Progress in Nutrition 2021; Vol. 23, Supplement 2: e2021252 DOI 10.23751/pn.v23iS2.12098

Original article

The Determination of Nutritional Habits of Students

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Abstract. *Study Objectives:* The aim of this study was to determine the nutritional habits of the students studying at Ardahan University School of Physical Education and Sports. The population of the research was selected by random method, with 51 female students and 86 male students from the Physical Education and Sports Teaching Department (n=30), Sports Management Department (n=107) *Methods:* In the analysis of the research data, descriptive statistics such as arithmetic mean, frequency, standard deviation, and percentage values are examined. In order to determine whether the parametric analyzes will be performed for this study, it was primarily assessed whether the scale data showed a normal distribution. *Results:* According to the results obtained, it is observed that the level of the 4th grade students in the sub-dimension of products used other than food is significantly higher than the 1st grade students. Accordingly, it can be claimed that 4th grade students consume products other than food more than 1st grade students. For the food consumption frequency sub-dimension, the levels of the 3rd grade students are found to be higher with a significant difference compared to the 2nd grade students. In the general averages of the eating habits scale, it is observed that the levels of the 3rd year students are higher than the 1st year students with a significant difference. According to the results of the research, for the sub-dimension of products used other than food, it is seen that the levels of the students of the sports management department are significantly higher than the students of the teaching department. *Conclusion:* In other words, it can be proclaimed that sports management students consume products other than food more than the students of the teaching department. Within the context of the sub-dimensions of the nutrition scale; according to the results of the nutritional habits dimension, it can be detected that the students exhibit a high level of positive behavior for the dimensions of eating habits and the frequency of food consumption, and a low level of behavior in the dimension of products used other than food.

Key words: Nutritional Habits, University Students, Food Consumption

Introduction

Food is an edible plant and animal tissues that contain nutrients and can sustain life in the daily diet (1). Nutrition, which is one of the most important topics emphasized today, constructs the basis of health in every period of life in terms of growth, development, the continuation of life and protection of health (2,3,4). It is the intake and use of nutrients that provide the physio active components necessary for the continuation of life, the protection and improvement of health, raising living standards, and productivity (5). Adequate and balanced nutrition is the provision of the energy required for growth and development, regeneration and functioning of tissues in an efficient manner by taking macro and micronutrients in the necessary sizes and varieties every day according to socio-demographic characteristics (age, gender, etc.) and physical activity status (6). Nutrition is a cultural issue as it is a human product. People have some values and habits about food (7). In

order to increase the quality of life, protect and improve health, it is important to know how often the nutrients should be consumed in sufficient quantities (8). One of the important reasons for the increase in obesity prevalence worldwide is unbalanced eating habits. Not choosing the right food, not getting the right amount of nutrients, insufficient intake of micronutrients, mistakes in cooking practices form the basis of unbalanced eating habits. As a result of the continuity of these habits, the energy intake also increases (9). Depending on global changes and rapid urbanization, human health is also directly impacted. In particular, the transition from an agricultural society to industrial society, industrial development creates a society with a different character, and causes many health problems by changing dietary habits (10, 11). Nutritional preferences are known to affect mental health as well as human physiology. In recent years, our shifting dietary habits had a great impact on the increase in disorders such as hyperactivity and attention deficit, depression, anxiety disorders. It is possible to prevent many psychiatric diseases such as depression, Alzheimer's disease, panic disorder and stress, attention deficit and hyperactivity by taking the right foods (12, 13). Main problems related to nutrition can be summarized as Iron deficiency anemia, Iodine deficiency, other vitamin and mineral deficiencies, Thinness-obesity, Eating behavior disorders and cardiovascular diseases (14). The school period is the period of the individual's first acquaintance with social habits by leaving home. Every nutritional behavior that can be gained in this period, when the basis of nutritional habits is formed, will form nutritional habits that will last a lifetime. In this period, such cases as the habit of not having breakfast and skipping meals, and turning to unhealthy foods such as fast-food type, which is with high fat, sugar and salt-sodium content, due to environmental factors (e.g., emulation) can increase nutritional problems in later ages (15, 16). Nutrition is a problem in itself, especially for students living in dormitories. Another important factor affecting the nutrition of young people is the inadequacy of nutritional information. Inadequate nutritional information and heavy economic conditions can cause young people to be undernourished (17, 18). Often, skipping breakfast can be caused by the difficulty of preparing breakfast and worrying about being late for school. However, it is reported that breakfast has a very important role in starting the day with enthusiasm, conveniently maintaining the activity and maintaining the blood sugar level (19, 20).

Material and Methods

Participants

The population of the research is selected by random method, with 51 female students and 86 male students studying at Ardahan University, School of Physical Education and Sports in the 2020-2021 Spring academic year, who are 30 students from the Physical Education and Sports Teaching Department, 107 students from the Sports Management Department with a total of 137 students.

Materials

In the research, seven questions are prepared to determine the demographic characteristics. A nutrition scale consisting of 20 questions developed by Vural (2018) is used to measure nutritional habits (21). The Likert type scale consists of 20 questions. The scoring system of the scale is graded with 1, 2, 3, 4, 5 points. The scale is composed of 1 "Never", 2 "Rarely", 3 "Sometimes", 4 "Often" and 5 "Always". The sub-factors of the scale are measured as 'Nutrition Habits, Products Used Except Food, Frequencies of Food Consumption and Performance'. The Cronbach Alpha coefficient is used to measure the reliability of the questionnaire. As a result of the reliability analysis, the Cronbach Alpha coefficient is found to be 0.74. This result exhibits that the survey results are reliable

Statistical analysis

SPSS 21.0 program is used for the analysis of the data collected in the research. In the analysis of the research data, descriptive statistics such as arithmetic mean, frequency, standard deviation, and percentage values are examined. In order to determine whether parametric analyzes will be performed for this study, it is initially examined whether the scale data shows a

normal distribution. As a result of the analysis, kurtosis and skewness values of the data are calculated and the results are shown below.

As seen in Table 1, as a result of the normal distribution analysis, the skewness and kurtosis values obtained for the nutrition scale are between -2 and +2. In addition, normal distribution graphs are also examined, and according to these results, it can be claimed that the data obtained from the nutrition scale and depression scale show normal distribution. Accordingly, for the analysis of normally distributed research data, independent T test for pairwise comparisons, One Way ANOVA test for multiple comparisons and Tukey test as post hoc test are applied.

A 5-point Likert-type scale is used in the questionnaire which is utilized to determine the nutritional habit levels of the students participating in the research, and the scale ranges to be used in the interpretation of the average values obtained are given in Table 2.

Results

Information on the research results is given below.

According to Table 4, where the demographic information of the sample group is given, approximately half (48.9%) of the students participating in the research are between the ages of 21-23. 62.8% of the participants are male and 37.2% are female. Distribution percentages by class are almost close to each other. While 21.9% of the students are studying in the teaching department, 78.1% of them are students in the sports management department. According to the activities that the participant students prefer to do in their spare time, 38.7% stated that they prefer to read books, 33.6% prefer to go to entertainment venues, and 16.8% prefer to visit historical places. While 38.7% of the students describe themselves as quiet, 24.8% as social and extrovert, 26.3% as active, the rate of those who describe themselves as nervous is 10.2%.

When we examine the answers given by the students participating in the research to the nutrition scale based on of items in Table 4, a very high level of eating habits is detected for 5 items. "Do you eat dinner regularly?" x=4.35±1.04 average for the question "Do

Table 1. The skewness and kurtosis values were obtained for the nutrition scale and depression scale.

	Skewness	Kurtosis
Nutrition Scale	-0.484	-0.210
Nutrition Habits	-0.731	1.163
Non-food products	0.550	0.492
Food Consumption Frequencies	-0.845	0.894
Performance	-0.796	0.298

Table 2. 5-Likert scale intervals for the nutrition scale.

Weight	Options	Limits
1	Never	1.00 – 1.80
2	Rarely	1.81 – 2.60
3	Sometimes	2.61 – 3.40
4	Often	3.41 – 4.20
5	Always	4.21 – 5.00

Table 3. Demographic information of the sample group

		f	%
Age	18-20	31	22.6
	21-23	67	48.9
	24-26	28	20.4
	27 and over	11	8.0
Gender	Male	86	62.8
	Female	51	37.2
Grade	1st Grade	30	21.9
	2nd Grade	41	29.9
	3rd Grade	34	24.8
	4th Grade	32	23.4
Department	Teaching	30	21.9
	Sports Management	107	78.1
Leisure time preference	I read a book	53	38.7
	I go to the cinema/theatre	4	2.9
	I visit historical places	23	16.8
	I go to entertainment venues	46	33.6
	I do shopping	11	8.0
How does s/he describe herself?	Quiet and calm	53	38.7
	Social and extrovert	34	24.8
	Hyperactive (Active)	36	26.3
	Nervous and anger	14	10.2

Table 4. Mean and standard deviation results obtained for the entire nutrition scale

	N	mean	SD
1. Do you regularly have breakfast in the morning?	137	3.68	1.32
2. Do you have lunch regularly?	137	3.50	1.33
3. Do you have dinner regularly?	137	4.35	1.04
4. Do you pay attention to the main meal before the training-match?	137	3.85	1.18
5. Do you have a snack an hour before the match?	137	3.01	1.25
6. Do you pay attention to nutrition at the end of the training-match?	137	3.91	1.20
7. Do you consume vitamins and minerals?	137	3.45	1.39
8. Do you consume protein powder?	136	1.40	0.98
9. Do you consume sports drinks?	136	2.32	1.35
10. Do you consume energy drinks?	136	2.21	1.36
11. Do you smoke cigarettes?	136	2.18	1.61
12. Do you take alcohol?	135	1.52	0.95
13. Do you consume milk and dairy products?	137	4.23	1.02
14. Do you consume legumes-grains?	137	4.12	1.06
15. Do you consume meat and meat products?	137	4.31	1.10
16. Do you consume vegetables and fruits?	137	4.36	0.91
17. Do you consume bread group?	137	3.83	1.30
18. Do you consume fast food?	137	3.18	1.28
19. My eating habits affect my performance.	137	4.22	1.07
20. Non-food items affect my performance.	137	3.53	1.27

you consume milk and dairy products?" x=4.23±1.02 average for the question "Do you consume meat and meat products?" x=4.31±1.10 average for the question "Do you consume vegetables and fruits?" x=4.36±0.91 average for the question and "My eating habits affect my performance." x=4.22±1.07 mean is obtained for the question. "Do you consume protein powder?" x=1.40±0.98 average for the question "Do you consume alcohol?" A mean of x=1.52±0.95 is obtained for the question, and the answers from these questions show a **never**-level result.

According to Table 5, in which we evaluated the nutritional habits of the students participating in the study according to the age variable, there is no significant difference between the age groups in the nutritional habits of the students.

According to Table 6, within the context of the results of the independent T test analysis, in which we evaluated the nutritional habits of the students participating in the study according to the gender variable, there is no significant difference between male and female students in the nutritional habits of the students.

According to the results, in which we evaluated the nutritional habits of the students participating in the research according to the grade variable in Table 7, the level of the 4th grade students in the subdimension of products used other than food is found to be =41±0.73 It is also detected to be higher with a significant difference than =1.85±0.67 ($p<0.05$). Accordingly, it can be claimed that 4th grade students consume products other than food more than 1st grade students. For the food consumption frequency sub-dimension, the level of the 3rd year students is found to be higher than =4.21±0.62, 2nd year students with a significant difference of =3.73±0.80 ($p<0.05$). In the general averages of the eating habits scale, it is observed that the levels of the 3rd year students are higher than =3.58±0.48, 1st year students with a significant difference =3.28±0.39 ($p<0.05$).

For Table 8, according to the results of the independent T test analysis, in which we evaluated the

Table 5. Results of One-Way ANOVA Test comparing nutritional habits according to the age variable

	Age	N	Mean	SD	F	P
Nutrition habits	18-20	31	3.61	0.79	0.728	0.537
	21-23	67	3.69	0.69		
	24-26	28	3.80	0.77		
	27 and over	11	3.94	0.54		
Non-Food Products	18-20	31	2.03	0.72	1.466	0.227
	21-23	67	2.32	0.74		
	24-26	28	2.13	0.57		
	27 and over	11	2.10	0.70		
Food Consumption Frequencies	18-20	31	3.87	0.85	0.754	0.522
	21-23	67	4.04	0.73		
	24-26	28	3.99	0.72		
	27 and over	11	4.24	0.52		
Performance	18-20	31	3.68	1.10	1.126	0.341
	21-23	67	3.93	0.91		
	24-26	28	3.80	1.07		
	27 and over	11	4.27	0.96		
Eating Habits Scale Average	18-20	31	3.30	0.51	1.780	0.154
	21-23	67	3.50	0.45		
	24-26	28	3.43	0.54		
	27 and over	11	3.64	0.51		

Table 6. Independent T-Test results comparing nutritional habits according to gender variable

	Gender	N	Mean	SD	t	P
Nutrition Habits	Male	86	3.73	0.71	0.285	0.776
	Female	51	3.69	0.73		
Non-Food Products	Male	86	2.22	0.66	0.371	0.711
	Female	51	2.17	0.78		
Food Consumption Frequencies	Male	86	3.91	0.71	-1.979	0.050
	Female	51	4.17	0.77		
Performance	Male	86	3.91	0.98	0.564	0.574
	Female	51	3.81	1.01		
Eating Habits Scale Average	Male	86	3.44	0.46	-0.210	0.834
	Female	51	3.46	0.55		

nutritional habits of the students participating in the study according to the department variable, for the sub-dimension of products used other than food, it is found that the level of the sports management department students with =2.29±0.69 is higher with a significant difference compared to the teaching department students with =1,90±0,66 ($p<0,05$). In other words, it can be asserted that sports management students consume products other than food more than the students of the teaching department.

Table 7. Results of One-Way ANOVA Test comparing eating habits according to the class variable

	Grade	N	Mean	SD	F	P	Difference
Nutrition Habits	1st Grade	30	3.59	0.57	0.514	0.673	
	2nd Grade	41	3.72	0.73			
	3rd Grade	34	3.82	0.85			
	4th Grade	32	3.72	0.69			
Non-Food Products	1st Grade	30	1.85	0.67	3.758	0.013**	4 > 1
	2nd Grade	41	2.26	0.69			
	3rd Grade	34	2.24	0.63			
	4th Grade	32	2.41	0.73			
Food Consumption Frequencies	1st Grade	30	4.07	0.62	3.148	0.027**	3 > 2
	2nd Grade	41	3.73	0.80			
	3rd Grade	34	4.21	0.62			
	4th Grade	32	4.08	0.80			
Performance	1st Grade	30	3.60	0.87	1.431	0.236	
	2nd Grade	41	3.82	1.07			
	3rd Grade	34	4.06	1.00			
	4th Grade	32	4.02	0.97			
Eating Habits Scale Average	1st Grade	30	3.28	0.39	2.900	0.037**	3 > 1
	2nd Grade	41	3.38	0.53			
	3rd Grade	34	3.58	0.48			
	4th Grade	32	3.56	0.50			

** A significant difference at the level of P<0.05 is indicated.

Table 8. The Independent T-Test results comparing eating habits according to department variable

	Department	N	Mean	SD	t	P
Nutrition Habits	Teaching	30	3.84	0.80	1.101	0.273
	Sports Management	107	3.68	0.69		
Non-Food Products	Teaching	30	1.90	0.66	-2.746	0.007**
	Sports Management	107	2.29	0.69		
Food Consumption Frequencies	Teaching	30	4.18	0.59	1.497	0.137
	Sports Management	107	3.96	0.77		
Performance	Teaching	30	3.87	1.07	-0.058	0.954
	Sports Management	107	3.88	0.97		
Eating Habits Scale Average	Teaching	30	3.45	0.51	-0.035	0.972
	Sports Management	107	3.45	0.49		

** A significant difference at the level of P<0.05 is indicated.

According to the results, in which we evaluated the nutritional habits of the students participating in the study according to the leisure time preference variable, there is no significant difference in the nutritional habits of the students according to their leisure preferences.

For Table 10, according to the results, in which we evaluated the nutritional habits of the students

Table 9. One-Way ANOVA Test results comparing nutritional habits according to the leisure time preference variable

	Leisure Time Preference	N	Mean	SD	F	P
Nutrition Habits	I read a book	53	3.78	0.66	1.820	0.129
	I go to the cinema/theatre	4	3.79	1.06		
	I visit historical places	23	3.98	0.67		
	I go to entertainment venues	46	3.51	0.79		
	I do shopping	11	3.70	0.49		
Non-Food Products	I read a book	53	2.04	0.72	1.636	0.169
	I go to the cinema/theatre	4	2.38	1.10		
	I visit historical places	23	2.14	0.69		
	I go to entertainment venues	46	2.35	0.66		
	I do shopping	11	2.43	0.57		
Food Consumption Frequencies	I read a book	53	3.96	0.65	0.741	0.565
	I go to the cinema/theatre	4	4.13	0.50		
	I visit historical places	23	3.97	0.57		
	I go to entertainment venues	46	3.98	0.81		
	I do shopping	11	4.36	1.14		
Performance	I read a book	53	3.83	0.99	0.140	0.967
	I go to the cinema/theatre	4	4.00	0.71		
	I visit historical places	23	4.00	1.02		
	I go to entertainment venues	46	3.87	0.93		
	I do shopping	11	3.82	1.35		
Eating Habits Scale Average	I read a book	53	3.40	0.51	0.500	0.736
	I go to the cinema/theatre	4	3.57	0.57		
	I visit historical places	23	3.52	0.47		
	I go to entertainment venues	46	3.43	0.44		
	I do shopping	11	3.58	0.66		

participating in the study according to the variable of self-description, there is no significant difference in the nutritional habits of the students according to the way they describe themselves.

Looking at the sub-dimensions of the Nutrition Scale for Table 12; =3.72±0.72 mean for eating habits dimension, =2.20±0.72 mean for non-food products dimension, =4.01±0.74 mean for food consumption frequency dimension and performance dimension, and the mean of =3.88±0.99 for performance dimension are obtained. According to these results, it can be asserted that the students exhibit a high level of positive behavior for the dimensions of eating habits and the frequency of food consumption, and a low level of behavior in the dimension of non-food products used.

Discussion and Conclusion

Approximately half of the students (48.9%) participating in the research are between the ages of 21-23. 62.8% of the participants are male and 37.2% are female. Distribution percentages by grade are almost close to each other. While 21.9% of the students are studying in the teaching department, 78.1% of them are students in the sports management department. Considering the activities that the participant students prefer to do in their spare time, 38.7% stated that they prefer to read books, 33.6% prefer to go to entertainment venues, and 16.8% prefer to visit historical places. While 38.7% of the students describe themselves as quiet, 24.8% as social and extrovert, 26.3%

Table 10. Results of One-Way ANOVA Test comparing nutritional habits according to self-description variable

	Self-description	N	Mean	SD	F	P
Nutrition Habits	Quiet and calm	53	3.70	0.63	0.369	0.775
	Social and extrovert	34	3.68	0.77		
	Hyperactive (Active)	36	3.81	0.67		
	Nervous and anger	14	3.61	1.03		
Non-Food Products	Quiet and calm	53	2.11	0.74	1.062	0.367
	Social and extrovert	34	2.21	0.69		
	Hyperactive (Active)	36	2.37	0.68		
	Nervous and anger	14	2.08	0.62		
Food Consumption Frequencies	Quiet and calm	53	3.99	0.68	0.213	0.887
	Social and extrovert	34	4.00	0.86		
	Hyperactive (Active)	36	4.08	0.69		
	Nervous and anger	14	3.91	0.83		
Performance	Quiet and calm	53	3.83	0.91	0.613	0.608
	Social and extrovert	34	3.93	1.16		
	Hyperactive (Active)	36	3.78	0.93		
	Nervous and anger	14	4.18	1.03		
Eating Habits Scale Average	Quiet and calm	53	3.41	0.46	0.298	0.826
	Social and extrovert	34	3.45	0.53		
	Hyperactive (Active)	36	3.51	0.48		
	Nervous and anger	14	3.44	0.58		

Table 11. The mean and standard deviation results obtained for the sub-dimensions of the nutrition scale

	N	Mean	SD
Nutrition Scale	137	3.45	0.49
Nutrition habits	137	3.72	0.72
Non-Food Products	137	2.20	0.70
Food Consumption Frequencies	137	4.01	0.74
Performance	137	3.88	0.99

as active, the rate of those who describe themselves as nervous is 10.2%. When we examine the answers given by the students to the nutrition scale based on products, a very high level of eating habits were determined for 5 items. "Do you eat dinner regularly?" with =4.35±1.04 average for the question; "Do you consume milk and dairy products?" with =4.23±1.02 average for the question; "Do you consume meat and meat products?" with =4.31±1.10 average for the question; "Do you consume vegetables and fruits?" with =4.36±0.91 average for the question; and "My eating habits affect my performance." with =4.22±1.07 mean are obtained for the question. "Do you consume protein powder?" with =1.40±0.98 average for the question; "Do you consume alcohol?" with a mean of =1.52±0.95 are obtained for the question, and the answers from these questions show a never-level result. According to the results of the One-Way ANOVA test analysis, in which we evaluated the nutritional habits of the students participating in the study according to the age variable, there is no significant difference between the age groups in the nutritional habits of the students. On the other hand, Acar (2021), in his study on elite female volleyball players, concludes that in terms of food consumption frequency, the levels of female volleyball players in the 16-18 age group are significantly higher than the female volleyball players in the 22-24 age group and 25-27 age group (22). According to the results of the One-Way ANOVA test analysis, in which we evaluated the nutritional habits of the

students participating in the study according to the age variable, there is no significant difference between the age groups in the nutritional habits of the students. Vancelik et al., (2007) conclude in their study that a significant portion of university students are far from ideal eating habits and that detailed studies are needed to determine the reason for this situation. In addition, Nnanyelugo and Okeke (1987) conclude in a study they conducted with university students in Nigeria that the most skipped meal is breakfast with a rate of 73% (23). According to the results of the independent T test analysis, in which we evaluated the nutritional habits of the students participating in the study according to the gender variable, there is no significant difference between male and female students in the nutritional habits of the students. According to the results of the One-Way ANOVA test analysis, in which we evaluated the nutritional habits of the students participating in the study according to the grade variable, it is observed that the levels of the 4th grade students in the sub-dimension of products used other than food are significantly higher than the 1st grade students. Accordingly, it can be claimed that 4th grade students consume non-food products more than 1st grade students. For the food consumption frequency sub-dimension, the levels of the 3rd grade students are found to be higher with a significant difference compared to the 2nd grade students. In the general averages of the eating habits scale, it is identified that the levels of the 3rd grade students are higher than the 1st grade students with a significant difference. According to the results of the independent T test analysis, in which we evaluated the nutritional habits of the students participating in the research according to the department variable, it is detected that the levels of the sports management department students for the sub-dimension of non-food products are significantly higher than the students of the teaching department. In other words, we can say that the students of the department of sports management consume non-food products more than the students of the teaching department. According to the results of the One-Way ANOVA test analysis, in which we evaluated the nutritional habits of the students participating in the study according to the leisure time preference variable, there is no significant difference in the nutritional habits of the students according to their leisure preferences. According to the results of the One-Way ANOVA test analysis, in which we evaluated the nutritional habits of the students participating in the study according to the variable of self-identification, there is no significant difference in the nutritional habits of the students according to the way they describe themselves. Looking at the sub-dimensions of the nutrition scale; according to the results of the nutritional habits dimension, it can be claimed that the students exhibited a high level of positive behavior for the dimensions of eating habits and the frequency of food consumption, and a low level of behavior in the dimension of non-food products consumed.

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