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A Comprehensive Study on Determination of Nutrition Knowledge and Nutrition Status in Adult Women

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Abstract

BACKGROUND/AIMS: Nutrition has direct effects on healthy growth, quality of life and lifespan. Studies have shown that most people are unable to fully grasp the healthiness and nutritional value of foods, and the relationships between diseases and diet. Due to these reasons, the aim of this study was to investigate the nutrition knowledge and the nutritional behaviors of women and the factors affecting them.

MATERIALS AND METHODS: The questionnaire that was used for data collection includes two major sections. In first part of this questionnaire, the sociodemographic and lifestyle characteristics of the participants were investigated. In second section, the Adult Nutrition Knowledge Level (YETBID) Scale was used. The YETBID Scale includes both a fundamental nutritional and food-health knowledge part, and a food preference part. This study was conducted with 380 adult women aged 20-49 years via a face-to-face questionnaire method between June and September, 2019. The test for conformity to normal distribution was provided by the t-test in quantitative data, and the Kolmogorov-Smirnov test was applied to qualitative data.

RESULTS: The important indicators having significant relationships with nutrition knowledge levels were found to be education level, age, marital status, dieting, percentage of income allocated to kitchen expenditure, having an illness, and having prior nutritional education. The important indicators having significant relationships with food preference were found to be having an illness and having prior nutritional education. In the food preference section, the ratio of correct answers was generally higher than the nutrition knowledge part.

CONCLUSION: The results showed that an adult woman's nutrition knowledge level and food preference can be affected by many factors. However, more research should be performed on this topic in order to obtain more information.

Keywords: Food preferences, nutrition, nutritional status, nutritional knowledge level, woman

INTRODUCTION

The first aim of the individual, family and society is being healthy and productive. Indicators of being healthy and productive can be listed as being advanced physically, spiritually, mentally and socially.[1] Due to this reason, human health must be maintained as a whole in order for these structures to function without any lifelong problems. There are many factors which affect human health in negative manners. The most important factors can be listed as heredity, nutrition, climate, physical environment, housing, education and cultural opportunities.[2] By investigating environmental factors carefully, one can see the importance of nutrition more clearly.

Nutrition is the most fundamental need of human health. Nutrition can be defined as the ability of people to take in the nutrients they need for their growth, development, healthy and productive life, and the ability to use these nutrients appropriately. In cases where adequate and balanced nutrition is not provided, results such as growth deficiency,

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increases in diseases, long and difficult disease processes and decreases in quality of life become inevitable.[3] Moreover, from a wider point of view, negative consequences such as increases in health expenditures and decreases in the welfare of society may also occur.[4]

According to some studies, wrong eating habits are one of the most significant causes of common health problems such as cardiovascular diseases, obesity, hypertension, osteoporosis, many cancer types and anemia.[5] It is a fact that having these kinds of diseases will directly affect individuals' quality of life. One of the best ways of protecting society from wrong nutritional habits and their drawbacks is to provide them with nutritional knowledge and the necessary encouragement.[6] With this approach in mind, individuals in society can be kept healthy and their quality of life can be improved.[7]

Women have important needs, such as growth, development, resistance to diseases and health protection.[8] It is also a well-known fact that women's health is affected by their nutritional status. Apart from physical differences such as nutrition, age, growth and development, women's nutritional needs also change during special periods such as menstruation, pregnancy, lactation and menopause.[9]

In today's world, women have moved away from their traditional role and they are involved in the workplace life. They have become more efficient and productive with their increasing responsibilities. Women contribute to the economic burden of the family with their responsibilities at every stage of their working life.[10] Though the role of women in society has changed year-by-year, women still have a major responsibility for the nutritional knowledge of the family.[11] It has been shown that the mother's nutritional habits have a direct effect on her children's habits.[12] This also indicates that the mother's nutritional knowledge and food preferences are practiced by the whole family.[13] Therefore, women's guidance in nutritional knowledge and food preference studies are a good guide for us to analyze the general situation of society. For this reason, this study was conducted on women aged between 20 and 49 years of age and the aim of this study was to investigate the nutrition knowledge and nutritional behaviors of women and the factors affecting them.

MATERIALS AND METHODS

The number of women between 20-49 years belonging to family health centers in Edirne was determined to be 41,989 according to the most recent population data provided by Turkish Statistical Institute (TURKSTAT). Based on a sample size calculation formula, the minimum required sample number was determined to be 368 women by accepting a 95% confidence level and taking the margin of error as 0.05. Following this, data were collected between the dates of June and September, 2019 with 457 voluntary participants. Written informed consent was obtained from the women who agreed to participate in this study. The inclusion criteria were determined as follows; being registered in a family health center in Edirne, Türkiye, being a woman between 20-49 years old, not being pregnant and answering all questions completely. After the exclusion of 77 volunteers, this study was conducted with 380 women.

The questionnaire which was used for data collection includes two major sections. Questions about general knowledge and nutritional behaviors were asked to the participants in the first part of questionnaire. In the sociodemographic characteristics section of questionnaire, the participants were asked twenty-four questions. Even though majority of the questions were multiple choice questions, there were also open-ended questions. Moreover, two questions allow participants to select multiple options. In this section, the participants' information such as their age, height, weight, smoking habits, alcohol use, marital status, education level, working status, vitamin-mineral use, general habits about meals, prior knowledge about nutrition, willingness to obtain further nutritional knowledge and their diet status were investigated.

In the second part of the questionnaire, the YETBID scale is made up from two sections which are the fundamental nutritional and food-health knowledge section, and the food preference section. In this study, an additional section which aimed to collect general knowledge and nutritional behaviors of participants was also used.

There are twenty propositions in the fundamental nutritional and food-health knowledge section of the YETBID scale, with twelve in the food preference section. In these two sections of the YETBID scale, a 5-point Likert scale is used. Those who "*absolutely agree*" with the correct propositions in these sections received four points, "*agree*" was given three points, "*indecisive*" received two points, "*disagree*" was awarded one point, and lastly those who "*absolutely disagree*" received zero points. In the wrong propositions, the order of the points was changed and "*absolutely disagree*" received maximum points, while "*absolutely agree*" received minimum points. The individual characteristics of the participants are given in Table 1.

In the first section of the fundamental nutritional knowledge questionnaire, the weighting of the propositions were 50% for vitamin-minerals, 20% for fat (lipid), 10% for carbohydrates, 10% for proteins, 5% for fiber, and lastly 5% for salt. In the fundamental nutrition and food-health knowledge section, the highest obtainable score was 80, while the lowest was 0. Accordingly, the highest score of the participants in this section was 80, while the lowest score was 13.

In the food preference section, the participants were questioned about their food preparation, cooking and consumption methods. This

Table 1. Individual characteristics of participants

	Answer	n	%
Health problem	No	306	80.5
	Yes	74	19.5
Smoking	Non-smoker	256	67.4
	Smoker	86	22.6
	Occasional smoker	38	10.0
Alcohol use	Non-drinker	212	55.8
	Drinker	58	15.3
	Occasional drinker	110	28.9
Marital status	Single	239	62.9
	Married	131	34.5
	Divorced	10	2.6
Working status	Not working	208	54.7
	Working	172	45.3
Education status	Primary or below	27	7.2
	High school	58	15.2
	University or above	295	77.6
	Total	**380**	100.0

section contains correct and incorrect statements on carbohydrate, fat, protein, fiber, liquid and salt consumption. The highest score in the food preference section was 48, while the lowest was 0. As a result, the highest score of the participants was 48, while the lowest was 5.

This study was conducted in accordance with the Helsinki Declaration Principles. This study was carried out with the permission of Trakya University Faculty of Medicine Scientific Research Ethics Committee (approval number: TÜTF-BAEK 2019/211). Moreover, a consent form including the text "The data obtained from this questionnaire that we will apply to you will only be used for scientific purposes and participants will not be subjected to any measurement and evaluation" was declared to the participants and signed by them.

Statistical Analysis

Statistical analysis of the data obtained from this study was analyzed with the SPSS statistics 25.0 program (IBM, USA). The significance level was taken as $p<0.05$. The mean and standard deviations of the quantitative data were calculated. The frequencies and percentages of the qualitative data are shown. The suitability of the quantitative data for normal distribution was checked by Kolmogorov-Smirnov and Shapiro-Wilk tests. Student's t-test was used in paired tests which fitted the normal distribution. The Mann-Whitney U test was performed for paired data which did not comply with the normal distribution. The Independent t-test for comparison of independent groups was used. The One-Way ANOVA test was used for quantitative variables with at least three groups. Differences between the groups were determined by the post-hoc test.

RESULTS

The participants were separated into three groups according to their ages in years, as "20-29", "30-39" and "40-49". The nutritional knowledge scores of these groups were examined and their means were found to be 53.17±7.997 for "20-29", 51.88±8.666 for "30-39" and lastly 55.05±7.904 for "40-49". A significant difference was found between these groups in terms of their nutritional knowledge scores (p=0.020). These results are given in Table 2.

Nutritional knowledge scores were compared according to diet status. The mean score of dieters was calculated as 55.43±9.705 and the mean score of non-dieters was calculated as 52.90±7.869. The results showed a significant difference between these groups (p=0.028).

Table 2. Nutritional knowledge and food preference scores by age groups

	Age groups (years)	n	$\bar{X} \pm SD$	F	p
Nutritional knowledge score	20-29	173	53.17±7.997	3.937	**0.02***
	30-39	107	51.88±8.666		
	40-49	100	55.05±7.904		
	Total	**380**	**53.30±8.230**		
Food preference score	20-29	173	37.68±7.314	0.929	0.396
	30-39	107	37.61±6.842		
	40-29	100	38.77±6.770		
	Total	**380**	**37.95±7.042**		

One-Way variance analysis (ANOVA). *p<0.05. $\bar{X}$: Mean, SD: Standard deviation.

The nutritional knowledge score and food preference score were compared according to the percentage of income allocated to the kitchen expenditures of the participants. When the mean scores were examined, it is seen that there were significant differences between the groups (p=0.004). Detailed analyses with the post-hoc test showed that the scores of the group which allocated 40% of their income to kitchen expenditure were significantly different from the group which gave 10% or below and from those who allocated 20% (p=0.019, p=0.013). The highest nutritional knowledge mean score belonged to the group which allocated 10% or below (56.61±8.452), while the lowest mean score belonged to the group which allocated 40% (50.85±7.949) of their income to kitchen expenditure.

The mean of the nutritional knowledge scores of those participants whose education group was "primary or below" was found to be 51.30±8.462, 49.17±8.506 for "high school", and 54.30±7.888 points for "university or higher". The mean score of all participants was found to be 53.30±8.230. Significant differences were found between the groups (p<0.001). Detailed post-hoc tests showed a significant difference between the "high-school" and "university or higher" education level groups (p<0.001).

Marital status, nutritional knowledge scores and food preference scores are compared in Table 3. The marital status groups are categorized as "single", "married" or "divorced". There were significant differences between these groups in their nutritional knowledge scores (p=0.019). Detailed post-hoc test showed a significant difference between the "single" and "married" groups (p=0.014). The mean nutritional knowledge score of the "single" group was found to be 52.43±8.289, while it was 54.93±7.837 for the "married" group.

The participants were grouped according to their condition of having an illness or not. Their nutritional knowledge scores and food preference scores were compared. Significant differences were found between individuals in terms of their nutritional knowledge scores (p=0.004). The mean score of the group "without health problems" was 52.58±8.110, while it was 56.30±8.098 in the group "with health problems."

Diseases related to nutrition were grouped. A significant difference was found between those with and those without nutritional diseases (p=0.004). While the mean score was 52.81±8.122 in those participants "without nutritional diseases", the mean score was 56.26±8.333 in those participants "with nutritional diseases." The mean overall score was 53.33±8.230 points.

The nutritional knowledge scores and food preference scores of the participants were compared according to their prior nutritional knowledge. There was a significant difference in the nutritional knowledge scores between those who had prior knowledge about nutrition and those who did not (p<0.001). The mean nutritional knowledge scores of the group who did not have prior nutrition knowledge were calculated as being 51.31±8.407 points. On the other hand, the score of the group having prior knowledge about nutrition was 56.15±7.6 points.

There was a significant difference in food preference scores between those with prior nutrition knowledge and those without (p=0.009). The mean of the food preference scores was found to be significantly higher in those who had prior nutrition knowledge than those who did not. The mean score of the group having prior nutrition knowledge found to

be 39.21±6.047 points, while it was only 37.14±7.843 points for those who did not. These results are given in Table 3.

A significant difference was found between those individuals with and those without disease in terms of their food preference score (p=0.037). The mean food preference score of the group without disease was found to be 37.49±7.2, while the score of the group with disease was found to be 39.85±6.022 points. These results are given in Table 4.

DISCUSSION

This study was conducted in order to determine the nutritional knowledge levels and nutritional preferences of adult women. The mean of the fundamental nutrition and nutritional-health knowledge section was found to be 53.30±8.23 points. In the food preference section, the mean of all participants' scores was found to be 37.95±7.04. The nutritional knowledge scores of the age groups were also examined. The mean scores were found to be 53.17±7.997 for group "20-29", 51.88±8.666 for "30-39" and 55.05±7.904 for "40-49". The mean nutritional knowledge score of the group "40-49" was found to be significantly higher than the other groups.

According to a study in which 803 Belgian women participated, women's knowledge about nutrition showed a significant difference with age (p=0.001). Although the age range of the participants was narrow, significant results were obtained.[14] In another study, 127 athlete trainers' nutrition knowledge was examined. The nutrition knowledge of groups 28-30 years (n=48), 31-40 years (n=28), 41-50 years (n=48), and 51 years or older (n=39) were compared. According to the results, the scores of the 51 years or older group were higher than the others.[15] Another study sharing the same scale was conducted with 104 participants. The nutrition knowledge scores of the 35-50 age group were significantly higher than those of the 18-35 and 51-65 age

Table 3. Nutritional knowledge and food preferences scores with respect to BMI. Education status and marital status

			Nutritional knowledge score			Food preferences score		
	Group	**n**	**$\bar{X}$ ± SD**	**Min.**	**Max.**	**$\bar{X}$ ± SD**	**Min.**	**Max.**
Education status	Primary or below	27	51.30±8.462	36	68	37.15±8.716	22	48
	High school	58	49.17±8.506	13	69	36.47±7.049	10	48
	University or above	295	54.30±7.888	17	80	38.31±6.852	5	48
	Total	380	53.30±8.230	13	80	37.95±7.042	5	48
			p<0.001*			p=0.157		
BMI (kg/m²)	Underweight	24	53.29±6.881	35	68	37.13±7.491	16	48
	Normal	247	53.50±8.258	13	80	37.89±6.937	5	48
	Overweight	75	52.76±8.671	32	74	38.08±7.868	6	48
	Obese	34	53.09±8.177	41	68	38.62±5.635	24	48
	Total	380	53.30±8.230	13	80	37.95±7.042	5	48
			p=0.922			p=0.880		
Marital status	Single	239	52.43±8.289	13	80	37.37±7.358	5	48
	Married	131	54.93±7.837	36	74	38.98±6.273	14	48
	Divorced	10	52.90±9.445	42	68	38.30±7.973	24	48
	Total	380	53.30±8.230	13	80	37.95±7.042	5	48
			p=0.019*			p=0.108		

One-Way variance analysis (ANOVA). *p<0.05. $\bar{X}$: Mean, SD: Standard deviation, BMI: Body mass index, Min.: Minimum, Max.: Maximum.

Table 4. Nutritional Knowledge and food preferences scores with respect to health problems. Prior knowledge and being willing to receive nutritional education

			Nutritional knowledge score		Food preferences score	
	Group	**n**	**$\bar{X}$ ± SD**	**t**	**$\bar{X}$ ± SD**	**t**
Health problem	No	306	52.58±8.110	2. 877	37.49 ±7.200	2.092
	Yes	74	56.30±8.098		39.85±6.022	
			p=0.004*		**p=0.037***	
Having prior knowledge	No	193	51.31±8.407	-5.187	37.14±7.843	-2.639
	Yes	123	56.15±7.600		39.21±6.047	
			p<0.001*		**p=0.009***	
Willing to receive education	No	132	53.39±8.643	0.158	37.47±7.703	-0.965
	Yes	248	53.25±8.019		38.20±6.665	
			p=0.875		p=0.335	

T-test in independent groups. *p<0.05. $\bar{X}$: Mean, SD: Standard deviation.

groups. The reason for this result was found to be education level and socioeconomic level differences between the groups.[16]

Another study was conducted with 1,062 adult volunteers. The participants were grouped according to their age ranges. Four age groups were determined as 18-29, 30-39, 40-49, and 50 years or above. There were significant differences in the nutritional knowledge scores between these groups (p=0.014). Significant differences were found especially between the 18-29 and 40-49 age groups. Among all groups, the highest scores belonged to the 40-49 age group.[17] Another study conducted in Australia examined the nutritional knowledge of 201 participants. Participants aged between 18 and 35 and over 35 years were compared. Significant differences were found between the groups (p<0.05). The nutritional knowledge of those participants over 35 years of age was found to be much higher than the other group.[18]

As can also be seen from the results of our study, the level of knowledge and awareness about nutrition increases in the middle age period. In that period, it was seen that participants improved their knowledge with their experiences. On the other hand, a significant difference was not found between the age groups in the food preference score. The reason for this situation is that having nutritional knowledge does not have any application-related obligations.

There was no significant difference between body mass index (BMI) and the nutritional knowledge scores (p=0.922). The mean scores of the participants in the low and normal BMI groups were found to be slightly higher than the overweight and obese groups. There was no significant difference between the BMI groups in terms of their food preference scores (p=0.88). In a study conducted among 222 university students, nutritional knowledge scores were compared according to BMI groups. In this mentioned study, a significant difference was not found between the groups (p=0.79). However, when the nutritional knowledge scores were compared numerically, the low BMI group's scores were found to be slightly higher than those of the overweight and obese groups.[19] In another study using the same scale, it was shown that the overweight and obese groups' nutritional knowledge scores were higher than the others. According to BMI groups, the nutritional knowledge score comparison data did not show clear results.[16]

Another study was conducted with 1,340 students in order to determine the relationships between BMI groups and nutritional knowledge-food preferences scores. According to these results, there was no significant relationship between nutritional knowledge and food preferences (p=0.156, p=0.654). However, according to the results of the mentioned study, it was found that the low BMI group's mean nutritional knowledge scores was slightly higher than the others. Moreover, the low and normal groups' mean food preferences scores were higher than the others.[20] The results of this other study were similar to those of our study.

Nutritional knowledge and food preference scores were examined according to education levels. A significant difference was found between the groups in terms of their nutritional knowledge scores (p<0.001). The mean scores were 54.30±7.888 for the "university or higher" group, 49.17±8.506 for the "high school" group, and 51.30±8.462 for the "primary or lower" group. The university or higher group had a significantly higher mean score than the other groups. In another study, participants were separated into three groups as "high school or below", "technology and trade high schools" and "higher" education levels. The group having the highest education level scored higher than the other two groups. In that study, the highest education group's mean score was found to be 76.27, while the technology and trade high school group was 69.08, and the high school or below group was 59.87.[18] Similarly, in our study, the mean nutritional knowledge scores of the "high school or below" group was lower than the others. In another study conducted on medical staff, four different groups were formed according to their education levels. Significant differences were found between the groups (p=0.001). The scores of the medicine and master degree groups were significantly higher than the other two groups.[21]

The relationships between meal skipping and nutritional knowledge and food preference scores were also investigated. The results did not show any correlation (p=0.73). In another study conducted on healthcare workers, researchers found a significant relation between skipping meals and nutritional knowledge scores (p=0.039). The mean nutritional knowledge score of those participants skipping meals was found to be 53.85±21.10 points, while for those participants who were not skipping meals, it was found to be 61.83±21.67 points. The mean score of those participants who sometimes skipped meals was 56.61±21.50 points. According to results of this mentioned study, the lowest mean score belonged to those participants skipping meals, while the highest mean score was for those participants not skipping meals.[21] Unlike our study, it was seen that the most frequently skipped meal was breakfast. This might be a result of the personal preferences, habits or working conditions of the participants. In another study conducted on 350 students, the rate of skipping meals was found to be 82.3%. Also, it was stated that 295 out of 350 participants were skipping breakfast.[22] In another study conducted on women living in Cyprus, 22% of the participants declared that they skipped meals. Also, breakfast was the most frequently skipped meal at a rate of 16.3% in the same study.[10] That study also showed that dinner and lunch were the least frequently skipped meals. The reason for this situation, which differs from our study, was that the other studies were conducted in student-centered or student-intensive groups. It was seen that similar results were obtained in student-centered studies. In studies where the majority of participants were working, it was seen that lunch meals were most frequently skipped.

Nutritional knowledge and food preference scores were compared according to illness status. The mean nutritional knowledge score of those who had a disease was 56.30±8.098, while for those who did not have a disease, it was 52.58±8.110. A significant difference was found between these 2 groups (p=0.004). It was seen that the nutritional knowledge score was higher in those participants with a disease. In another study conducted on 104 participants, 17.4% of the research group had at least one health problem. Their results showed that the nutritional knowledge and food preference scores were higher among those people with health problems than among those without health problems.[16] In our study, the food preference scores also showed differences between the ill and healthy participants (p=0.037). The mean food preference scores were higher in those participant who had an illness, similar to their nutritional knowledge scores. The most common diseases in our participants were diabetes, hypertension and hypothyroidism. Another study showed similar results to our study. That study also determined that diabetes, hypertension, hypothyroidism and gastritis were the most common diseases in health care workers.[21]

The participants were grouped according to their marital status. A significant difference found between the groups in terms of their nutritional knowledge scores (p=0.019). The married group had

54.93±7.837 points as their mean score, while the single group had 52.43±8.289. In another study, the mean nutritional knowledge score was calculated to be 56.57±16.98 for singles and 69.30±16.98 for married individuals. A significant difference were found between these two groups ($p<0.05$).[18] In another study, the mean score of singles was found to be 39.2 and the mean score of married individuals was 38.7 points. The researchers did not find any significant difference between the groups ($p=0.591$).[17] As a conclusion for this part, it can be said that living with someone can increase the time that is spent cooking, and the number of meals prepared at home. This may lead to increased interest in nutrition and therefore increased nutritional knowledge.

Participants with or without a prior nutritional knowledge were compared according to their nutritional knowledge score. A significant difference was found between the groups ($p<0.001$). The mean score of the group with prior nutritional knowledge was 56.15±7.600, while the other group's mean score was 51.31±8.407. The food preference scores were also shown to have a significant difference ($p=0.009$). The mean food preference score of the group with a prior knowledge about nutrition was 39.21±6.047, while it was 37.14±7.843 points for the group without. The results did not shown any significant difference between the groups that were willing to receive nutritional education and those who were not, both in their nutritional knowledge ($p=0.875$) and their food preference scores ($p=0.335$).

The "*saturated fat content of fish is higher than red meat*" proposition had the lowest correct response rate, and it was answered correctly by only 17.9% of the participants.

The "*fats contain less energy than protein and carbohydrates*" proposition was answered correctly by 33.7% of the participants. In another study, 34.3% of participants answered correctly the question regarding "*how many calories per gram of protein, fat and carbohydrate*".[21] In brief, it can be said that the mean knowledge level about calorie values of the participants was low.

The "*fruits contain high protein*" proposition was answered correctly by only 41.1% of the participants, which shows us that there is a lack of knowledge in general. Another study conducted on healthcare workers showed that 43% of participants disagree and 34.6% agree with the proposition "*Fruits are good sources of quality protein, iron, vitamin B12 and zinc*".[21] The results of the mentioned study show similarity with our results, and in both studies, the majority of the participants answered the mentioned proposition incorrectly. Moreover, another study stated that 37.4% of their participants answered the same question correctly, which also shows a similarity with our results.[16]

The "*Haricot bean salad contains high fiber*" proposition was answered correctly by 64.7% of our participants. In another study conducted on healthcare workers, it was stated that 66% of the participants choose the correct answers in fiber knowledge related questions.[21]

The "*Vitamin C in orange strengthens immunity and protects against colds and flu infections*" proposition was correctly answered by 96.9% of our participants. It was the proposition which had the highest correct rate.

The "*Vitamin E is a highly effective vitamin for the sense of sight*" proposition was correctly answered by 15.8% of our participants. In that proposition, 31.8% of the participants were indecisive. The overall success rate of answers given to this proposition was low. The most important task of vitamin E in the body is its antioxidant task. Its effects on reproduction have also been demonstrated in animal studies. However, it does not have any significant relation with sight.[2]

The "*Vitamins and minerals provide energy*" proposition was answered incorrectly by many of our participants. Only 31.6% of participants answered this question correctly. Vitamins and minerals do not provide energy. They protect the body against various diseases. However, they do not have any energy value.[2]

The majority of participants answered the propositions in the food preference section correctly. The "*It is better to put 3-4 dried apricots instead of wafers in a child's lunchbox*" proposition was the proposition which was answered correctly with the highest success rate. 92.7% of the participants answered this proposition correctly. The "*Someone who wants to reduce the amount of fat intake from food can prefer skimmed milk*" proposition was answered correctly by 61.3% of the participants. This proposition was the proposition which had the lowest correct rate in that section.

According to the results obtained from the collected data, nutritional knowledge was found to be significantly related with education level, age, marital status, dieting, percentage of income allocated to kitchen expenditure, having an illness and having prior nutritional education. Increasing education levels and age affect nutritional knowledge in a positive manner. Education enhances the reading and research ability of individuals. Due to this reason, educated people are more likely to acquire correct knowledge. This positive relationship between nutritional knowledge scores and the age of the participants can be explained by their increased nutritional experience. On the other hand, the increasing percentage of income allocated to kitchen expenditure affects nutritional knowledge in a negative manner. Results showed that married women scored higher than the others in the nutritional knowledge section. Moreover, dieting women also scored higher than non-dieting ones in this section. Having any illness or having prior nutritional education both affected nutritional knowledge levels positively.

The results of the food preference section showed that being ill and having a prior nutritional education were significantly related to the food preference scores of the participants. Those participants who had an illness scored higher than those who did not in this section. Moreover, those women who had a prior nutritional education scored higher than those who did not.

Our study showed that there are many factors affecting the nutritional knowledge levels and nutritional behaviors of individuals. Increases in age, increases in education levels, marital status, being on a diet, the percentage of the budget allocated to the kitchen (also in relation to the household budget), the presence of any diseases, and having prior nutritional knowledge were the factors which positively affected nutritional knowledge levels. However, the factors affecting nutritional behavior were the presence of any diseases and having a prior nutritional knowledge.

Nutrition is an essential factor which directly affects the health of the individual and the society in many aspects. It is very important to obtain the correct nutritional information in order to provide proper nutrition. However, positive effects can be seen only when correct information turns into correct nutritional behavior. The most important point of our study was to create awareness of this situation.

Study Limitations

This research was carried out on women aged 20-49 living in Edirne city center. This research and its results in the city center of Edirne are limited to the province and the sample, and it is not intended to generalize the findings and results to the whole country. This research was conducted from June to September, 2019 and so this research is limited in time as participants are thought to change over time. Another limitation of this study was the education levels of the participants, which were not homogeneously distributed. The fact that the study was conducted in Edirne city center led to the educational level distribution of the participants not being homogeneous.

CONCLUSION

The results of our study show that having a disease or obtaining nutrition education is necessary for the development of proper nutritional behavior. While many different factors affect obtaining knowledge about nutrition, factors which affect nutritional habits are limited and need to be developed. In addition to increasing nutritional knowledge, performing studies in order to change people's habits and ensuring that the society receives more education on nutrition may be useful practices. More studies and applications are needed on this subject.

MAIN POINTS

- Education level, age, marital status, dieting, percentage of income allocated to kitchen expenditure, having an illness, and having prior nutritional education were significantly associated with nutrition knowledge levels.
- Food preference was affected by having prior nutritional knowledge and having an illness.
- In the food preference section, the ratio of correct answers was generally higher than the nutrition knowledge section.

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ETHICS

Ethics Committee Approval: This study was carried out with the permission of Trakya University Faculty of Medicine Scientific Research Ethics Committee (approval number: TÜTF-BAEK 2019/211).

Informed Consent: Written informed consent was obtained from the women who agreed to participate in this study.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: Ö.D., S.D., Design: Ö.D., S.D., Supervision: S.D., Materials: Ö.D., Data Collection and/or Processing: Ö.D., Analysis and/or Interpretation: Ö.D., Literature Search: Ö.D., Writing: Ö.D., Critical Review: S.D.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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