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Orthorexic Tendencies, Sociodemographic Characteristics, and Nutritional Behaviors among University Students

Üniversite Öğrencileri Arasında Sosyodemografik Özellikler, Beslenme Davranışları ve Ortoreksik Eğilimler

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ABSTRACT

Aim: Orthorexia Nervosa (ON) is a condition characterized by an obsession with healthy eating and strict adherence to a diet perceived as healthy. The number of studies regarding the incidence and etiology of ON is limited. It is known that people are a ground breaking factor for mental and physical health problems and can negatively affect them, and people belonging to health-related professions are in the risky group. Therefore, it is important to evaluate this situation and to provide the necessary support. Therefore, this study aimed to determine the tendency to Orthorexia Nervosa (ON) and related factors among university students. **Subjects and Method:** The study, designed in the cross-sectional type, was carried out with the participation of a total of 816 students. The Orthorexia Nervosa Scale (ORTO 11) was used to evaluate the tendency for ON, and a structured questionnaire designed in line with the literature was used to evaluate the related factors. **Results:** The mean score that students got from the ORTO 11 scale was 27.24±3.74. The level of ON was determined to be higher among female students and among individuals who did not consume tobacco products and alcohol, who read food labels on food packages, who often preferred organic food, who did not consume fast-food, or who had regular eating habits ($p < 0.05$ for each category). **Conclusions:** The students were determined to have a tendency for ON and the characteristics of food choice and consumption increase the ON tendency. Identifying the symptoms of ON will be helpful in classifying the disease and developing diagnostic criteria.

Keywords: Orthorexia nervosa, ORTO 11, university student

Makale Bilgisi

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ÖZ

Amaç: Ortoreksiya Nevroza (ON) sağlıklı beslenmeye dair takıntı ve sağlıklı algılanan diyete katı bağlılık ile karakterize bir durumdur. ON'un görülme sıklığı ve etiyolojisine ilişkin çalışma sayısı sınırlıdır. Kişilerin ruhsal ve fiziksel sağlık problemleri için zemin hazırlayıcı bir faktör olduğu ve onları olumsuz yönde etkilemekte ve sağlık ile ilişkili mesleklere mensup kişilerin riskli grupta yer alabileceği bilgisi göz önünde bulundurulduğunda bu durumun değerlendirilmesi ve gerekli desteğin sağlanması önem kazanmaktadır. Bu nedenle bu araştırmanın amacı üniversite öğrencileri arasında Ortoreksiya Nevroza (ON) eğilimini ve ilişkili faktörlerin belirlenmesidir. **Örneklem ve Yöntem:** Kesitsel desende tasarlanan bu çalışma 816 öğrencinin katılımı ile tamamlanmıştır. ON eğiliminin değerlendirilmesi için Ortoreksiya Nervoza Ölçeği (ORTO 11), ilişkili faktörlerinin değerlendirilebilmesi için literatür bilgisi doğrultusunda hazırlanan yapılandırılmış soru formu kullanılmıştır. **Bulgular:** Öğrencilerin ORTO 11 ölçeğinden aldıkları ortalama puan 27.24±3.74'dır. Kadın öğrencilerde, sigara ve alkol tüketmeyenlerde, ambalajlı gıda alırken üzerindeki bilgilere bakanlarda, tükettikleri gıdaların organik olmasına özen gösterenlerde, fast-food türü yiyecek tüketmeyenlerde ve düzenli yemek yeme alışkanlığı olanlarda ON düzeyinin daha yüksek olduğu saptanmıştır (her biri için; $p<0.05$). **Sonuç:** Öğrencilerinin ON eğilimi olduğu, besin seçimi ve tüketimine ilişkin özelliklerin ON eğilimini artırdığı tespit edilmiştir. ON'a ilişkin belirtilerin belirlenmesi, hastalığın sınıflandırılmasında ve tanı kriterlerinin geliştirilmesinde faydalı olacaktır.

Anahtar Kelimeler: Ortoreksiya nervoza, ORTO 11, üniversite öğrencisi

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Introduction

Healthy eating has become the main focus of people living in developed societies due to the growing incidence of obesity, diabetes, hypertension, cardiovascular disorders, osteoarthritis and cancer (Chaki, 2013). People tend to pay attention to the quality, quantity, and type of food they choose so that they can stay healthy and fit (McComb & Mills, 2019). Accordingly, healthy nutrition is an important part of a healthy lifestyle, as well as being an action associated with reducing the risk of chronic diseases and obesity (Adriaanse et al., 2011). Yet, there is a delicate line between selectivity in the type and quality of food to be consumed and developing a psychological obsession to keep fit. Going beyond this delicate line leads to impaired eating patterns and, in extreme cases, results in psychological eating disorders (Chaki, 2013).

Anorexia nervosa and bulimia nervosa are among the most common eating disorders (Akturk et al., 2019). In addition to these known disorders, there is another disorder, which was first introduced by Steven Bratman (2017) and which has not yet been included in the Diagnostic and Statistical Manual of Mental Disorders 5th Edition: Orthorexia Nervosa (ON) (Dunn & Bratman, 2016; Chaki, 2013). ON is a condition characterized by an obsession with healthy eating and strict adherence to a diet perceived as healthy (McComb & Mills, 2019; Zickgraf et al., 2019).

ON has two stages. The first stage consists of choosing to eat a healthy diet and the second stage involves the transformation of this eating style into an unhealthy obsession. The second stage is a pathological table (Bratman, 2017). After a while, a health-related behavior may become unhealthy, life-threatening, and it may negatively affect the physical, mental and social aspects of the person (Şengül, 2019; Brytek-Matera, 2012). Over time, the person tries to persuade those around to follow the same diet, feels guilty while consuming food considered as "unhealthy", is afraid of getting sick, and implements a kind of self-punishment by following an even more limited diet (Lopes et al., 2020). Also, the person may conflict with family members in food choices, socialization may become limited, and consequently, negative nutritional outcomes may occur (Dunn & Bratman, 2016).

Data obtained from clinical cases, which reveals the incidence of ON that can affect the person in many areas, is very limited. In studies conducted using ON scales, on the other hand, the incidence varies between 6.0% and 90.0% (Dunn et al., 2017). Therefore, the epidemiology of ON is not fully known (Şengül, 2019). The limited number of studies and uncertainty also includes the etiology of ON, and no consensus has been established on this subject, yet. The results of a recent systematic review, including 54 studies on the subject, have noted that there was a complex relationship between ON and risk factors such as age, gender, socioeconomic status, body mass index, being a member of a health-related profession, exercise, diet (vegan, vegetarian), and consumption of alcohol or smoking (McComb & Mills, 2019).

Because the number of studies related to the incidence and etiology of ON is limited, yet it is a factor that paves the way for the mental and physical health problems of individuals, it can affect them negatively, and people belonging to health-related professions may be in the risky group, the evaluation of this situation and providing the necessary support become important. Therefore, this study aimed to determine the tendency for ON among students of the faculty of health sciences, and related factors.

Materials and Methods

Design

This was a cross-sectional descriptive study.

Participants

The study was planned to be carried out with 1344 students enrolled in the faculty of health sciences of a university during the 2018-2019 academic year. A total of 1344 students, including 665 students in the Nursing Department, 360 students in the Midwifery Department, and 316 students in the Health Management Department, were enrolled in Eskisehir Osmangazi University Faculty of Health Sciences. The inclusion criteria were: (i) being older than 18 years old; (ii) being enrolled in the faculty of health sciences; and (iii) volunteering to participate in the study. The study group consisted of a total of 816 students who were present at school during the data collection process, met the inclusion criteria of the study, and accepted to participate in the study.

Data Collection

The researchers visited the students in their classrooms, gave brief information about the topic and purpose of the study to be conducted, and then the measurement tools were administered. This process took about 15 minutes.

Instruments

In the study, a structured questionnaire created by the researchers in line with the literature (McComb & Mills, 2019; Dunn et al., 2017; Bratman, 2017; Dunn & Bratman, 2016), and the ORTO 11 Scale were used as data collection tools.

The Structured Questionnaire: The questionnaire aimed to collect information about some socio-demographic characteristics of the students (gender, age, the status of family income) lifestyle, disease and body perception (smoking/alcohol habits, doing physical exercise, chronic disease history, personality type, bodyweight perception) and variables related to food selection/consumption (reading food labels, preference for organic food, fast-food consumption, eating habits). Individuals who were actively working in an income-generating job were accepted as "employed", those who smoked at least 1 cigarette a day was accepted as "smoker", those who consumed alcohol at least once a week were considered as "alcohol consumer", and those who had three meals a day, namely breakfast, lunch, and dinner, were accepted to have “regular eating habits”.

ORTO 11: This scale was first developed by Bratman & Knight (2000) to evaluate the tendency for ON. It was updated by Donini et al. (2005). Arusoglu et al. (2008) carried out the validity and reliability study of ORTO-15 in Turkey, and they decided to use the ORTO 11 version. The scale has a 4-point Likert type rating structure and consists of 11 questions. The scores that can be obtained from the scale vary between 11 and 44. Increased scores obtained from the scale indicate a decrease in tendency for ON.

Data Analysis

All analyses were performed using SPSS Statistics for version 21.0 program. The Shapiro-Wilk test was employed to test the normality of the data and the data were found to not show a normal distribution. Spearman’s correlation analysis, the

Mann-Whitney U test, and Kruskal-Wallis analysis were used for the analyses. The statistical significance was accepted as $p<0.05$.

Ethical Approval of the Study

At the outset, ethical approval of Eskisehir Osmangazi University, Social and Humanities Scientific Research and Publication Ethics Committee (64075176-900-E.2377) and institutional permission of Eskisehir Osmangazi University Faculty of Health Sciences were obtained.

Results

Of the students making up the study group, 81.4% were female and their ages ranged between 18 and 32. The mean age was 20.68±1.77. The scores that the study group obtained from the ORTO 11 scale ranged from 15 to 41, and the median score was 27.0.

Table 1. The Distribution of Students' ORTO 11 Scores by Some Socio-Demographic Characteristics, such as Lifestyle and the Perception of Disease and Body

Socio-demographic characteristics- lifestyle - perception of disease and body	n	Median of ORTO 11 scores (min.-max.)	Test Value z/KW; p
Department			
Nursing	457	27.0 (15.0-41.0)	
Midwifery	276	27.0 (16.0-37.0)	4.264; 0.119
Health management	83	27.0 (21.0-37.0)	
Gender			
Female	664	27.0 (15.0-41.0)	**3.264; <0.05**
Male	152	28.0 (19.0-37.0)	
Age group			
≤19	196	27.0 (18.0-37.0)	
20	206	27.5 (15.0-37.0)	3.256; 0.354
21	203	27.0 (19.0-35.0)	
≥22	211	27.0 (16.0-41.0)	
Smoking			
Smoker	202	28.0 (20.0-41.0)	**3.754; <0.05**
Non-smoker	614	27.0 (15.0-37.0)	
Consumption of alcohol			
Yes	88	29.0 (18.0-41.0)	**3.480; <0.05**
No	728	27.0 (15.0-37.0)	
Doing regular exercise			
Yes	349	27.0 (16.0-37.0)	1.831, 0.067
No	467	27.0 (15.0-41.0)	
History of an illness that requires constant medication			
Yes	84	28.0 (19.0-37.0)	0.432; 0.666
No	732	27.0 (15.0-41.0)	
Bodyweight perception			
Slim	151	28.0 (19.0-37.0)	
Normal	565	27.0 (15.0-41.0)	2.971; 0.226
Overweight/obese	100	27.5 (18.0-37.0)	
Total	816	27.0 (15.0-41.0)	

KW: Kruskal-Wallis, z: Mann-Whitney U test

Table 2. Distribution of Students' Scores from ORTO 11 by some Variables Related to Food Preferences/Consumption

Variables related to food preferences/consumption	n	Median of ORTO 11 scores (min.-max.)	Test Value z/KW; p
Reading food labels while buying packaged food			
Yes	721	27.0 (15.0-41.0)	**5.140; <0.05**
No	95	29.0 (16.0-37.0)	
Caring for the food consumed to be organic			
No	388	28.0 (19.0-37.0)	**7.912; <0.05**
Yes	428	26.0 (15.0-41.0)	
Consumption of fast food and the like			
No	121	27.0 (19.0-34.0)	**3.479; <0.05**
Yes	695	27.0 (15.0-41.0)	
Eating order			
Consistent	420	27.0 (15.0-37.0)	
Inconsistent	396	28.0 (18.0-41.0)	**4.433; <0.05**
Total	816	27.0 (15.0-41.0)	

KW: Kruskal-Wallis, z: Mann-Whitney U test

Discussion

Awareness of healthy eating has increased markedly in recent years (Brytek-Matera, 2012). Despite this increase, the incidence of ON (Dunn et al., 2017) and the data associated with risky groups vary (McComb & Mills, 2019). Therefore, the results of the study are expected to contribute to the uncertainty in the field. According to the results of the study, it can be said that students participating in the study had a tendency for ON (Mean ONscore: 27.24 ± 3.74). The mean ON score obtained in the present study was similar to those of various studies whose sample consisted of students in the field of health (Cengiz, 2020; Agopyan et al., 2019; Arslantas, 2019; Parra-Fernandez et al., 2018; Duran, 2016; Fidan et al., 2010).

In the present study, the relationship between ON and some variables such as gender and age was examined. In the literature, female students have been reported to have a higher tendency for ON compared to male students (Parra-Fernandez et al., 2018; Ronceroet et al., 2017; Sanlier et al., 2016; Fidan et al., 2010). In our study, similar to the literature, female students' tendency for ON was found to be higher compared to that of males. This can be justified by the ideal beauty measures imposed by society especially on girls today (Hacıoğlu, 2017; Su et al., 2016). Another variable that may be a risk factor for ON is age. The young population is stated to be more at risk in terms of ON compared to the older population (Fidan et al., 2010). However, since the majority of ON-related studies have been conducted with individuals in the 20-30 age group, age-related data are not clear (McComb & Mills, 2019). In the current study, no difference was found between ON and age groups. This may be related to the fact that students were in the young population group and that their ages were close to each other.

Avoiding tobacco and alcohol consumption are among the healthy lifestyle behaviors (Ertop, 2012). Similar to the literature, the tendency for ON was higher in students who did not smoke (Hyrnik et al., 2016) and use alcohol (Roncero et al., 2017). Nutritional information on food labels is considered an important tool to encourage consumers to choose healthy food (Grunert et al., 2010). Similar to the literature, the tendency for ON was higher in students who read the food labels on packaged, who cared about consuming organic food, who did not consume fast-food and who had regular dietary habits (Arslantas, 2019; Bona et al., 2019; Garipoğlu, 2019; Plichta et al., 2019; Malmborg et al., 2017; Brytek-Matera, 2012). Given that ON is characterized by a fixation with a healthy diet (McComb & Mills, 2019; Zickgraf et al., 2019), a

statistically significant difference between these variables and ON was an expected outcome.

This study had some limitations. For example, a cross-sectional design was used in the study, students enrolled in the study were from a single faculty, and the scales employed in the study did not allow the establishment of a decisive diagnosis.

Conclusion

The study revealed the tendency of students for ON and ON-related factors. Determination of obsessional concerns of orthorexic individuals will be useful in the classification of the disease and development of diagnostic criteria. With this respect, we recommend that similar studies with different variables should be carried out with an experimental/quasi-experimental research design, and risk groups should be supported in light of results obtained.

Ethical Approval of the Study

At the outset, ethical approval of Eskisehir Osmangazi University, Social and Humanities Scientific Research and Publication Ethics Committee (64075176-900-E.2377) and institutional permission of Eskisehir Osmangazi University Faculty of Health Sciences were obtained.

Conflict of Interest

There is no conflict of interest.

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Authors' contributions

ÖÇ: Conception, design, literature review, data collection, writing, critical review

AÜ: Design, analysis

EU: Data processing, literature review and interpretation, editing

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