

The Prevalence and Related Factors of Eating Disorders and Eating Attitudes Among Balikesir University Students

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ABSTRACT

Objective: Eating disorders are classified as psychiatric diseases that include deterioration in eating behaviors and attitudes and has negative effects on the physical and mental health of the individual. The main objective of the study is to elaborate the psychosocial and psychopathological factors related to eating disorders among university students.

Methods: We have enrolled 199 female and 201 male volunteer students at Balikesir University Faculty of Medicine. Participants were evaluated with a semi-structured questionnaire prepared by our institution regarding clinical experience and available information sources and according to DSM-V diagnostic criteria. Eating Attitude Scale, Ortho-15 Scale, Maudsley Obsessive Compulsive Question List, Rosenberg Self-Esteem Scale and Body Perception Scale were administered to all participants. Individuals with previously known or concomitant dementia, delirium, mental retardation, psychotic disorder diagnosis, depression with psychotic symptoms, and bipolar depression were not included in the study.

Results: The OCD sub-dimension and cleaning sub-dimension differed significantly according to the gender variable ($p < 0.05$). The body image mean scores were significantly different in terms of the psychiatric diagnosis variable ($p < 0.05$). Participants with psychiatric diagnosis had significantly higher obsessive compulsive disorder suspicion and rumination dimensions and body dissatisfaction scores. When the chronic disease variable was analyzed with the variables of eating attitudes, self-esteem, OCD symptoms and body image, it was found that the eating attitude differed significantly compared to the chronic disease variable ($p < 0.05$). In addition, ortho-cognitive ($p < 0.05$) and ortho-clinical ($p < 0.05$) mean scores were found to differ significantly. The eating attitude scores were higher in people with chronic diseases.

Conclusion: This research showed that eating attitudes changed with sociodemographic characteristics and was correlated with obsessive compulsive disorder symptoms, body image and self-esteem. In this study we found that eating attitudes of university students had a significant relationship with psychopathological and psychosocial factors; such as obsessive compulsive disorder symptoms, body image and self-esteem.

Keywords: Body Image, Self-Esteem, Obsessive Compulsive Disorder, Sociodemographics, Eating Disorders

1. INTRODUCTION

Eating disorders are classified as psychiatric diseases that include deterioration in eating behaviors and attitudes and has negative effects on the physical and mental health of the individual (1, 2). The psychopathology that lies beneath eating disorders are, especially bulimia nervosa (3) and anorexia nervosa (4) and the main problem is not over or under eating (5); excessive and unrealistic perception and exaggerated preoccupation with weight and appearance (6). The prevalence of eating disorders are increasing in young people due to the fact that eating attitudes are affected by many factors, especially in youth period (7). Gender and age take the first place amongst the factors affecting eating attitudes in the literature. The American Psychiatric Association reports that the incidence of Anorexia Nervosa (AN)

increases between the ages of 15-19 and 40% of AN cases are in this age group (7,8). The majority of bulimia nervosa (BN) cases occur in university youth, which includes late adolescence, and before the age of 25 (8). When the effect of gender is evaluated, it is seen that especially young girls attach more importance to body image and aesthetics than boys and are more prone to eating disorders (9). Other factors affecting the eating attitude are body mass index (BMI), body dissatisfaction and practicing continuous diet (10, 11).

Apart from the factors that negatively affect the eating attitude, the combination of biological (*genetic or neurochemical*), developmental, cultural, individual, psychological, familial and environmental factors paves the way for the formation of eating disorders (12, 13). Recent studies in the USA indicate

that 3% of adolescent individuals have eating disorders (8) and quite similarly 2.3% in Turkey (13). In recent studies it has been suggested that eating disorders show their first symptoms especially in childhood and adolescence and later developmental periods may increase the risk of eating psychopathology (13). In previous studies stating (14,15) eating disorders were defined as a psychopathology that is handled with more than one theoretical framework and has different risk factors (16-20).

Considering the approaches emphasizing eating behavior and eating psychopathology, it is thought that cognitive behavioral approaches provide important information both in the explanation and effective treatment of eating disorders (9). Cognitive-behavioral approaches have stated that people's attribute on excessive meaning to variables such as body image and weight and determine their own value through these two individual variables may trigger maladaptive eating behaviors (17-19).

Up to date extensive research have been conducted supporting the association of obsessive-compulsive symptoms in eating disorders and eating behavior disorders in obsessive-compulsive disorders (18,19). It is stated that the phenomenology of both disorders is similar, in both disorders there is a rigid, perfectionist structure, it is noteworthy that cognitive distortions and mental overwork are similar, and that once started, the problematic behavior cannot be stopped (20).

Previously it was published that the body image perception of people with eating disorders were similar to the symptoms of Body Dysmorphic Disorder (BDD) and those people have an over-evaluative attitude towards their body image. It is thought that OCD and eating disorders, which may have similar symptoms, may be a subject that experts have difficulty in diagnosing in clinical practice and there may be uncertainty about which condition is the trigger or whether it is seen simultaneously (21-23).

1.2. Study Hypothesis

Recent studies support that the rate of eating disorders in developing societies are as high as in western societies (24). It is noteworthy that studies on eating disorders are still scarce in Turkey.

Due to the fact that eating disorders are associated with more than one factor and the diversity of risk factors, this study was structured on the examination of eating behavior and related factors in young adult individuals and aimed to investigate the prevalence of eating attitudes and eating disorders in Balıkesir University students.

2. METHODS

This research has been conducted at Balıkesir University Faculty of Medicine between 27/09/2017 – 27/03/2018. The study has been approved by ethics committee (Date: 04/10/2017 and protocole number 2017/86). Informed

consent has been obtained from all the participants prior to questionnaires.

We have enrolled 199 female and 201 male volunteer students at Balıkesir University Faculty of Medicine. Participants were evaluated with a semi-structured questionnaire prepared by our institution regarding clinical experience and available information sources and according to DSM-V diagnostic criteria. Eating Attitude Scale, Ortho-15 Scale, Maudsley Obsessive Compulsive Question List, Rosenberg Self-Esteem Scale and Body Perception Scale were administered to all participants.

The sociodemographic data form and all other scales were filled by the participant. Individuals with previously known or concomitant dementia, delirium, mental retardation, psychotic disorder diagnosis, depression with psychotic symptoms, and bipolar depression were not included in the study.

2.1. Statistical Analysis

SPSS 20 program was used in the statistical analysis of our study. The distribution of the data was determined by using appropriate statistical methods (*Descriptive Statistics and Normality Analysis*) as well as visual graphics. Independent Sample t-Test, One-Way Analysis of Variance (ANOVA), Tukey test or Mann Whitney U test were used for pairwise comparisons of groups. In the evaluation of categorical data, cross tables were made and chi-square test was used for comparisons. In addition, intergroup linkage analysis and comparison tests were performed. $P < 0.05$ was accepted as statistical significance level, and it was studied at 95% confidence level.

The sample size has been calculated via Cochran (1977) sampling calculation method within 95% CI and 5% SE on minimum number of participants generating statistical significance (Cochran, W.G. (1977) *Sampling Techniques*. 3rd Edition, John Wiley & Sons, New York).

3. RESULTS

In order to examine the demographic variables, we have conducted a frequency analysis on their percentage distributions. The findings are given in *Table 1*. According to the initial analysis 67.8% of the participants were between the ages of 18-21 ($n=271$), 30% ($n=120$) were between the ages of 22-25 and 2.3% ($n=9$) were between the ages of 25-30. A minority of the subjects (3.3%, $n=13$) reported that they had previous psychiatric diagnosis and 96.8% ($n=387$) declared none. The rate of chronic disease was 5.3% ($n=21$). When the Body Mass Index ranges of the participants were examined, 10% ($n=40$) were underweight, 69.8% ($n=279$) were normal, 16.5% ($n=66$) were overweight, and 3.5% were obese ($n=15$).

Table 1. Frequency Distribution of Participants' Demographic Variables

Demographic Variables (N=400)		N	%
Age	18-21 age	271	67,8
	22-25 age	120	30,0
	25-30 age	9	2,3
Gender	Female	199	49,8
	Male	201	50,3
Class	1	119	29,8
	2	80	20,0
	3	59	14,8
	4	79	19,8
	5	45	11,3
	6	18	4,5
Marital Status	Single	397	99,3
	Married	3	,8
Living with	Alone	43	10,8
	With family	69	17,3
	Dormitory	209	52,3
	House Friend	79	19,8
Where she/he spent most of her life	Village/Town	22	5,5
	District/Small town	145	36,3
	City	233	58,3
Income Level	<1000 TRY	269	67,3
	1000-2000 TRY	118	29,5
	2000-3000 TRY	10	2,5
	>3000 TRY	3	,8
Psychiatric Disease	Yes	13	3,3
	No	387	96,8
Chronic Disease	Yes	21	5,3
	No	379	94,8
Alcohol	Yes	88	22,0
	No	312	78,0
Smoking	Yes	73	18,3
	No	327	81,8
BMI	Thin	40	10,0
	Normal	279	69,8
	Over weight	66	16,5
	Obese	15	3,5
	Total	400	99,8
Total		400	100,0

BMI values were calculated by the researcher in line with the participants' height and weight information.

Table 2. Eating Attitudes and Correlation Analysis of Related Factors

1	2	3	4	5	6	7	8	9	10	11			
Maudsley Control Sub-dimension	1												
Maudsley Cleaning	0.400**	1											
Maudsley slowness	0.652**	0.369**	1										
Maudsley doubt	0.555**	0.334**	0.500**	1									
Maudsley rumination	0.644**	0.325**	0.662**	0.512**	1								
Eating Habit	0.250**	0.257**	0.272**	0.197**	0.274**	1							
Orto-15 Cognitive	0.100*	0.204**	-0.088	0.123*	0.135**	0.251**	1						
Orto-15 Clinic	0.249**	0.140**	0.241**	0.193**	0.360**	0.413**	0.408**	1					
Orto-15 Emotional	0.173**	0.302**	0.156**	-0.212**	0.232**	0.268**	0.621**	0.414**	1				
Self Respect	0.174**	0.153**	0.189**	0.112*	0.249**	0.221**	0.049	0.159**	0.012	1			
Body Perception	0.090	0.141**	0.089	0.133**	0.261**	0.096	-0.072	0.187**	0.084	0.151**	1		

** $p < 0,01$

* $p < 0,05$

The numbers given in the column define the scale in the row.

When the gender variable was examined with the variables of eating attitudes, self-esteem, OCD symptoms and body image, it was found that the OCD sub-dimension and cleaning sub-dimension differed significantly according to the gender variable ($p < 0.05$). The cleanliness sub-dimension was found to be higher in women than in men. In addition, cognitive dimension ($p < 0.05$), clinical dimension ($p < 0.05$) and emotional dimension ($p < 0.05$), which were the sub-dimensions of ORTO-15 applied to the participants in order to measure their eating attitudes ($p < 0.05$) differed significantly. It was found that the mean scores of orthorexia in terms of sub-dimensions were significantly higher than the mean scores of women (Table 2).

During the analysis of the psychiatric diagnosis variable with eating attitudes, self-esteem, OCD symptoms and body image variables, the OCD sub-dimensions of doubt ($p < 0.05$) and rumination ($p < 0.05$) were used for psychiatric diagnosis. The body image mean scores were significantly different in terms of the psychiatric diagnosis variable ($p < 0.05$). Participants with psychiatric diagnosis had significantly higher OCD suspicion and rumination dimensions and body dissatisfaction scores.

When the chronic disease variable was analyzed with the variables of eating attitudes, self-esteem, OCD symptoms and body image, it was found that the eating attitude differed significantly compared to the chronic disease variable ($p < 0.05$). In addition, ortho-cognitive ($p < 0.05$) and ortho-clinical ($p < 0.05$) mean scores were found to differ significantly. The eating attitude scores were higher in people with chronic diseases.

In Table 3, the first model, mean scores of EAT-40 ($\beta = .257$) and ORTO-15 ($\beta = -.224$) were found to significantly predict Maudsley total scores. It was observed that the participants' EAT-40 scores ($t = 5.198$; $p < 0.05$) were significant at the rate of 15% and the ORTO-15 score explained 15% of the Maudsley total scores. In the second model, Self-Esteem and Body Perception mean scores were included in addition to the YTT-40 and ORTO-15 score averages, and the significance level of the explanatory relationship of eating attitudes in the model was examined. In line with the results, it was determined that 19% of the participants explained the Maudsley total score when the self-esteem and body image variables of the YTT-40 and ORTO-15 mean scores were included.

Table 3. Linear Regression Analysis of Eating Attitude, Self-Esteem, Body Image and OCD Symptoms

Predictors	Predicted	B	β	R	R ²	Adjusted R ²	t	p	
1	(Constant)	19.75					8.465	0	
	Eating Behaviour	Maudsley Total	0.178	0.257	0.398	0.159	0.154	5.198	0*
	Orto-15		-0.231	-0.224				-4.519	0*
2	(Constant)	11.890					4.361	0	
	Eating Behaviour	Maudsley Total	0.147	0.213	0.453	0.206	0.198	4.293	0*
	Orto-15		0.224	-0.217				-4.455	0*
	Rosenberg		0.350	0.155				3.322	0.001*
	Body Perception		0.037	0.137				3.002	0.003*

P<0,05 associated variable: OCD

4. DISCUSSION

In this study, we have aimed to analyze the eating attitudes and related factors in university students. The findings obtained in the study could be elaborated as the distribution of sociodemographic variables, and secondly, examining the clinical variables such as eating attitude, obsessive-compulsive symptoms, self-esteem and body image. The age distribution was found to be in the range of 18-25. It has been reported that the participants mostly stayed in dormitories because they were university students. The participants stated that they mostly live in districts and metropolitan cities. The rate of participants with psychiatric and chronic diseases was lower than those without. When the distribution of the Body Mass Index (*BMI*) variable, which is important in terms of the research subject, is examined in line with the classification, it was seen that the participants have the highest rate of being normal weight and second group was overweight.

The Maudsley sub-dimensions were found to be positively associated with eating attitude. This shows that OCD symptoms were high and eating psychopathology increased in the same direction. Another study conducted by Herrera Giménez (14) suggested that bulimia nervosa cases may be at risk of emotional eating attacks due to excessive emphasis on body image and weight. In a study conducted by Hovardaoğlu (15), body image was examined in schizophrenic and depressive patients. Accordingly, it was thought that body image could be an important factor in the clinical sample.

On the other hand, in another study conducted by Brechan and Kvaem (16), it was concluded that depressive symptoms and body dissatisfaction were associated with disordered eating behavior. In another study conducted by Shafran, Fairburn, Robinson, and Lask (17), it was stated that the need for self-control or avoidance of people regarding body image is associated with health eating behavior. It was suggested by Reas and colleagues (18) that avoidance behavior is frequently observed in overweight individuals as a result of the importance they attach to body image, and emotional eating behavior can be observed as a result of the emotional load caused by this situation. In a national study conducted by Hudson et al. (20), it was concluded that the prevalence of eating disorders was significantly associated with body image dissatisfaction.

It was observed that Maudsley OCD sub-dimensions were negatively related to orthorexia sub-dimensions. This showed that there was an inverse linear relationship between the psychopathological course of healthy living and nutritional behavior and obsessive-compulsive disorder. In addition, it was thought that healthy living and nutritional behaviors did not have high scores on the basis of averages and this was due to the fact that this situation cannot be evaluated from a psychopathological point of view. It was found that the Maudsley slowness and rumination sub-dimensions were positively related to body image, and the participants who reported obsessive-compulsive behavior in these sub-dimensions had high body image scores. As stated by Shafran et al. (17) and Reas et al. (18), it can be thought that body-checking behavior may progress at a psychopathological level, and because this condition progresses in an obsessive-compulsive state, a situation that can be associated with OCD may occur for individuals (25-30). In this direction, it was seen that the findings obtained in the study were consistent with other studies in the literature. In addition, the high mean scores of the Rosenberg Self-Esteem Scale, which states that high scores lead to low self-esteem, and Maudsley OCD sub-dimensions were positively related, and low self-esteem and OCD symptoms were high. Low self-esteem was also found to be associated with eating attitude, and high scores indicating inconsistency of eating attitudes and high self-esteem scores were linear.

In line with the results obtained, it was determined that the maladaptive and psychopathological course of the eating attitude explained the OCD level. In the other step of the analysis, the level of explanation of the OCD total score by the research variables in the explanatory relationship of body image and self-esteem was examined, and it was found that the explanatory power of eating attitudes increased significantly with the inclusion of body image and self-esteem. In this direction, it has been determined that body dissatisfaction and low self-esteem of individuals have a mediating function in the relationship between eating attitude and OCD symptoms. It was seen that the findings are similar to the research results in the literature in the field of eating psychopathology. As stated by Castellini et al. (31), body image and low self-esteem are common among the consequences of eating disorders. Adams et al. (32), published that discomfort due to body image was associated with individuals' self-esteem. Low self-esteem

was observed in individuals who were dissatisfied with their appearance or who are worried about it. Wichstrøm and von Soest (33), on the other hand, argued that this situation has a two-way relationship and each of them has factors that can affect each other. In their prospective study, it was concluded that the relationship between adolescents' self-esteem and body dissatisfaction was mutual. On the other hand, Ward and Hay (34) suggested that body dissatisfaction may accompany depressive symptoms and dysfunctional coping methods in depression, coping and body dissatisfaction, and this may be related to low self-esteem. In our country, Öyekçin (35) stated that in the etiological evaluation of eating disorders, self-esteem and, accordingly, body image, which is shaped by the way a person evaluates himself or herself, may be an important factor in the emergence of eating disorders (35, 36).

Limitations of the Study

One of the limitations of the research is that it was carried out only on students studying at a university in Balıkesir. Therefore, the generalizability level of these results to the whole of Turkey or to a wider region is low. The fact that the questionnaire forms distributed in this study were not in digital media and were applied in print both increased the financial burden and limited the number of people reached. The questionnaire to be prepared in the digital environment will make it easier to reach a large number of university students and reduce the financial burden.

5. CONCLUSION

This research showed that eating attitudes changed with sociodemographic characteristics and was correlated with obsessive compulsive disorder symptoms, body image and self-esteem. In this study we found that eating attitudes of university students had a significant relationship with psychopathological and psychosocial factors; such as obsessive compulsive disorder symptoms, body image and self-esteem. The increase in scores of eating attitude and OCD symptoms were associated with image dissatisfaction and low self-esteem. Regarding the demographics of study population, one can say that Balıkesir University Faculty of Medicine students' outcomes were consistent with other studies.

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