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Relationship Between Orthorexia Nervosa, Eating Attitudes and Obsessive-Compulsive Disorder Among Nursing Students: A Cross-Sectional Study

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Abstract:

Objective: Objectives: This study aims to determine the levels of orthorexic tendencies, eating attitudes, and obsessive-compulsive symptoms in nursing students, examine the relationships among these variables, and investigate whether orthorexic tendencies and eating attitudes predict obsessive-compulsive symptoms.

Methods: The study was designed as a descriptive, cross-sectional study. Participants were selected using purposive sampling. Descriptive Characteristics Information Form, Orthorexia-11 Scale, Eating Attitudes Test (EAT) and Padua Inventory-Washington State University Revision (PI-WSUR) scales were used. This study was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology checklist for cross-sectional studies.

Results: The mean score was 19.11±11.53 in the EAT participants, 28.30±4.16 in the Orthorexia-11 Scale and 56.35±23.85 in the PI-WSUR. A positive correlation was found between the participants' orthorexia nervosa tendencies and obsessive-compulsive symptoms. It was observed that as the participants' EAT mean scores increased, their obsessive-compulsive symptoms also increased. In the regression analysis, it was seen that orthorexia nervosa tendencies and eating attitudes were significant predictors of obsessive-compulsive symptoms.

Conclusion: The findings obtained from the study are important in terms of shedding light on the relationship between orthorexia nervosa, eating attitudes and obsessive-compulsive symptoms in nursing students. Given that health sciences students are a high-risk group for eating disorders, it is essential to include courses on eating disorders in the curriculum and implement regular psychological screenings in universities.

Keywords: Orthorexia Nervosa, Eating Attitudes Test, Obsessive-Compulsive Disorder, Nursing Students

Orthorexia nervosa (ON) is a proposed eating disorder defined by an obsessive focus on healthy eating, which can result in significant psychological distress and social impairment. The term was introduced by Steven Bratman in the late 1990s, highlighting the extreme preoccupation with food quality rather than quantity, thereby distinguishing it from other eating disorders like anorexia nervosa and bulimia nervosa [1, 2]. Individuals with ON frequently classify foods as

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"healthy" or "unhealthy," leading to rigid dietary restrictions that can negatively affect their physical and mental well-being [3, 4]. ON is considered a behavioral and personality disorder due to excessive attention paid to consuming healthy foods, excessive time spent on this pursuit, and the disruption of daily functioning [5]. Although ON is not yet included in the DSM-5 criteria, it is a growing concern, particularly among health-conscious populations and certain professional groups.

The clinical features of ON include perfectionism, anxiety, and a desire for control, which are also common in other eating disorders [6, 7]. Unlike anorexia nervosa, which is primarily concerned with weight loss and body image, orthorexia emphasizes the perceived healthiness of food choices and often results in social withdrawal to avoid exposure to "unhealthy" foods [1, 8]. Research suggests that ON may serve as a maladaptive coping mechanism, especially for individuals experiencing health anxiety, as strict adherence to dietary rules is believed to prevent illness [9, 10]. Moreover, studies have explored the relationship between ON and Obsessive-Compulsive Disorder (OCD), identifying overlapping traits such as ritualistic behaviors, compulsions, and food-related anxiety [11, 12].

OCD is a chronic mental health condition marked by obsessions, defined as intrusive, unwanted thoughts or images, and compulsions, defined as repetitive behaviors aimed at reducing distress or preventing a feared event [13, 14]. Both OCD and ON significantly impair daily functioning and social interactions [15]. Studies have shown that individuals with orthorexic tendencies may present elevated obsessive-compulsive traits, such as strict food preparation rituals, heightened food-related anxiety, and significant discomfort when deviating from dietary norms [16-18]. These findings suggest that ON may reflect a food-related manifestation of compulsive symptomatology [19, 20].

Eating attitudes (defined as a person's beliefs, behaviors, and feelings about food and eating) are central to understanding ON, particularly among adolescents and young adults. Positive eating attitudes are associated with balanced food intake and psychological well-being, while negative attitudes are linked to disordered eating patterns and dietary rigidity. A growing body of research indicates that a substantial proportion of young adults, particularly those in health-related fields, exhibit symptoms of orthorexia due to internalized ideals about health and nutrition [6, 21]. These individuals may devote considerable time to food selection and preparation, often at the expense of social interaction and mental health [22]. Cultural norms, body image dissatisfaction, and media influence further contribute to maladaptive eating behaviors [23, 24]. Over time, this preoccupation with healthy eating can evolve into an obsession that mimics compulsive behavior, underscoring the need for multidimensional assessment and intervention.

Gender is a critical yet understudied variable in this context. Epidemiological data suggest that women are more likely than men to experience disordered eating attitudes, obsessive-compulsive symptoms, and ON tendencies [23, 25]. Women are disproportionately subjected to sociocultural pressure regarding appearance, diet, and health, which may explain their greater vulnerability to these conditions [8, 24]. Nevertheless, findings are inconsistent, with some studies reporting no significant gender differences in orthorexic or obsessive-compulsive behaviors [19, 26]. These mixed results reveal the necessity of further research that directly addresses the role of gender in the interaction between ON, eating attitudes, and OCD symptoms, especially in young adults preparing for health-related careers.

While numerous studies have independently explored ON, eating attitudes, and OCD symptoms, few have examined their intersection, and even fewer have investigated how these relationships may vary by gender. This study aims to address this gap by assessing the relationships among orthorexia nervosa, eating attitudes, and obsessive-compulsive symptoms in nursing students, a population especially vulnerable due to their health education and internalized health ideals. Furthermore, the study explores whether these variables differ by gender, offering a novel contribution to the existing literature. By illuminating these associations, this research seeks to support early detection and targeted interventions for disordered eating and obsessive traits in future healthcare professionals.

Research questions are the following: (1) What is

the level of ON tendencies, eating attitudes and OCD symptoms in nursing students?; (2) Is there a relationship between ON, eating attitudes and OCD in nursing students? and (3) Are ON and eating attitudes predictive of obsessive-compulsive symptoms in nursing students?

METHODS

Study Design

The study was conducted using descriptive, cross-sectional research design. This study was reported in accordance with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist for cross-sectional studies

Participants and Sampling Methods

The population of the study consisted of 456 undergraduate nursing students enrolled in the Department of Nursing at Van Yüzüncü Yıl University, Faculty of Health Sciences, during the fall semester of the 2023-2024 academic year. Participants were recruited using a convenience sampling method and participation was based on voluntary consent. All eligible undergraduate nursing students within the defined population were invited to participate in the study.

A total of 249 students who met the inclusion criteria and voluntarily agreed to participate were included in the final sample. The remaining 207 students were not included for the following reasons: 133 students declined to participate, 42 students were absent or could not be reached during the data collection period, and 32 students submitted incomplete or invalid questionnaires.

The inclusion criteria were: being 18 years of age or older, being currently enrolled as a nursing student at Van Yüzüncü Yıl University, having no visual or hearing impairment, and voluntarily agreeing to participate in the study. The exclusion criterion was the presence of a diagnosed psychological disorder.

Data Collection

Data were collected using face-to-face, self-administered questionnaires between October and November 2023. Prior to data collection, permission was obtained from the relevant course instructors to administer the questionnaires during scheduled class hours. The researchers visited the classrooms in person, provided a brief explanation of the study objectives, and informed students about the voluntary nature of participation, confidentiality, and their right to withdraw at any time.

Students who agreed to participate were provided with a written informed consent form along with the data collection instruments. Data collection took place in quiet, distraction-free classroom environments, where participants completed the questionnaires individually based on self-report. The researchers remained present throughout the data collection process to ensure standardized administration and to address any questions raised by the participants. Completion of the questionnaires required approximately 15-20 minutes, after which the completed forms were collected directly by the researchers.

Data Collection Tools

Descriptive Characteristics Information Form

The form, created by the researchers in line with the literature, consists of a total of 15 questions to determine the students' sociodemographic characteristics (age, gender, marital status, department, class, family structure, income status) and biopsychosocial perceptions (relationship with family, relationship with friends, effective coping, physical health) [3, 20, 26-28].

Orthorexia 11 Scale (ORTHO-11)

The ORTO-15 was developed by Donini *et al*. [5]. In its original form, the scale is a 15-item with 4-point Likert-type responses (Always, Often, Sometimes, Never) self-assessment instrument. The Turkish adaptation of the scale was conducted by Arusoğlu *et al*. [29] and four items with low factor loadings were removed, resulting in an 11-item Turkish version of the scale. The items investigate individuals' behaviours in choosing, purchasing, preparing, and consuming foods that they consider healthy. Answers that are distinctive for orthorexia are given a score of "1", and answers that indicate a tendency towards normal eating behavior are given a score of "4". Low

scores indicate an orthorexic tendency. The scale is evaluated based on the total score. The cut-off score of the scale is 27. Internal consistency calculated with Cronbach alpha was found to be 0.62 [29]. In this study Cronbach alpha was found to be 0.75.

Eating Attitudes Test (EAT-40)

It was developed by Garner & Garfinkel [30] to identify adolescents with eating disorders and to measure symptoms of anorexia nervosa, and can be applied to individuals over the age of eleven. It was adapted into Turkish by Savaşır and Erol [31]. It is a self-report scale consisting of 40 items with 6-point Likert-type responses (Always, very often, Often, Sometimes, Rarely, Never). The cut-off point is 30 points. For items 1, 18, 19, 23, 27, 39, sometimes 1 point, rarely 2 points, never 3 points and other options are evaluated as 0 points. For the other items of the scale, always is calculated as 3 points, very often as 2 points, frequently as 1 point and other options as 0 points. The scale is evaluated based on the total score. Internal consistency calculated with Cronbach alpha was found to be 0.70 [31]. In this study Cronbach alpha was found to be 0.83.

Padua Inventory-Washington State University Revision (PI-WSUR)

Participants' obsessive-compulsive symptom levels were assessed using PI-WSUR. It is a 39-item self-report scale that assesses obsessions and compulsions. The participant is asked to indicate how much he/she is bothered by each statement using a five-point Likert scale (ranging from 0 = Not at all to 4 = Very much). Burns *et al*. [32] revised the original Padua Inventory to address the differentiation between worry and obsession and created this version by removing items that caused confusion [32, 33]. In their study, they reported that this version has a 5-factor structure and that this version of the inventory is also valid and reliable. The Turkish adaptation was made by Yorulmaz *et al*. [34]. The scale consists of 5 sub-dimensions: checking compulsions, contamination obsessions and washing compulsions, obsessional impulses to harm self/others, dressing/grooming compulsions and obsessional thoughts of harm to self/others. There are five options in each item. These are; not at all (0), very little (1), a lot (2), quite a lot (3) and extremely (4), respectively. A score of zero for each item indicates that the symptom in the question is not experienced at all, while a score of four indicates that the symptom is experienced severely. The total score that can be obtained from the inventory is between 0 and 156. In the Turkish adaptation study of the inventory, the Cronbach alpha value was stated as 0.93 [34]. In this study Cronbach alpha was found to be 0.92.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 26.0. Normality of the continuous variables was assessed prior to inferential analyses using visual inspection of histograms and Q-Q plots, as well as examination of skewness and kurtosis values. Skewness and kurtosis values within ±1.5 were considered indicative of an approximately normal distribution. The distributions were considered approximately normal based on these criteria, and therefore parametric statistical analyses were applied. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated for sociodemographic characteristics and scale scores. In addition to descriptive statistics, independent samples t-tests were performed to compare mean scale scores between female and male participants. Chi-square tests of independence were used to examine associations between gender and categorical variables related to eating attitudes. Assumptions for each analysis were evaluated prior to testing, and appropriate statistical procedures were applied accordingly. Before conducting regression analysis, Pearson correlation coefficients were computed to assess bivariate relationships among ORTHO-11, EAT-40, and PI-WSUR scores. Correlation coefficients of ≥ 0.30 were considered adequate for inclusion in the regression model. The strength of correlations was interpreted as follows: poor (0.00-0.20), fair (0.21-0.40), good (0.41-0.60), very good (0.61-0.80), and excellent (0.81-1.00) [35]. To examine the predictive effects of orthorexia nervosa and eating attitudes on obsessive–compulsive symptoms, a multiple linear regression analysis (enter method) was performed. Regression assumptions,

TABLE 1. Socio-Demographic Characteristics of Participants

Variables	Data
Age (years)	21.04±2.2 (17-36)
Gender	
Female	180 (72.3%)
Male	69 (27.7%)
Class	
First Class	91 (36.5%)
Second Class	6 (2.4%)
Third Class	81 (32.5)
Fourth Class	70 (28.1)
The relation of parents	
Married	231 (92.8%)
Divorced	2 (8%)
Living separately	3 (1.2%)
Mother deceased	1 (0.4%)
Father deceased	11 (4.4%)
Other	1 (0.4%)
Educational status of mother	
Illiterate	90 (36.1%)
Primary school graduate	95 (38.2%)
Secondary school graduate	38 (15.3%)
High school graduate	17 (6.8%)
University graduate	5 (2%)
Educational status of father	
Illiterate	17 (6.8%)
Primary school graduate	82 (32.9%)
Secondary school graduate	70 (28.1%)
High school graduate	49 (19.7%)
University graduate	29 (11.6%)
Marital status	
Married	11 (4.4%)
Single	220 (88.4%)
I have a partner	18 (7.2%)
Employee status of father	
Has a permanent job	118 (47.4%)
Works part time	66 (26.5%)
Does not work	61 (24.5%)

including linearity, normality of residuals, multicollinearity, and homoscedasticity, were tested and met. A P-value of <0.05 was considered statistically significant for all analyses.

RESULTS

The sociodemographic characteristics of the participants are given in Table 1. Most of the study participants were female (72.3%). 60.6% of the participants are sophomores and above. It was found that 92.8% of the participants have married parents and 88.4% are single. The mothers' educational status of 98% of the participants and the fathers' educational status of 87.5% were high school graduates or below. More than half of the participants had a nuclear family type, and 69.9% of them stated that they had a democratic family type. More than half of the participants described their family and friend relationships as good. 94.8% of the participants did not have any physical illness.

Descriptive statistics of the participants' scores on ORTHO-11, EAT-40, PI-WSUR, and its subdimensions by gender are presented in Table 2.

The mean EAT-40 score was 18.26 ± 10.39 for female participants and 23.83 ± 15.87 for male participants. Considering that the cut-off score of the EAT-40 is 30, the mean scores of both female and male participants were below the clinical threshold, indicating no deterioration in eating attitudes within the study sample.

The mean ORTHO-11 score was 28.18 ± 3.93 among female participants and 29.92 ± 4.39 among male participants. Given that ORTHO-11 scores range from 11 to 44, with higher scores indicating a lower tendency toward orthorexia nervosa, the findings suggest that orthorexic tendencies were relatively low among both female and male participants.

Obsessive–compulsive symptoms were assessed using the PI-WSUR. The mean PI-WSUR total score was 57.00±23.46 for female participants and 54.58±24.98 for male participants. With respect to the PI-WSUR subscales, higher mean scores were observed in the contamination obsessions and washing compulsions subscale (20.20±8.52), followed by

TABLE 1 Continued. Socio-Demographic Characteristics of Participants

Variables	Data
Employee status of mother	
Has a permanent job	4 (1.6%)
Works part time	8 (3.2%)
Does not work	235 (94.4%)
Perceived family economic situation	
(5000 TL under)	14 (5.6%)
(5000-8000 TL)	31 (12.4%)
(8000-1500 TL)	135 (54.2%)
(15000-20000 TL)	48 (19.3%)
(Above 200000 TL)	19 (7.6%)
Family structure	
Democratic	174 (69.9%)
Strongly regulatory	52 (20.9%)
Extremely repressive	22 (8.8%)
Family type	
Nuclear	181 (72.7%)
Extended	67 (26.9%)
The relationship with family	
Good	175 (70.3%)
Average	65 (26.1%)
Bad	8 (3.2%)
The relationship with friends	
Good	154 (61.8%)
Average	86 (34.5%)
Bad	9 (3.6%)
Coping with problems with family or friends	
I can produce solutions with composure	206 (82.7%)
I act reserved and wait for a move from the other party	23 (9.2%)
I think I am inadequate in solving problems	17 (6.9%)
Having a physical illness	
Yes	12 (4.8%)
No	236 (94.8%)
Total	249 (100%)

Data are shown as mean±standard deviation or n (%) where appropriate.

checking compulsions (16.56±9.17) across the total sample.

Descriptively, female participants showed higher mean scores on the contamination obsessions and washing compulsions and obsessional thoughts of harm to self/others subscales, whereas male participants demonstrated higher mean scores on the obsessional impulses to harm self/others subscale. These differences are presented descriptively, and inferential statistical comparisons are reported separately.

Independent samples t-tests were conducted to examine gender differences in EAT-40, ORTHO-11, and PI-WSUR total and subscale scores. No statistically significant gender differences were found in EAT-40 ($t = 1.85$, $P=0.073$) or ORTHO-11 total scores ($t = 0.69$, $P=0.490$). Similarly, no significant gender difference was observed in the PI-WSUR total score ($t = -0.68$, $P=0.495$).

Regarding PI-WSUR subscales, a statistically significant gender difference was identified only in the obsessional impulses to harm self/others subscale, with male participants scoring higher than female participants ($t = 2.29$, $P=0.024$). No statistically significant gender differences were observed for checking compulsions, contamination obsessions and washing compulsions, dressing/grooming compulsions, or obsessional thoughts of harm to self/others (all $P>0.05$).

The frequencies of ON and eating attitude deterioration among the participants are presented in Table 3. Eating attitude deterioration was observed in 8.3% of female participants and 10.1% of male participants. Pearson's chi-square analysis indicated no statistically significant association between gender and eating attitude deterioration, $\chi^2(1, N = 249) = 0.20$, $P=0.652$.

Regarding ON tendencies, 35.6% of female participants and 34.8% of male participants were classified as having a tendency toward ON. Similarly, no significant association was found between gender and ON tendency, $\chi^2(1, N = 249) = 0.01$, $P=0.909$.

The relations between ORTHO-11, EAT-40 and PI-WSUR were given in the Table 4. It was determined that there was a low level negative significant relationship between the mean score of the ORTHO-11 and PI-WSUR ($r=-.159$). In other words, as the participants' orthorexia nervosa symptoms increased,

TABLE 2. Mean Scores of Participants in ORTHO-11, EAT-40, PI-WSUR and Sub-dimensions by Gender

Scale	Gender	Mean±SD	(Min-Max)	P-value*
ORTHO-11	Female	28.18±3.93	15-38	0.49
	Male	29.92±4.39	21-41	
	Total	28.30±4.16	15-39	
EAT-40	Female	18,26±10,39	3-81	0.07
	Male	23.83±15.87	7-79	
	Total	19.11±11.53	3-81	
PI-WSUR Total	Female	57.00±23.46	7-124	0.49
	Male	54.58±24.98	9-120	
	Total	56.35±23.85	7-124	
Checking compulsions	Female	16.48±9.05	0-37	0.82
	Male	16.77±9.55	0-40	
	Total	16.56±9.17	0-40	
Contamination obsessions and washing compulsions	Female	20.52±8.47	0-40	0.33
	Male	19.34±8.64	2-40	
	Total	20.20±8.52	0-40	
Obsessional impulses to harm elf/others	Female	3.93±5.56	0-36	**0.02**
	Male	6.17±7.07	0-34	
	Total	4.53±6.07	0-36	
Dressing/grooming compulsions	Female	4.92±3.17	0-12	0.49
	Male	4.61±3.03	0-12	
	Total	4.83±3.13	0-12	
Obsessional thoughts of harm to self/others	Female	10.68±6.08	1-28	0.06
	Male	9.11±5.65	0-28	
	Total	10.25±5.99	0-28	

ORTHO-11, orthorexia 11 scale; EAT-40, eating attitudes-40 test; PI-WSUR, Padua Inventory Washington State University revision.

*independent sample T test. Statistically significant P-value is shown in bold.

their obsessive-compulsive symptoms increased. In addition, it was seen that there was a positive significant relationship between the participants' means score of the EAT-40 and PI-WSUR (r=.286).

One of the assumptions for performing regression analyses is that there are significant correlation relationships between variables. Accordingly, a prospective model was created in which eating attitudes and ON predict OCD. As a result of the multiple linear regression analysis, it is seen that the model created is statistically significant (F: 11.005, P<0.001). Accordingly, it is seen that the mean score of the ORTHO-11 and EAT-40 together explain approximately 10% of the variance on PI-WSUR. Accordingly, it is seen that ON (β=-.173, P<0.05) and eating attitudes (β=.290, P<0.05) are significant predictors of obsessive-compulsive symptoms (Table 5).

DISCUSSION

This descriptive, cross-sectional study was conducted with 249 nursing students to examine the relationships between orthorexia nervosa tendencies, eating

TABLE 3. Prevalence of Orthorexia Nervosa Tendencies and Eating Attitudes According to Gender

		n	%	P-Value**
ORTHO-11				
No tendency to ON	Female	116	64.4	χ^2:0.20, P=0.65
	Male	45	65.2	
	Total	161	64.7	
There is a tendency towards ON	Female	64	35.6	
	Male	24	34.8	
	Total	88	35.3	
EAT-40				
Eating Attitude Normal	Female	165	91.7	χ^2= 0.01, P=0.90
	Male	62	89.9	
	Total	227	91.2	
Deterioration in Eating Attitude	Female	15	8.3	
	Male	7	10.1	
	Total	22	8.8	

ORTHO-11, orthorexia 11 scale; EAT-40, eating attitudes test-40; ON, orthorexia nervosa.
**Ki-square test.

attitudes, and obsessive-compulsive symptoms. Considering that nursing students are a risk group for disordered eating behaviors due to their health-related education and exposure to health norms, identifying these psychological tendencies is important. The findings of the study are expected to contribute to the development of educational and preventive interventions tailored for nursing students by clarifying how ON tendencies, eating attitudes, and obsessive-compulsive symptoms interact in this population. Previous studies have suggested that individuals in health-related fields may internalize rigid health and dietary norms, which may increase their vulnerability to orthorexic and obsessive behaviors [6, 23]. In this context, nursing students represent a particularly relevant group for investigating the interplay between eating-related attitudes and psychological symptoms. This study builds upon this body of literature by exploring how ON and eating attitudes relate to obsessive-compulsive

TABLE 4. The Correlation Between ORTHO-11, EAT-40 and PI-WSUR

		1	2	3
1-ORTHO-11	r	1		
	P-value			
2-EAT-40	r	0.020	1	
	P-value	0.783		
3-PI-WSUR	r	-0.159*	0.286**	1
	P-value	**0.016**	**<0.001**	

ORTHO-11, orthorexia 11 scale; EAT-40, eating attitudes test-40; PI-WSUR, Padua Inventory Washington State University revision.
*Correlation is significant at the 0.05 level (2-tailed), **Correlation is significant at the 0.01 level (2-tailed). Statistically significant P-values shown are in bold.

TABLE 5. The Results of Multiple Linear Regression Analysis of ORTHO-11 and EAT-40 Predicting PI-WSUR

Variables	B	SE	β	t	P-value	F	P-value
Constant	73.073	11.563		6.320	**<0.001**	11.005	**<0.001**
ORTHO-11	-0.971	0.398	-0.173	-2.440	**0.016**		
EAT-40	0.596	0.145	0.290	4.104	**<0.001**		

ORTHO-11, orthorexia 11 scale; EAT-40, eating attitudes test-40; PI-WSUR, Padua Inventory Washington State University revision; SE, standard error.

$R=0.33$, $R^2=0.11$, $R^{2adj}=0.10$

Statistically significant P-values are shown in bold.

symptoms within this specific academic and developmental context.

The participants' orthorexia nervosa tendencies were assessed using the ORTHO-11 scale, in which lower scores indicate higher ON tendencies [5, 29]. Participants scoring 27 or below were classified as having a high tendency toward orthorexia nervosa. The mean ORTHO-11 score was 28.18±3.93 for female participants and 29.92±4.39 for male participants, indicating relatively similar orthorexic tendencies across genders. Consistent with this finding, independent samples t-test results showed no statistically significant difference between female and male participants in ORTHO-11 total scores, suggesting that orthorexic tendencies did not differ meaningfully by gender in the present sample. According to the 27-point cut-off, 35.6% of female students and 34.8% of male students in this study were classified as having orthorexic tendencies. In line with the descriptive findings, chi-square analysis revealed no significant association between gender and orthorexia nervosa tendency, further supporting the absence of gender-based differences in ON classification. These prevalence rates are lower than those reported in previous studies using ORTHO-11 or ORTHO-15. For instance, Arslantaş *et al*. [36] reported an average score of 27.34±4.53 among nursing students, while Brytek-Matera *et al*. [23] found ON risk in 68.55% of female and 43.18% of male university students using the ORTHO-15 scale. Studies conducted with Turkish healthcare professionals have shown ON prevalence ranging from 43.6% to 60.1% [25, 37, 38], and in international samples, the risk varies widely from 57.6% to 81.9% [39, 40]. It has been argued that ON may be more common in health science students due to their exposure to dietary and health-related content during their training [41]. While many studies report a higher prevalence in women [23, 42], other findings suggest that men may also be at risk [38, 43, 44]. The lack of significant gender differences observed in the present study may be attributable to sample characteristics, shared educational exposure, or sociocultural factors, including gender distribution within health education programs and varying norms related to body surveillance and health behaviors. Such inconsistencies across studies underscore the influence of cultural, psychosocial, and educational contexts, as well as methodological differences in sampling and measurement.

The total mean score of the participants on the EAT-40 was 19.11±11.53, which is below the clinical cutoff score of 30, indicating generally healthy eating attitudes among most of the sample [31]. The EAT-40 scale is used to assess problematic eating behaviors, and scores above 30 are considered indicative of a possible eating disorder or significant deterioration in eating attitudes [30]. Based on this cutoff, 8.8% of the participants were identified as having disordered eating attitudes. When examined by gender, the prevalence of disordered eating attitudes was 8.3% among female participants and 10.1% among male participants. Although this distribution suggests a slightly higher proportion among male students, chi-square analysis revealed no statistically significant association between gender and eating attitude deterioration, suggesting that the observed difference lacks statistical significance. Consistently, independent samples t-test results showed no significant gender difference in EAT-40 mean scores, further supporting the absence of gender-based differences in eating attitudes within the present sample.

This finding is noteworthy considering that previous studies have generally reported higher levels of disordered eating among female university students. Studies conducted in Turkey found EAT-40 mean scores ranging from 15.66±8.50 to 20.9±9.3, which is consistent with our findings [36, 45]. However, Arslantaş *et al*. [36] found a much higher prevalence (84.5%) of disordered eating attitudes in a university sample, where 77.9% of participants were female, indicating a potentially stronger gender-related vulnerability.

The relatively low prevalence of disordered eating attitudes observed in the present study may be partially attributable to regional sociocultural factors. Eastern Turkey is characterized by a more conservative social structure and traditional gender role expectations compared to more urbanized western regions. Previous research has demonstrated that sociocultural influences, including body image ideals, social pressures, and media exposure, play a significant role in the development of eating disorders [46, 47]. In more conservative contexts, where body-centered social comparison may be less prominent, disordered eating attitudes may emerge less frequently or present differently. Nevertheless, further research is needed to clarify how regional sociocultural contexts shape eating attitudes among university students across Turkey.

The mean total score of female participants on the PI-WSUR was 57.00±23.46, while that of male participants was 54.58±24.98. Given that total PI-WSUR scores range from 0 to 156, these values indicate a moderate level of obsessive–compulsive symptoms in the present sample [33, 34]. Although there is no universally accepted clinical cutoff score for the PI-WSUR, previous studies conducted in non-clinical populations have reported mean scores ranging between 48 and 75 [15, 16, 26, 48]. In this context, the scores observed in our study are consistent with the expected range for university students. Accordingly, the scores observed in this study fall within the expected range for university student samples. Moreover, independent samples t-test analysis revealed no statistically significant gender difference in PI-WSUR total scores, suggesting comparable overall obsessive-compulsive symptom severity between female and male participants.

With respect to symptom dimensions, descriptive differences were observed across genders. Female participants reported higher mean scores on the contamination obsessions and washing compulsions subscale, whereas male participants showed higher mean scores on obsessional impulses to harm self/others. However, inferential analyses indicated that a statistically significant gender difference emerged only for obsessional impulses to harm self/others, with male participants scoring higher on this subscale. No significant gender differences were found for checking compulsions, contamination obsessions and washing compulsions, dressing/grooming compulsions, or obsessional thoughts of harm to self/others.

These findings are partially consistent with prior research suggesting that contamination and cleaning symptoms tend to be more prevalent among women, whereas checking and harm-related symptoms are more commonly reported among men [49-51]. Such patterns are often interpreted within the framework of traditional gender roles, which emphasize cleanliness, caregiving, and responsibility among women. Nevertheless, other studies have reported reversed patterns or no significant gender differences, highlighting the role of cultural and psychosocial context in shaping the expression of obsessive-compulsive symptoms [52]. In the present study, the regional sociocultural setting, characterized by more traditional gender roles and conservative norms, may have influenced symptom expression, particularly among female participants. Additionally, educational stressors and developmental factors associated with the university period may contribute to the predominance of contamination- and checking-related symptoms, which are frequently linked to anxiety regulation and perceived control [50, 53].

The positive correlation between EAT-40 and PI-WSUR scores indicates that higher disordered eating attitudes are associated with greater obsessive-compulsive symptom severity. Similar findings were reported by studies showing higher obsession scores among students with high eating disorder risk [54, 55]. The comorbidity of OCD and eating disorders is well established; shared features include perfectionism, anxiety, and cognitive rigidity. Furthermore, a significant negative relationship between ORTHO-11 and PI-WSUR scores supports previous findings linking ON and obsessive-compulsive behaviors [56]. ON, characterized by obsession with healthy eating,

often overlaps with obsessive symptoms.

This correlation may stem from shared mechanisms such as rigid thinking, heightened anxiety, and compulsive coping patterns. Among nursing students, exposure to health norms, body-related expectations, and academic pressure may foster restrictive eating and ritualistic control behaviors. Perfectionism, common in both OCD and eating disorders, can lead to excessive dietary monitoring and ritualization to reduce perceived risks or dissatisfaction. Cognitive features such as intolerance of uncertainty and fear of mistakes may further reinforce these behaviors. Moreover, in traditional societies emphasizing discipline, appearance, and morality, these traits may be culturally reinforced, particularly among women [46, 47].

Multiple regression analysis showed that both ON tendencies and eating attitudes were significant predictors of obsessive-compulsive symptoms, explaining about 10% of the variance in PI-WSUR scores. ON (β = –.173) was a negative predictor due to ORTHO-11 scoring, while disordered eating attitudes (β = .290) positively predicted obsessive-compulsive symptoms. These results support previous findings highlighting overlapping characteristics, including perfectionism, cognitive rigidity, anxiety, and compulsive rituals, between eating disorders and OCD [7, 8, 26, 48, 57]. Individuals with ON often display obsessive behaviors related to food selection and control [16, 48, 58], while disordered eating attitudes involve intrusive thoughts and ritualistic eating patterns [8].

Other factors such as intolerance of uncertainty, trait anxiety, and distress intolerance may also contribute [22, 23]. Considering the multiple academic, social, and gender-related stressors faced by nursing students, OCD symptoms likely arise from a combination of cognitive, emotional, and environmental influences. The modest variance explained by the model underscores the multifactorial nature of obsessive-compulsive symptomatology and highlights the need for future studies addressing broader psychological and contextual variables.

Strengths and Limitations

A key strength of this study is its focus on nursing students, a clinically relevant high-risk group for disordered eating behaviors and obsessive-compulsive symptoms. The simultaneous assessment of orthorexic tendencies, eating attitudes, and obsessive-compulsive symptoms offers a clinically meaningful perspective on the overlap between eating-related behaviors and compulsive psychopathology. The use of validated and widely accepted assessment tools enhances the clinical reliability of the findings. Furthermore, identifying orthorexic tendencies and eating attitudes as significant predictors of obsessive-compulsive symptoms provides important implications for early screening and preventive mental health interventions in university and clinical settings.

This study has several limitations. First, its cross-sectional design precludes causal inferences and limits the generalizability of the findings. The use of self-reported measures may have introduced social desirability bias. Additionally, the study was conducted at a single center with a predominantly female sample, which may further affect representativeness.

While gender-based comparisons were conducted, other sociodemographic variables (e.g., age, academic year, and income level) were collected to describe the sample characteristics but were not included in inferential analyses. Accordingly, the absence of inferential analyses across additional sociodemographic subgroups should be considered a limitation. Future longitudinal and multi-center studies with larger and more diverse samples are recommended to examine the potential influence of these factors using multivariate analytical approaches. In addition, although individuals with a diagnosed psychiatric disorder were defined as an exclusion criterion, the presence of psychiatric diagnoses among participants was based on self-report and was not verified through a structured clinical interview. Therefore, it is possible that some participants with undiagnosed or unreported psychiatric conditions were included in the sample, which may have influenced the findings.

CONCLUSION

In conclusion, the findings of this study indicate generally healthy eating attitudes, relatively low orthorexia nervosa tendencies, and moderate levels of

obsessive–compulsive symptoms among nursing students. Although no significant gender differences were observed in most variables, the presence of disordered eating attitudes and orthorexic tendencies in a notable proportion of students highlights the importance of preventive and supportive approaches in university settings. Based on these findings, providing training and counseling services addressing eating disorders, orthorexia nervosa, and obsessive-compulsive symptoms may be beneficial for nursing students. Such interventions could be incorporated into existing student counseling and health promotion services to support early identification and promote healthier coping strategies. Future research should examine the effectiveness of these supportive interventions in improving students' psychological well-being.

Ethics Approval and Consent to Participate

Ethical approval for this study was obtained from the Van Yüzüncü Yıl University Non-Interventional Clinical Research Ethics Committee (Decision no: 2023/09-07; Date: 18.09.2023). Institutional permission was also obtained from the institution where the study was conducted prior to data collection. Permission to use the measurement instruments was obtained from the authors who conducted the Turkish validity and reliability studies of the scales. All participants were informed about the purpose and procedures of the study, and written informed consent was obtained prior to participation. Participation was voluntary, and participants were informed of their right to withdraw from the study at any time without any consequences. The study was conducted in accordance with the principles of the Declaration of Helsinki. Data confidentiality was ensured by anonymizing all participant information, assigning identification codes instead of personal identifiers, and restricting data access to the research team only. The collected data were stored securely and used solely for scientific purposes.

Data Availability

All data generated or analyzed during this study are included in this published article. The data that support the findings of this study are available on request from the corresponding author, upon reasonable request.

Authors' Contribution

Study Conception: NSKD, CHA, KA; Study Design: NSKD, CHA, KA; Supervision: NSKD, CHA; Funding: NSKD, CHA, KA; Materials: NSKD, CHA, KA; Data Collection and/or Processing: NSKD, CHA, KA; Statistical Analysis and/or Data Interpretation: NSKD, CHA; Literature Review: NSKD, CHA, KA; Manuscript Preparation: NSKD, CHA, KA; and Critical Review: NSKD, CHA.

Conflict of Interest

The author(s) disclosed no conflict of interest during the preparation or publication of this manuscript.

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Generative Artificial Intelligence Statement

The author(s) declare that no artificial intelligence-based tools or applications were used during the preparation process of this manuscript. The all content of the study was produced by the author(s) in accordance with scientific research methods and academic ethical principles.

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