	7 and over	264	26%
	Total	1,000	100%
Degree of cultural contact	Low	301	30%
	Middle	432	43%
	High	267	27%
	Total	1,000	100%
Spouse's educational level	My mom	47	5%
	Basic education	115	11%
	High school education	137	14%
	Collegiate	478	48%
	Postgraduate	223	22%
	Total	1,000	100%

It is noted from Table 1 that the ages of the women in the study sample ranged between 18 years and older than 51, and the vast majority of them were either middle-aged or young. University, as we find most of the women in the sample are from weak or middle-income families economically, and this reflects their low living conditions and lives, which may be dear to the families of Jordanian society, which suffers from somewhat difficult economic conditions; As for the education of the children of women, more than half of them had an average education, and we note that the most significant percentage of women have between (4-6) children or live in a large family. The degree of cultural contact was medium, and finally, the husbands' education level was at the university level. It may be characteristic of the Jordanian citizen who always strives for progress, even in light of the social and economic conditions from which he suffers.

2.2. Study tool

The use of appropriate tools in studies and research is considered one of the elements of great importance in achieving the objectives of the study to be identified. In order to achieve the objectives of the study, it has been. The study tool was built and developed, which was a questionnaire to collect information by referring to a group of previous studies such as study [28], study [29], and study [30]. The economic situation, the number of family members, the husband's educational status, the children's educational status, and the degree of cultural contact).

While the second part of the questionnaire included (35) test items to measure the level of nutritional and health awareness of the women in the study sample. The items are divided into seven main axes as follows:

- The first axis: its paragraphs revolve around women's awareness of family members' nutrition in general, and it includes paragraphs from 1 to 5.
- The second axis includes paragraphs from 6 to 10, and it revolves around identifying women's information about milk and its products and its nutritional importance to humans.
- The third axis: its five paragraphs, from 11 to 15, revolve around the awareness of female heads of households about children's nutrition.
- The fourth axis: its paragraphs identify women's knowledge of the plant and animal proteins group, including sections from 16 to 20.
- The fifth axis includes paragraphs from 21 to 26 and revolves around identifying women's awareness of carbohydrates in their diet.

- f. Sixth Axis: It includes paragraphs that revolve around the nutritional awareness of heads of households with fruits and vegetables and paragraphs from 26 to 30.
- g. The seventh axis includes paragraphs on women's awareness of pregnant women's nutrition, represented by paragraphs from 31 to 35.

To know the level of awareness of women in the axes above, the questionnaires were corrected by giving one mark to the correct answers, while the wrong answer was given zero. Therefore, the maximum score will be 35. The scores obtained by the women were translated into estimates so that those who scored less than (17.5 or more) to (50%) are progressively Weak, and if you get (17.5 to 26.3) or the equivalent of 50 to 75%, it is an average rating, and more than 26.3 or something repeated to 75% is a good rating.

2.3. Validity of the study tool

To verify the validity of the study tool, the researchers relied on two methods: the first is called face validity (validity of the arbitrators), which depends on presenting the tool to a group of specialists who are experts in the field. The second is called internal consistency, which is based on calculating the correlation coefficient between each unit of the tool and the tool as a whole. The following is an explanation of the steps that the researchers followed to verify the validity of the tool according to each of the two methods:

2.3.1. The veracity of the arbitrators

After the paragraphs of the study tool were drafted in its initial form, the researchers presented it to a group of arbitrators with specialization and experience, including nutritionists in nutrition centers, in addition to a number of faculty members at Al-Balqa Applied Universities and Yarmouk in the field of vocational education, home economics, and physical education, to judge the study tool. Through the extent of their effectiveness and suitability to measure what they were designed to measure, to benefit from their observations and suggestions regarding the suitability of the paragraphs to the areas of the study tool, the integrity of expression and linguistic structures, the absence of overlap and repetition between paragraphs and the extent of clarity of the paragraphs. Based on the directions of the arbitrators, a number of amendments were made to the study tool, as the researchers adopted the criterion of an agreement rate of (80%) between the arbitrators and more as a criterion for the required amendments. Despite this, the comments of the majority of the arbitrators contained minor amendments, most of which were linguistic, and thus it was not There is a radical change in the wording and clarity of the paragraphs of the study tool, and accordingly all linguistic modifications were made to the paragraphs of the study tool according to the comments received. After judging the study tool (the questionnaire), it was modified according to the opinions and comments of the arbitrators, and was produced in its final form.

2.3.2. Internal consistency validity

The study tool was applied to a random sample from the same study population but from outside the model, which numbered (100) women, to extract the validity of the internal consistency due to the paragraph's correlation with the scale as a whole or the paragraph's correlation with the dimension to which it belongs. The degree of internal consistency reached (0.88) is considered. This value is high and indicates the validity of the study tool for its application on the ground.

2.4. The stability of the study tool

The study tool was applied to a random sample of the same study community. Still, from outside the model, which numbered (100) women by two consecutive times with a time difference of two weeks between the first application and the second application, the correlation coefficient was calculated between the application results of the first and the second, which had a value of (0.84). To ensure the stability of the study tool, the stability coefficient was calculated statistically using the Spearman-Brown equation. Statistical analysis showed the alpha coefficient value, which amounted to (0.87), which is a high value that confirms the stability of the scale used in the questionnaire and achieves its purposes.

2.5. Statistical methods

The data was collected by means of a personal interview in order to obtain accuracy in obtaining the required information. A set of statistical operations were used in analyzing the data for this study, represented by frequencies and percentages to describe the characteristics of the study sample and the Pearson correlation coefficient to ensure the validity of the internal consistency of the study tool by finding the "Pearson correlation" coefficient between. Each axis and the overall score of the instrument; Cronbach's alpha coefficient (α) and Spearman-Brown coefficient to calculate the stability coefficient of the study instrument.

3. RESULTS AND DISCUSSION

To answer the first study question, which states: "What is the level of nutritional and health awareness among women athletes in Jordan?" The percentage of the study sample was extracted as the degrees of general nutritional awareness reached by women (from 12 to 31), with an arithmetic mean of 19.3 degrees, or the equivalent of 55%. This means that the level of general awareness for women was medium; The women were distributed according to the degree of their food and health awareness into three categories, as shown in Table 2.

Table 2. The numbers and percentages of women according to their level of nutritional and health awareness

Food and health awareness level category	The number	Percentage
Weak less than 50%	427	43%
Medium from 50% to 75%	279	28%
Good 75% or more	294	29%
The total	1,000	53%

We note from Table 2 the highest percentage of women was in the poor level of nutritional and health awareness, followed by the average level and then the excellent level. This indicates the low level of women's awareness of the general nutritional and health aspects, which means that all women need guidance and awareness to raise their awareness, nutritional knowledge and health.

Health and nutritional awareness is of great importance in an individual's life, especially for women practicing sports activities, because of its major role in managing the functions of the body's systems while carrying out sports activities, which require the practice of an integrated and comprehensive nutritional behavior, in a way that is commensurate with the nature of the activities that are practiced, in addition to the necessity identify the basic food elements that provide the body with energy. The level of nutritional and health awareness of women was also determined according to the fields of study, where the arithmetic average and percentage were extracted in descending order according to their arithmetic averages, which are shown in Table 3.

Table 3. The level of awareness of women according to the nutritional fields

Rank	Food field	SMA	Percentage
1	Milk and its products	3.6	72
2	Proteins	3.5	71
3	Adult feeding	3.3	66
4	Pregnant feeding	2.7	54
5	Kids nutrition	2.4	48
6	Fruits and vegetables	2.1	43
7	Carbohydrates	1.5	31

It is clear by reviewing Table 3 that the arithmetic averages of the level of women's awareness of food and health according to the seven areas specified in the study are shown in the table, as we note that the highest of these averages is in the field of awareness of milk and its products and reached 3.6, which is equivalent to 72%. The lowest is Carbohydrate awareness, with an average of 1.59 or more, equal to 31%. In general, four areas were medium: adult nutrition, milk, its products, proteins, and pregnant women's food. The remaining three areas were weak, which are (children's nutrition, fruits and vegetables, and carbohydrates). It is important to note that studies by the Central Organization for Statistics and Information Technology [14] show that one of the causes of the spread of severe malnutrition, especially among females, is women's low level of awareness in the area of feeding vulnerable groups of children and pregnant women.

To answer the second study question, which states: "Is there a correlation between the level of Nutritional and health awareness for women in Jordan that is attributed to the variables (bitter, Educational level, Economic situation, Children's education, number of children, degree of cultural contact, Spouse's educational level)?"

To answer this question, the correlation coefficient and the importance of the relationship between women's nutritional and health awareness level and the subjective variables were extracted, as shown in the following Table 4. It is clear from the previous Table 4 that the relationship between the level of nutritional awareness and the age of women. It was found that there is a negative correlation between the level of healthy awareness and generation amounting to (0.164-), and it was significant at the level of (0.01) because a lack of movement and efficiency characterizes older women. They have a low level of education as well. The increase in their tradition, adherence to their ancient knowledge and skills, and lack of acceptance of the nutritional changes that occur in their society are the opposite of young women.

It is clear from the previous Table 4 that the relationship between the level of food awareness and the educational group of women. It was found that there is a positive correlation between the level of nutritional awareness and education, amounting to 0.524, and it is significant at the level of 0.01. The higher level of

education for women leads to increased openness, knowledge, and acceptance of advice and instructions related to food and nutrition. This contributes to improving the performance of its nutritional role in the family, which reflects positively on the family's health.

Table 4. The correlation between the level of nutritional awareness of women and the variables of the study

Importance level	Correlation coefficient	Variables
0.01	- 0.164	Level of awareness and age
0.01	0.524	level of awareness and education
0.01	0.498	level of awareness and economic status
0.01	0.611	Awareness level and children's education level
0.01	- 0.253	Awareness level and number of children
0.01	0.553	level of cultural awareness and communication
0.01	0.487	Awareness level and educational level of the husband

It is clear from the previous Table 4 that the relationship between the level of food awareness and the family's economic status was found to have a positive correlation between their food awareness level and financial position. It was significant at the level (0.01), and the value of the correlation coefficient was (0.498) because the family's economic situation reflects the ability to purchase materials from Different foodstuffs and diversify them at any cost.

It is clear from the previous Table 4 that the relationship between the level of food awareness and children's education level. It was found that there is a positive correlation between the level of nutritional awareness and the level of education of children, especially girls. It was significant at the level of 0.01, and the value of the correlation coefficient was 0.611, as the diversity and difference in food awareness may increase with it. And health for children, who in turn work to educate the mother and guide her to the correct nutritional information.

It is clear from the previous Table 4 that the relationship between the level of nutritional awareness and the number of children. It was found that there is a negative correlation between the level of healthy understanding and the number of children, and it is significant at the level (0.01). The value of the correlation coefficient was (0.253-). As the number of family member's increases, their food preferences may vary in addition to their food needs, which affects the head of the family and pushes her to provide food needs at the lowest possible expense, especially in poor or economically weak families.

It is clear from the previous Table 4 that the relationship between the level of food awareness and the degree of cultural contact for women was found to have a positive correlation between the level of nutritional awareness and the degree of cultural communication. It was significant at the level (0.01), and the value of the correlation coefficient was (0.553), as the increased exposure and exposure to information sources related to food, nutrition, and health. It helps to enlighten female heads of household and contributes to their nutritional and healthy development.

It is clear from the previous Table 4 that the relationship between the level of nutritional awareness and the educational level of the husband It was found that there is a positive correlation between the level of nutritional awareness and the husband's educational level. It was significant at the level (0.01), and the value of the correlation coefficient was (0.487). An educated husband is more understanding and open to modern information and can influence his wife because of his role and position in the family.

4. CONCLUSION

From the foregoing, it can be concluded that the level of general nutritional awareness among women was average, with an average of 19.3 or more to 55%, which reflects the need to guide and educate them to increase their nutritional and health awareness; In addition, there is a weakness in the level of awareness of women according to the seven domains identified by the research in three of them: (carbohydrates, fruits, vegetables, and child nutrition), while it was average in the remaining four, which are (adult nutrition, milk, dairy products, proteins, nutrition pregnant woman); It was also found that there is a positive and significant correlation between the level of nutritional and health awareness of women and some of their self-characteristics represented in (women's educational category, economic status, children's education level, degree of cultural contact, husband's educational level); In addition to the presence of a significant and negative correlation between the level of nutritional and health awareness of women with age and the number of children.

With the aim of developing women's nutritional and health awareness and benefiting from their family role to improve the nutritional level of their families, and through the results of the study, we recommend working to improve women's self-characteristics, especially with regard to education, economic status and cultural openness, as this greatly affects women's awareness in all fields, especially in the field of food, nutrition and health; In addition to holding training courses in nutritional counseling, especially for educated

women, to work as guides for housewives in their regions to educate them about food, nutrition and health; We also recommend holding educational campaigns to raise awareness of the importance of food and the principles of proper nutrition, with the participation of all relevant authorities such as (Ministry of Agriculture, Ministry of Education, Ministry of Higher Education, Ministry of Social Affairs and Development, Ministry of Health, and civil society organizations); With the need to pay attention to spreading food and health awareness through all audio-visual media, which is the backbone of human life due to its wide strength. Influence by providing awareness and education programs in the areas of food, nutrition and public health to provide women with the knowledge, skills and sound food and health attitudes and to change all the unhealthy practices to which they are accustomed; In addition to paying attention to food and health education materials within the curricula of the various stages, emphasizing concepts and information related to proper nutrition, and working to develop and update this information and skills continuously; In addition to the need to conduct more research and field studies to reveal the nutritional and health status of the population in general, especially children and youth, through schools and the development of appropriate programs to improve their nutritional and health quality.




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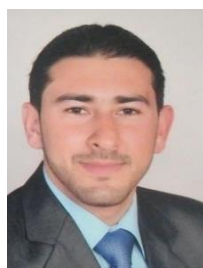
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