

# Which Nutritional and Demographic Characteristics Affect Hopelessness in Young Adults? A Cross-Sectional Study of University Students From Turkey

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## ABSTRACT

**Objectives:** The aim of this study was to investigate the effects of nutritional status and demographic characteristics on the hopelessness of university students.

**Study Design:** A cross-sectional study with a random sampling of students aged between 17-25 years, at Ondokuz Mayıs University was conducted. A questionnaire form investigating demographic characteristics and nutritional habits was applied to students. The food frequency questionnaire form and also the Beck Hopelessness Scale were used. Total scores range from 0-20 points and are categorized according to symptom severity as follows: 0-3: normal; 4-8: mild; 9-14: moderate; 15-20: severe hopelessness. Statistical analysis of the data was evaluated with SPSS 21.0 statistical package program.  $p < 0.05$  was considered statistically significant.

**Results:** The mean hopelessness score of the students was  $4.63 \pm 3.75$  and the mean of most of their hopelessness scores (50.1%) was normal. Sleeping 5-6 hours and  $\geq 10$  hours, smoking and using alcohol, using alcohol at least one time or more in a week were associated with a higher hopelessness score and skipping a meal was associated with a low hopelessness score ( $p < 0.05$ ). Unhealthy foods such as processed meat product, fried vegetable, fried potato, soup (ready), peanut butter, candies, hamburger, ketchup, margarine, mayonnaise, chips were associated with higher hopelessness score when consumed frequently (daily or 5-6 times in a week) ( $p < 0.05$ ).

**Conclusion:** The mean hopelessness score of university students who we examined was determined as normal. Sleeping time, smoking and alcohol use, frequent consumption of unhealthy foods had a relationship with the hopelessness scale.

**Keywords:** Demographic characteristic, hopelessness, nutrition, university student

## Genç Yetişkinlerde Beslenme ile İlgili ve Demografik Hangi Özellikler Umutsuzluğu Etkiler: Türkiye' den Üniversite Öğrencilerinin Kesitsel Çalışması

### ÖZET

**Amaç:** Bu çalışmanın amacı, beslenme durumu ve demografik özelliklerin üniversite öğrencilerinin umutsuzluğu üzerindeki etkilerini araştırmaktır.

**Çalışma Planı:** Ondokuz Mayıs Üniversitesi' ne devam eden 17-25 yaş arası öğrencilerin rast gele örnekleme yöntemiyle seçildiği kesitsel bir çalışmadır. Öğrencilere beslenme durumu ve demografik özellikleri sorgulayan bir anket formu uygulanmıştır. Besin tüketim sıklığı formu ve ayrıca Beck Umutsuzluk Ölçeği uygulanmıştır. Ölçeğin toplam skoru 0-20 puan arası değişmekte olup 0-3: normal, 4-8: hafif, 9-14: orta ve 15-20 puan ciddi umutsuzluğu ifade etmektedir. Verilerin istatistiksel analizi SPSS 21.0 istatistik paket programı ile değerlendirilmiştir.  $p < 0.05$  istatistiksel olarak anlamlı kabul edilmiştir.

**Bulgular:** Öğrencilerin umutsuzluk puanı ortalaması  $4.63 \pm 3.75$ ' dir ve çoğunun umutsuzluğu (%50.1) normaldir. Uyku süresi 5-6 saat ve  $> 10$  saat olan, sigara ve alkol kullanan, bir haftada en az bir sefer veya daha fazla alkol kullananların umutsuzluğu yüksek iken, öğün atlayanların umutsuzluk puanı düşüktür ( $p < 0.05$ ). İşlenmiş et ürünü, kızarmış sebze, patates kızartması, çorba (hazır), yer fıstığı, şeker, hamburger, ketçap, margarin, mayonez, cips gibi sağlıklı olmayan besinlerin sık (her gün veya haftada 5-6 sefer) tüketimi artmış umutsuzluk puanı ile ilişkilidir ( $p < 0.05$ ).

**Sonuç:** Bu çalışmada araştırdığımız üniversite öğrencilerinin umutsuzluk puanı normal aralıkta belirlenmiştir. Uyku süresi, sigara ve alkol kullanımı ile sağlıklı olmayan besinlerin sık tüketimi umutsuzluk ile ilişkilidir.

**Anahtar sözcükler:** Demografik özellik, beslenme, umutsuzluk, üniversite öğrencisi



**B**ased on studies on depressed patients, hopelessness is defined as not making an effort to reach a goal and expecting negative results about it even though it is not based on a realistic reason (1). University period, mediate step from puberty to adulthood, is known as the end of puberty and beginning of adulthood and defined as the late period of puberty (2). University is different from other courses because students are trained to be professionals there and for this reason, they have positive expectations about the future.

Studies in Turkey show that youths and university students have a tendency to hopelessness (3,4). Among various studies in Turkey about university students, mild to moderate hopelessness was determined (5,6). Studies on university students showed that demographic characteristics such as gender, education level and working status of parents, departments of education, income rate and living place associated with the level of hopelessness (2-4,7). In a study, having moderate or severe hopelessness rate was determined 13.9% of university students (8). Hopelessness is known to accompany many psychiatric disorders (9-11). It has shown that hopelessness can cause serious problems up to the suicide attempt among persons who have mental disorders especially depression and anxiety (12,13). Besides, it is known that the presence of high hope influences academic success positively (14).

The influence of nutrients and some components on psychiatric disorders in the diet has been the subject of research in recent years. Especially vitamin C, beta-carotene and omega-3 fatty acids have been shown to have a positive effect on depressive symptoms (15-17). The decrease in fish consumption was found to be a risk for depressive disorders in males (18). It was shown that as the consumption of meat and vegetables increased, the rate of depression decreased (19). The Mediterranean diet that rich in vegetables, fruits, whole grains is determined to be effective in improving the mood according to a normal diet (20). In the literature research, there are not enough studies showing the relationship between nutritional status and hopelessness.

Hopelessness, also having negative expectations about the future for a person, adversely may affect to deal with problems and relationships with the environment. It is thought that improving nutritional status can affect not only the quality of life but also the contribution of mental and spiritual health. Because of that studies on nutritional status and hopelessness are insufficient, this study aimed

to evaluate the effect of nutritional and demographic characteristics on the hopelessness of university students.

## Materials and Methods

### *Study participants/sample*

This is a cross-sectional study that a total of 733 students (age between 17-25 years) of Ondokuz Mayıs University who have an undergraduate education in four years program participated by random sampling method. University students who received four-year undergraduate education, who did not have perception disorders or communication problems and answered both the questionnaire and the scale completely were included in the study.

### *Procedure of investigation*

A questionnaire form that contains; demographic characteristics, nutritional status, lifestyle of students and a scale (Beck Hopelessness Scale-BHS) which determines the hopelessness level of students, was applied to the students. The scale which was developed by Beck et al in 1974, includes 20 true-false items and it is a self-assessment scale. Total scores range from 0–20 points and as the scale score increases, the level of hopelessness increases. The scale is categorized according to symptom severity as follows: 0–3: normal; 4–8: mild; 9–14: moderate; 15–20: severe (21,22).

To determine the nutritional status; a food frequency questionnaire that contains 56 foods in total, was applied and the evaluation was dependent on two conditions which are frequent consumption (daily or 5-6 times in a week) and rare consumption (1 time in 15 days or less). Body mass index (BMI) was used to evaluate body weight and the BMI was classified according to World Health Organization criteria.

### *Statistical analysis*

The statistical analyses were performed with Statistical Package for Social Sciences version 21.0 for Windows. The results were presented as percentages, means  $\pm$  standard deviation, median (minimum-maximum). Pearson's chi-squared test was used to determine the habits of students according to sex. For comparison, two non-parametric independent groups, Mann-Whitney U test was used; for more than two non-parametric independent groups, Kruskal-Wallis test was used. Pearson's correlation was used to determine the relationship with hopelessness.  $p < 0.05$  was considered statistically significant.

This study was carried out according to ethical principles and the ethical permission was taken from "Ethics Committee of Clinical Research of Ondokuz Mayıs University" and issue number is B.30.2.ODM.0.20.08/2112. It is derived from the master thesis of Zeynep Uzdil and the name was "The relationship between hopelessness level with nutritional status and demographic characteristics in university students".

## Results

A total of 733 university students, 353 (48.2%) men and 380 (51.8%) women were included in the study. As shown in Table 1, the habit of smoking and alcohol use for men was 40.8% (n=144) and 44.8% (n=158), respectively. Also, the smoking and alcohol habits of men were higher than women ( $p<0.001$ ). Hopelessness status according to the sex was not different ( $p>0.05$ ).

The mean BMI of men and women were  $23.34 \pm 3.39$  kg/m<sup>2</sup> and  $21.41 \pm 3.13$  kg/m<sup>2</sup> respectively and higher for men ( $p<0.001$ ). According to the classification of BMI, 70.0% of the students were normal and 20.1% of them were obese (Not given in the table). The mean hopelessness score of students was  $4.63 \pm 3.75$  points. According to the classification of hopelessness score, 50.1% of them were normal hopelessness (Table 1).

72.2% of students watch television and 88.5% of them use tablet/computer. There was a positive correlation between hopelessness score and the duration of watching television and using tablet/computer ( $r=0.152$  and  $r=0.220$ , respectively) (Not given in the table).

Table 1. Descriptive habits of students according to sex (expressed as number, percent and Mean $\pm$ SD)			
Variables	Men (N=353)	Women (N=380)	Total (N=733)
<b>Health status</b>			
Non-healthy	26(7.4)	57(15.0)	83(11.3)
Healthy	327(92.6)	323(85.0)**	650(88.7)
<b>Smoking habit</b>			
Smoker	144(40.8)*	48(12.6)	192(26.2)
Non-smoker	209(59.2)	332(87.4)	541(73.8)
<b>Alcohol consumption habit</b>			
Yes	158(44.8)*	102(26.8)	260(35.5)
No	195(55.2)	278(73.2)	473(64.5)
<b>Exercise status</b>			
Regular	157(44.5)*	66(17.4)	223(30.4)
Never	196(55.5)	314(82.6)	510(69.6)
<b>Hopelessness status</b>			
Normal	167(47.3)	200(52.6)	367(50.1)
Mild	114(32.3)	119(31.3)	233(31.8)
Moderate	68(19.3)	56(14.7)	124(16.9)
Severe	4(1.1)	5(1.3)	9(1.2)
<b>Skipping meals status</b>			
Yes	164(46.5)	201(52.9)	365(49.8)
No	63(17.8)	47(12.4)	110(15.0)
Sometimes	126(35.7)	132(34.7)	258(35.2)
BMI (kg/m <sup>2</sup> )	$23.34 \pm 3.39^*$	$21.41 \pm 3.13$	$22.34 \pm 3.40$
Hopelessness score	$4.89 \pm 3.85$	$4.39 \pm 3.63$	$4.63 \pm 3.75$
BMI: Body Mass Index, SD: Standard deviation. * $p<0.001$ ,** $p<0.05$ . Significant was given for sex (Pearson chi-squared test)			

Table 2. Distribution of hopelessness score according to sex (expressed as number, percent and Mean ± SD)

Variables	Men		Women		Total	
	Median (min-max)/ Mean rank	Test statistics	Median (min-max)/ Mean rank	Test statistics	Median (min-max)/ Mean rank	Test statistics
Exercise		U=14356		U=9979		U=5541
Yes	4 (0 - 19)/ 183.88		4 (0 - 14)/ 196.30		4 (0 - 19)/ 386.39	
No	3.5 (0 - 19)/ 171.49		3 (0 - 17)/ 189.28		3 (0 - 19)/ 358.52	
Alcohol use		U=13876		U=12523		U=54141
Yes	4 (0 - 19)/ 186.74		4 (0 - 17)/ 206.73		4 (0 - 19)/ 395.27*	
No	3 (0 - 19)/ 169.11		3 (0 - 17)/ 184.55		3 (0 - 19)/ 351.46	
Smoking		U=13596		U=6286		U=44308
Yes	4 (0 - 19)/ 187.08		4 (1 - 17)/ 225.54*		4 (0 - 19)/ 406.73*	
No	3 (0 - 19)/ 170.06		3 (0 - 17)/ 185.43		3 (0 - 19)/ 352.90	
Duration of smoking (year)		$\chi^2=0.115$		$\chi^2=5.424$		$\chi^2=0.743$
0-3	4 (0 - 15)		3 (1 - 10)		4 (0 - 15)	
4-6	4 (0 - 17)		6 (1 - 17)		5 (0 - 17)	
≥ 7	5 (0 - 19)		5 (2 - 14)		5 (0 - 19)	
Alcohol consumption frequency		$\chi^2=20.631^*$		$\chi^2=12.694^{**}$		$\chi^2=33.655^*$
At least once a week or more often	6 (0 - 19)a		7 (0 - 17)a		6 (0 - 19)a	
Once or twice a month	3 (1 - 14)b		3 (0 - 15)b		3 (0 - 15)b	
Less than once a month	2 (1 - 17)b		2 (0 - 11)b		2 (0 - 17)b	
Sleep duration (hour)		$\chi^2=6.048^{**}$		$\chi^2=8.672^{**}$		$\chi^2=15.137^*$
5-6	4 (0 - 19)ab		4 (0 - 15)a		4 (0 - 19)a	
7-8	3 (0 - 14)a		3 (0 - 16)b		3 (0 - 16)b	
≥ 10	4.5 (0 - 19)b		4 (0 - 17)b		4 (0 - 19)ab	
BMI classification		$\chi^2=1.108$		$\chi^2=7.501$		$\chi^2=5.475$
Underweight	3.5 (1 - 17)		3 (0 - 10)		3 (0 - 17)	
Healthy weight/Normal	4 (0 - 19)		3 (0 - 17)		3 (0 - 19)	
Overweight	4 (0 - 14)		3 (0 - 14)		4 (0 - 14)	
Obese	4 (1 - 12)		6 (4 - 10)		5 (1 - 12)	
Skipping meals status		$\chi^2=13.182^{**}$		$\chi^2=9.205^{**}$		$\chi^2=21.447^*$
Yes	4 (0 - 19)a		4 (0 - 16)a		4 (0 - 19)a	
No	6 (0 - 14)b		5 (0 - 17)a		5.5 (0 - 17)b	
Sometimes	3 (0 - 12)a		3 (0 - 17)b		3 (0 - 17)c	

BMI: Body Mass Index, SD: Standard deviation  
 $\chi^2$ : Statistics of Kruskal Wallis test, U: Statistics of Mann Whitney U test. a-c: There is no difference between groups with the same character.  
<sup>\*</sup>p<0.001; <sup>\*\*</sup>p<0.05. Significant was given for each column group.

In Table 2, the distribution of hopelessness score according to sex was given. Students who are smoking and using alcohol had higher hopelessness scores than others (p<0.001) and also women who are smoking had higher hopelessness scores (p<0.001), but among men, smoking was not significantly important for hopelessness (p>0.05). Hopelessness score was significantly higher in those with a high frequency of alcohol use among all students (p<0.001) and also for men and women (p<0.001 and p<0.05, respectively). Although hopelessness score was not statistically significant for the prolonged smoking duration (p>0.05). Hopelessness score was significantly higher for students who sleep 5-6 hours than 7-8 hour

(p<0.001), for men sleeping ≥ 10 hours was higher than 7-8 hours (p<0.05).

As shown in Table 2, students who skip meals and sometimes skip meals had lower hopelessness score than not skipping (p<0.001). For men and women, not skipping meals was related to higher hopelessness (p<0.05). According to the BMI classification, hopelessness was not statistically different for men and women (p>0.05).

The food consumption frequency and distributions of hopelessness score according to the frequency of consumption are given in Table 3. Students who consume white cheese, yogurt with fruit, processed meat product, fried

potato, fried vegetable, toast/sandwich, hamburger, bagel, patty/pizza, cakes/cookies, soup (ready), margarine, mayonnaise, candies, peanutbutter, chips, ketchup/salad sauce, frequently had higher hopelessness score ( $p<0.05$ ).

In several studies, mean hopelessness scores of university students were determined  $4.56\pm 3.42$ ;  $4.40\pm 4.03$ ;  $4.22\pm 4.33$  and  $6.06\pm 4.80$  points, respectively (8,23-25). In another study, hopelessness score of individuals who are 17-25 years old was determined  $5.56\pm 4.35$  points (26).

Table 3. Distributions of hopelessness score according to the frequency of food consumption

Foods	Frequent consume			Rare consume			U	p*
	%	Median (min-max)	Mean rank	%	Median (min-max)	Mean rank		
<b>Dairy products</b>								
White cheese	67.40	3 (0 - 19)	350.85	32.60	4 (0 - 19)	400.39	67.012	0.003
Yoghurt with fruit	30.60	4 (0 - 15)	398.54	69.40	3 (0 - 19)	353.12	49.943	0.007
<b>Meat products</b>								
Processed meat product	43.00	4 (0 - 14)	386.73	57.00	3 (0 - 19)	352.13	59621	0.028
<b>Vegetables</b>								
Fried potato	47.30	4 (0 - 19)	387.85	52.70	3 (0 - 19)	348.25	59.735	0.011
Fried vegetable	45.20	4 (0 - 17)	392.79	54.80	3 (0 - 19)	345.76	57.993	0.003
<b>Grains</b>								
Toast, sandwich	48.80	4 (0 - 19)	390.48	51.20	3 (0 - 17)	344.58	58.718	0.003
Hamburger	36.40	4 (0 - 19)	419.49	63.30	3 (0 - 19)	336.93	48.197	<0.001
Bagel	49.40	4 (0 - 19)	383.27	50.60	3 (0 - 19)	351.13	61.261	0.039
Patty, pizza	37.10	4 (0 - 19)	417.01	62.90	3 (0 - 19)	337.49	49.094	<0.001
Cake, cookie	48.80	4 (0 - 19)	383.09	51.20	3 (0 - 19)	351.64	61.363	0.043
Soup (ready)	30.00	4 (0 - 17)	409.18	70.00	3 (0 - 19)	348.91	47.150	<0.001
<b>Other foods (fatty, sweetened)</b>								
Margarine	32.20	4 (0 - 16)	414.17	67.80	3 (0 - 19)	344.60	47.515	<0.001
Mayonnaise	35.20	4 (0 - 19)	405.16	64.80	3 (0 - 19)	346.27	51.430	<0.001
Candies	36.40	4 (0 - 19)	403.52	63.60	3 (0 - 19)	346.08	52.460	<0.001
Peanut butter	34.70	4 (0 - 19)	402.20	35.30	3 (0 - 19)	348.33	51.891	<0.001
Chips	39.40	4 (0 - 19)	400.93	60.60	3 (0 - 19)	344.91	54.352	<0.001
Ketchup, salad sauce	37.50	4 (0 - 19)	392.77	62.50	3 (0 - 19)	351.53	55.889	0.010

Fifty-six foods were evaluated in the study but in this table, the statistically significant relationship between foods and hopelessness was given.  
 U= Statistics of Mann-Whitney U test  
 \* $p<0.05$ , significant statistically

## Discussion

In this study, to determine the factors affecting hopelessness, a weak relationship was determined between the duration of watching television and using tablet/computer and also the level of hopelessness of those who spend time with electronic devices has increased. This can be attributed to the fact that with the developing technology, youngers can spend more time with technological devices such as television and tablet/computer and spendless time on the human relationship/interpersonal relationship so as a result of this they may become increasingly unhappy individuals.

In this study, the mean hopelessness score of students was  $4.63\pm 3.75$  points.

The hopelessness score of American university students was determined  $4.36\pm 4.58$  points(12).

In this study, the rates of smoking and using alcohol were 26.2% ( $n=192$ ) and 35.5% ( $n=260$ ) respectively. In another study, the rates of smoking and using alcohol of university students were 22.5% and %18.0, respectively(27). In another study, the smoking rate was determined among 15.0% of students (28). The alcohol use among university students was 48.8% in Turkey and 25.8% of them use alcohol once a week (29). In this study, it was determined that using alcohol at least one or more times in a week was common. And also the hopelessness score of students who are smoking and using alcohol was higher than the others in this study.

Besides, as the frequency of using alcohol increases, the average score of hopelessness increases ( $p < 0.05$ ). This might be due to the fact that those people who have higher hopelessness are more likely to smoke and use alcohol because of their mood changes; and studies on people who have a diagnosis of alcohol dependence have shown that dependency recognition is related to hopelessness (30,31).

The recommended duration of daily sleeping for healthy adults by the National Heart, Vascular and Blood Institute is 7-8 hours(32). In this study, it was determined that 55.9% of students slept as much as the recommended level. In a study, duration of 8 hours and less sleeping rate was determined 65.6% among university students(27). In another study, the duration of sleeping of 55.0% of the students was determined 7-8 hours(33). In this study, sleep duration and hopelessness were associated and sleeping below and above 7-8 hours were found to have a higher BHS score. From these results, we think that sleeping less than the recommended level causes not to get enough rest for the body and too much sleep will cause most of the daily activity to go to sleep, so these situations can change the mood.

In this study, we determined that 49.8% of students skip meals. In another study, 63.8% of students skip meals and especially 54.5% of them skip breakfast (34). In this study, the hopelessness score of students who are skipping meals statistically determined to be lower than those who are not skipping meals ( $p < 0.05$ ). These situations may be related to the changes in the emotional state, and the presence of hopelessness could be the leading cause for the students to eat, and so they don't skip meals there by consuming frequent meals.

We determined that when white cheese was rarely consumed, the hopelessness scores of students were high. In a study, inadequate intake of calcium; which the most common mineral in milk and dairy products, has been associated with depressive symptoms (16). We determined that students who frequently consume processed meat products which in the meat group their hopelessness score was higher. Meat is the main protein source of the diet; however, it is known that protein consumption diminished depressive symptoms and choosing a meat group from healthy foods will have positive effects on hopelessness (35). We expected that vegetable consumption inversely related to hopelessness. In this group, we determined that those who frequently consumed fried vegetables and

fried potato has a higher hopelessness score. Especially in Turkey, the oil used for frying is often sunflower oil which is rich in n-6 fatty acids. In a study, it is shown that consuming linoleic acid increases depression that often accompanied by hopelessness(36).

The great majority of carbohydrates, which are the main energy source of the diet, are provided from bread and cereals. We determined that those who frequently consumed toast/sandwich, hamburger, bagel, patty/pizza, cake/cookie had a higher hopelessness score. When these foods being in a diet frequently and consumed in excess they may cause an increase in body weight due to higher energy intake. Also, determining the amount of consumption of these foods and their association with hopelessness will be beneficial. Students who frequently consume margarine, mayonnaise, peanut butter, candies had higher hopelessness scores. Foods in this group have high energy and people who like and frequently consume them will increase their energy intake. Increased energy intake can cause obesity and chronic diseases and thus developing health problems due to nutrition which can cause hopelessness. Foods such as toast, bagel, cream, peanut butter and candies are ready to eat so students who have high hopelessness scores could prefer to consume these foods. In this group, consuming foods that are poor in protein, vitamins and minerals can explain their relationship with hopelessness; also who consume mayonnaise, hamburger, chips and ketchup/salad sauces frequently had higher hopelessness score which is the reason that these foods are not suggested in a healthy diet.

## Conclusion

At the end of this study; the duration of sleeping, watching television and using a tablet/computer had a relationship with hopelessness. The relationship between sleeping duration and hopelessness can influence the food consumption of students so it is important for students to have adequate sleep. Smoking and alcohol use were related to hopelessness. Foods that are not recommended to be consumed in a healthy diet are found to increase hopelessness score and it is important that individuals practice healthy eating behaviors recommended by specialists. In order to easily consume the foods in the milk, meat, vegetable and fruit groups by university students, it is necessary to be easily accessible in the university canteens, cafeterias and where students hosted. Efforts to reduce the factors contributing positively to the hopelessness of the youngsters can also make a significant contribution to community health. There is a need for state policies that

support the level of education and the economic situation so that society can achieve its lifestyle and nutrition goals. Thus, it is thought that individuals will be able to look more positively for the future and minimize hopelessness.

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