DETERMINATION OF ORTHOREXIA NERVOZA IN UNIVERSITY STUDENTS

ÜNİVERSİTE ÖĞRENCİLERİNDE ORTOREKSİYA NERVOZANIN SAPTANMASI

Gökhan DEGE[1], Müveddet Emel ALPHAN[2]

[1]Department of Nutrition and Dietetics, Agri Ibrahim Cecen University School of Health
[2]Department of Nutrition and Dietetics, Atlas University Faculty of Health Sciences

Gökhan Dege https://orcid.org/0000-0001-9237-770X
Müveddet Emel Alphan https://orcid.org/0000-0002-9702-1881

Abstract

Objective: This study was conducted in order to evaluate orthorexia nervosa (ON) tendency of the students of the Department of Nutrition and Dietetics studying at Trakya University according to the variables of gender, age and body mass index (BMI).
Method: A total of 125 students (19 males, 106 females) studying in daytime education participated in the study. The research data were collected by the researcher using the "questionnaire method", by interviewing the participants face to face. Socio-demographic characteristics (gender, age, place of residence, etc.) of the participants were determined and their anthropometric measurements were taken. In addition, "Eating Attitude Test (EAT-40)" was used to evaluate eating disorders, "ORTO-15" test to define ON and "Maudsley Obsessive Compulsive Inventory" to evaluate obsessive symptoms.
Results: It was determined that male individuals had higher EAT-40 scores than females, while females' ORTO-15 scores and obsessive scores were higher than males (p> 0.05). The majority of both males and females (94.7% and 93.4%, respectively) were in the low risk group according to the EAT-40 assessment. It was found that 73.7% of men and 56.6% of women were orthorexic. In the analyzes performed according to age groups, it was found that there was a statistically significant difference in the obsessive score (p <0.05). In the correlation analysis performed with the scales, a statistically significant negative correlation was found between the EAT-40 score and the ORTO-15, ORTO-15 and obsessive score (p <0.05).
Conclusion: In conclusion, it will be beneficial to conduct more comprehensive studies evaluating ON and related factors.

Keywords: Eating score, orthorexia nervosa, obsessive symptom, university students

Özet

Amaç: Bu çalışma, Trakya Üniversitesi'nde öğrenim gören Beslenme ve Diyetetik Bölümü öğrencilerinde ortoreksiya nervoza (ON) eğiliminin, cinsiyet, yaş ve beden kütle indeksi (BKİ) değişkenlerine göre değerlendirilmesi amacıyla yapılmıştır.
Yöntem: Çalışmaya birinci öğrenimde eğitim gören toplam 125 öğrenci (19 erkek, 106 kadın) katılmıştır. Araştırma verileri, araştırmacı tarafından "anket yöntemi" kullanılarak, katılımcılarla yüz yüze görüşülerek toplanmıştır. Katılımcıların sosyo-demografik özellikleri (cinsiyet, yaş, kalınan yer vb.) belirlenmiş ve antropometrik ölçümleri alınmıştır. Ayrıca, yeme bozukluklarının değerlendirilmesi için "Yeme Tutum Testi (EAT-40)", ON'nin tanımlanabilmesi için "ORTO-15" testi ve obsesif belirtilerin değerlendirilmesi için ise "Obsesif Belirti Testi" kullanılmıştır.
Bulgular: Erkek bireylerin EAT-40 puanı kadın bireylerden yüksek bulunurken, kadın bireylerin ise ORTO-15 puanı ve obsesif puanı erkeklerden yüksek bulunmuştur (p>0.05). Hem erkek hem kadın bireylerin çoğunluğu (sırasıyla %94,7 ve %93,4) EAT-40 değerlendirmesine göre düşük risk grubundadır. Erkeklerin %73,7'sinin, kadınların ise %56,6'sının ortorektik olduğu saptanmıştır. Yaş gruplarına göre yapılan analizlerde obsesif puanının istatistiksel olarak anlamlı bir farklılık gösterdiği saptanmıştır (p<0.05). Ölçekler ile yapılan korelasyon analizinde, EAT-40 puanı ve ORTO-15, ORTO-15 ve obsesif puanı arasında negatif yönlü istatistiksel olarak anlamlı bir ilişki tespit edilmiştir (p<0.05).
Sonuç: Sonuç olarak, ON ve ilişkili faktörlerin değerlendirildiği daha geniş kapsamlı çalışmaların yapılması yararlı olacaktır.

Anahtar Kelimeler: Obsesif belirti, ortoreksiya nervoza, üniversite öğrencileri, yeme puanı

Yazışma Adresi/Address for Correspondence:
Gökhan Dege
Department of Nutrition and Dietetics, Agri Ibrahim Cecen University School of Health, Agri / Turkey
Telefon/Phone: +90 (545) 497 83 11 41 *E-mail:* gokhandege@hotmail.com

INTRODUCTION

According to the World Health Organization (WHO), health is defined as a state of complete well-being in mental, physical and social aspects. The fact that individuals are not sick and injured does not mean that they are completely healthy. The main factors affecting the health of individuals are heredity and environmental conditions. Nutrition is in the first place among environmental factors. All environmental conditions affect the lives of individuals and these effects direct the lives of individuals. The health of the individual and society is adversely affected if environmental factors are insufficient. However; if the environmental factors can be achieved to be sufficient, the health of the individual and the society is affected positively (1).

Nutrition is the first thing that people need. Nutrition is the consumption of nutrients and the physiological use of nutrients by the body so that individuals can maintain their lives, grow and live in a healthy way (2). Eating disorders are not only a physical dimension but also a psycho-social dimension that occurs with disorders in the way of consuming food; body mass and physical appearance of the individual and in the habit of consuming food (3). The psychiatric disorder of the food consumption behavior of individuals is called eating disorders (4).

Recently, organizations, dieticians, print and visual media have started to frequently use a new concept called "orthorexia nervosa" (ON). However; orthorexia nervosa is not yet included in the Diagnostic and Statistical Manual of Mental Diseases like other eating disorders (anorexia nervosa and bulimia nervosa). Many researchers have focused their attention on orthorexia nervosa and it is not yet clear whether it can be defined as an eating disorder (5). The word orthorexia was defined by Steven Bratman for the first time by combining the Greek words "orthos" (correct, appropriate) and "orexia" (appetite) (6).

Orthorexia nervosa is an eating disorder defined as an obsession with healthy eating and it is an obsession of consuming natural diets that interferes with a person's life. A diagnosis of orthorexia nervosa can be made when this condition causes a long-term and serious negative impact on the person's life (such as spending most of the day thinking about food, thinking about food to prevent life stress) (7).

Although orthorexic individuals are similar to anorexia nervosa patients in terms of encountering situations such as weight loss, amenorrhea, restrictive diet practices, the criterion in food choices is whether the nutrients are healthy or not. These patients

claim that there is no problem with their weight and that they experience weight loss due to their healthy diet (8). In the literature, a statistically significant negative correlation was found between the eating attitude score and the Ortho-15 score in the studies conducted. As the eating attitude score increases, the Ortho-15 score will decrease; As the eating attitude score decreases, the Ortho-15 ratio increases (9-10-11-12-13)

In this context, it is aimed to determine the ON tendency of the students studying at Trakya University according to the variables of gender, age and BMI (Body Mass Index).

MATERIAL AND METHOD

Research Pattern

The study was conducted to determine students' obsession with healthy eating and the factors affecting it, and it is a cross-sectional study.

Place and Time of the Study

This research was carried out in the first, second, third and fourth grade students who were continuing their daytime education in Trakya University Faculty of Health Sciences, Nutrition and Dietetics Department in April 2016. The ethics committee of the study was taken in the meeting numbered 74 and decision numbered 26 dated 29.02.2016.

Target Population and Sample of The Research

The Target Population of the Research

The universe of the research consists of 214 students enrolled in the Department of Nutrition and Dietetics of the Faculty of Health Sciences of Trakya University, who continue their daytime education during the study period.

The Sample of the Research

The sample of the study consisted of 125 students who actively attend daytime education in Trakya University Faculty of Health Sciences, Department of Nutrition and Dietetics and agree to participate in the study.

Collection of Data

Questionnaire form and anthropometric measurement techniques were used as data collection tools in the study.

Questionnaire form

A questionnaire prepared by the researcher and consisting of 4 parts was applied to the students participating in the study. The content of the questionnaire is as follows:

- General Information (gender, age and place of residence)
- Anthropometric Measurements
- Eating Attitude Test
- Obsessive Symptom Test
- Ortho 15 Test

Anthropometric Measurements

Anthropometric measurements (body weight (kg), height (cm) and waist

circumference (cm)) of the individuals participating in the study were carried out by the researcher. Body weight was analyzed using Tanita BC 532 brand bioelectric impedance device on an empty stomach in the morning, with the least amount of clothing on the individuals. The height of the individuals was measured with a non-stretch tape measure by maintaining the stance with the feet adjacent, the head on the Frankfurt plane (the eye triangle and the upper auricle aligned, parallel to the floor) (14).

Body mass index was calculated from the body weight / height 2 (kg / m2) equation for all individuals. World Health Organization's classification was used in classifying individuals according to their BMI. Accordingly, BMI intersection points are weak < 18.5 kg / m2, Normal; 18.5-24.9 kg / m2, Light Fat 25.0-29.9 kg / m2 and Fat ≥30.0 kg / m2 (15).

Before taking the waist circumference measurement, the patients were asked to remove the items and clothing that could interfere with the measurement. The measurement was taken in a standing position, face-to-face with the person taking the measurement, with the abdomen (abdomen) relaxed, arms on both sides, feet side by side. The area between the lowest rib and the crystalline was found and the circumference passing through the midpoint was measured with a non-stretch tape measure. Measurements were recorded in cm and with a sensitivity of 0,1 cm (14).

Eating Attitude Test

The Eating Attitude Test (EAT-40) was developed by Garner and Garfinkel as a self-assessment scale consisting of 40 questions that objectively measures the symptoms of anorexia nervosa and bulimia nervosa. It provides more detailed information in clinical evaluation and determines the changes that occur as a result of treatment. On the other hand, the scale is also used as a screening tool to investigate previously undiagnosed cases of anorexia nervosa in populations that constitute a high risk group for the disease. The test can distinguish anorexia nervosa, bulimia nervosa, and binge eating syndrome from the control group. It also differentiates anorexia and bulimia from binge eating syndrome, but cannot compare anorexia with bulimia (16).

The Turkish validity and reliability study for the Eating Attitude Test was conducted in 2000 by Elal, Altuğ, Slade and Tekcan. Five factors emerged in the study: dieting, bulimia and body size, preoccupation with eating in the mind, oral control, and conflicting feelings and thoughts about food (17).

Eating attitude test results; for questions numbered 1-18-19-23-27-39, "sometimes" 1 point, "rarely" 2 points and "never" 3 points, other options are given 0 points, the

answers of other questions are "always" 3 points, "very often "1 point and other options are evaluated as 0 points. A maximum of 120 points can be obtained from the test. In EAT-40 risk profiles; EAT-40 is defined as "low risk" if its total score is less than 21, "medium risk" if it is 21-30, and "high risk" if it is more than 30. As a result, the total score of the scale is obtained by summing the scores from each item of the scale (18). In the study of Kadıoğlu and Ergün (2015), the Cronbach Alpha reliability coefficient was found to be 0.77 (19).

Obsessive Symptom Test

The original inventory was developed by Rachman and Hodgson for the evaluation of various obsessive-compulsive symptoms. The original inventory contains 30 true-false types of items. Inventory total score is 30. The test-retest reliability of the inventory is 0.80, and the internal consistency varies between 0.60 and 0.87 in the studies (20).

The inventory was adapted to Turkish by Erol and his friends. In the adaptation, 7 more items related to rumination (obsessional thinking) were added and an inventory of 37 items was formed. While the initial internal consistency alpha coefficient was 0.44, the new Cronbach alpha value was found to be 0.81 for 30 items and 0.86 for 37 items after some items were rewritten and studies were completed

on the inventory. Erol and his friends calculated the factor analysis of the inventory for the Turkish sample and determined three factors: Cleanliness, obsessional thinking, and slowness / control. Alpha coefficients for these factors are 0.61, 0.66 and 0.65, respectively. Evaluation: 1 point is given to each correct item marked. Only item 11 is reverse scored. The points collected are determined by the numerical values obtained from each item. The highest values are 37 for the total obsession score. In a study conducted in Turkey, no cut-off score is calculated. It is recommended to be used in comparative studies (21).

ORTO-15 Scale

ORTO-15 scale was used to evaluate the orthorexic tendency of individuals. This scale is a 15-item self-rating scale. ORTO-15 test results were evaluated with "1" points for responses, which are the discriminating criteria for Orthorexia, and "4" points for normal eating behavior. A minimum of 15 and a maximum of 60 points can be obtained on the scale (22).

It has been evaluated by giving 2 points if the answer to questions 1 and 13 is 'always', 4 points for 'often', 3 points for 'sometimes', 1 point for 'never'; 4 points if the answer to questions 2-5-8-9 is 'always', 3 points if 'often', 2 points if 'sometimes', 1 point if 'never'; 1 point if the answer to the questions 3-4-6-7-10-11-12-14-15 is 'always', 2 points

for 'often', 3 points for 'sometimes', 4 points for 'never'.

The items investigate the obsessive behavior of individuals in choosing, purchasing, preparing, and consuming foods that they consider healthy. In order to evaluate the individuals treated both emotionally and rationally, some items were used as "cognitive-rational area" (1, 5, 6, 11, 12, 14), some of them were "clinical area" (3, 7, 8, 9, 15). The other part examines the "emotional space" (2, 4, 10, 13) . According to the result of the Ortho-15 test, those who score "40" and below are defined as "Orthorectic" (having extremely sensitive eating behaviors). As the score increases, it is understood that the eating behavior approaches normal (22).

The internal consistency Cronbach Alpha value of the scale was found to be 0.44 by Arusoğlu (23)

Analysis of Data

The data obtained from the questionnaire form were evaluated using the SPSS (The Statistical Package for The Social Sciences) 20.0 program. The distribution of the measurement variables was examined using the Kolmogorov-Smirnov test. Mean and standard deviation were used in the numerically evaluated data, and number and percentage were used in the data classified in groups. The non-parametric Mann Whitney U test was used for those who did not show normal distribution in two independent groups, and the non-parametric Kruskal Wallis test was used for those who did not show normal distribution in more than two independent groups. Since the data did not show normal distribution in correlation tests, "Spearman" correlation coefficients were used. Results were evaluated at 95% confidence interval and $p < 0.05$ significance level.

RESULTS

The distribution of students according to their general characteristics is given in Table 1 were 68.0% of the individuals are in the age range of 18-21, 28.8% are in the age range of 22-25, 3.2% are in the age range of 26 and over. The majority of both males and females stay in the dormitories (63.2% and 79.2%, respectively). Looking at the distribution of BMI, 89.5% of men and 83.0% of women are in the range of 18.5 - 24.9 kg / m2. The proportion of male and female individuals with BMI <18.5 kg / m2 is 5.3% and 10.4%, respectively, and those with 25.0-29.9 kg / m2 are 5.3% and 6.6%, respectively. While the waist / height ratio of 92.8% is below 0.5, 31.6% of the male individuals and 2.8% of the female individuals are above 0.5.

Table 1. Distribution of Students According to Their General Characteristics

	Male		Female		Total	
Specifications	**n**	**%**	**n**	**%**	**n**	**%**
Place to Stay						
Dormitory	12	63.2	84	79.2	96	76.8
Home	7	36.8	22	20.8	29	23.2
Age (Year)						
18-21	12	63.2	73	68.9	85	68.0
22-25	7	36.8	29	27.4	36	28.8
26 and Over	-	-	4	3.8	4	3.2
BMI (kg/m^2)						
<18.5	1	5.3	11	10.4	12	9.6
18.5-24.9	17	89.5	88	83.0	105	84.0
25.0-29.9	1	5.3	7	6,6	8	6.4
Waist / Height Ratio						
<0.5	13	68.4	103	97.2	116	92.8
0.5 and Over	6	31.6	3	2.8	9	7.2
TOTAL	19	100.0	106	100.0	125	100.0

The assessment of individuals' EAT-40 and Ortho-15 scores according to gender is given in Table 2. According to this; The majority of both males and females (94.7% and 93.4%, respectively) were in the low risk group in Eat-40 assessment, and there was no statistically significant difference between them (p = 0.911> 0.05). In the ortho-15 risk assessment, it was found that male individuals (73.7%) were more orthorexic than female individuals (56.6%), but this difference was not significant (p = 0.163> 0.05).

Table 2. Assessment of Eat-40 and Ortho-15 Scores of Students According to Gender

	Male		Female		Total		p*
	n	**(%)**	**n**	**%**	**n**	**%**	
Eat-40 Risk Assessment							
Low Risk	18	94.7	99	93.4	117	93.6	0.911
Medium Risk	1	5.3	6	5.7	7	5.6	
High Risk	-	-	1	0.9	1	0.8	
Ortho-15 Risk Assessment							
Orthorectic	14	73.7	60	56.6	74	59.2	0.163
Normal	5	26.3	46	43.4	51	40.8	
TOTAL	19	100	106	100	125	100	

* Mann Whitney U test and Chi-Square test

Assessment of EAT-40 and Ortho-15 scores according to BMI of individuals has been shown in Table 3. In the EAT-40 risk assessment, all of the slim and slightly fat individuals and 92.4% of the individuals with normal BMI are in the low risk group (p> 0.05). Half of the slim individuals were orthoreectic, half of them were normal, while 60.0% of the individuals with normal BMI and 62.5% of the slightly fat individuals were found to be orthorexic (p> 0.05).

Table 3. Assessment of EAT-40 and Ortho-15 Scores According to The Body Mass Index of Individuals

	Slim		Normal		Slightly fat		p*
	n	%	n	%	n	%	
Eat-40 Risk Assessment							
Low Risk	12	100.0	97	92.4	8	100.0	0.804
Medium Risk	-	-	7	6.7	-	-	
High Risk	-	-	1	1.0	-	-	
Ortho-15 Risk Assessment							
Orthorectic	6	50.0	63	60.0	5	62.5	0.785
Normal	6	50.0	42	40.0	3	37.5	
Total	12	100.0	105	100.0	8	100.0	

* Mann Whitney U test and Chi-Square test

In Table 4, the assessment of individuals' eating attitude score and Ortho-15 and MOCI scale scores are given. Accordingly, a statistically significant negative relationship was found between eating attitude score and Ortho-15 score (r = -0.240; p <0.05). As the eating attitude score increases, the Ortho-15 score will decrease; As the eating attitude score decreases, the Ortho-15 ratio will increase.

The ortho-15 score has a negative correlation with the MOCI scale score (r = -0.264; p <0.05). As the Ortho-15 score of individuals increases, the MOCI scale score decreases, but as the Ortho-15 score decreases, the MOCI scale score increases.

In the light of these results, it is expected that the number of people with ON eating disorder is increasing day by day and the disorder may increase in the coming years. In addition, dietitians should be included in the treatment that will be planned in a multidisciplinary way. Through making protocols between public health staff and the National Education Ministry, Dietitians who work in public health facilities should train the students about healthy nutrition in schools and raise awareness of students on this issue, which can reduce the frequency of orthorexia Nervosa.

Table 4. Assessment of Individuals' EAT-40 Score and Ortho-15 and MOCI Scale Scores

Variables	EAT-40 score	Ortho-15 score	MOCI scale score
EAT-40 Score	r=1.000 p=-	r=-0.240 p=0.007*	r=0.154 p=0.087
Ortho-15 Score	#	r=1.000 p=-	r=-0.264 p=0.003*
MOCI Scale Score	#	#	r=1.000 p=-

* p <0.05 Spearman Correlation

DISCUSSION AND RECOMMENDATION

This study aimed to determine the healthy nutrition obsession status of the Nutrition and Dietetics s tudents studying at the Faculty of Health Sciences of Trakya University, Central district of Edirne, by using scales such as EAT, Ortho 15 and Maudsley Obsessive Compulsive Inventory.

Considering the distribution of students according to their general characteristics, most of the individuals are between the ages of 18-21, while the majority of both male and female individuals stay in the dormitory. Individuals' BMI is generally in the range of 18.5-24.9 kg / m2. The waist / height ratio of the majority of the individuals participating in our study is below 0.5. The ratio of male individuals with waist / height ratio over 0.5 is higher than female individuals.

In a study conducted with 200 students who applied to Ankara University Medico-Social Center, it was found that 65.5% of the students' BMI values were in the normal category, 20% in the fat category and 6.0% in the slim category (24). The BMI values in this study are parallel to the BMI values obtained in our study (Table 1).

In the TBSA-2010 study, the waist circumference / height ratio of males was 0.55 and 0.58 for females. In male and female individuals, the percentage of those whose waist circumference / height ratio exceeds 0.5 increases with age. The ratio of normal waist circumference / height ratio in adult males and females is 49.4% and 52.7%, respectively. For those whose age group is 31-50 years, this rate decreases to 20.2% for men and 20.2% for women. Based on these data, the risk of chronic disease increases with age. The rate of men with normal values in all individuals is 26.8% and 23.0% for women (25). When we look at waist circumference / height values in our study, it is seen that the results of the TBSA study are not parallel (Table 1).

According to the study which was conducted by Özenoğlu and Dege in 2015, which evaluated the students by the body mass indeks (BMI) according to their gender, it was found that the BMI of female students which is (21,19 kg / m2) are lower than the male students BMI which is (22,69 kg / m2), the results found are similar to the results which were obtained under our study. (26).

When the assessment of the EAT-40 scores of the individuals according to their gender, it is seen that the majority of both males and females are in the low risk group in the EAT-40 assessment (p = 0.911) (Table 2). In the ortho-15 risk assessment, it was found that males were more orthoreectic than females, but this difference was not significant (p = 0.163) (Table 2).

59 (78.7%) of 75 people, who participated in Baş's study in 2014, were female and 16 (21.3%) were male. The rate of those with orthorexic characteristics was determined to be 64%. Thirty-six (75%) of those with orthorexic characteristics were women and 12 (25%) were men, and no significant relationship was found between the genders in terms of ON (p = 0.301). In the same study, it was reported that 88% of the individuals were in the low risk group in terms of anorectic features, and 12% were in the medium risk group. The relationship between being orthorexic and anorectic was found to be statistically significant (p =

0.022) (22). Considering these data, the results obtained between ON and gender in Baş's study in 2014 are in line with the results of our study. However, when the status of being orthorexic and being anorectic was examined, the opposite result was obtained from the present study (Table 2).

Half of the slim individuals were orthoreectic and half normal, while slightly fat individuals were found to be more orthorexic compared to individuals with normal BMI (p = 0.785) (Table 3).

12% of the individuals who participated in the study conducted by Baş in 2014 were slim, 80% were normal weight and 8% were overweight. 10.4% of orthorexic patients are slim, 83.3% are normal weight and 6.3% are overweight. 14.8% of those who are not orthorexic are slim, 74.1% are normal weight and 11.1% are overweight (22). In this study, opposite results were obtained in our study (Table 3).

In our current study, when we look at the evaluation of the individuals' eating attitude score and the Ortho-15 and MOCI scores, a statistically significant negative correlation was found between the eating attitude score and the Ortho-15 score (r = -0.240; p <0.05), and it was found a statistically significant negative correlation between the Ortho-15 score and the MOCI score (r = -0.264; p <0.05) As the eating attitude score increases, the Ortho-15 score decreases; As

the eating attitude score decreases, the Ortho-15 score increases. In addition, as the Ortho-15 score of individuals increases, the MOCI score decreases, but as the Ortho-15 score decreases, the MOCI score increases (Table 4). Since healthy eating obsession changes in relation to obsessive obsession, people's obsession with healthy eating may also be linked to their psychological obsession. In a study conducted by Arusoğlu in 2006, ORTO variable and OCD and EAT seem to be directly proportional. In other words, as the tendency for ORTO increases, it has been found that the tendency towards other eating disorders increases (23). Considering these data, it was found that Arusoğlu's study in 2006 found a direct proportion between the MOCI score variable and the tendency to orthorexia, and a direct proportion between the the ORTO variable and EAT, these results were found to be similar to the present study (Table 4). Half of the slim individuals were orthoreectic and half normal, while slightly fat individuals were found to be more orthorexic compared to individuals with normal BMI (p = 0.785) (Table 3).

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orthorexia, and a direct proportion between the the ORTO variable and EAT, these results were found to be similar to the present study (Table 4).

CONCLUSION

This study was planned and conducted in order to determine the tendency of ON in the students of Trakya University Faculty of Health Sciences Department of Nutrition and Dietetics according to gender, age and BMI variables. This study was completed with a total of 125 students, 19 male and 106 female. It was found that 89.5% of the men participating in the study and 83.0% of the women had normal BMI values.

Most of the students participating in the study stay in the dormitory. While the average age of the students was between 18-21 years, BMI of the majority was found to be normal.EAT-40 scores of males were higher than females, while ORTO-15 and MOCI scores of females were higher than males. When the EAT-40 mean scores of both men and women are examined, it is seen that they are in the low risk group (<21 points) in terms of eating disorder risk. On the other hand, it can be said that they have "orthorexic" tendencies since their ORTO-15 mean scores are <40.

While most of the individuals were in the "low risk" class for eating disorder in the EAT-40 evaluation, more than half of them were found to have orthorexic tendencies. In addition, male students have higher orthorexic tendencies than female students. Half of the slim individuals are orthoreectic and half of them are normal, while slightly fat individuals are found to be more orthorexic compared to individuals with normal BMI. Looking at the EAT-40 assessment according to BMI, it was found that most of the individuals were in the "low risk" group in terms of eating disorders.

The students subject to the research may have started to apply the knowledge about healthy nutrition that they learned during their education. Since Nutrition and Dietetics students or dietitians are a professional group that is prone to ON, trainings and seminars on this subject should be given to the students by our Nutrition and Dietetics teachers in order to prevent the obsession with healthy nutrition.

ORTO-15 score is negatively correlated with the MOCI score. As the Ortho-15 score of the individual increases, their obsessive score decreases, and as the ORTO-15 score decreases, their obsessive score increases. Since healthy eating obsession is related to obsessive obsession, their obsession with healthy eating is also related to their psychological obsession. In this case, providing psychological counseling support in addition to the dietician is important in the treatment of people. While giving

nutrition seminars, also giving psychological support seminars to reduce the anxiety levels of people can be helpful to prevent this situation.

In the light of these data, it is expected that the number of people with ON eating disorder will increase day by day and the disorder may increase in the coming years. In addition, dietitians should be included in the treatment that will be planned in a multidisciplinary manner. By making protocols between public health and National Education, dietitians working in public health by giving trainings about healthy nutrition in schools and raising the awareness of students on this issue can reduce the incidence of orthorexia nervosa. Although the studies conducted so far are not sufficient yet, it is deemed necessary to conduct studies covering larger segments of the society in the light of the data obtained from these studies.

LIMITATION

The limitation of our study is that the validity and reliability value of the Ortho-15 scale which were used in our study is lower than of the ortho-11 scale.

REFERENCES

1. Baysal, A., Aksoy. M, Besler T. Bozkurt, N, Keçecioğlu. S, Mercanlıgil SM, Kutluay- Merdol T, Pekcan G, Yıldız E. 2008 ; Diyet el kitabı, Hatiboğlu Yayınevi, Ankara.

2. Baysal, A. Beslenme, 2011; Hatiboğlu Yayınevi, Ankara.

3. Ünalan, D., Öztop, Elmalı, F. Öztürk, A., Konak. D, Pırlak. B. Bir Grup Sağlık Yüksekokulu Öğrencisinin Yeme Tutumları ile Sağlıklı Yaşam Biçimi Davranışları Arasındaki İlişki, İnönü Üniversitesi Tıp Fakültesi Dergisi, 2011;16 (2); 75-110.

4. Vardar, E., & Erzengin. M. Ergenlerde Yeme Bozuklarının Yaygınlığı ve Psikiyatrik Eş Tanıları İki Aşamalı Toplum Merkezli Bir Çalışma, Türk Psikiyatri Dergisi, 2011; 22(4); 205-212.

5. Kazkondu, İ. Üniversite Öğrencilerinde Ortoreksiya Nervoza (Sağlıklı Beslenme Takıntısı) Belirtilerinin İncelenmesi (Tez). Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Yüksek Lisans Tezi. 2010.

6. Bratman, S., Knight, D. Health Food Junkies orthorexia nervosa in overcoming the Obsession with Healthful Eating, Broadway Books, Newyork. 2004.

7. Cartwright, M.M. Eating disorder emergencies: understanding the medical complexities of the hospitalized eating disordered patient, Crit Care Nurs Clin North America, 2004;16(4); 515-30.

8. Bagci, Bosi., AT, Camur., D, Guler. C. Prevalence of orthorexia nervosa in resident medical doctors in the faculty of medicine, Ankara, Turkey, Appetite, 2007; 49(3); 661-665.

9. Zarifoğlu, B. Farklı fakültelerdeki üniversite öğrencilerinde ortoreksiya nervoza görülme sıklığı ile yeme tutum davranışları ve beden algısı arasındaki ilişkinin incelenmesi (Tez). Hasan Kalyoncu Üniversitesi, Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi. 2019.

10. Sünbül, Ş. Üniversite öğrencilerinin yeme tutumu ve ortoreksiya nervoza eğilimlerinin belirlenmesi (Tez). Selçuk Üniversitesi, Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi. 2019.

11. Karadayı, Ü. Ortoreksiya ve bozuk yeme tutumlarının beden imgesi, sağlık kaygısı ve obsesif inançlarla ilişkisinin incelenmesi (Tez). T.C. Maltepe Üniversitesi, Lisansüstü Eğitim Enstitüsü, Yüksek Lisans Tezi. 2020

12. Sümengen, M. Üniversite öğrencilerinde yeme davranışları ve ortoreksiya nervoza ilişkisi (Tez). Bahçeşehir Üniversitesi, Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi. 2020

13. Yılmaz, H. Obsesif kompulsif bozukluk tanısı ile izlenen hastalarda ortoreksiya nervoza (Tez). Çukurova Üniversitesi, Tıp Fakültesi, Uzmanlık Tezi. 2020.

14. Pekcan, G. Beslenme durumunun saptanması. Baysal A, Aksoy M, Besler T, Bozkurt N, Keçecioğlu S, Mercanlıgil SM, Kutluay-Merdol T, Pekcan G, Yıldız E. Diyet el kitabı, Hatiboğlu Yayınevi, Ankara, 2008

15. WHO expert consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. The Lancet, 2004; 363; 157-163.

16. Talwar, P. Factorial Analysis of The Eating Attitude Test (EAT-40) among a group of Malaysian University Students, The Malaysian Journal of Psychiatry, 2011; 20 (2); 1-19.

17. Altuğ, A., Elal, G., Slade, P., Tekcan, A. The Eating Attitudes Test (EAT) in Turkish university students: relationship with sociodemographic, social and individual variables, Eating and weight disorders, 2000; 5(3); 152-160.

18. Şanlıer, N., Yassıbaş, E., Bilici, S., Şahin, G., Çelik, B. Does the rise in eating disorders lead to increasing risk of orthorexia nervosa? Correlations with gender, education, and body mass index, Ecol Food Nutrition, 2016; 55(3); 266-278.

19. Kadıoğlu, M., Ergün, A. Üniversite Öğrencilerinin Yeme Tutumu, Öz-Etkililik ve Etkileyen Faktörler.

Marmara Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi. 2015; 5 (2), 96-104.

20. Hodgson, RJ., Rachman, S. Obsessional-compulsive complaints, Behavior Research and Therapy, 1977; 15; 389-395.

21. Erol, A., Toprak, G., Yazıcı, F. Üniversite öğrencisi kadınlarda yeme bozukluğu ve genel psikolojik belirtileri yordayan etkenler, Türk Psikiyatri Dergisi, 2002; 13(1); 48- 57.

22. Baş, Y. Diyetisyenlerde sağlıklı beslenme takıntısı (ortoreksiya nervoza) ve yeme tutumlarının saptanması (Tez). Haliç Üniversitesi, Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi. 2014

23. Arusoğlu, G., Kabakçi, E., Köksal, G., Merdol, TK. Orthorexia nervosa and adaptation of ORTO-11 into Turkish, Türk Psikiyatri Dergisi, 2006; 19(1); 1-9.

24. Yılmaz, B. Ankara Üniversitesi'ndeki öğrencilerin beslenme durumları, fiziksel aktiviteleri, beden kütle indeksleri ve kan lipitleri arasındaki ilişkiler (Tez). Hacettepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi. 2007

25. Turkish Health Minister. Hacettepe University Faculty of Health Sciences, Department of Nutrition and Dietetics, Ankara Numune Training and Research Hospital. Turkey Nutrition and Health Survey. Evaluation of Nutritional Status and Habits Result Report. Ministry of Health Publication No: 931, Ankara. 2014

26. Özgenoğlu, A., & Dege, G. Üniversite gençliğinde yeme bozukluğunun yordayıcıları olarak benlik saygısı ve beslenme eğitiminin ortoreksiya nervoza gelişmesi üzerine etkisi. Bozok Tıp Dergisi, 2015; 5(3), 5-14.

27. Egyptian Journal of Medical Sciences. 2012;33(1):503-517.