EMU Journal of Health Sciences
DAÜ Sağlık Bilimleri Dergisi

DOI:

Geliş Tarihi (Received): 28.07.2026 Kabul Tarihi (Accepted): 19.08.2026 Online Yayın Tarihi (Published):25.08.2026

Original Research Article/Orijinal Araştırma Makalesi

Effects of Disordered Eating Behaviors and Diet Quality on Orthorexia Nervosa in Female Health Sciences Students

Ceyda Durmaz, Ceren Gezer

Eastern Mediterranean University, Faculty of Health Sciences, Department of Nutrition and Dietetics, Famagusta, North Cyprus, Mersin 10 Türkiye

Abstract

Aim: This study aimed to determine the relationship between the tendency of orthorexia nervosa, eating behavior, and diet quality among female university students who study in the faculty of health sciences.

Material and Method

: Participants were 18-25 years old, 254 female university students. The body weight, height, waist and hip circumferences were measured according to techniques. Tendency of orthorexia nervosa was assessed using Orthorexia Nervosa Risk Scale (ORTO-11), tendency of eating disorders was assessed using Eating Attitude Test (EAT)-26, and diet quality was assessed using Diet Quality Index-International (DQI-I).

Results: Although the diet quality scores (52.3±8.31) of students were found to be low, the tendency of orthorexia nervosa (83.4%) and eating disorders (31.5%) were considerably higher. The mean ORTO-11 score is higher for those with low diet quality compared to those who have high diet quality ($p<.05$). It has been determined that there is a weak negative relation between ORTO-11 and EAT-26, ORTO-11 and DQI-I ($p<.001$, $p=.031$, respectively). Orthorexia nervosa tendency was ($p=.003$) higher in those who have a higher eating disorders tendency.

Conclusion: To sum up, increased orthorexia nervosa tendency is related to increased eating disorders tendency and diet quality in female health sciences students. In order to obtain more conclusive results, a broad multi-centered study design with an extended sample size representing the general population and analyzing the effects of influential factors is suggested.

Keywords: eating disorders, diet quality, orthorexia nervosa, life quality, student

Kadın Sağlık Bilimleri Öğrencilerinde Bozulmuş Yeme Davranışları ve Diyet Kalitesinin Ortoreksiya Nervoza Üzerindeki Etkisi

Özet

Amaç: Bu çalışma, Sağlık Bilimleri Fakültesinde öğrenim gören kadın üniversite öğrencilerinde ortoreksiya nervoza eğilimi, yeme davranışı ve diyet kalitesi arasındaki ilişkiyi belirlemeyi amaçlamıştır.
Materyal ve Metod: Katılımcılar 18-25 yaş arası 254 kadın üniversite öğrencisidir. Vücut ağırlığı, boy uzunluğu, bel ve kalça çevresi ölçümleri tekniğine uygun olarak alınmıştır. Ortoreksiya nervoza eğilimi Ortoreksiya Nervoza Risk Ölçeği (ORTO-11), yeme davranış bozukluğu eğilimi Yeme Tutumu Testi (EAT)-26 ve diyet kalitesi Uluslararası Diyet Kalitesi İndeksi (DQI-I) kullanılarak değerlendirilmiştir.
Bulgular: Öğrencilerin diyet kalitesi puanları (52,3±8,31) düşük bulunmasına rağmen, ortoreksiya nervoza eğilimi (%83,4) ve yeme davranış bozukluğu eğilimi (%31,5) oldukça yüksek bulunmuştur. Diyet kalitesi düşük olanların ORTO-11 puan ortalaması, diyet kalitesi yüksek olanlara göre daha yüksektir (p<,05). ORTO-11 ile EAT-26 ve ORTO-11 ile DQI-I arasında zayıf düzeyde negatif bir ilişki olduğu belirlenmiştir (sırasıyla p<,001, p=,031). Yeme bozukluğu eğilimi daha yüksek olanlarda ortoreksiya nervoza eğilimi daha yüksek bulunmuştur (p=,003).
Sonuç: Özetle, kadın sağlık bilimleri öğrencilerinde artan ortoreksiya nervoza eğilimi, artan yeme bozukluğu eğilimi ve diyet kalitesi ile ilişkilidir. Daha kesin sonuçlar elde etmek amacıyla, genel popülasyonu temsil eden genişletilmiş bir örneklem büyüklüğüne sahip ve etkili faktörlerin rolünü analiz eden kapsamlı, çok merkezli bir çalışma tasarımı önerilmektedir.

Anahtar Kelimeler: yeme bozuklukları, diyet kalitesi, ortoreksiya nervoza, yaşam kalitesi, öğrenci

Introduction

There is no standard global identification for orthorexia nervosa (ON), and it is admitted as a probable eating disorder.[1,2] While the main criteria for ON are consuming healthy foods, body dissatisfaction and weight control can also have a role similar to anorexia nervosa (AN). In addition, while ON has been seen frequently comorbid with eating disorders, orthorexic behaviors decrease alongside the increase of eating disorders pathology.[3,4] Healthy nutrition as a healthy lifestyle behavior is related to the improvement of health and reduced risk of chronic diseases such as obesity, type 2 diabetes, cardiovascular diseases, cancer, and osteoporosis.[5,6] The main idea of orthorexia rests on improving health by preventing disease. Therefore, an orthorexic individual is obsessed with food choice, healthy food consumption, and body weight.[7] A study conducted on nutrition and dietetics students found that dietary energy and saturated fatty acid intake are lower in orthorexics than in non-orthorexics.[8] Another study indicated that professional athletes are at a higher risk of developing ON and a higher adherence to the Mediterranean diet.[9] So, it has been expected that orthorexic behavior is related to increased diet quality. Still, there is also a risk of malnutrition, osteoporosis, amenorrhea, etc. related to dietary restrictions in orthorexic pathology.[10] Therefore, diet and quality of life are adversely affected. It has been shown that there is a relation between ON and quality of life in

health sciences students.[11] Also, it has been indicated that ON is related to body image, physical health, and a healthy lifestyle.[12] In addition, gender and age are prime factors that affect eating habits. It has been stated that orthorexic eating behavior and occurrence of AN are higher in females, especially between 15 and 24 years.[13,14] A systematic review and meta-analytical integration study results demonstrated that orthorexic behaviors are slightly higher in women compared to men.[15] Apart from gender and age, dissatisfaction with body weight and weight-loss diets are other significant factors related to eating disorders in university students.[16] Besides, eating behaviors are primarily common among health science students, graduates, athletes, and artists.[17] In addition, it has been shown that women health professionals can be accepted as ON risk group.[18] Hence, not only the gender, age, body image but also education and profession are relevant to eating behaviors and ON. In our knowledge, there is a need to clarify and strengthen the data on diet and life quality, ON and eating behavior relations. This study hypothesizes that ON is related to diet and life quality and eating disorders in female health sciences students. This study aims to determine the association between the tendency of ON, eating behavior and diet, and life quality among female health sciences students.

Materiel and Methods

Sample Selection

The study was conducted at Eastern Mediterranean University between December 2016 and April 2017, and the sample size was determined as 254 female students studying at the Faculty of Health Sciences using simple random sampling with a 95% confidence interval and a 5% sampling error. The female students were 18-25 years of age, native Turkish speakers, individuals with no stated pregnancy were included in the study. The study was approved by the Ethical Board of Scientific Research and Publication of Eastern Mediterranean University (Approval No:2016/34-13). According to The Helsinki Declaration, all participants were asked to sign an informed consent form.

Data Collection

The data was collected by face-to-face interview method. The data collection form included general information, anthropometric measurements, food frequency questionnaire (FFQ), Diet Quality Index-International (DQI-I), Lifestyle Index (LI), Orthorexia Nervosa Risk Scale (ORTO-11), Eating Attitude Test (EAT)-26.

Antropometric Measurements

The body weight (in kg) of individuals were measured by TANITA MC780. The height of individuals were measured via stadiometer on the frankfort horizontal plane with both feet placed side by side, and the heel and occipitial region touching the stadiometer. The waist circumference (WC) was measured from the midpoint between the palpable rib and the iliac crest and the hip circumference (HC) was measured from the top point of the hip by a rigid tape. For women, a waist circumference below <80 cm is considered low risk, and ≥88 cm is considered high risk; a waist-to-hip ratio of approximately ≤0.80 is considered low risk, and approximately ≥0.85 is considered high risk.[19]

Food Frequency Questionnaire (FFQ)

Frequency and amount of food consumption of individuals were determined based on the food consumption of the previous month, using the food frequency questionnaire (FFQ) which is adapted for Turkish population and contains 54 food items belonging to main food groups (milk and dairy products, meat-egg-legumes, fruits and vegetables, bread and grains and oils-fats-sugar-desserts-beverages). In line with the answers given in this form, the frequencies were multiplied by the coefficient determined for each option (Each meal: 3.0, Every day: 1.0,

1-2 times a week: 0.215, 3-4 times a week: 0.5, 5-6 times a week: 0.7855, 15 Once a day:0.067, Once a month: 0.033, Never: 0) to calculate the daily consumption amounts. Consumption amounts of each food item were recorded, then multiplied by the consumption frequency coefficient to estimate daily consumption amounts.[20] Finally, daily consumed nutrients and energy intake levels were calculated with the 'Computer-Aided Nutrition Program'-Nutrition Information System (BEBIS 7.1) program.

Diet Quality Index-International (DQI-I)

Dietary quality was calculated according to the Dietary Quality Index-International (DQI-I) protocol developed by Kim et al. The DQI-I is not a psychometric questionnaire, but an algorithmic index that scores quantitative food and nutrient consumption data on a scale of 0–100 across four main categories: variety, adequacy, moderation, and overall balance. The total score varied between 0-100, "0" referred to poor diet quality, and "100" to high diet quality. The score of DQI-I ≥60 indicated a high diet quality and a DQI-I score of <60 indicated the diet to be of a poor quality.[21]

Lifestyle Index (LI)

The life quality of individuals was evaluated via the LI tool developed by Kim et al. to measure the healthy lifestyle of an individual. LI consisted of Diet Quality Index (DQI), Physical Activity Index (PAI), Smoking Index (SI) and Alcohol Index (AI). The total score varied between 0-100, and the score of LI ≥60 referred to high life quality, and the score of LI <60 indicated a poor quality of life.[22]

Orthorexia Nervosa Risk Scale (ORTO-11)

ORTO-15 scale developed by Donini et al. consisted of 5 items to evaluate the healthy diet obsession of individuals. The Cronbach alpha coefficient of this scale was determined as 0.44.[23] The tool was adapted into Turkish as ORTO-11 in 2006 by Arusoğlu et al., with 11 items having a Cronbach alpha coefficient of 0.62. The response options of questions were scored points of 1, 2, 3, or 4. Items reflecting an orthorexic tendency scored 1 point, whereas normal eating behavior scored 4 points. Total scores for ORTO-11 ranged between 0 and 44 points. Higher scores of ORTO-11 referred to the decreased tendency of ON. The tendency of ON as per ORTO-11 classification was described as; "0-15 high", "16-30 moderate" and "31-44 low".[24] The Cronbach alpha coefficient was detected as 0.64 in this study.

Eating Attitude Test (EAT-26)

EAT-26 tool developed by Garner et al. includesd 26 items in the form of 5 point likert type scale and response options as "always", "very often", "often", "sometimes", "rarely" and "never".[25] Turkish validity and reliability of this tool were carried out by Savaşır and Erol and the confidence coefficient was analyzed as 0.70.[26] Total scores for EAT-26 ranged between 0 and 53 points. A total score of ≥20 points indicated increased eating disorders tendency as per the scale. EAT-26 tool may be subdivided into sub-scales for assessing dieting, bulimia, food preoccupation and oral control tendencies in an individual. The dieting indicated food restriction and an obsession with weight loss, whereas bulimia and food preoccupation reflected binge eating behaviors. Oral control sub-scale exhibited an individual's self-control over food consumption.[27] The Cronbach alpha coefficient for the tool was detected as 0.67 in this study.

Statistical Evaluation

For statistical evaluation, number (S), percentage (%) and mean ($\bar{x}$), standard deviation (SD), and minimum and maximum values were calculated. Chi-Square Test was used to determine statistical significance according to EAT-26 and ORTO-11 classification. Pearson correlation analysis was used to analyze correlations between ORTO-11, EAT-26, DQI-I, and LI. Correlation coefficient (r) of 0.00-0.29 is considered weak, 0.30-0.64 is considered

moderate, 0.65-0.84 is considered strong, 0.85-1.00 is considered very strong. Binary logistic regression analyses were used to predict significant factors for ON tendency and, odds ratio (OR) and 95% confidence interval (CI) were calculated. In all statistical tests significance levels were accepted as p<.05. Statistical Package for Social Science (SPSS) sofware, version 26 (IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp) was used so as to evaluate statistical data.

Results

In this study, mean age was 21.03±2.57 years while mean body weight was assessed as 59.4±11.5 kg, mean waist circumference was assessed as 75.6±9.49 cm and hip circumference was assessed as 99.1±8.58 cm. The means of the four fundamental constituents of DQI-I, namely variety, adequacy, moderation, and overall balance, were found to be 18.8±2.27, 22.5±7.60, 10.0±4.95, 0.88±1.62, respectively. The mean of DQI-I and LI were determined as 52.3±8.31 and 65.4±18.7, respectively. The mean of PAI, SI and AI were assessed as 11.6±13.8, 24.7±9.69, and 18.6±4.69, respectively. In addition, the mean of ORTO-11 and EAT-26 were 25.8±4.54 and 17.0±8.36, respectively (Table 1).

Table 1. Age, anthropometric measurements, DQI-I, LI, EAT-26 and ORTO-11 scores of individuals (n=254)

	$\bar{x}$ ±SD	Min-Max
Age (year)	21.03±2.57	18.00-25.00
Body weight (kg)	59.4±11.5	36.1-107.2
Height (cm)	162.1±6.30	150.0-179.0
Waist circumference (cm)	75.6±9.49	58.0-112.0
Hip circumference (cm)	99.1±8.58	81.0-113.0
DQI-I Variety	18.8±2.27	3.0-20.0
DQI-I Adequancy	22.5±7.60	5.0-40.0
DQI-I Moderation	10.0±4.95	0.0-24.0
DQI-I Overall balance	0.88±1.62	0.0-10.0
DQI-I Total	**52.3±8.31**	**30.5-81.5**
LI DQI-I	10.4±1.66	6.1-16.3
LI PAI	11.6±13.8	0.0-30.0
LI SI	24.7±9.69	0.0-30.0
LI AI	18.6±4.69	0.0-20.0
LI Total	**65.4±18.7**	**10.2-94.8**
ORTO-11	**25.8±4.54**	**16.0-39.0**
EAT-26	**17.0±8.36**	**4.0-47.0**

DQI-I: Diet Quality Index-International, LI: Lifesyle Index, PAI: Physical Activity Index, SI: Smoking Index, AI: Alcohol Index, ORTO-11: Orthorexia Nervosa Risk Scale, EAT-26: Eating Attitude Test-26

It was determined that 14.6% of the students had ≥60 points from DQI-I and 53.1% of them had ≥60 points from LI. While 83.9% of the students had 16-30 points, 16.1% had 31-44 points from ORTO-11 (p<.05). It was determined that 31.5% of students received ≥20 points from EAT-26. There was not statistically significant difference of anthropometric measurements according to EAT-26 and ORTO-11 classifications (Table 2).

Table 2. DQI-I, LI distrbution according to ORTO-11 and EAT-26 classification

	EAT-26		**Total**		**ORTO-11**		**Total**	
	<20	**≥ 20**		**p**	**16-30**	**31-44**		**p**
	n (%)	**n (%)**	**n (%)**		**n (%)**	**n (%)**	**n (%)**	
DQI-I								
<60	152 (87.4)	65 (81.3)	217 (85.4)	.951	180 (84.5)	37 (90.2)	217 (85.4)	**.048**

60-100	22 (12.6)	15 (18.8)	37 (14.6)		33 (15.5)	4 (9.8)	37 (14.6)	
LI								
<60	83 (47.7)	36 (45.0)	119 (46.9)	.580	103 (48.4)	16 (39.0)	119 (46.9)	.275
60-100	91 (52.3)	44 (55.0)	135 (53.1)		110 (51.6)	25 (61.0)	135 (53.1)	
Total	**174 (68.5)**	**80 (31.5)**	**254 (100.0)**		**213 (83.9)**	**41 (16.1)**	**254 (100.0)**	

**: p<.05, DQI-I: Diet Quality Index-International, LI: Lifesyle Index, ORTO-11: Orthorexia Nervosa Risk Scale, EAT-26: Eating Attitude Test-26*

The mean ORTO-11 score is higher in those who have low diet quality compared to those who have high diet quality (p<.05) (Table 3).

Table 3. ORTO-11 and EAT-26 scores according to DQI-I and LI classification

	EAT-26		**p**	**ORTO-11**		**p**
	$\bar{x}$ **±SD**	**Min-Max**		$\bar{x}$ **±SD**	**Min-Max**	
DQI-I						
<60	16.8±8.45	4.0-47.0	.225	26.1±4.37	16.0-39.0	**.039***
60-100	18.1±7.84	6.0-34.0		24.5±5.31	17.0-38.0	
LI						
<60	16.7±7.68	5.0-44.0	.307	26.0±4.35	16.0-38.0	.898
60-100	17.3±8.94	4.0-47.0		25.7±4.71	17.0-39.0	

**: p<.05, DQI-I: Diet Quality Index-International, LI: Lifesyle Index, ORTO-11: Orthorexia Nervosa Risk Scale,*

ON tendency was (OR=1.082, 95% CI: 1.028-1.140; p=.003) higher in those have higher eating disorders tendency (Table 4).

Table 4. Regression analysis related factors with ORTO-11

	ORTO-11		
	OR	**95% CI**	**p**
EAT-26	1.082	1.028-1.140	**.003***
DQI-I	1.028	0.984-1.073	.216
LI	0.989	0.970-3.146	1.009

**p<.05, CI: Confidence Interval, DQI-I: Diet Quality Index-International, LI: Lifesyle Index, ORTO-11: Orthorexia Nervosa Risk Scale, EAT-26: Eating Attitude Test-26*

There was a moderate negative relation between ORTO-11 and EAT-26 (r=-.412, p<.001). Furthermore, DQI-I and ORTO-11 had a weak negative association (r=-.136, p=.031) among themselves (Figure 1).

Discussion

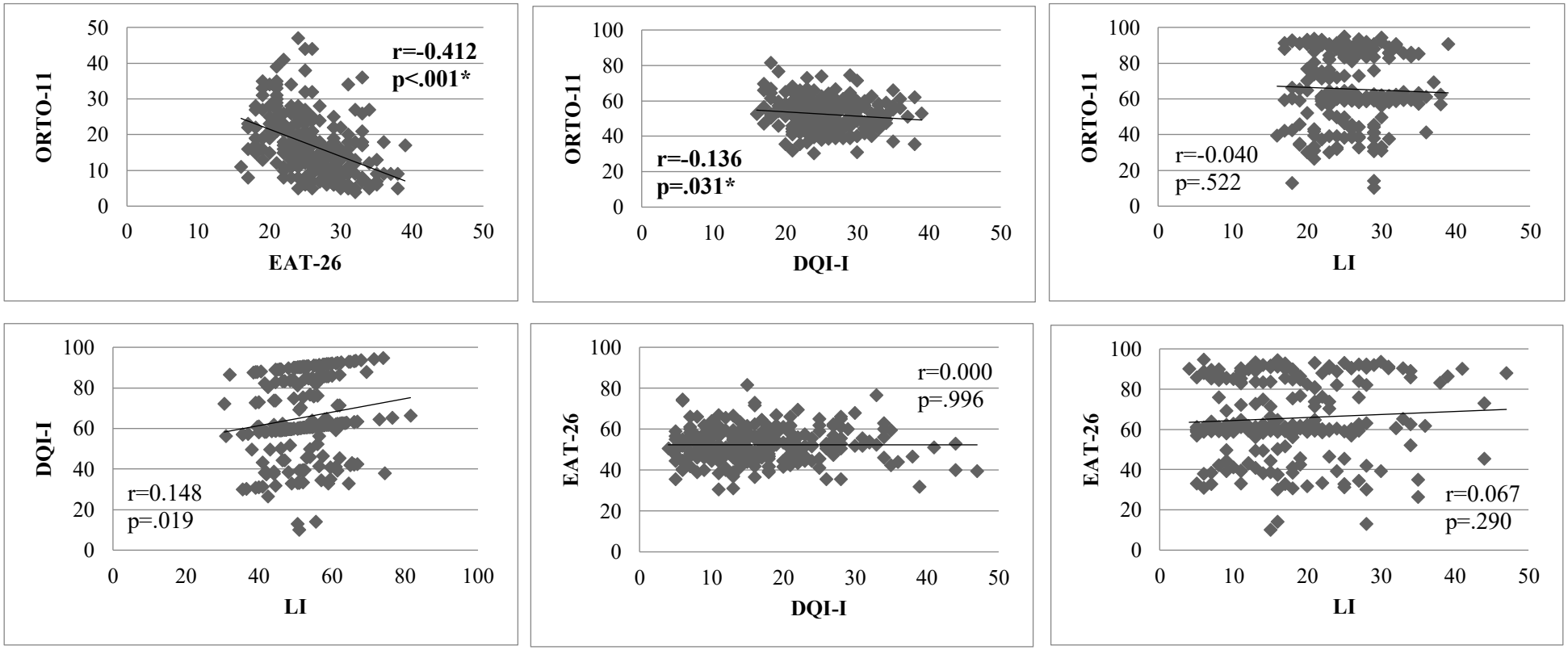
In this study, it has been predicted that ON is related to diet, life quality, and eating disorders; hence, it has been aimed to determine the relation between the tendency of ON, eating behavior, and diet and life quality among female health sciences students. Basically, it has been found that ON tendency is positively related to eating disorders disposition and diet quality in female health sciences students.

The nutritional quality and status of the students could be influenced by their biological, psychological, and socioeconomic situations.[28] In this study, the mean DQI-I score was determined as 52.3±8.31, and a diet quality of 85.4% of students was identified as low. Similarly, in studies performed in Spain and Croatia using various tools, university students' diet quality was low.[29,30,31] In our study, the mean LI score was established as 65.4±18.7 and 46.9% of students' life quality was detected as poor. It has been suggested that in order to increase quality of life, healthy nutrition and regular physical activity must be adopted.[32] In our

study, the mean PAI score was 11.6±13.8, while the maximum score to be obtained was 30. A study performed on female students indicated that 13.3% had a medium activity level, whereas 34.7% were sedentary.[33] Another study conducted on university students revealed low physical activity levels similar to this study and the authors recommended an education stressing the importance of physical activity.[34] In addition, ON tendency in university students was also related to their physical activity and exercise levels.[35] Exercise addiction, gender, age, education, obsession, and eating disorders were suggested as related factors to ON.[36,37] As per the scores obtained in the study, 83.9% of students had moderate, and 16.1% of students had low ON tendency. Moreover, 31.5% of the students had high eating disorders tendency. A study conducted with university students in the United States reported that 83.0% of the students had ON tendency.[38] A study from Turkey demonstrated that 59.8% of the students had ON tendency and 28.9% of them had eating disorders.[39] Another study in Turkey found that 62.2% of medical and nursing students had ON tendency.[40] Moreover, health sciences students also have ON tendency.[41] As a result, it can be inferred that university students in all parts of the world exhibit ON tendency at a considerably high rate.

It has been suggested that body image is closely related to the development of eating disorders and eating disorders are also predicted to be associated with ON.[42] In addition, it has been indicated that ON can occur with eating disorders simultaneously in college students.[43] In this study, the increase in ON tendency was related to a rise in the tendency of eating disorders ($r=-.412$, $p<.001$), and ON tendency was one time higher in those who have a higher eating disorders tendency ($p<.05$). Similarly, other studies with university students indicate an increase in ON tendency with increased eating disorders tendency.[39,44,45] On the contrary, there are also studies showing that the increase in ON tendency is related to the decrease in the tendency of eating disorders.[46,47] The positive relationship between ON and eating disorders is explained by a common characteristic related to behavior and lifestyle adapted to eating, diet intertwined with identity, self-esteem, and obsessive, compulsive personality traits such as rigidity and perfectionism influencing diet quality.[2] It has been suggested that ON is related to comparatively unhealthy eating and other lifestyle behaviors.[48] In a study, the diet quality of individuals who have ON tendency was lower than those who have eating disorders.[49] In this study, it has been determined that the mean ORTO-11 score is higher in those who have low diet quality compared to those who have high diet quality ($p<.05$), and the increase in ON tendency is related to increased diet quality ($r=-.136$, $p=.031$).

Figure 1. The relationship between ORTO-11, EAT-26, DQI-I, LI scores (n=254)



**p<.05 ORTO-11: Orthorexia Nervosa Risk Scale, EAT-26: Eating Attitude Test-26, DQI-I: Diet Quality Index-International, LI: Lifesyle Index*

A study on nursing students indicated increased ON tendency related to increased diet quality.[50] On the other hand, another study conducted on nutrition and dietetic students indicated that ON tendency didn't have any relation to diet quality.[46] In this study, the positive association between ON tendency and diet quality could be related to eating disorders tendency. While 83.9% of the students had moderate, 16.1% had low tendency; none exhibited a high tendency of eating disorders. Therefore, possibly they did not avoid foods that they considered unsafe or unhealthy and hence their diet quality was not adversely affected. This could also be associated with education and profession since the increase in nutritional knowledge leads to adopting a healthier diet and food choice; knowledge on health and illness influenced orthorexic tendency complicating the status of health professionals and individuals receiving health education.

This study posed certain limitations worthy of mentioning. Firstly, the study was conducted only with female students. Therefore, future studies on orthorexia, eating disorders, and diet quality must be performed on both genders. Secondly, the economic status of students, psychological factors such as obsessive compulsive disorder, addiction to food and exercise, ect. were not taken into consideration. Future studies including these factors would enlighten their roles in coping with ON and eating disorders tendency in young adults. Thirdly, this study was conducted on students studying in only one faculty. Multi-centered large sample studies would be beneficial for establishing a conclusive relationship between ON and the eating disorders tendency and diet quality for young adults.

There are a few points for implications for research and practice. Even though it has been found that increased ON tendency is related to increased diet quality, there is a need for further analysis of whether this can be accepted as a positive effect since ON is also related to eating disorders. Therefore, considering common factors related to ON and eating disorders such as gender, age, education, profession, lifestyle, body weight and body image can be beneficial for further analysis in future researches. Furthermore, multidisciplinary education and screening programs can be organised to prevent and determine ON and eating disorders for risk groups hence this can be beneficial in practice. If these education programs include dietitians, by using suitable techniques and tools nutritional status can be assessed at first step, then personalised meetings can be made with individuals who have a risk or already have ON and/or eating disorders. This program while can be effective for prevention also can be effective for improvement of diagnosis and treatment.

Conclusion

In conclusion, the increase in ON tendency is related to increased eating disorders and diet quality in female health sciences university students. To obtain more conclusive results, it is necessary to design longitudinal, multi-centered, and large sample studies to represent the general population and analyze covariates.

***Correspondig Author/Sorumlu Yazar**: RDs Ceyda Durmaz, Eastern Mediterranean University, Faculty of Health Sciences, Department of Nutrition and Dietetics, Famagusta, Northern Cyprus, Mersin-10 Türkiye, E-mail: ceydurmaz@gmail.com*

References

1. Fairburn CG, Harrison PJ. Eating disorders. Lancet 2003;361(9355):407-416.
2. Cena H, Barthels F, Cuzzolaro M, et al. Definition and diagnostic criteria for orthorexia nervosa: A narrative review of the literature. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2018;24(2):209-246.
3. Barthels F, Meyer F, Pietrowsky R. Orthorexic eating behavior. A new type of disordered eating. Ernahrungs Umschau 2015;62(10):156–161.

4. Brytek-Matera A, Donini LM, Krupa M, Poggiogalle E, Hay P. Orthorexia nervosa and self-attitudinal aspects of body image in female and male university students. Journal of Eating Disorder 2015;3(1).
5. Aldana SG, Greenlaw RL, Diehl HA, et al. Effects of an intensive diet and physical activity modification program on the health risks of adults. Journal of the American Dietetic Association 2005;105(3):371-381.
6. Varga M, Dukay-Szabó S, Túry F, van Furth Eric F. Evidence and gaps in the literature on orthorexia nervosa. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2013;18(2):103-111.
7. Gramaglia C, Brytek-Matera A, Rogoza R, Zeppegno P. Orthorexia and anorexia nervosa: Two distinct phenomena? A cross-cultural comparison of orthorexic behaviours in clinical and non-clinical samples. BMC Psychiatry 2017;17(1).
8. Grammatikopoulou MG, Gkiouras K, Markaki A, et al. Food addiction, orthorexia, and food-related stress among dietetics students. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2018;23(4):459-467.
9. Martinovic D, Tokic D, Martinovic L, et al. Adherence to Mediterranean diet and tendency to orthorexia nervosa in professional athletes. Nutrients 2022;14(2):237.
10. Rodgers RF, White M, Berry R. Orthorexia nervosa, intuitive eating, and eating competence in female and male college students. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2021;26(8):2625-2632.
11. Ab Hamid MR, Azman NN, Said N, Rahman AN. Orthorexia nervosa and the quality of Life Among Health Sciences students in Universiti Teknologi MARA, Selangor. Environment Behaviour Proceedings Journal 2018;3(7):121.
12. Pauzé A, Plouffe-Demers M-P, Fiset D, Saint-Amour D, Cyr C, Blais C. The relationship between orthorexia nervosa symptomatology and body image attitudes and distortion. Scientific Reports 2021;11(1).
13. Bundros J, Clifford D, Silliman K, Neyman Morris M. Prevalence of orthorexia nervosa among college students based on Bratman's test and associated tendencies. Appetite 2016;101:86-94.
14. Strahler J. Sex differences in orthorexic eating behaviors: A systematic review and meta-analytical integration. Nutrition 2019;67-68:110534.
15. Oberle CD, Lipschuetz SL. Orthorexia symptoms correlate with perceived muscularity and body fat, not BMI. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2018;23(3):363-368.
16. Sanlıer N, Yabancı N, Alyakut Ö. An evaluation of eating disorders among a group of Turkish University Students. Appetite 2008;51(3):641-645.
17. Abdullah MA, Al Hourani HM, Alkhatib B. Prevalence of orthorexia nervosa among nutrition students and nutritionists: Pilot study. Clinical Nutrition ESPEN 2020;40:144-148.
18. Ermumcu MSK, Acar-Tek N. Healthy eating concern in health professionals: orthorexia nervosa (ON). Gazi Journal of Health Sciences 2016;1(2):59-71.
19. Heyward VH, Wagner RR. Applied Body Composition Assesment. 2nd ed. Champaign: Human Kinetics; 2004:67-79.
20. Pekcan G. Beslenme Durumunun Saptanması. In:Diyet El Kitabı, 4.nd ed. [Baysal A, ed]. Ankara: Hatiboğlu Yayınları; 2016:65-116. (Turkish)
21. Kim S, Haines PS, Siega-Riz AM, Popkin BM. The diet quality index-international (DQI-I) provides an effective tool for cross-national comparison of diet quality as illustrated by China and the United States. Journal of Nutrition 2003;133(11):3476-3484.
22. Kim S, Popkin BM, Siega-Riz AM, Haines PS, Arab L. A cross-national comparison of lifestyle between China and the United States, using a comprehensive cross-national measurement tool of the healthfulness of lifestyles: The lifestyle index. Preventive Medicine 2004;38(2):160-171.
23. Donini LM, Marsili D, Graziani MP, Imbriale M, Cannella C. Orthorexia nervosa: A preliminary study with a proposal for diagnosis and an attempt to measure the dimension of the phenomenon. Eating and Weight Disorder-Studies on Anorexia, Bulimia and Obesity 2004;9(2):151-157.
24. Arusoğlu G, Kabakçı E, Köksal G et al. Orthorexia nervosa and adaptation of ORTO-11 into Turkish. Turkish Journal of Psychiatry 2008;19(3):283-291.
25. Garner DM, Olmsted MP, Bohr Y, Garfinkel PE. The eating attitudes test: Psychometric features and clinical correlates. Psychological Medicine 1982;12(4):871-878.
26. Savaşır I, Erol N. Yeme Tutum Testi: Anoreksiye nervoza belirtileri indeksi. Turkish Journal of Psychology 1989;7(23):19-25.
27. Rodríguez MA, Salar VN, Carretero MC et al. Eating disorders and diet management in contact sports; EAT-26 questionnaire does not seem appropriate to evaluate eating disorders in sports. Nutricion Hospitalaria 2015;32(4):1708–1714.
28. Florence MD, Asbridge M, Veugelers PJ. Diet quality and academic performance. Journal of School Health 2008;78(4):209-215.
29. Šatalić Z, Barić IC, Keser I, Marić B. Evaluation of diet quality with the Mediterranean Dietary Quality Index in university students. International Journal of Food Sciences and Nutrition 2004;55(8):589-597.

30. Moreno-Gómez C, Romaguera-Bosch D, Tauler-Riera P, et al. Clustering of lifestyle factors in Spanish university students: The relationship between smoking, alcohol consumption, physical activity and Diet Quality. Public Health Nutrition 2012;15(11):2131-2139.
31. García-Meseguer MJ, Burriel FC, García CV, Serrano-Urrea R. Adherence to Mediterranean diet in a Spanish University population. Appetite 2014;78:156-164. DOI:10.1016/j.appet.2014.03.020
32. Arslan S, Daskapan A, Cakır B. Specification of nutritional and physical activity habits of university students. TAF Preventive Medicine Bulletin 2016;15(3):171.
33. Radu L-E, Făgăraş S-P, Vanvu G. Physical activity index of female university students. Procedia Social and Behavioral Sciences 2015;191:1763-1766.
34. Fagaras S-P, Radu L-E, Vanvu G. The level of physical activity of university students. Procedia Social and Behavioral Sciences 2015;197:1454-1457.
35. Oberle CD, Watkins RS, Burkot AJ. Orthorexic eating behaviors related to exercise addiction and internal motivations in a sample of university students. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2017;23(1):67-74.
36. Oberle CD, Samaghabadi RO, Hughes EM. Orthorexia nervosa: Assessment and correlates with gender, BMI, and personality. Appetite 2017;108:303-310. DOI:10.1016/j.appet.2016.10.021
37. Fidan T, Ertekin V, Isıkay S, Kırpınar I. Prevalence of orthorexia among medical students in Erzurum, Turkey. Comprehensive Psychiatry 2010;51(1):49-54. DOI:10.1016/j.comppsych.2009.03.001
38. McInerney-Ernst EM. Orthorexia Nervosa: Real Construct or Newest Social Trend?. PhD Thesis. University of Missouri-Kansas City 2011.
39. Sanlier N, Yassibas E, Bilici S, Sahin G, Celik B. Does the rise in eating disorders lead to increasing risk of orthorexia nervosa? correlations with gender, education, and body mass index. Ecology of Food and Nutrition 2016;55(3):266-278.
40. Yılmazel G. Orthorexia tendency and social media addiction among candidate doctors and nurses. Perspectives in Psychiatric Care 2021;57(4):1846-1852.
41. Yılmaz FC, Özcelik AO. Orthorexia and Eating Attitudes in Health Sciences Students. European Journal of Applied Sciences 2021;9(3):386-394.
42. Dell'Osso L, Carpita B, Muti D, et al. Prevalence and characteristics of orthorexia nervosa in a sample of university students in Italy. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2017;23(1):55-65.
43. White M, Berry R, Sharma A, Rodgers RF. A qualitative investigation of Orthorexia Nervosa among U.S. college students: Characteristics and sociocultural influences. Appetite 2021;162:105168.
44. Duran S. The risk of orthorexia nervosa (healthy eating obsession) symptoms for health high school students' and affecting factors. Pamukkale Medical Journal 2016;9(3):220-226.
45. Agopyan A, Kenger EB, Kermen S, Ulker MT, Uzsoy MA, Yetgin MK. The relationship between orthorexia nervosa and body composition in female students of the Nutrition and Dietetics Department. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2018;24(2):257-266.
46. Gezer C, Kabaran S. The risk of orthorexia nervosa for female students studying nutrition and dietetics. Suleyman Demirel University the Journal of Health Science 2013;4(1):4-22.
47. Brytek-Matera A, Fonte ML, Poggiogalle E, Donini LM, Cena H. Orthorexia nervosa: Relationship with obsessive-compulsive symptoms, disordered eating patterns and body uneasiness among Italian university students. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2017;22(4):609-617.
48. Zickgraf HF, Barrada JR. Orthorexia nervosa vs. Healthy Orthorexia: Relationships with disordered eating, eating behavior, and healthy lifestyle choices. Eating and Weight Disorder- Studies on Anorexia, Bulimia and Obesity 2021;27(4):1313-1325.
49. Gezmen Karadag M, Elibol E, Yıldıran N et al. Evaluation of the relationship between obesity with eating attitudes and orthorexic behavior in healthy adults. Gazi Medical Journal 2016;27:107-114.
50. Arslantas H. Eating behaviour and orthorexia nervosa (healthy eating obsession) in nursing students: Cross-sectional analytic study. Journal of Psychiatric Nursing 2017;8(3):137-144.