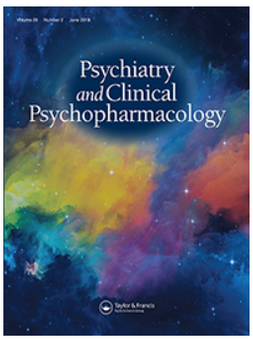

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Hatice Altun

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Association of eating attitude with anxiety and depression levels in children and adolescents with obsessive–compulsive disorder

Hatice Altun

Department of child and adolescent psychiatry, Faculty of medicine, Kahramanamaras Sutcu Imam University, Kahramanmaras, Turkey

ABSTRACT

OBJECTIVE: The aim of the present study was to determine eating attitude in children and adolescents with obsessive–compulsive disorder (OCD) and the relationship between eating attitudes and anxiety and depression levels.

METHODS: The sample comprised 40 patients (mean age: 14.02 ± 1.84 years), who met DSM-V criteria for OCD and age- and sex-matched 40 healthy controls (mean age: 14.15 ± 2.05 years). The assessment consisted of the Maudsley Obsessive–Compulsive Inventory (MOCI), Eating Attitudes Test (EAT), Children's Depression Inventory, and State–Trait Anxiety Inventory (STAI). The body mass index (BMI) was calculated as kilograms per metre squared.

RESULTS: There was no statistically significant difference between the two groups in terms of age, sex, and BMI ($p > .05$). Although the EAT score was higher in the patient group compared to the control group, there was no significant difference between the two groups. Of 40 children with OCD, 6 (15%) had a score above the EAT cut-off value of 30 suggesting a disordered eating attitude, whereas this rate was 0% in healthy controls. The anxiety and depression levels and obsessive–compulsive symptoms were significantly higher in the OCD patient group than in the control group ($p < .001$). EAT scores had a significant positive correlation with the depression scores and MOCI checking, cleaning, doubting, and total subscales' scores in OCD patients. Depression levels and obsessive–compulsive symptoms except MOCI slowness and rumination subscales predicted higher scores of EAT according to the linear regression analyses.

CONCLUSIONS: The current study showed that depression levels and obsessive–compulsive symptoms including MOCI checking, cleaning, doubting, and total subscales were the predictors of eating attitude and behaviour in children and adolescents with OCD.

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Obsessive–compulsive disorder; eating attitude; depression; anxiety; children; adolescent

Introduction

Obsessive–compulsive disorder (OCD) is a debilitating and persistent psychiatric disorder characterized by obsessions (recurrent and persistent thoughts, intrusive ideas, urges, or images) and/or compulsions (repetitive behaviours intended to reduce distress) [1]. Epidemiological and population-based studies indicated that the prevalence of OCD in children and adolescents was between 1% and 4% with the mean of 2% [2,3]. It is very important to diagnose OCD in children and adolescents and related comorbidities and risk factors early, since it results in a significant deterioration in functionality, shows a chronic progression, and has a common comorbidity with many psychiatric disorders such as mood and eating disorders (EDs) [2,4–6]. Similar to OCD, EDs also affect many aspects of the lifes of the children and adolescents. EDs are life-threatening chronic diseases which can occur frequently during adolescence, which have high morbidity and mortality rates. ED is primarily a disorder characterized by deterioration in eating attitudes and behaviours and accompanied by extreme preoccupation with foods and intense concerns about body weight [1,7]. Although the prevalence of EDs during early adolescence (10–14 years) is very low, available knowledge suggests that ED and ED syndromes are exacerbated during early adolescence [8,9]. The age range of 15–17 years in which the lifestyles of adolescents begin to take shape is considered to be the time period during which eating habits, like many habits, begin to form. Over the course of this process, there are many factors including psychiatric conditions such as OCD affecting the eating habits of adolescents [7–10].

It is known that there are common points between ED and OCD in terms of etiological, biological, clinical, and therapeutic approach. Clinically, the fears about weight gain, repetitive and persistent preoccupation with food, body image, and losing weight pathways as well as eating vast amounts of food with an irresistible desire and making an effort to vomit afterwards, over-exercising, and ritualized eating attitudes of patients with anorexia and bulimia are likened to unblocked thoughts and repetitive/ritualistic behaviours as those of patients with OCD. In addition to clinical similarities between OCD and ED, there are some similar biological characteristics in the serotonergic system [11–13].

CONTACT Hatice Altun drhaticealtun@gmail.com

ED is known to be associated with OCD, and one-third of adult patients with anorexia nervosa (AN) and bulimia nervosa (BN) have lifelong OCD diagnosis [14–16]. Although obsessive–compulsive characteristics are seen in patients with ED, disordered eating attitudes can also occur in patients with OCD. OCD is known to have psychopathological features in terms of ED development. The research conducted to identify ED-predictive factors in non-clinical samples and patients with ED indicates that obsessive–compulsive features are one of the important factors predicting disordered eating behaviour [5,13,17–19].

The majority of these studies examining the relationship between OCD and ED were conducted on adult patients. There are a limited number of studies on children and adolescents.

It is especially important to identify eating attitude and behaviours, the clinical aspects and risk factors regarding eating attitudes in children diagnosed with OCD, since EDs and OCDs commonly accompany each other and many other pschyciatric disorders, emerge at a young age, and have chronical progression. Therefore, the present study aimed to identify the eating attitudes in children and adolescents with OCD and to determine the relationship of eating attitudes with anxiety and depression levels.

Methods

A cross-sectional study with a descriptive and comparative design was carried out. To detect moderate significant correlation ($r = 0.50$) between Eating Attitude Test (EAT) and depression scales minimum sample size was determined as 37 for each group ($\alpha = 0.05$, $1–\beta = 0.90$). Gpower 3.1.9 package was used for sample size estimation. The medical records of 132 patients who were diagnosed with OCD in the outpatient clinic of the Child and Adolescent Psychiatry Department at the study centre between January 2015 and September 2017 were screened. Patients who may be eligible for this study were called by telephone. The patients and parents were informed about the study. A psychiatric interview of the patients who agreed to the study was conducted by a child and adolescent psychiatrist. Forty patients with OCD (11–17 years) who met the inclusion criteria were included in the study. Forty healthy children matched for age and gender were included in the study as the control group. Diagnosis of OCD was determined according to the diagnostic criteria of DSM-V. The exclusion criteria included comorbid mental retardation, the presence of ASD and other psychiatric disorders according to DSM-V, and the presence of a comorbid chronic endocrine, metabolic, neurological, gastroenterological disease, any current medication use, and substance use.

The control group was formed of healthy children of healthcare personnel at the hospital where the study was conducted or of patients presenting at the hospital for routine health examinations. The families were given information about the study and children who were willing to participate and were age- and gender-matched to the study group were included. A psychiatric examination according to DSM-V of the control group subjects was conducted. Children were excluded from the control group if they had any psychiatric disorders, chronic medical disease, any medication, or substance use. The sociodemographic data of the patients and control cases included in the study were recorded. Their body mass indexes (BMIs) were calculated by measuring their heights and weights. The Maudsley Obsessive–Compulsive Inventory (MOCI) for assessing obsessive–compulsive symptoms, EAT for assessing eating attitude and behaviour, Children's Depression Inventory (CDI) for measuring depression levels, and State–Trait Anxiety Inventory (STAI) for measuring anxiety levels were applied to all participants. The study was approved by the scientific research ethical committee of Sutcu Imam University, Medical Faculty, Kahramanmaras, Turkey (No:07, Date: November 8, 2017). Written consents were obtained from all subjects and the parents.

Instruments/assessment

Body mass index

For children and adolescents, BMI is age and sex specific and is often referred to as BMI-for-age. After BMI is calculated for children and adolescents, it is expressed as a percentile which can be obtained from either a graph or a percentile calculator. The BMI was calculated in kilograms per metre squared (weight/height^2), according to weights and heights of the participants. The percentile values of the BMI range were classified as underweight (≤5th percentile), normal weight (5th to 85th percentile), overweight (85th to <95th percentile), and obese (>95th percentile).

Maudsley obsessive–compulsive inventory

This scale developed by Hodgson and Rachman [20] in 1977 seeking to investigate the severity and type of O–C symptoms. The original version of the scale, which was adapted into Turkish by Erol and Savasir [21], contains 30 items and 4 subscales (cleaning, checking, slowness, doubting). Seven items were added to the Turkish-language version, which also included all subscales of the original scale, and these seven items constitute an extra subdimension of "rumination." This handicap, which was regarded by some authors as a deficiency of the original version, was introduced in the Turkish-language version. Every item in the scale had to be answered as "true/false." Potential scores of

the scale range between 0 and 37, and higher scores indicate more pronounced O–C symptoms. The levels of O–C symptom subtypes were determined by this scale in the present study.

Eating attitude test

The test–retest reliability of the validity and reliability study was developed by Garner and Garfinkel in 1979 [22] and adapted to Turkish by Savasir and Erol in 1989. EAT is the most widely used self-report scale aimed at evaluating the AN symptoms objectively and measuring behaviours and attitudes related to eating. The scale consists of 40 items and the items are marked on a 6-point Likert-type scale with the answers varying between always and never. The total score of the scale is obtained by adding the scores given to all the questions, and a higher score indicates a deterioration in eating attitudes. The recommended cut-off is 30, and scores higher than 30 are frequently associated with disordered eating attitudes and behaviour [23].

Children's depression inventory

It was developed by Kovasc [24] in 1980 to measure depression levels in children. The scale contains 3 choices and 27 items and can be used in patients in the age range of 6–17 years. The cut-off point is 19, and the highest possible score is 54. The total score shows the severity of depression. The adaptation to our country was made by Oy in 1991 [25].

State–Trait Anxiety Inventory

It was developed by Spielberger [26] in 1973, and its validity and safety studies for Turkish language were conducted by Oner in 1995 [27]. It consists of two scales, namely State Anxiety and Trait Anxiety, both of which are Likert type and consist of 20 items scored between 1 and 4. The State Anxiety Inventory demonstrates the feelings of a person under certain conditions at any given moment. STAI determines the feelings of the person regardless of the condition and circumstances. Scoring changes between 20 and 80 for both scales, and higher scores indicate higher levels of anxiety.

Statistical analysis

All data obtained in the study were assessed using the 22.0 version of the SPSS statistical program. To select appropriate statistical method for groups, normality of the data was checked by the Shaphiro wilk test. The Mann–Whitney *U* test was used to compare non-parametric data. The chi-square test was used for the sociodemographic data of the patient and control groups, *t*-test was used for the comparison of scale results, height, weight, and BMI for independent variables, Pearson correlation test was used to calculate the correlations of the scale results obtained with each other. Univariate linear regression analysis was performed to estimate beta coefficients to predict eating attitude and behaviour. A *p*-value of less than .05 was considered statistically significant.

Results

The mean age of OCD patients was 14.02 ± 1.84 years while that of the control group was 14.15 ± 2.05 ($p = .776$). There was no statistically significant difference in terms of age, gender, and other sociodemographic characteristics except maternal psychiatric disorder (Table 1). The rate of maternal psychiatric disorder was statistically higher in the mothers of the OCD patients than the control group's mothers ($p = .003$). There was no significant difference in terms of age, gender, and other scale scores in OCD patients with and without maternal psychiatric disease ($p > .05$ for all). The mean BMIs of the patients and control subjects were 20.56 ± 3.71 kg/m^2 and 19.82 ± 3.45 kg/m^2, respectively. Of the cases with OCD, 12 (30%) were underweight (≤5th percentile), 23 (57.5%) were normal weight (5th to 85th percentile), 5 (12.5%) were overweight (85th to <95th percentile) whereas none of them was obese (>95th percentile); in other words, none had a BMI of 30 or higher. Of the control subjects, 10 (25%) were underweight (≤5th percentile), 28 (70%) were normal weight (5th to 85th percentile), 5 (5%) were overweight (85th to <95th percentile), and none of them was obese (>95th percentile); in other words, none had a BMI of 30 or higher. There was no statistically

Table 1. Demographic and clinical data of OCD and control groups.

	OCD group ($n = 40$)	Controls group ($n = 40$)	*p*
Age (years)	14.02 ± 1.84	14.15 ± 2.05	.776
Gender (male/female)	21/19	23/17	.653
Education (years)	8.13 ± 2.31	8.92 ± 2.04	.105
Maternal age (mean ± SD)	39.85 ± 5.00	40.77 ± 4.62	.393
Paternal age (mean ± SD)	44.60 ± 5.50	44.50 ± 5.28	.934
Maternal psychiatric disorder (*n*/%)			.003
Yes	12 (30%)	2 (5%)	
No	28 (70%)	38 (95%)	
Paternal psychiatric disorder (*n*/%)			.556
Yes	2 (5%)	1 (2.5%)	
No	38 (95%)	39 (97.5%)	
BMI (mean ± SD)	20.56 ± 3.71	19.82 ± 3.45	.359
BMI percentile range			.376
Underweight (≤5th percentile) (*n*/%)	12 (30.0%)	10 (25.0%)	
Normal weight (5th to 85th percentile) (*n*/%)	23 (57.5%)	28 (70.0%)	
Over weight (86th to <95th percentile) (*n*/%)	5 (12.5%)	5 (5.0%)	

Notes: BMI: body mass index; OCD: obsessive–compulsive disorder. $p < .05$: statistical significance.

Table 2. The EAT, CDI, STAI-S, STAI-T scores, and MOCI subscales' scores of the patient and control groups.

	OCD group ($n = 40$)	Control group ($n = 40$)	p
EAT scores (mean ± SD)	17.65 ± 10.53	15.30 ± 7.33	.251
EAT cut-off scores (n/%)			.011
30 > EAT	6 (15%)	0 (0%)	
<30 EAT	34 (85%)	40 (100%)	
CDI (mean ± sd)	13.70 ± 8.86[a]	7.95 ± 4.43	.001
CDI cut-off scores (n/%)			<.001
19 above	12 (30%)	0 (0%)	
19 under	28 (70%)	40 (100%)	
STAI-S (mean ± sd)	42.47 ± 11.27[a]	35.00 ± 7.61	.001
STAI-T (mean ± SD)	53.35 ± 8.68[a]	39.07 ± 9.03	<.001
MOCI checking (mean ± SD)	4.92 ± 2.29[a]	2.40 ± 1.93	<.001
MOCI cleaning (mean ± SD)	6.27 ± 2.48[a]	3.92 ± 2.26	<.001
MOCI slowness (mean ± SD)	3.70 ± 1.48[a]	1.80 ± 1.47	<.001
MOCI doubting (mean ± SD)	3.85 ± 2.03[a]	2.75 ± 1.58	.009
MOCI rumination (mean ± SD)	5.15 ± 2.31[a]	2.65 ± 1.87	<.001
MOCI total (mean ± SD)	23.90 ± 8.41[a]	13.52 ± 6.81	<.001

Notes: EAT: Eating Attitude Test; CDI: Children's Depression Inventory; MOCI: Maudsley Obsessive–Compulsive Inventory; OCD: Obsessive–Compulsive Disorder; STAI-S: State Anxiety Inventory; STAI-T: Trait Anxiety Inventory. $p < .05$: statistical significance.
[a]Higher than those of controls.

significant difference between the two groups in terms of BMI and BMI percentile range scores ($p = .359$, $p = .376$, respectively) (Table 1).

The mean EAT scores of the OCD and control groups were 17.65 ± 10.53 and 15.30 ± 7.33, respectively. There was no statistically significant difference between the two groups in terms of EAT scores ($p = .251$). Of 40 children with OCD, 6 (15%) had a score above the EAT cut-off value of 30 suggesting disordered eating attitude, while 34 (85%) scored below the EAT cut-off value of 30. All of the control group (100%) had an EAT score <30. There was a statistically significant difference among groups in terms of EAT cut-off scores ($p = .011$) (Table 2).

In respect to above and under the EAT cut-off value of 30 in patients with OCD, there was no significant difference according to gender, age, maternal psychopathology, BMI, STAI-S, and STAI-T scores ($p > .05$ for all), while depression levels and the MOCI checking, cleaning, doubting, andtotal subscales were found significantly higher in the OCD patients in above the EAT cut-off value of 30 ($p < .05$ for all).

Also, the depression and anxiety levels and obsessive–compulsive symptoms were significantly higher in the OCD patient group than in the control group ($p < .001$) (Table 2). In respect to gender, no significant difference was found between males and females in the patient and control groups in terms of EAT, depression, anxiety levels, and obsessive–compulsive symptoms ($p > .05$ for all).

According to the Pearson correlation analysis, EAT scores in OCD patients had a significant and positive correlation with the depression scores ($r = 0.511$, $p = .001$). Significant and positive correlations were noted among the EAT and MOCI checking ($r = 0.466$, $p = .002$), cleaning ($r = 0.482$, $p = .002$), doubting ($r = 0.436$, $p = .005$), and total subscale scores ($r = 0.470$, $p = .002$) of the OCD patients. The correlation analysis of patient and control groups are shown in Table 3.

According to the linear regression analysis, there was a significant relationship between CDI score, obsessive–compulsive symptoms, and eating attitude. In the patient group, a one unit increase in CDI score resulted in an increase of 0.59 units in the EAT scale, while CDI scores were found to have no effect on eating attitude in the control group. In addition, there was a significant effect of the MOCI checking, cleaning, doubting, and total subscales on eating attitude in OCD patients. However, there was no significant effect of STAI-T and STAI-S scores on eating attitude (Table 4).

Discussion

This current study, in which the relationship of eating attitude with anxiety and depression level in children and adolescents with OCD was determined, revealed that obsessive–compulsive symptoms, depression, and state–trait anxiety levels were significantly higher in the patients with OCD compared to the control group. Although the EAT score was high in children with OCD, no significant difference was found between the two groups. However, the EAT level above 30 was found to be significantly higher than the control group. A significant relationship of eating attitude with depression scale and MOCI checking, cleaning, doubting, and total subscales was detected in OCD patients. While the likelihood of higher EAT score was found to increase with increasing depression scores, it was observed that anxiety levels had no effect on eating attitude.

The evidence for a relationship between OCD and ED can be found in the epidemiological and clinical

Table 3. Correlations between clinical variables and EAT scores in the OCD group and control group.

	Age	BMI	CDI	STAI-S	STAI-T	MOCI checking	MOCI cleaning	MOCI slowness	MOCI doubting	MOCI rumination	MOCI total
EAT scores OCD											
r	0.007	−0.182	**0.511**	0.044	0.219	**0.466**	**0.482**	0.180	**0.436**	0.232	**0.470**
p	.964	.261	**.001**	.785	.175	**.002**	**.002**	.266	**.005**	.149	**.002**
Controls											
r	**−0.361**	−0.227	−0.100	0.133	0.046	**0.433**	**0.397**	0.139	0.301	**0.392**	**0.463**
p	**.022**	.157	.538	.413	.776	**.005**	**.011**	.393	.060	**.012**	**.003**

Notes: BMI: body mass index; CDI: Children's Depression Inventory; EAT: Eating Attitude Test; MOCI: Maudsley Obsessive–Compulsive Inventory; OCD: Obsessive–Compulsive Disorder; STAI-S: State Anxiety Inventory, STAI-T: Trait Anxiety Inventory. $p < .05$: statistical significance. Bold values show a statistically significant correlation.

Table 4. Effects of CDI, STAI-T, STAI-S, and MOCI subscales on EAT scores in OCD patients.

	Unstandardized coefficients		
	B	Std. Error	*p*
CDI	0.588	0.161	.001
STAI-S	0.040	0.147	.785
STAI-T	0.257	0.186	.175
MOCI checking	2.075	0.640	.002
MOCI cleaning	1.983	0.585	.002
MOCI slowness	1.236	1.095	.226
MOCI doubting	2.191	0.733	.005
MOCI rumination	1.024	0.696	.149
MOCI total	0.571	0.174	.002

Notes: Univariate linear regression analysis; CDI: Children's Depression Inventory; EAT: Eating Attitude Test; MOCI: Maudsley Obsessive–Compulsive Inventory; OCD: Obsessive–Compulsive Disorder; STAI-S: State Anxiety Inventory; STAI-T: Trait Anxiety Inventory. $p < .05$: statistical significance.

data on comorbidity: the rate of OCD in patients with ED varies between 3.3% and 41% [5,16,28,29], whereas the prevalence of ED ranges between 11% and 16.7% in patients with OCD [5,30,31]. Many studies conducted on ED and OCD comorbidity specified that OCD starts much earlier than the diagnosis of ED [31,32]. In a study on adults diagnosed with OCD, the EAT scores were found to be significantly higher compared to healthy controls [33]. In this study, although the EAT score was higher in the patient group compared to the control group, there was no significant difference between the two groups. This condition might be associated with the lower age range of the patient group, cultural characteristics, and the low number of the sample. However, the disordered eating attitude (EAT > 30) was found to be significantly higher in the children with OCD (15%) and depression levels and obsessive–compulsive symptoms were found significantly higher in the OCD patients with disordered eating attitude compared to without disordered eating attitude. It was observed in a study on nursing students that there was a relationship between eating attitude and obsessive–compulsive symptoms and that as the eating behaviour was impaired, the level of obsessive–compulsive symptoms increased. According to the EAT, 5.6% of students had ED, and checking, slowness, and rumination subscales of obsessive–compulsive symptoms were reported to be associated with eating attitude [19]. There are also studies indicating the association of contamination, cleaning, washing, and organizing subscales with eating attitude [13,18,34,35]. A relationship of the MOCI checking, cleaning, doubting, and total subscales with EAT scores was also identified in the patient group with OCD of this study. An increase was noted in this scale scores in disordered eating attitude.

There are significant gender differences in the lifetime prevalence of AN and BN among the patients with OCD with marked female overrepresentation [4]. The present study showed boys and girls with OCD had no significant EAT, depressions, and anxiety scores. Similar to this study, another study in which EAT was assessed in adult patients with OCD found that there was no relationship among EAT, depression, and anxiety scores in terms of gender [33].

In addition, in this study, although maternal psychiatric disease was significantly higher in mothers of OCD children than in the control group, there was no difference between maternal psychiatric disease and clinical variables and scale scores in the patient group. This may be related to the inadequate number of samples.

The most frequent comorbid diagnoses among adolescents and adult patients with ED were mood disorders followed by anxiety disorders, OCD, and substance use disorders [36–38]. Higher depression symptoms were shown to predict the future onset of other pathologies, including eating pathology [39,40]. A majority of previous studies focused on the relationship of body image, self-esteem, anxiety, and depression level with eating attitudes. These studies reported that eating attitudes had an association with increased anxiety and depression levels and low-self-esteem, body dissatisfaction [13,34,41–45]. The results of a study suggested that depressive symptoms might have been an important step in predicting disordered eating behaviours in adolescents with low-self-esteem [38]. In another study, a positive significant association was found between depression level and eating attitudes of the students, and depression symptoms predicted higher scores of EAT according to the multiple regression analyses [44]. The present study found a positive significant association between depression level and eating attitudes of the adolescents with OCD, and depression symptoms predicted higher scores of EAT according to the linear regression analyses. These results support the conclusion that depression is a significant risk factor for disordered eating attitudes [13,43–46].

Clinical and epidemiological studies consistently showed that the majority of patients with ED experienced one or more anxiety disorders. The onsets of OCD, social phobia, specific phobia, and generalized anxiety disorder were demonstrated to precede the onset of ED most commonly. The presence of anxiety disorders may be a risk factor for the development of ED. Therefore, the early diagnosis and treatment of anxiety disorders emerging during childhood–adolescence may prevent the development of ED. The coexistence of EDs with anxiety disorders affects the treatment and prognosis of the disorder negatively [16,42,47]. Similarly, both state and trait anxiety levels were also found to be significantly higher in the patients compared to the control subjects in this study. Studies revealed that there was a significant relationship among eating attitude and anxiety and phobic anxiety symptom levels [33,34,48]. However, in this study, no association was detected between EAT and anxiety levels in the patients with OCD according to the correlation analysis as well as linear regression analysis.

The main limitation of the present study was its cross-sectional design. The study was administered to a small sample size. Therefore, its results cannot be generalized to all OCD patients. One of the other limitations was that the cases were not evaluated by a semi-structured psychiatric interview such as the Schedule for Affective Disorders and Schizophrenia for School Aged Children, Present and Lifetime Version (K-SADS-PL). Another limitation was that the study was conducted with the measuring tools based on the self-reports of the groups. In addition, EAT, used in this study, primarily includes the items related to AN and is insufficient to form a diagnosis of ED. However, EAT is commonly used to show possible disordered eating attitude. ED is diagnosed after an interview conducted by a child and adolescent psychiatrist. Nevertheless, to our knowledge, this was the first report on the relationship of anxiety and depressıon levels with eating attitude and eating attitude in children and adolescents with OCD, which, we believe, will form a basis for further prospective, large-scale studies on ED of patients with OCD.

Conclusions

The current study indicates that depression levels and obsessive–compulsive symptoms including MOCI checking, cleaning, doubting, and total subscales were the predictors of eating attitude and behaviour in adolescents with OCD. Therefore, the increased level of depression is especially important for patients with OCD. Disordered eating attitude might begin as mild and transient changes in eating patterns and unfortunately can become more severe over time and lead to an actual ED. Due to the more common occurrence of ED in adolescents and its potential of resulting in serious physical and psychological outcomes, it is an important public health problem. It is of significance for health professionals to have knowledge about the relation between these two disorders, since especially patients with OCD often have a coexistence of disordered eating attitude. The routine screening and early recognition of ED in OCD patients is also important for the early development of appropriate treatment programs in terms of the prognosis and treatment of both diseases.

Disclosure statement

No potential conflict of interest was reported by the author.

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