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Research Article

Investigation of Nutrition Knowledge Levels of Gastronomy Department Students: A Study on Students in Istanbul

Gastronomi Bölümü Öğrencilerinin Beslenme Bilgi Düzeylerinin İncelenmesi: İstanbul'daki Öğrenciler Üzerine Bir Çalışma

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Abstract

Aim: In line with the data obtained from this study, it was aimed to determine the need for basic nutrition knowledge in gastronomy education and to make relevant suggestions on this issue. **Materials and Methods:** The population of the study consisted of 196 students studying in the gastronomy department of different universities in the 2021-2022 academic year and participated voluntarily. In the first part of the questionnaire, demographic characteristics, anthropometric measurements (height/cm, body weight/kg) and eating habits of the individuals were questioned. The second part of the questionnaire consisted of the "A Nutrition Knowledge Level Scale For Adults (NKLSA)", which measured the nutritional knowledge level of the students. After the questionnaire was completed, the data obtained were transferred to the SPSS (IBM Statistical Package for the Social Sciences) version 22 software database for evaluation and necessary statistical analyses. **Results:** In the study, 38.8% of the participants were male and 61.2% were female. It was found that the rate of eating out was higher in men than in women and this was a statistically significant difference ($p<0.05$). The calculated body mass indexes of the participants were 25.3±4.7 kg/m^2 for men and 23.1±4.3 kg/m^2 for women. It was found that male and female individuals scored an average of 52.2±7.0 and 53.6±7.1 points, respectively, out of 80 full points on the Basic Nutrition sub-dimension of the NKLSA ($p>0.05$) and an average of 37.8±6.7 and 38.9±5.8 points, respectively, out of 48 full points on the Food Preference sub-dimension.
Conclusion: The results of our study showed that the basic nutrition knowledge level and food preferences of gastronomy department students were at a moderate level.

Öz

Amaç: Bu çalışmadan elde edilen veriler doğrultusunda, gastronomi eğitiminde temel beslenme bilgisi ihtiyacının belirlenmesi ve bu konuda ilgili önerilerde bulunulması amaçlanmıştır. **Gereç ve Yöntem:** Araştırmanın evrenini, 2021-2022 akademik yılında farklı üniversitelerin gastronomi bölümünde okuyan ve gönüllü olarak katılan 196 öğrenci oluşturmuştur. Anketin ilk bölümünde, bireylerin demografik özellikleri, antropometrik ölçümleri (boy/cm, vücut ağırlığı/kg) ve beslenme alışkanlıkları sorgulanmıştır. Anketin ikinci bölümünü ise, öğrencilerin beslenme bilgi düzeylerini ölçen "Yetişkinler için Temel Beslenme Bilgi Düzeyi (YETBİD)" ölçeği oluşturmuştur. Anket tamamlandıktan sonra elde edilen veriler, değerlendirme ve gerekli istatistiksel analizlerin yapılması için SPSS (IBM Statistical Package for the Social Sciences) versiyon 22 programı veri tabanına aktarılmıştır. **Bulgular:** Çalışmada, katılımcıların %38,8'i erkek ve %61,2'si kadındı. Dışarıda yemek yeme oranının erkeklerde kadınlardan daha yüksek olduğu ve bunun istatistiksel olarak anlamlı bir fark olduğu bulunmuştur ($p<0,05$). Katılımcıların hesaplanan beden kütle indeksleri erkekler için 25,3±4,7 kg/m^2 ve kadınlar için 23,1±4,3 kg/m^2 olarak bulunmuştur. Erkek ve kadın bireylerin YETBİD ölçeğinin Temel Beslenme alt boyutundan 80 tam puan üzerinden sırasıyla ortalama 52,2±7,0 ve 53,6±7,1 puan aldıkları ($p>0,05$) ve Besin Tercihi alt boyutundan 48 tam puan üzerinden sırasıyla ortalama 37,8±6,7 ve 38,9±5,8 puan aldıkları bulunmuştur. **Sonuç:** Çalışmamızın sonuçları, gastronomi bölümü öğrencilerinin temel beslenme bilgi düzeyinin ve besin tercihlerinin orta düzeyde olduğu sonucuna ulaşılmıştır.

This study was presented as an oral presentation online at the VI. International Anatolian Agriculture, Food, Environment, and Biology Congress (07-09 October 2022, Kütahya). This article is derived from the master's thesis titled "Investigation of Healthy Nutrition Knowledge Levels of Gastronomy Students," registered in the YÖK Thesis Center with thesis number 755459. Some of the findings of the thesis were presented online at the VI. International Anatolian Agriculture, Food, Environment, and Biology Congress, held from October 7-9, 2022, in Kütahya, Türkiye. The congress was hosted by Kütahya Municipality and organized by Turkish Science and Technology Publishing (TURSTEP), under the leadership of Niğde Ömer Halisdemir University, Sivas Cumhuriyet University, Kütahya Dumlupınar University, and The Turkish Journal of Agriculture - Food Science and Technology (TURJAF). The article produced from the other findings of the thesis has been uploaded to your journal.

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INTRODUCTION

The term Gastronomy was used by the poet Archestratus for the first time in the 4th century B.C. It was stated in this poet's writing that Gastronomy is the art of cooking good and delicious food, table pleasure, and eating and drinking well (1). There are many different definitions of gastronomy. The concept of gastronomy, which consists of the Greek words gastro (stomach) and nomos (law, rules), means "the interest in eating well, healthy, well-arranged, pleasant and delicious kitchen, meal order and system" in French (2-5). However, it is also reported that this limited definition is insufficient to explain the science of gastronomy. In its shortest and most concise definition, it is said that gastronomy is the art and science of eating (6). A more comprehensive definition was made by Öney in 2016 stating that "Gastronomy is the science of food and eating and drinking, and it is also associated with the philosophy of art and culture". The Turkish Language Association defines gastronomy as "the interest in eating good food" and "a healthy, well-organized, pleasant and delicious kitchen, food order and system" (7). Gastronomy is an important source of happiness for students as well as being one of the basic elements of life and health due to its relation with food and beverages, its interaction and connection with food and nutrition. The development of skills related to food and beverages increases the pleasure and satisfaction received from these items, and this satisfaction contributes to the development of gastronomy. Therefore, gastronomy is a branch of science that can be passed on from generation to generation (8).

Investigating the importance given to healthy and balanced nutrition, healthy cooking methods, appropriate storage conditions and hygiene rules by gastronomy department students, who will have important duties in food and beverage businesses and kitchens in the future, has recently gained importance as a serious issue concerning public health (5,6). Nutrition is the basis of health in terms of maximum well-being, and minimum disease status, as a prerequisite for a healthy, productive, and productive life, a basic human need and a fundamental human right. A sufficient, balanced, healthy diet is essential for growth and development, being healthy and energetic, a sustainable environment, and sustaining life (9-11). Sufficient and balanced nutrition is defined as not only filling the stomach but also providing the body with the nutrients and energy it needs according to the person's physiological status, age, and gender, in the required amount, in quality, economically, regularly and sustainably, to ensure the physical development and growth of the person and to maintain his/her health (10). Determining the nutrition and health status of a country and examining the effects of these factors is important in developing food and nutrition policies at the national level. For this reason, nutritional studies for healthy nutrition are important in understanding the changes in nutrition and the nutritional status of society (11).

Today, when the use of social media and electronic devices is increasing and people tend to meet their eating and drinking needs in a time period when their attention is focused on more than one point at the same time, it is observed that they consume without realizing how much they eat and thus health problems based on obesity and malnutrition occur. It is also considered that there are negative effects of moving away from our traditional eating and meal culture. Based on this, it is considered extremely important to increase the level of healthy and conscious education of students studying at gastronomy departments (12).

The current state of gastronomy demonstrates the significant contribution of graduates with vocational training and expertise in healthy nutrition to the efficiency and sustainability of service provision within the sector. In this context, the importance of graduates from the gastronomy department, who have received an education and acquired the requisite awareness to ensure the production of foods in accordance with nutritional principles, health, and economy, is increasing on a daily basis for public health, especially in light of the prevailing conditions. Despite the existence of numerous studies on the subject of healthy nutrition knowledge and habits among university students, there is a notable absence of comprehensive studies on gastronomy department students, who will ultimately become the chefs of the future. In light of this, the present study was designed and conducted with the objective of uncovering the eating habits and levels of healthy nutrition knowledge among gastronomy department students, as well as the relevant factors. Based on the data obtained from this study, the aim was to ascertain the necessity for fundamental nutrition knowledge within the context of gastronomy education, and to provide pertinent recommendations.

MATERIALS AND METHODS

The study was conducted to determine the healthy nutrition knowledge levels of university gastronomy department students in Istanbul. The study was planned in a Cross-Sectional Descriptive / Qualitative fashion. As a result of the statistical power analysis, it was determined that at least 192 students should be included in the study with a 95% Confidence Interval. The population of the study consisted of 196 volunteering students who were studying in the gastronomy department of different universities in the 2021-2022 academic year.

Necessary permission was obtained from the Nişantaşı University Ethics Committee to conduct the study (2022/4). The questionnaire was conducted between 21.12.2021-21.04.2022. It was difficult to reach students in the COVID-19 pandemic with limited face-to-face meeting opportunities. For this reason, the questionnaire form and scale were applied to the students on the internet, with the previously created Google Form.

The reporting of this study was made in line with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines, which were developed to ensure the transparent and complete presentation of research. The study design, data collection methods, analysis process, and presentation of findings have been structured in line with the STROBE checklist (13).

A questionnaire that consisted of two parts was used as the data collection tool. In the first part, the demographic characteristics, place of residence, anthropometric measurements (height/cm, body weight/kg), and nutritional habits of the students included in the questionnaire were questioned. Using the height (cm) and body weight (kg) data obtained from the students based on their declarations, the values of the body mass index (BMI), which is one of the easy ways to determine the nutritional status of the individual in practice, were calculated. BMI is determined by dividing the body weight in kilograms by the square of the height in centimeters. A BMI of 18.5-24.9 kg/m^2 is considered normal, 25.0-29.9 kg/m2 is considered overweight, and values of 30 kg/m^2 and above are considered obese (14). The second part of the questionnaire consisted of the "A Nutrition Knowledge Level Scale For Adults (NKLSA)", which measures the nutrition knowledge levels of students and is briefly called the "NKLSA". The scale, which is used to measure students' knowledge levels about healthy nutrition, was developed by Batmaz, and its validity and reliability study was conducted. The scale has a total of "32" questions, 20 of which were titled "Basic Nutrition / Food Health" and 12 titled "Food Preference", and two evaluation questions. The evaluation of the scores obtained was evaluated as a total Basic Nutrition Score out of 80 (<45 as poor, 45-55 as moderate, 56-65 as good, and >65 as very good). Out of a total of 48 points, a Food Preference score of <30 was considered poor, 30-36 was considered moderate, 37-42 was considered good, and >42 was considered very good (15).

Statistical Evaluation of Data

After the questionnaires and the scale were completed, the data were transferred to the SPSS (IBM Statistical Package for the Social Sciences) version 22 program database for evaluation and necessary statistical analysis. Among the variables, continuous variables were expressed as mean ($\bar{x}$), standard deviation (SD), upper and lower, and discrete variables were expressed as number (n) and percentage (%). The conformity of the data with normal distribution was analyzed with the Kolmogorov-Smirnov normality test. The analysis of the difference between groups in categorical variables was tested with "Fisher's Exact Chi-Square" test, and in cases where the use of the Chi-Square Test was not appropriate, 2xn dimensional categorical variables were tested with the "Kolmogorov-Smirnov" test, one of the nonparametric hypothesis tests. Regarding quantitative variables, the "Mann-Whitney U" test was used to analyze whether the difference between two groups was significant in findings that did not comply with normal distribution, and the "Kruskal-Wallis" test was applied to analyze the significance of the difference between more than two groups. To analyze the relationship between quantitative variables, the "Pearson Correlation" test was applied to the findings that were suitable for normal distribution. The significance level was taken as $p<0.05$ in statistical data.

RESULTS

The results of the questionnaire and scale applied to gastronomy department students in the present study are shown in the tables below. Statistical analyses and results are discussed within the framework of the relevant literature data.

As seen in Table 1, 38.8% of the students who participated in the study were male, 61.2% were female, and most of them were single (95.4%) and first-year students (40.3%). No statistically significant differences were detected between the distribution of the students participating in the present study according to classes, gender, and marital status ($p>0.05$). The mean ages of male and female students were calculated as 22.6±6.5 and 22.3±5.7 years, respectively, and no statistically significant difference was found between these two averages ($p>0.05$). The rate of students living at home with their family was determined as 46.9% and the rate of men living alone at home (23.7%) is higher than women (9.2%). There was a statistically significant difference between the places where the students lived according to their gender ($p<0.05$). The rate of female students living with their families was higher than that of males.

Table 1. General information and body mass index classification of participants

	Male		Female		Total		
	n 76	% (38.8)	n 120	% (61.2)	n 196	% (100)	p
Marital status							
Single	2	(2.6)	7	(5.8)	9	(4.6)	0.487 +
Married	74	(97.4)	113	(94.2)	187	(95.4)	
Classes							
1st grade	24	(31.6)	55	(45.8)	79	(40.3)	**0.174 •**
2nd grade	21	(27.6)	28	(23.4)	49	(25.0)	
3rd grade	14	(18.4)	21	(17.5)	35	(17.9)	
4th grade	17	(22.4)	16	(13.3)	33	(16.8)	
Residence							
At home with family	34	(44.7)	58	(48.3)	92	(46.9)	
At home with friends	8	(10.5)	11	(9.2)	19	(9.7)	**0.026 •**
Home alone	18	(23.7)	11	(9.2)	29	(14.8)	
In dormitory	16	(21.1)	40	(33.3)	56	(28.6)	
Age (years)	$\bar{x}$ ±SD		$\bar{x}$±SD		$\bar{x}$±SD		0.268 **
	22.6±6.5		22.3±5.7		22.4±6.0		

• Chi-Square Test, +Fisher's Exact Test, **Mann-Whitney U Test

According to Table 2, the mean number of main and snack meals consumed daily by students was determined as 2.3±0.5 and 1.4±0.9, respectively. According to the results of the analysis, there was no significant difference in the number of main and snack meals according to gender (p>0.05). 86.2% of the students stated that they skipped meals. The meals most skipped were found to be lunch (40.3%), morning (30.1%), and evening (6.1%). No significant differences were detected between skipped meals and gender (p>0.05). While the rate of students who never eat out is 4.6%, 41.3% of students stated that they eat out a few times a month, and 40.8% of students stated that they eat out a few times a week. The rate of men eating out was higher than women at a statistically significant level (p<0.05).

Table 2. The distribution of students by gender and meal patterns

	Male		Female		Total		
	n 76	% (38.8)	n 120	% (61.2)	n 196	% (100)	p
Meal skipping status							
Yes	27	(35.5)	58	(48.3)	85	(43.3)	
No	10	(13.2)	17	(14.2)	27	(13.8)	0.145 *
Sometimes	39	(51.3)	45	(37.5)	84	(42.9)	
Skipped meal							
Breakfast	18	(23.7)	41	(34.2)	59	(30.1)	
Brunch	2	(2.6)	2	(1.7)	4	(2.0)	
Noon	30	(39.5	49	(40.8)	79	(40.3)	**0.000 ▪**
Afternoon	7	(9.2)	4	(3.3)	11	(5.6)	
Evening	7	(9.2)	5	(4.2)	12	(6.1)	
Night	2	(2.6)	2	(1.7)	4	(2.0)	
Frequency of eating out							
More than once every day	3	(3.9)	3	(2.5)	6	(3.1)	
Once a day	6	(7.9)	14	(11.7)	20	(10.2)	
Several times a week	36	(47.4)	44	(36.7)	80	(40.8)	**0.000 ▪**
Several times a month	29	(38.2)	52	(43.3)	81	(41.3)	
I do not eat out	2	(2.6)	7	(5.8)	9	(4.6)	
Number of meals per day	$\bar{x}$ ±SD		$\bar{x}$±SD		$\bar{x}$±SD		
Main Meal	2.4±0.5		2.2±0.5		2.3±0.5		0.062 +
Snack	1.3±0.9		1.5±0.9		1.4±0.9		0.206 +

*Chi-Square Test, +Mann-Whitney U Test, ▪Kolmogorov-Smirnov Test

It is seen in Table 3 that 57.7% of the students who participated in the study are in the normal (M: 47.4%, F: 64.2%) BMI class. The rates of overweight and obese men were determined as 30.3% and 17.1%, respectively. For women, these rates were 15.8% and 10.0%, respectively. There was a statistically significant difference between gender and BMI classification (p<0.05). The NKLSA Basic Nutrition score of male and female students was calculated as 52.2±7.0 and 53.6±7.1 out of 80 full points (p>0.05). The NKLSA "Food Preference score" of the students was calculated as 38.5±6.2 out of 48 full scores. The Food Preference total mean score of male and female students was found to be 37.8±6.7 and 38.9±5.8, respectively, and no statistically significant differences were detected between the values (p>0.05).

Table 3. The distribution of the students according to BMI classification and total average score of the students from the NKLSA by gender

	Male		Female		Total		
	n 76	% (38.8)	n 120	% (61.2)	n 196	% (100)	p
BMI classification							
Underweight (<18.5 9 kg/m²)	4	(5.3)	12	(10.0)	16	(8.2)	0.019 *
Normal (18.5-24.9 kg/m²)	36	(47.4)	77	(64.2)	113	(57.7)	
Overweight (24.9-29.9 kg/m²)	23	(30.3)	19	(15.8)	42	(21.4)	
Obese (≥30 kg/m²)	13	(17.1)	12	(10.0)	25	(12.8)	
Total Average Score							
Basic nutrition score (80 points)	76	52.2±7.0	120	53.6±7.1	196	53.0±7.1	0.140 +
Food preference score (48 points)	76	37.8±6.7	120	38.9±5.8	196	38.5±6.2	0.278 +

*Chi-Square Test, +Mann-Whitney U Test

According to Table 4, no significant differences were detected in the NKLSA basic nutrition and food preference score mean according to the number of main meals, number of snacks, skipping meals, skipped meals, and frequency of eating out (p>0.05). The mean BMI values of male and female students were determined as 25.3±4.7 and 23.1±4.3 kg/m², respectively. As a result of the analysis, a statistically significant difference was detected between the height, body weight, and BMI values of male and female students (p<0.05).

According to Table 5, no significant correlations were detected between the basic nutrition and food preference score and age, body weight, and BMI (p>0.05).

Table 5. The correlation of the students' NKLSA score with some parameters

		Basic Nutrition (80 points)		Food Preference (48 points)	
	n	r	p*	r	p*
Age (years)	196	0.052	0.467	-0.021	0.775
Body weight (kg)	196	-0.078	0.277	-0.053	0.457
BMI (kg/m²)	196	-0.021	0.771	-0.004	0.957

* Pearson Correlation Test

Table 6 shows the statistically significant differences between the classes in which the students are studying and other classes in terms of their need for healthy nutrition information. Those who need healthy nutrition information were 44.5% in the 1st class, but it started to decrease in older classes, decreasing to 16.8% in the 3rd and 4th classes. However, no statistically significant difference was found between all classes (p>0.05).

Table 6. The distribution of the students' need for healthy nutrition information by grade

	Need for Healthy Nutrition Information						
	Yes		No		Total		
Classes	n	%	n	%	n	%	p*
1st grade	61	44.5	18	30.5	79	40.3	
2nd grade	30	21.9	19	32.2	49	25.0	
3rd grade	23	16.8	12	20.3	35	17.9	0.236
4th grade	23	16.8	10	17.0	33	16.8	
Total	137	100	59	100	196	100	

*Chi-Square Test

Table 4. he NKLSA total score average according to students' meal patterns and BMI classification

		Basic Nutrition (80 points)	Food Preference (48 points)
	n	$\bar{x} \pm SD$	$\bar{x} \pm SD$
Number of main meals			
<3	135	53.3±7.0	38.8±6.2
≥3	61	52.6±7.2	37.7±6.0
p*		0.488	0.187
Number of snacks			
None	36	51.0±6.1	37.7±6.4
1-2	137	53.4±7.1	38.6±6.1
>3	23	54.3±8.2	37.8±6.5
p+		0.132	0.603
Meal skipping status			
Yes	85	54.3±7.3	38.9±6.1
No	27	53.2±7.9	38.0±7.5
Sometimes	84	51.7±6.3	38.2±5.9
p+		0.061	0.206
Skipped meal			
Breakfast	59	52.4±7.4	38.1±6.2
Brunch	4	57.8±8.6	40.0±5.3
Noon	79	53.2±6.9	38.7±5.8
Afternoon	11	53.5±7.9	37.5±7.3
Evening	12	52.8±4.8	39.3±5.8
Night	4	54.3±4.9	40.3±4.9
p+		0.810	0.946
Frequency of eating out			
More than once every day	6	47.7±7.8	33.3±10.3
Once a day	20	55.4±8.3	39.5±6.0
Several times a week	80	53.1±7.5	38.7±5.7
Several times a month	81	52.7±6.2	38.6±5.7
I do not eat out	9	54.1±5.3	36.4±10.9
p+		0.277	0.712
BMI classification			
Underweight (<18.5 9 kg/m^2)	16	54.7±7.2	38.3±4.8
Normal (18.5-24.9 kg/m^2)	113	52.8±7.0	39.0±6.0
Overweight (24.9-29.9 kg/m^2)	42	53.0±7.3	36.5±7.4
Obese (≥30 kg/m^2)	25	53.1±7.1	39.4±5.0
p ■		0.791	0.260

*Mann-Whitney U Test, + Kruskal-Wallis Test, ■Kruskal-Wallis Test

DISCUSSION

The findings of the study, which was designed to ascertain the extent of knowledge regarding healthy nutrition among students of gastronomy department and to offer recommendations within the context of the current state of knowledge on the subject, are presented and discussed in this part.

The majority of students who participated in the study were women (61.2%), single people (95.4%), and first-year students (40.3%). No statistically significant difference was found between the distribution of the students participating in the present study according to classes, gender, and marital status ($p>0.05$). The mean age of the students was found to be 22.6±6.5 and 22.3±5.7 years, respectively, and there was no statistically significant difference between them ($p>0.05$).

Staying in a dormitory can lead to inevitable consequences such as being away from the family environment and not being fed enough (16). When looking at the housing opportunities of the students, almost half of the students (46.9%) lived at home with their families, the rate of men living alone at home (23.7%) was higher than women, and there was a statistically significant difference between the place of residence according to gender ($p<0.05$). The rate of female students living with their families was higher than that of males. Güldiken and Özekicioğlu (17) conducted a study on students' accommodation and problems and reported that students living in rented houses have economic problems because of high rents, and if the number of students staying at home is more than 3, they do not have the opportunity to study sufficiently, and students living in state dormitories also have problems with cleaning. They found that they had some problems such as not being able to watch TV, not being able to study, and entry and exit times (17). The fact that approximately one-quarter of the male students live alone at home, although not very high, is positive in terms of the students in the present study not experiencing possible problems that may arise from accommodation. Accommodation opportunities for students are important factors affecting their nutrition and health status.

Considering many negative associated factors, it is of great importance to determine the nutritional knowledge and habits of university students and to develop recommendations appropriate to the current situation (18). When the results of the students' meal patterns were evaluated in the present study, it was found that most of them skipped meals (86.2%), and the meals most skipped were lunch (40.3%) and breakfast (30.1%), respectively. In terms of the frequency of eating out, it was found that men were more likely to eat out than women, and a significant difference was detected between the frequency of eating out and gender ($p<0.05$). In a similar study conducted with university students regarding meal patterns, it was stated that 44.1% of the students did not eat breakfast regularly, 41.6% did not eat lunch regularly, and 9.8% did not eat dinner regularly (19). In this study, unlike the present study, breakfast was found to be the most skipped meal. Considering the results of Türkiye Nutrition and Health Survey (TNHS) 2017, when the main meal consumption of students aged 15 and over was evaluated, it was determined that 85% of the students included in the study had breakfast (11). In the present study, it was found that the rate of people skipping the morning meal is higher than the country-wide data.

This result can be considered as a negative situation in terms of healthy eating attitudes and behavior in gastronomy department students. It is suggested that the number of meals consumed, skipping meals, the reasons for skipping meals, whether or not to snack, and all kinds of psychological factors affecting eating are important indicators of the individual's eating habits (20). Regardless of the meal eaten, especially for university students who are in an active education and training process, not skipping meals and ensuring that meal intervals and the types and amounts of food consumed at meals are balanced will affect their academic success as well as risk many health problems, especially obesity, diabetes, and cardiovascular diseases. In light of the potential for a notable reduction in daily food intake, it is advised that university students adopt a more regular and frequent eating pattern to optimize their dietary habits. Such a dietary pattern will facilitate students' academic success by enabling them to meet their metabolic needs, maintain stable energy levels and enhance their concentration. Furthermore, adopting regular and balanced eating habits can assist in developing healthy lifestyles over the long term and prevent potential nutrition-related health issues.

Consequently, encouraging more frequent and regular eating habits can be regarded as a crucial strategy in formulating nutrition programs for university students.

It was reported that the relationship between obesity prejudice and body image is stronger in women than in men (21). In the present study, the mean BMI values of the students were determined as 25.3±4.7 and 23.1±4.3 kg/m^2 for men and women, respectively. A statistically significant difference was detected between the BMI values of men and women ($p<0.05$). Men have higher BMI values compared to women. As a result of gender and BMI classification evaluation in the present study, the rate of overweight men was found to be higher than women, and this difference was found to be statistically significant ($p<0.05$). In a previous study conducted on students studying in various departments of Pamukkale University, the rate of students in the normal body weight classification according to the BMI classification was found to be higher than the present study (71.8%) (22). Here, it can be argued that students of other departments have more awareness of body image and healthy nutrition than gastronomy department students. Likewise, in a study conducted on students studying at Medipol University School of Health Professions, the mean BMI was higher in men than in women, similar to the present study in terms of gender. In this study, it was seen that the rate of those with normal weight (66.9%) in terms of BMI values classification was higher than in the present study (57.7%). The findings of the present study and other studies conducted with university students show that female students' awareness of body weight is higher than male students. These results are explained as an indication that women in adolescence and university age attach importance to their appearance and desire to be admired more than men (19). It was concluded that the awareness of having a normal body weight is higher than that of male students, and it can be said that this may be because of the difference in body perception between the two groups. It is generally accepted that men have a higher muscle mass than women. Since muscle tissue weighs more than fat tissue, a body with less fat of the same body weight can lead to a higher BMI. In addition, male hormones such as testosterone can have a direct effect on BMI by influencing fat distribution and muscle mass.

The purpose of the nutrition information and education to be given is to show students their current nutritional status and bring them to the highest level by providing them with healthy eating habits, getting rid of wrong eating behaviors, preventing foods from affecting health negatively, and using food resources as economically and effectively as possible (9). When the results of the present study in healthy nutrition knowledge level were evaluated, it was seen that male and female students received 52.2±7.0 and 53.6±7.1 ($p>0.05$) out of 80 full points, which is the NKLSA Basic Nutrition score. The mean Food Preference score out of 48 full points of the NKLSA, which measures the level of nutrition knowledge, was found to be 38.5±6.2. When the scores obtained from both categories of NKLSA were evaluated according to the score classification ranges, it was found that the nutrition knowledge levels of gastronomy department students were at a moderate level. Gazi University conducted a similar study with its students, and the nutrition knowledge test developed by the researchers in the light of literature knowledge was applied to the young people included in the study. The mean nutrition knowledge test scores of the young people were found to be 5.6±5.5 for men and 6.0±2.3 for women, and this difference between genders was found to be unlike the present study, it was reported to be statistically and significantly higher in women ($p<0.05$) (23). This result might have occurred because young people, regardless of gender, have encountered more stimuli about nutrition and diet and have become more interested in this subject in the period since 2009, when the study in question was conducted. Also, the fact that less than half of the gastronomy department students, although not at a very high rate, stated that they had received nutrition information within the scope of the school course in the present study, may explain the fact that no difference was found between genders. In the present study, no difference was found between the classes being studied and NKLSA scores. It was reported in the study conducted by Çalıştır et al. (24) on Muğla University students that 3rd-grade students had the highest nutrition knowledge score, but there was no statistically significant difference between classes ($p>0.05$). In another study that investigated the relationship between students' classes and their basic nutrition knowledge scores, unlike the present study, it was found that there was a weak negative ($r=-0.088$) but significant ($p=0.016$) correlation between the students' classes and their Basic Nutrition scores (20). It is argued that the nutritional knowledge of the individual is one of the important factors affecting the nutritional status and habits of the individual and society.

The study was conducted with the participation of the students who were studying in the gastronomy departments of three universities in Istanbul. Students in classes 1-4 of these universities were included in the study as the population, and preparatory classes were not included. This situation can be defined as the limitations of the study. Emphasis was placed on ensuring the participation of the students in the study via Google Form voluntarily and care was taken in this regard.

CONCLUSION AND RECOMMENDATIONS

Investigating the importance that gastronomy department students, who will be responsible for food and beverage businesses and kitchens in the future, attach to healthy and balanced nutrition, healthy cooking methods, healthy storage conditions, and hygiene rules has become a serious issue concerning public health in recent times.

The results of our study showed that the basic nutrition knowledge level and food preferences of gastronomy department students were at a moderate level. It was also found that they are mostly willing to receive nutrition education. In this regard, the issue of increasing the nutrition knowledge level of gastronomy department students should be addressed by those concerned, and important steps should be taken towards implementation on this issue. In this study, it was determined that the nutritional knowledge scores of those who attach importance to healthy nutrition were higher, and the nutritional knowledge scores were similar between the classes studied, and in line with the results of the study in which the curricula of gastronomy departments in our country were examined comprehensively, the results that there were not enough courses on nutrition in the curricula were also taken into consideration. Based on this, measures should be taken to raise and develop healthy nutrition awareness in the curricula of gastronomy departments and to ensure its continuity.

Students should be enabled to enhance their capacity to form and disseminate nutrition awareness through knowledge from various disciplines. Courses should be taken jointly from Nutrition and Dietetics as well as Food Engineering departments; projects and studies should be conducted collaboratively. Students should be ensured to understand the scientific foundations of healthy eating; they should be taught basic topics such as the functions of macro and micronutrients, principles of balanced nutrition, types of diets, and nutritional disorders. The roles and benefits of functional foods and superfoods in nutrition should be taught; students should be enabled to know how to incorporate these types of foods into their menus. Awareness should be raised about the role of healthy eating in preventing diseases; studies should be conducted to help students understand the relationship between nutrition and chronic diseases. Students should also be made aware of sustainable food production and consumption, along with healthy eating; projects aimed at preventing food waste should be developed to create awareness about sustainable nutrition among students.

To summarize the subject with a holistic approach, based on the necessity of raising awareness of all segments of society in terms of healthy nutrition knowledge and skills, both through formal training and non-formal education, the students of the department of gastronomy, who focus on food, beverages, and the concept of eating well, should also focus on healthy nutrition. As a result, increasing the knowledge and skill levels of students will not only enable them to achieve superior success in their professional lives, but also enable them to take part as students who inspire society and lead positive changes. Therefore, it is critical for education policies and institutions to develop and implement strategies to maximize the potential of students in order to support the overall well-being of society and sustainable development in the long term.

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