

Relationship Between Eating Behaviors of Nursing Students and Orthorexia Nervosa (Obsession with Healthy Eating): A Cross-Sectional Study

Hemşirelik Öğrencilerinin Yeme Davranışları ve Ortoreksiya Nervosa (Sağlıklı Beslenme Takıntısı) İlişkisi: Kesitsel Bir Çalışma

Hülya ARSLANTAŞ,¹ Filiz ADANA,² Serdal ÖĞÜT,³ Dilek AYAKDAŞ,⁴ Azime KORKMAZ⁵

SUMMARY

Objectives: This cross-sectional study aimed to determine eating behaviors and the prevalence of orthorexia nervosa (ON) among nursing students, factors associated with eating behaviors and ON, and the relationship between eating behaviors and ON.

Methods: The study sample included 181 students selected using a method for a sample with a known population with 90% power range and 95% confidence level. The data were collected using a Personal Information Form, Eating Attitude Test (EAT-40), and Orthorexia-11 Scale (ORTHO-11). The resulting data were evaluated using SPSS 15.0, a software package for statistics. The data were analyzed using Student t test, chi-square test, and Pearson correlation analysis in frequency, mean, and percentage, and the type 1 error level was accepted to be $p > 0.05$.

Results: Of the students, 84.5% were found to be at risk according to EAT-40, and 45.3% were found to be at the risk of developing ON. Their EAT-40 mean score was 17.76 ± 12.34 and ORTHO-11 mean score was 27.34 ± 4.53 . The students' sociodemographic characteristics and their EAT-40 mean score were compared, and the prevalence of eating disorders was found to be higher among those whose fathers completed primary school or had higher education, who watched their calorie intake, and who had a fear of gaining weight. Furthermore, the students' sociodemographic characteristics and ORTHO-11 mean score were compared, and those who cared about proper nutrition and had a fear of gaining weight had a higher tendency to develop ON. A low negative correlation was found between EAT-40 and ORTHO-11 ($r = -.162$; $p = 0.027$).

Conclusion: Almost three thirds of students were found to be at risk of eating behavior; nearly half of them were found to be at risk of developing ON. Those with a fear of gaining weight had a higher tendency to both have eating disorders and develop ON.

Keywords: Nurse; orthorexia nervosa; student; eating behavior.

ÖZET

Amaç: Çalışma hemşirelik bölümü öğrencilerinde yeme davranışları ve ortoreksiya nervosa (ON) sıklığını, yeme davranışları ve ON ile ilişkili faktörleri, yeme davranışları ve ON ilişkisini belirlemek amacıyla kesitsel olarak yapılmıştır.

Gereç ve Yöntem: Araştırmada evreni bilinen örnekleme yöntemi ile %90 güç ve %95 güven aralığında 181 öğrenci örnekleme oluşturmuştur. Veriler Kişisel Bilgi Formu, Yeme Tutum Testi (YTT-40) ve Ortoreksiya-11 Ölçeği (ORTO-11) ile toplanmıştır. Elde edilen veriler SPSS istatistik paket programı 15.0' da değerlendirilmiş ve istatistiksel analiz olarak sıklık, ortalama, yüzde, student-t test, ki kare, Pearson korelasyon analizi kullanılmış olup, tip 1 hata düzeyi $p < 0.05$ olarak kabul edilmiştir.

Bulgular: Öğrencilerin %84.5'inin YTT-40 açısından, %45.3'ünün de ON açısından riskli olduğu görülmektedir. Öğrencilerin YTT-40 puan ortalamalarının 17.76 ± 12.34 , ORTO-11 puan ortalamalarının ise 27.34 ± 4.53 olduğu bulunmuştur. Öğrencilerin özellikleri ile YTT-40 puan ortalamaları karşılaştırıldığında; baba eğitimi ilkököl ve üstü olanların, aldığı kaloriye dikkat edenlerin, şişmanlama korkusu olanların yeme bozukluğu sıklığı yüksek bulunmuştur. Öğrencilerin özellikleri ile ORTO-11 puan ortalamaları karşılaştırıldığında ise; doğru beslenmeye önem veren ve şişmanlama endişesi olanların ortoreksiya eğiliminin daha fazla olduğu görülmektedir. YTT-40 ve ORTO-11 arasında negatif yönlü düşük düzeyde ilişki ($r = -.162$; $p = 0.027$) bulunmuştur.

Sonuç: Öğrencilerin yaklaşık dörtte üçünün yeme tutumu açısından, yarıya yakınının da ON açısından riskli olduğu, şişmanlama korkusunun hem yeme tutumu bozukluğuna hem de ON' ya yatkınlığı artırdığı bulunmuştur.

Anahtar sözcükler: Hemşire; ortoreksiya nervosa; öğrenci; yeme davranışı.

¹Department of Psychiatric and Mental Health Nursing, Adnan Menderes University Nursing Faculty, Aydın, Turkey

²Department of Public Health Nursing, Adnan Menderes University Nursing Faculty, Aydın, Turkey

³Department of Nutrition and Dietetics, Adnan Menderes University Health Science Faculty, Aydın, Turkey

⁴Department of Psychiatric and Mental Health Nursing, İzmir Katip Çelebi University Health Science Faculty, İzmir, Turkey

⁵Afyon Kocatepe University, Psychiatry Clinic, Afyonkarahisar, Turkey

Correspondence (İletişim): Dr. Hülya ARSLANTAŞ.
e-mail (e-posta): dhulyaars@yahoo.com

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Introduction

Nutrition, a prerequisite for the survival of all living creatures, is defined as the adequate and balanced consumption of nutritional elements during the growth, development, and reproduction processes of human beings. Inadequate or unbalanced consumption of these nutritional elements may result in the occurrence of several health problems. In addition to its physiological structure, nutrition is also regarded as a sociological and psychological case.^[1,2]

The term "eating disorder" was suggested by Huse and Lucas (1984) and defined as "deviations from eating habits, which may lead to diseases or inadequate nutrition." Peo-

ple with eating disorders experience disturbances in their thoughts of eating habits, body weight, and physical appearances and disturbances in their eating behaviors.^[3-5] Studies on defining atypical disorders in eating behaviors have been gradually increasing in developed countries. Although DSM-V has renewed and expanded its diagnostic categories, some eating disorders, such as orthorexia, were neglected.^[6-12]

The term “orthorexia” was first used by Bratman and Knight^[13] in 1997 to define obsession with healthy nutrition, which was characterized by excessive and time-consuming engagement in healthy nutrition. This disorder may also result in the dysfunction of social issues, and individuals who suffer from it lead their lives based on the strict norms of healthy nutrition.^[14-18]

Donini et al.^[9] reported the prevalence of orthorexia, which they defined as avid healthy nutrition habits as well as obsessive-compulsive personal characteristics. Individuals who were at higher risk of orthorexia nervosa (ON) included females, adolescents, students having health education,^[19-23] sportspeople (bodybuilding, athleticism),^[10,11,16,18,22,24] males (practitioners and medical students),^[9,21,25,26] dietitians,^[22,26,27] and those who attend a fitness center^[22,28] in addition to performing artists.^[25] However, various sociodemographic characteristics have been observed in different studies.

Bratman and Knight^[13] stated in their book named *Health Food Junkies* that the prevalence of orthorexia in the USA was at a critical level. Donini et al.^[9] found the rate of orthorexia to be higher among males who were older and with lower education. Korinth et al.^[19] conducted a study that evaluated dietary restrictions, ON tendencies, and healthy nutrition choices of nutrition science students in Germany and revealed that nutrition students had higher dietary restrictions. A study conducted in Austria showed that 12.8% of dietitians had four or higher ON symptoms.^[18]

Bosi et al.^[20] found that 45.5% of medical interns were oversensitive to their own nutrition habits, and the scores they obtained from ORTHO-15 (a test for the diagnosis of orthorexia) were lower than 40. Fidan et al.^[21] reported the prevalence of orthorexia among medical students to be 43.6%. The present study showed that the prevalence of orthorexia was higher among male medical students. Some people with orthorexia are concerned about unhealthy food based on genetic susceptibility, perfectionist personality, unrealistic demands, and misinformation or social pressures.^[15] A study conducted in Hungary showed that 56.9% of the university students had a tendency to ON, and a relationship existed between orthorexia and nutrition as well as body image distortion.^[24] Bo et al. found eating disorders and orthorexia tendencies among university students who took nutrition (dietetic) and body care (Exercise and Sports Sci-

ences) classes to be 9.1% and 25.9%, respectively. Nutrition students had two times higher risk of eating disorders.

Individuals who were educated on healthy nutrition were reported to care about it both for groups they served and for themselves, which may result in nutrition obsession.^[20,23,29] Thinking about how the foods are prepared or spending most of the time thinking about the foods due to caring about healthy nutrition are among the risk factors that may lead to the emergence of eating disorders.^[29] Nursing students are also among the risk groups regarding nutrition because they receive education on health field. Although only a single study on ON was conducted by nursing and midwifery students at School of Health in Turkey,^[23] no study was found in the international literature. Regarding nursing students, contribution to both national and international literature, determining the ON risk of the students who would be the future health care providers as they were among risk groups because they received health education, and finding the factors that would lead to disorders in eating attitudes and to ON tendency were considered to be important. Thus, this study aimed to determine eating behaviors and the prevalence of ON among nursing students, factors associated with eating behaviors and ON, and the relationship between eating behaviors and ON.

Here are the study questions:

1. What do nursing students' eating behaviors and the prevalence of orthorexia nervosa refer to?
2. What are the factors associated with nursing students' eating behaviors and the prevalence of orthorexia nervosa?
3. Does a relationship exist between nursing students' eating behaviors and the prevalence of orthorexia nervosa?

Materials and Method

Participants

This cross-sectional study was conducted in the Aydın province in May 2014 with students in the nursing department of a state university. The study population included 340 students in the nursing department of a School of Health, and the study sample included 181 students assessed using a method for a sample from a known population with 90% power range and 95% confidence level. The surveys were conducted in a classroom environment and under observation, and written permission and consent were obtained from the relevant institution and students before the administration. The administration of the surveys took 30 min. The data were collected using Personal Information Form, Eating Attitude Test (EAT-40), and Orthorexia-11 Scale (ORTHO-11). In the study, sociodemographic characteristics were considered as dependent variables, and EAT-40 and ORTHO-11 scores were considered as independent variables.

Instruments

Personal Information Form: The relevant studies^[17,30,31] that were considered to affect the students' eating behaviors and nutritional obsessions were reviewed to create a form including 17 questions: 9 were about sociodemographic characteristics, 2 were about health status, and 6 were about nutrition.

The Eating Attitude Test-EAT-40: The test was developed by Garner and Garfinkel (1979)^[32] to examine eating behaviors and attitudes of anorectic patients and evaluate the potential disorders in eating behaviors of normal individuals. The validity and reliability for Turkish were tested by Savaşır and Erol (1989).^[33] The total score level was found to be directly associated with the level of psychopathology. EAT-40 referred to the susceptibility to and attitude toward a disordered eating behavior at a clinical level. The 6-point Likert-type response form included 40 items. The breakpoint was 30. Increased points were associated with an increase in a risk of eating behavior disorder. The scale's Cronbach's alpha value was 0.70,^[33] and the study's Cronbach's alpha value was 0.84.

Orthorexia-11 Scale (ORTHO-11): The ORTHO-15 scale was developed to determine individuals' obsessions with healthy nutrition. Bratman (2000)^[13] prepared a short questionnaire including 10 questions regarding orthorexia, and then the statements in this questionnaire were improved and modified by Donini et al. (2004)^[34] The ORTHO-15 scale is a 15-item self-assessment tool the original version of which was developed in Italy and then revised to evaluate the tendency to orthorexia nervosa. Each statement was evaluated using the 4-point Likert-type rating. For Turkish version of the scale, items with factors measuring only 0.50 or above were identified. Of these items, 11 were selected. The scale was agreed on to be used in Turkish as ORTO-11. The scale was adapted to Turkish by Arusoğlu et al. (2008).^[16] Low scores indicated orthorectic tendency. The scale's Cronbach's alpha value was 0.62,^[35] and the study's Cronbach's alpha value was found to be 0.64.

Ethical Considerations

For the study, permission was obtained from the relevant institution before the administration, and informed written consent was obtained from the participants at the beginning of the administration.

Statistical Evaluation

The data obtained from the study were evaluated using SPSS software package for statistics (Version 15.0; Chicago, IL, USA). Normal distribution analysis was conducted at the beginning of the study. Thus, the Gaussian curve was used for calculating the mean score, the minimum and maxi-

imum score range, and the significance level of Kolmogorov-Smirnov test, and the distribution was found to be included in the normal distribution curve. Student t test, chi-square test, and Pearson correlation analysis were used. Frequencies, percentages, and mean scores were found. Also, the type 1 error level was accepted to be $p > 0.05$.

Table 1. Students' sociodemographic characteristics

Students' personal characteristics	n	%
Year		
First year	53	29.3
Second year	36	19.9
Third year	43	23.8
Fourth year	49	27.1
Gender		
Female	141	77.9
Male	40	22.1
Marital status		
Single	178	98.3
Married	3	1.7
Place of residence		
House	122	64.7
Hostel	59	32.6
Maternal education level		
Literate/Primary School graduate	118	65.2
Middle/High school graduate	63	34.8
Paternal education level		
Literate/Primary school graduate	78	43.1
Middle/High School graduate	103	56.9
Maternal working status		
Employed	12	6.6
Unemployed	169	93.4
Paternal working status		
Employed	115	63.5
Unemployed	66	36.5
Income level		
Low	45	24.9
Middle	129	71.3
High	7	3.9
Chronic disease		
Yes	27	14.9
No	154	85.1
Continuous drug use		
Yes	18	9.9
No	163	90.1
Caring about proper nutrition		
Yes	135	74.6
No	46	25.4
Number of daily meals		
1-2	45	24.9
3-4	119	65.7
5 or more	17	9.4
Consuming fast food		
Yes	114	63.0
No	67	37.0
Watching the calorie Intake		
Yes	50	27.6
No	131	72.4
Pre-planning what to eat		
Yes	16	8.8
No	165	91.2
Worrying about gaining weight		
Yes	99	54.7
No	82	45.3

Table 2. Percentages of students' ORTHO-11 and EAT-40 scores

ORTHO-11 scale	>27	≤27
	99 (54.7%)	82 (45.3%)
EAT-40 scale	≥30	<29
	153 (84.5%)	28 (15.5%)

ORTHO-11: Orthorexia-11 Scale; EAT-40: Eating Attitude Test.

Table 3. Students' ORTHO-11 and EAT-40 scores

	n	Min.	Max.	Mean±SD
ORTHO-11 scale	181	17.00	41.00	27.34±4.53
EAT-40 scale	181	2.00	58.00	17.76±12.34

ORTHO-11: Orthorexia-11 Scale; EAT-40: Eating Attitude Test; Min.: Minimum; Max.: Maximum; SD: Standard deviation.

Results

Of the students, 77.9% (n=141) were females and 29.3% (n=53) were males. Of the students, 98.3% (n=178) were single and 67.4% (n=122) resided in a house. Of their mothers, 65.2% (n=118) completed primary school or had lower education, and 93.4% (n=169) were employed. Of their fathers, 56.9% (n=103) completed middle school or had higher education, and 63.5% (n=115) were unemployed. Of the students, 71.3% (n=129) came from middle income families. Of

them, 14.9% (n=27) reported to have a chronic disease and 9.9% (n=18) took drugs continuously.

Of the students, 74.6% (n=135) cared about proper nutrition, 65.7% (n=119) ate three or four times a day, 63.0% (n=114) consumed fast food every day, 72.4% (n=131) did not watch the calorie quantity of the food they ate, 91.2% (n=165) did not plan what to eat beforehand, and 45.3% (n=82) did not worry about gaining weight (Table 1).

Of the students, 84.5% (n=153) were found to be at risk according to EAT-40, and 45.3% (n=82) were found to be at the risk of developing ON (Table 2).

Their EAT-40 mean score was 17.76±12.34 and ORTHO-11 mean score was 27.34±4.53 (Table 3).

The students' sociodemographic characteristics and their EAT-40 scores were compared, and the prevalence of eating disorders was found to be higher (p<0.05) among those whose fathers completed primary school or had higher education, who watched their calorie intake, and who had a fear of gaining weight (Table 4).

Furthermore, the students' sociodemographic characteristics and their ORTHO-11 scores were compared, and those who cared about proper nutrition and had a fear of gaining weight had a higher tendency (p<0.01) to develop ON (Table 5).

Table 4. Comparison of students' characteristics and EAT-40 scores

Students' characteristics	EAT-40 scale						Test	p
	29 or lower		30 or higher		Total			
	n	%	n	%	n	%		
Paternal education status								
Primary school or lower education	72	47.1	6	21.4	78	43.1	6.340*	0.012
Primary school or higher education	6	52.9	22	78.6	28	56.9		
Watching the calorie intake								
Yes	35	22.9	15	53.6	50	27.6	11.154*	0.001
No	118	77.1	13	46.4	131	72.4		
Worrying about gaining weight								
Yes	33	21.6	16	57.1	49	27.1	15.172*	0.001
No	120	78.4	12	42.9	132	72.9		

*χ² test.

Table 5. Comparison of students' characteristics and Orthorexia-11 scores

Students' characteristics	Orthorexia-11				
		n	Mean±SD	Test	p
Caring about proper nutrition	Yes	135	26.68±3.97	9.342*	0.003
	No	46	29.26±5.50		
Worrying about gaining weight	Yes	49	25.77±4.07	1.516*	0.004
	No	132	27.92±4.57		

*t-test. SD: Standard deviation.

Table 6. Relationship between students' EAT-40 and ORTHO-11 scores

Scale	ORTHO-11	
	r	P
EAT-40 scale	-.162*	0.027

*Pearson correlation test. ORTHO-11: Orthorexia-11 Scale; EAT-40: Eating Attitude Test.

A negative, low-level relationship was found between EAT-40 and ORTHO-11 mean scores of the students (Table 6).

Discussion

This study was conducted to examine nursing students' eating behaviors and the prevalence of ON among them, their eating behaviors and ON mean score, the factors associated with their eating behaviors and ON, and the relationship between their eating behaviors and ON. The results were discussed as follows.

Of the students, 84.5% were found to be at risk according to EAT-40. Duran^[23] conducted a study to investigate the risk for ON (obsession with healthy nutrition) among the students of a School of Health and found that 10.9% of the students were at risk of eating disorders based on their EAT-40 scores. Studies conducted with several groups showed that the groups included in the range from 3.8% to 31.8% based on 30 break points in the EAT-40 scores were at risk.^[5,36-39] The reason why the present study found the students to be at approximately 3–25 times higher risk of developing an eating attitude disorder might be the fact that the majority of the sample group included females. Furthermore, the media's defining the profile of an ideal woman as weak, aesthetic, and slim might be effective in this case.

Of the students, 45.3% were found to be at risk of developing ON. Aksoydan and Camcı^[27] found 56.4% of artists to be at risk of ON. Ramacciotti et al.^[40] conducted a study in Italy with a sample group including the general population. They reported that the prevalence of ON was 57.6% and women were at two times higher risk of ON than men. Bağcı Bosi et al.^[20] examined the medical doctors in their study and found the prevalence of ON to be 45.5%. Fidan et al.,^[21] on the contrary, found it to be 43.6%. Ergin^[22] carried out a study with a group of health care staff and observed that 60.1% of them had the risk of ON. Alvarenga et al.^[29] found that 81.9% of Brazilian dietitians had the symptoms of ON. Mc Inerney-Ernst^[38] conducted a study with university students and found 83% of them to have a tendency to ON. Varga et al.^[41] reported that 56.9% of the students had a tendency to ON. Shah^[42] found 69% of the students to be orthorectic. Ramacciotti et al.^[40] conducted a study in 2011 and

diagnosed 57.6% of the participants with ON. Varga et al.^[41] reviewed the literature to examine the gaps in ON and other studies. They reported the prevalence of orthorexia for the general population to be 6.9% and found this rate to be 35%–57.8% for the groups at high risk (health care professionals and artists). Another study found that 14% of the athletes had the risk of an eating disorder.^[30] This study supported the findings of other studies concerning ON risk. The findings of this study were in parallel with the findings of other studies in the literature conducted with a variety of groups. A limited number of studies in the literature have been conducted on this topic with nurses and nursing students. Therefore, the results of this study could not be compared with the findings of other studies conducted with nursing students.

The students' EAT-40 mean score was 17.76±12.34 and ORTHO-11 mean score was 27.34±4.53 in this study. Ünalan et al.^[5] reported EAT mean score of the students to be 20.9±9.3, Usta et al.^[34] found it to be 15.66±8.50, and Duran^[23] found it to be 18.43±10.56. Bağcı Bosi et al.^[20] reported the ORTHO-15 mean score of the participants to be 39.87±0.22, whereas Duran^[23] found the orthorectic symptom mean score of the students at a School of Health to be 26.95±5.11.

The orthorectic tendency of the sample group of this study was found to be nearly the same as the orthorectic tendency in a study^[23] conducted with similar students, but different from the findings of the study conducted by Bağcı Bosi et al.^[20] with medical doctors. This might be because the students in the sample of this study had different professional training, and more than three fourths of them were females. This might also be because the students further cared about their physical appearance as they were in the adolescence period. The use of different scales in the study might also be one of the reasons in that case.

In this study, the participants' sociodemographic characteristics and EAT-40 scores were compared, and the prevalence of eating disorders was found to be higher among those whose fathers completed primary school or had higher education, who watched their calorie intake, and who had a fear of gaining weight. Gezer and Kabaran^[43] found that female students and those whose mothers completed primary school or had higher education, those who consumed fast food, those who watched the calorie quantity of what they ate, those who planned what to eat beforehand, those who ate five times or more a day, and those who worried about gaining weight had high EAT scores. Similarly, Ulaş et al.^[44] reported that women and those who followed a diet had an increased risk for a potential eating disorder. Ünalan et al.^[5] found in their study that female students and those with normal weight, those who stayed in hostels, and those who lived in provinces were at high risk of the incidence of an eating disorder. Kadioğlu

and Ergün^[45] found the mean EAT score to be higher in females than in males, but with no significant difference. They reported that those who were overweight or obese, those who were not pleased with their body weight, and those who had parents with low-level education were at risk of eating disorders. Büyüköztürk et al.^[46] reported that gender and the place of residence had no effect on the eating attitude. The literature showed that the higher the level of education the parents had, the more the young people exhibited proper nutrition behaviors and the more informed they became about proper nutrition.^[47,48] O'Dea et al.^[49] found the rate of eating disorders to be higher among university students who were thinking of losing weight. Duran^[23] reported that the eating attitude test mean scores of those who followed a method to gain or lose weight were higher than those who did not follow a method to gain or lose weight.

Regarding watching the calorie intake and the fear of gaining weight, some of the findings of other studies supported the findings of the present study,^[23,42,43,48] whereas some of those of others did not.^[5,44] This might be because the majority of the present study samples were females, and females had a sensitivity to their perceptions of body image. However, the fact that being a female was not a determining factor in eating attitude as in other studies^[5,43] seemed to be a contradictory finding. However, similar to the present study, the study conducted by Kadioğlu and Ergün^[45] revealed that gender was not a determining factor in eating attitude.

The present study showed that paternal education was effective in eating attitude supporting some other studies; however, maternal education was not found to be effective. Unlike the present study, some studies found maternal education to be effective in eating attitude. Also, other studies placed an emphasis on high parental education and on the fact that university students with lower parental education^[47,48] were at higher risk^[44] of experiencing eating disorders.

The students who cared about proper nutrition and worried about gaining weight were observed to have a higher tendency to orthorexia. Duran^[23] found the orthorexia test scores to be higher among individuals who followed a method to gain or lose weight, whereas Arusoğlu et al.^[16] found these scores to be higher among those who were administered a continuous medial diet therapy. Özkan et al.^[50] found that males had a lower tendency to ON. Ergin^[22] and Ramacciotti et al.^[40] found no significant difference between sociodemographic characteristics and the prevalence of ON. Fidan et al.^[21] reported that the tendency to ON was statistically significantly higher in male students. As a risk group, health care professionals' susceptibility to ON was found to be high (99%); however, the participants who were not included in this group had a tendency of 98.5% to ON. A study conducted with university students in Germany showed that nu-

trition students in upper classes chose more healthy foods.^[19] Similar to the study conducted by Ergin^[22] and Ramacciotti et al.,^[40] the present study found no significant difference between sociodemographic characteristics and the prevalence of ON. Although particularly some studies reported that males^[21,50] had a higher tendency to ON, similar to the present study, Varga et al. and^[41] Brytek-Matera et al.^[17] found no significant difference in ORTHO-11 between males and females.^[17,22] The reason why no significance was observed between sociodemographic characteristics and ON might be that individuals in diverse sociodemographic groups affected each other regarding nutrition, and visual and written media publications on nutrition were also effective.

A negative, low-level relationship was found between EAT-40 and ORTHO-11. Since lower scores obtained in the ORTHO-11 scale indicated a higher susceptibility to disorders in this study, the correlation coefficients were interpreted as positive, although they were negative, and the evaluations were made on that basis. Duran^[23] conducted a study with the students of a School of Health and found a positive, significant relationship between EAT-40 and ORTHO-11 scores. The relationship between EAT-40 and ORTHO-11 was examined, and all studies reported that the higher the rates of disturbance in eating attitudes, the higher the levels of orthorectic symptoms.^[16,36,37,39,41,42] Thus, it could be predicted that individuals who were at a low risk of ON kept a more balanced diet. Orthorectic individuals' avoidance of foods that they consider unsafe or unhealthy and, therefore, their limitation of the variety of foods they consume lead to inadequate intakes of energy and nutritional elements. ON can lead to the emergence of some behaviors such as avoiding the consumption of some foods based on their preparation methods and the materials used while preparing them,^[13] eating only raw vegetables, or eating only foods in particular colors.^[15] Orthorectic individuals have a tendency to increasingly limit their diets for their efforts to achieve perfection, resulting in low dietary varieties.^[11,51]

Conclusion and Recommendations

Approximately four fifths of the students were observed to be at risk based on EAT-40, and nearly half of them were at risk of ON. Their EAT-40 mean score was 17.76 ± 12.34 and ORTHO-11 mean score was 27.34 ± 4.53 . Students who watched their calorie intake and had a fear of gaining weight, and whose fathers completed primary school or had higher education, had higher EAT-40 mean scores. On the contrary, those who cared about proper nutrition and worried about gaining weight had higher ORTHO-11 mean scores. Higher rates of disturbance in eating attitudes indicated higher levels of orthorectic symptoms.

The healthy nutrition and eating attitudes and behaviors

of nursing students who received necessary education to protect and promote the health and improve the life quality by allowing the society to keep an adequate and balanced diet may be affected by this education. Anxiety and stress that lead to behaviors, such as overeating or eating refusal in students, can be reduced by teaching them the methods to cope with stress. Students' self-efficacy levels can be determined to help them acquire healthy behaviors. It would be beneficial to raise awareness against unhealthy weight control methods more common among university students. Factors that affect eating attitudes can be reported while providing protective services and used in early diagnosis in health centers. Raising students' awareness of nutrition and dealing with risk groups for eating disorders, as well as taking relevant precautions, are considered to be important.

Limitations of the Study

The study was limited by the fact that gender was not considered to be effective because the number of males who participated in the study was low, and that body mass indexes of the students were not included in the surveys.

Furthermore, information and findings of other groups were given in introduction and discussion sections because of limited numbers of studies on ON and only a single study conducted with nursing students. In addition, this study was expected to make a significant contribution to the literature because of a limited number of studies conducted on ON with nursing students.

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Introduction: Orthorexia nervosa (ON) is characterized by an obsession with healthy eating, which may lead to severe physical, psychological and social disorders. It is particularly important to research this problem in populations that do not receive clinical care in order to improve early detection and treatment. Objective: The aim of this study was to research the prevalence of ON in a population of Spanish university students and to analyze the possible associations between ON and psychological traits and behaviors that are common to ED. Method: A cross-sectional study with 454 students fr Orthorexia nervosa: relationship with obsessive-compulsive symptoms, disordered eating patterns and body uneasiness among Italian university students. Anna Brytek-Matera. ORCID: orcid.org/0000-0001-5178-371X 1Â The present study aimed to investigate the relationship between ORTO-15 score and obsessive-compulsive symptoms, disordered eating patterns and body uneasiness among female and male university students and to examine the predictive model of ORTO-15 in both groups. Methods.Â Further studies regarding the relationship between ON and anorexia nervosa, as well as obsessive-compulsive symptoms, are needed to better understand the causality. Level of Evidence Level V, descriptive study. Methods: This cross-sectional study, conducted between May 2018 and January 2019, enrolled 627 medical students using a proportionate random sample from all seven faculties of medicine in Lebanon. The ORTO-15 scale was used to evaluate ON tendencies and behaviors among participants. Scores below 40 indicate the presence of ON.Â Objective: This study was carried out to evaluate eating attitudes and obsessive-compulsive symptoms of nursing students. Method: This study was performed with 270 nursing students between FebruaryMarch 2013, in a foundation university and a state univesity.