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Are trauma and dissociation related to treatment resistance in patients with obsessive–compulsive disorder?

Umit B. Semiz · Leman Inanc · Cigdem H. Bezgin

Abstract

Objective Previous research has indicated a relation between obsessive–compulsive disorder (OCD), childhood traumatic experiences and higher levels of dissociation that appears to relate to negative treatment outcome for OCD. The aim of the present study is to investigate whether childhood trauma and dissociation are related to severity of OCD in adulthood. We also intend to examine the association between treatment resistance, dissociation, and each form of trauma.

Methods Participants included 120 individuals diagnosed with OCD; 58 (48.3 %) of them met the criteria for treatment-resistant OCD (resistant group), whereas the other 62 (51.7 %) were labeled as responder group. The intensity of obsessions and compulsions was evaluated using Yale-brown obsessive–compulsive scale (Y-BOCS). All patients were assessed with the traumatic experiences checklist, dissociative experiences scale, beck depression inventory, and beck anxiety inventory.

Results Controlling for clinical variables, resistant group had significantly higher general OCD severity, anxiety, depression, trauma, and dissociation scores than the responders. Correlation analyses indicated that Y-BOCS scores were significantly related to severity of dissociation, anxiety, depression, and traumatic experiences. In a logistic regression analysis with treatment resistance as a dependent variable, high dissociation levels, long duration of illness, and poor insight emerged as relevant predictors, but gender, levels of anxiety, depression, and traumatic experiences did not.

Conclusions Our results suggest that dissociation may be a predictor of poorer treatment outcome in patients with OCD; therefore, a better understanding of the mechanisms that underlie this phenomenon may be useful. Future longitudinal studies are warranted to verify if this variable represents predictive factors of treatment non-response.

Keywords Obsessive–compulsive disorder ·
Treatment resistance · Childhood trauma ·
Dissociation

Introduction

The clinical presentation of obsessive–compulsive disorder (OCD) is similar across the spectrum of cultures and has varied little in its description in the literature over the past century [1]. Once believed to be rare, OCD is now estimated to affect between 2 and 3 % of the general population and is the fourth most common psychiatric illness [2].

Numerous placebo-controlled studies have demonstrated the efficacy of clomipramine and selective serotonin reuptake inhibitors (SSRIs) in the treatment of OCD. Effectiveness of treatment is often gauged by the clinician as a decrease in symptoms to a level the patient finds tolerable and at which the patient is able to function. In clinical trials, a 25 to 35 % reduction of mean Yale-brown obsessive–compulsive scale (Y-BOCS) scores considered an adequate response to a given treatment. However, as many

U. B. Semiz · L. Inanc · C. H. Bezgin
Department of Psychiatry, Istanbul Erenkoy Psychiatry and
Neurology Education and Research Hospital, Istanbul, Turkey

U. B. Semiz (✉)
Istanbul Erenkoy Ruh ve Sinir Hastaliklari Egt. ve Ars.
Hastanesi, Sinan Ercan Cad No:29 Kazasker Kadikoy,
34736 Istanbul, Turkey
e-mail: semizub@yahoo.com

as 40–60 % of patients may not respond or may have only a partial response to these medications. It is generally accepted that the failure of at least two adequate therapeutic trials of serotonin reuptake inhibitors (SRIs) constitutes treatment-resistant OCD [3].

In recent years, several studies have investigated possible clinical predictors of treatment resistance in patients with OCD. In these studies, earlier age of onset [4, 5], longer duration of illness [4, 6], poor insight [5, 7], obsessions with sexual or religious content [8], comorbid depressive disorder [5], body dysmorphic and tic disorder [6] have been reported to predict poor responses to SRI and/or behavioral treatment.

Many of the mechanisms and vulnerability factors involved in the etiology and maintenance of OCD remain unknown. One putative vulnerability factor for OCD is traumatic life events, particularly childhood traumatic experiences. Childhood trauma has been implicated in the development of OCD [9]. Epidemiological and clinical studies have reported that childhood traumatic experiences are more prevalent among patients with OCD or community subjects who reported high levels of obsessive–compulsive (OC) symptoms compared to normal subjects [10, 11]. Several studies have also documented the possible development of treatment-resistant OCD after various types of traumas [12–14].

Some reports have emphasized the possible association between OCD and dissociation. More severe OCD symptoms were evidenced in patients with a higher degree of dissociation [15]. High level of dissociation has also been found to be one of the reasons for treatment resistance in patients suffering from OCD [16].

Findings suggest an association between dissociation and environmental factors, including childhood traumatic experiences [17]. The association between childhood trauma history, dissociation, and OCD has been of particular interest. Several researches have reported previously on the relationship between traumatic and dissociative experiences in OCD [18, 19]. Lochner et al. [18] revealed that tendency to dissociation in OCD patients is relevant to childhood traumatic experiences. Despite the clinical significance of dissociation, research on its impact on treatment outcome in OCD is limited. A prospective cognitive behavior therapy (CBT) study including 52 patients with OCD indicated that a higher degree of dissociative experiences at baseline was associated with more severe OCD symptoms at post-treatment assessment, and treatment non-responders had significantly higher baseline dissociation than responders [20].

The aim of the present study is to investigate whether childhood trauma and dissociation are related to severity of OCD in adulthood. We hypothesize that there is a positive correlation between childhood trauma, dissociation and severity of OCD. We also intend to examine the association between treatment resistance, dissociation, and each form of trauma with the hypothesis that childhood trauma and dissociation would be more likely to cause a poor treatment response, and thus would be more strongly associated with treatment-resistant OCD. In addition, we want to investigate the extent to which this association reflects a direct connection, or if such connection is mediated by other factors.

Methods

Participants

The sample consisted of 120 consecutive admissions to the adult in- and outpatient clinics at a tertiary care psychiatric research and education hospital during a 12-month study period (from May 2012 through May 2013). The sample was composed of 100 outpatients and 20 inpatients. A hundred and thirty-nine OCD subjects were willing and fulfilled inclusion criteria to participate in the study. However, four patients refused to participate during data gathering and another 15 left the study because of insufficient time to administer all instruments. Thus, a total of 120 OCD subjects were involved in the trial. These subjects were followed-up for at least 1 year, some of them for years and ultimate treatment period was 10 weeks.

Participants were patients aged 18 years or over, with a primary diagnosis of OCD, as determined by the relevant section of structured clinical interview for DSM-IV (SCID-I). Exclusion criteria included active schizophrenia or psychosis, acute suicidality, substance abuse, organic brain disorder, severe mental retardation that does not permit an evaluation to characterize OCD, or OCD symptoms that occur exclusively in the context of depression. Fifty-eight (48.3 %) of these participants were labeled as "treatment-resistant OCD" (resistant group) due to failure of at least one adequate prior treatment trial (e.g., psychodynamic therapy, CBT, or at least two types of medication trials). Subjects were considered treatment-responsive OCD patients (responder group) if, after treatment with any conventional therapy (not necessarily the first trial with a SRI or CBT), they presented at least a 35 % decrease in the initial Y-BOCS score and had maintained improvement for at least 12 months. We did not pre-select for treatment-resistant participants; these were the individuals who sought treatment and, thus, represented a naturalistic sample. The study was approved by the local ethical committee. After complete description of the study to the participants, written informed consent was obtained.

Measurements

The instruments were administered by two experienced psychiatrics. Whenever possible the raters were blinded as to the treatment response status.

Demographic characteristics

Structured questions were used to determine socio-demographic characteristics.

DSM-IV diagnosis

To establish OCD diagnosis, relevant section of the structured clinical interview for DSM-IV Axis I disorders (SCID-I; [21]) was used for all patients.

OCD severity

The severity and types of OCD symptoms were assessed using the Y-BOCS [22]. The severity scale is a 10-item rater-administered measure of current severity of obsessions and compulsions with total scores ranging from 0 to 40. Each item is rated by clinician on a five-point Likert-type scale (0–4). Specific symptoms were assessed using the Y-BOCS symptom checklist (Y-BOCS-SC). To determine the insight degree of patients we also rated item 11. The Turkish version of the scale showed suitable psychometric properties and performance [23].

Traumatic life events

To assess whole childhood trauma history, the traumatic experiences checklist (TEC; [24]) was used. TEC is a 25-item measure that assesses a wide range of trauma. The first ten items assess the presence/absence of a wide variety of stresses and trauma (e.g., having to look after parents and/or siblings as a child). The last 15 items assess the presence/absence of abusive experiences. The TEC yields an overall index of number of traumas experienced and weighted composite scores of five types of abuse (i.e., emotional neglect, emotional abuse, physical abuse, sexual harassment, and sexual abuse). Three items load onto each composite scale with total scores for each determined by the relationship with the abuser, the age at which the abuse occurred, and subjective ratings of the impact of the experience. Good validity and reliability is reported with Cronbach's alpha scores of 0.86 and 0.90 and test–retest reliability of $r = 0.91$. A previous study demonstrated that the scalability, reliability, and validity of the Turkish version of this instrument were satisfactory [25].

Depression

Severity of the cognitive, affective, and somatic symptoms of depression was evaluated using the Turkish version [26] of the beck depression inventory (BDI; [27]). The BDI is a 21-item self-report inventory, which has been shown to be a reliable and valid measure of depression severity in both clinical and non-clinical populations [27]. The patients have to choose one of the four statements in accordance with their feelings during the past week. Total scores vary between 0 and 63.

Anxiety

The beck anxiety inventory (BAI; [28]) is a 21-item self-report measure, used to assess the severity of anxiety symptoms. The patients were asked to rate to which extent they have been bothered by certain anxiety symptoms during the last week, on a four-point Likert scale ranging from 0 (not at all) to 3 (severely, I could barely stand it). The total score ranges from 0 to 63. The reliability and validity of the Turkish version BAI have been demonstrated [29].

Dissociation

The participants were identified by screening all consecutively admitted patients with the Turkish version [30] of the dissociative experiences scale (DES; [31]), the most common measure of dissociation. It is a 28-item self-report scale that requires the individual to indicate on a scale ranging from 0 to 100 to what extent presented statements of dissociative experiences apply to them. The statements include experiences such as having done something without knowing when and how or finding oneself at a place without being able to recollect how one got there. Total scores are calculated by averaging the scores of the 28 items. Because dissociation does not represent a unitary construct, the DES includes amnesia, absorption, and depersonalization–derealization subscales. The DES is not designed to diagnose dissociative disorders per se and is generally used as a screening instrument. It is widely accepted as a standard measure of spontaneous dissociation in both clinical and non-clinical samples. The Turkish version of this widely used screening instrument has a reliability and validity as high as its original form.

Data analyses

Clinical data were expressed as percentages or mean values ± standard deviation. Comparisons of demographic and clinical data were made with two-tailed unpaired t tests for continuous variables and Chi-square analysis for nominal data. Pearson's correlations were performed to

determine the relationships between symptom severity of OCD and scores on the BDI, BAI, TEC, and DES. To assess the contribution of each of the selected explanatory variables to treatment-resistance status, logistic regression analysis was used. Statistical significance was set at 0.05. The data analyses were computed using SPSS, version 16.0 (SPSS, Chicago, IL, USA).

Results

The sample consisted of 120 subjects (27 males, 93 females) fulfilling diagnostic criteria for OCD by the DSM-IV, with a mean ($\pm$SD) age of 34.7 ± 9.9 years and an age range of 19–62 years. Fifty-eight (48.3 %) of these patients met the criteria for treatment-resistant OCD (resistant group), whereas the other 62 (51.7 %) were labeled as responder group. General demographic and clinical data of the patients with OCD are shown in Table 1. Responder and resistant groups were similar in terms of age, gender, and education. As indicated in Table 1, patients from the resistant group had significantly longer duration of the illness than the responders (resistant's 9.86 ± 6.98 years vs. responders 5.44 ± 4.47 years; $t = 3.88$, $p < 0.001$).

One-third of the OCD patients in our sample were found to be depressed. The most frequent OCD comorbidity was major depression (32.8 %), followed by panic disorder (22.5 %), generalized anxiety disorder (21.6 %), specific phobia (20 %), and social phobia (15 %). With respect to

the OCD spectrum disorders, two patients were diagnosed with autism, ten subjects with hypochondriasis, and twelve subjects with pathological nail biting. Five of the patients reported trichotillomania. Two patients had a tic disorder. There were two subjects with anorexia nervosa, one with eating disorder not otherwise specified. There was one subject with intermittent explosive disorder and one subject with an impulse control disorder not otherwise specified.

As expected, current severity of OC symptoms was significantly higher for treatment-resistant patients. The mean total Y-BOCS score for the resistant group was 31.32 ± 8.00, compared with 12.50 ± 5.57 for the responder group ($t = 14.85$, $p < 0.001$). The mean Y-BOCS obsession subscale score was 15.35 ± 4.02 for the resistant group and 6.16 ± 2.91 for the responders ($t = 13.82$, $p < 0.001$). The mean Y-BOCS compulsions subscale score was 15.80 ± 4.09 for the resistant group and 6.13 ± 3.18 for the responder group ($t = 13.92$, $p < 0.001$). The Y-BOCS insight score for the resistant group was 2.39 ± 1.02 and for the responder group it was 0.42 ± 0.59 ($t = 12.11$, $p < 0.001$).

Resistant group also received higher mean scores of depression and anxiety than responders: BDI = 23.39 ± 9.51 vs. 13.05 ± 7.55 for the responder group ($t = 6.34$, $p < 0.001$), and BAI = 23.00 ± 11.30 vs. 13.08 ± 10.23 for the responder group ($t = 4.82$, $p < 0.001$).

Trauma scores, as assessed by the TEC, were significantly higher for the resistant group than for the responder group in all dimensions except sexual harassment: total

Table 1 Comparison of demographic and clinical variables between respondent and resistant OCD groups

Clinical characteristics	Resistant group ($n = 58$)	Responder group ($n = 62$)	Analysis (t or χ^2)	p value
Age (years)	35.80 ± 11.31	34.10 ± 8.92	0.86	0.39
Gender (female)	46 (79.3 %)	47 (75.8 %)	0.21	0.64
Education (years)	9.56 ± 4.10	9.18 ± 3.80	0.50	0.61
Duration of illness (years)	9.86 ± 6.98	5.44 ± 4.47	3.88	**0.000**
Total Y-BOCS score	31.32 ± 8.00	12.50 ± 5.57	14.85	**0.000**
Y-BOCS obsessions	15.35 ± 4.02	6.16 ± 2.91	13.82	**0.000**
Y-BOCS compulsions	15.80 ± 4.09	6.13 ± 3.18	13.92	**0.000**
Y-BOCS insight	2.39 ± 1.02	0.42 ± 0.59	12.11	**0.000**
Beck depression inventory	23.39 ± 9.51	13.05 ± 7.55	6.34	**0.000**
Beck anxiety inventory	23.00 ± 11.30	13.08 ± 10.23	4.82	**0.000**
TEC total trauma composite score	9.80 ± 10.61	2.96 ± 5.20	4.18	**0.000**
TEC emotional neglect composite score	3.86 ± 4.20	0.94 ± 1.96	4.54	**0.000**
TEC emotional abuse composite score	3.01 ± 4.70	1.00 ± 1.89	2.87	**0.006**
TEC bodily threat total composite score	2.43 ± 3.65	0.71 ± 1.74	3.07	**0.003**
TEC sexual harassment composite score	0.54 ± 1.23	0.23 ± 0.67	1.60	0.11
TEC sexual abuse composite score	1.05 ± 1.70	0.25 ± 0.70	3.14	**0.002**
Dissociative experiences scale	29.11 ± 18.27	7.37 ± 4.97	8.23	**0.000**

Bold values indicate statistical significance ($p < 0.05$)

Y-BOCS Yale-brown obsessive–compulsive scale, *TEC* traumatic experiences checklist

Table 2 Obsessive–compulsive symptom dimensions according to the (Y-BOCS)

Y-BOCS symptom dimensions	Resistant group (n = 58) n (%)	Responder group (n = 62) n (%)	Analysis (χ^2)	p value
Y-BOCS obsessions of				
Aggression	25 (43.1 %)	25 (40.3 %)	0.09	0.75
Contamination	34 (58.6 %)	26 (41.9 %)	3.33	0.07
Sexual content	12 (20.7 %)	8 (12.9 %)	1.31	0.25
Hoarding/saving	7 (12.1 %)	14 (22.6 %)	2.29	0.13
Religiosity	25 (43.1 %)	12 (19.4 %)	7.92	**0.005**
Symmetry or exactness	17 (29.3 %)	12 (19.4 %)	1.62	0.20
Somatic content	3 (5.2 %)	2 (3.2 %)	a	0.59
Other contents	13 (22.4 %)	10 (16.1 %)	0.76	0.38
Y-BOCS compulsions of				
Cleaning/washing	34 (58.6 %)	33 (53.2 %)	0.35	0.55
Checking	24 (41.4 %)	28 (45.2 %)	0.17	0.67
Repeating	21 (36.2 %)	25 (40.3 %)	0.21	0.64
Counting	18 (31.0 %)	13 (21.0 %)	1.58	0.20
Ordering/arranging	15 (25.9 %)	11 (17.7 %)	1.16	0.28
Hoarding/collecting	3 (5.2 %)	5 (8.1 %)	a	0.52
Other contents	15 (25.9 %)	13 (21.0 %)	0.40	0.52

Bold value indicates statistical significance ($p < 0.05$)

a Fisher's exact test

Table 3 Correlations between clinical measurements and symptom dimensions of OCD in whole sample

Clinical measurements	Total Y-BOCS score	Y-BOCS obsessions	Y-BOCS compulsions
Dissociative experiences scale	0.68**	0.68**	0.66**
Beck anxiety inventory	0.44**	0.43**	0.44**
Beck depression inventory	0.50**	0.45**	0.52**
TEC total trauma	0.32**	0.31**	0.32**
TEC emotional neglect	0.46**	0.45**	0.46**
TEC emotional abuse	0.30**	0.28*	0.31**
TEC bodily threat	0.27*	0.26*	0.27*
TEC sexual harassment	0.18	0.17	0.18
TEC sexual abuse	0.30**	0.28*	0.31**

TEC traumatic experiences checklist

* Correlation is significant at the 0.01 level

** Correlation is significant at the 0.001 level

compulsions was found to be related to dissociative experiences in terms of treatment resistance. Results obtained from Pearson correlation analyses are presented in Table 3.

To explore which clinical variables lead to a greater risk for treatment resistance in patients with OCD, logistic regression equation was estimated (Table 4). Dependent variable was treatment resistant (i.e., resistant group vs. respondent group), while independent variables involved gender, duration of illness, BAI, BDI, Y-BOCS religious obsessions, Y-BOCS insight, DES, TEC total trauma, and its subscale scores. The results of this logistic regression analysis indicated that longer duration of illness, poorer insight, and higher levels of dissociative experiences were significant ($\chi^2 = 140.4$, $df = 13$, $p < 0.001$) predictors of the treatment resistance (96.6 % correct) even when other potential factors were controlled for.

Discussion

The current study investigated the potential relationship between childhood trauma, dissociation, and OCD in the context of clinical severity and treatment resistance. Our results extend the extant literature by providing evidence for a significant relationship between treatment outcome, trauma, and dissociation in a clinical OCD sample.

As expected, the findings of the current study indicate a strong relationship between childhood trauma and OCD severity. Sexual harassment was the only form of childhood trauma having no significant correlation with OCD severity. Emotional neglect, emotional abuse, bodily threat, sexual abuse, and childhood trauma in general seemed to

trauma composite score = 9.80 ± 10.61 vs. 2.96 ± 5.20 ($t = 4.18$, $p < 0.001$), emotional neglect = 3.86 ± 4.20 vs. 0.94 ± 1.96 ($t = 4.54$, $p < 0.001$), emotional abuse = 3.01 ± 4.70 vs. 1.00 ± 1.89 ($t = 2.87$, $p = 0.006$), bodily threat = 2.43 ± 3.65 vs. 0.71 ± 1.74 ($t = 3.07$, $p = 0.003$), and sexual abuse = 1.05 ± 1.70 vs. 0.25 ± 0.70 ($t = 3.14$, $p = 0.002$).

With respect to the dissociative experiences, resistant group (29.11 ± 18.27) had significantly higher scores than responder group (7.37 ± 4.97) on the DES ($t = 8.23$, $p < 0.001$) (Table 1).

A comparison of the content of obsessive–compulsive symptoms is presented in Table 2. We found a statistically significant difference between the two groups only for religious content of obsessive symptoms, which, according to the Y-BOCS symptom checklist, was exhibited more frequently in the resistant group ($p = 0.005$).

Pearson correlation analyses indicated that Y-BOCS total scores as well as obsessions and compulsions subscale scores were significantly related to severity of dissociation, anxiety, depression, traumatic experiences in general, and all specific traumas except sexual harassment. After controlling for a correlation analysis, none of obsessions and

Table 4 Logistic regression predicting treatment resistance in patients with OCD

Variables	β coefficient	S.E.	Wald	95.0 % CI for β coefficient		Exp (B)	p value
				Lower	Upper		
Gender	−3.92	2.56	2.34	0.00	3.01	0.02	0.13
Duration of illness	0.57	0.27	4.32	1.03	3.01	1.76	**0.038**
Beck anxiety inventory	−0.002	0.06	0.001	0.88	1.13	0.99	0.98
Beck depression inventory	0.18	0.13	1.75	0.92	1.55	1.19	0.19
Y-BOCS religious obsessions	6.35	3.37	3.55	0.77	4.24	572.62	0.06
Y-BOCS insight	4.01	1.72	5.46	1.91	1.60	55.35	**0.019**
Dissociative experiences scale	0.18	0.08	5.68	1.03	1.40	1.20	**0.017**
TEC total trauma	0.24	0.40	0.37	0.58	2.77	1.27	0.54
TEC emotional neglect	0.30	0.38	0.62	0.64	2.83	1.35	0.43
TEC emotional abuse	−0.85	0.79	1.17	0.09	1.99	0.43	0.28
TEC bodily threat	0.17	0.30	0.30	0.65	2.14	1.18	0.58
TEC sexual harassment	3.59	1.93	2.47	0.83	1.58	36.29	0.12
TEC sexual abuse	−1.03	0.99	1.09	0.05	2.47	0.36	0.30

Bold values indicate statistical significance ($p < 0.05$)

Y-BOCS Yale-brown obsessive–compulsive scale, *TEC* traumatic experiences checklist

be significantly associated with OCD severity. Considering different types of childhood trauma, the most significant association was found between emotional neglect and OCD severity. Despite methodological differences, this finding is consistent with earlier research which demonstrated a relation between childhood trauma and OCD in community and clinical samples [9, 32, 33]. However, the focus in earlier research was on the presence of the OCD diagnose rather than taking the severity into account.

A significant and growing body of research suggesting a role for past traumas or comorbid post-traumatic stress disorder (PTSD) in the development of OCD has also been reported to extend to associations between the severity and number of traumas experienced and the severity of OCD symptoms [34, 35] and treatment outcomes [12, 36]. Recent clinical empirical studies demonstrated that individuals seeking treatment for resistant OCD reported more severe traumatic experiences [14] and a diagnosis of comorbid PTSD in these patients led to poorer treatment outcome (i.e., no change or a worsening of symptoms) than for those without comorbid PTSD [36].

However, relations between childhood trauma and treatment resistance were indirect and mediated by several factors. After controlling for some relevant factors including gender, duration of illness, anxiety, depression, religious obsessions, insight and dissociation, childhood traumatic experiences were no longer significantly related to treatment resistance. The absence of a direct relation between trauma and treatment resistance could suggest that a history of childhood trauma is associated with a general vulnerability to develop a severely psychopathology. Dissociation, insight, and duration of illness turned out to have

a significant association with treatment resistance when taking all potential mediating factors into account. No such effects were found for severity of anxiety and depressive symptoms. The mediating role of dissociation appears to be the most important. The indirect association between childhood trauma and treatment resistance in OCD is in accordance with expectations based on previous studies. Briggs and Price [33] found that childhood trauma was related to OC symptoms indirect through the development of depression and anxiety. A more recent study [37] suggested that dissociation might primarily constitute a cognitive trait and was not necessarily associated with the experience of trauma in clinical subjects with OCD. Since a link between the proneness to dissociation in adulthood and self-reports of childhood trauma has been documented in patients with several psychiatric disorders including OCD [18], it is advisable that our patients with OCD would display increased frequency and severity of dissociative symptoms, possibly reflecting a greater frequency of past traumatic events.

Consistent with our findings, more severe OCD symptoms were proven in patients with a higher degree of dissociation [15]. This study has both a correlational design and also provides evidence for causal associations between dissociation and treatment resistance in OCD. Our results replicate and extend previous research indicating that dissociation has a negative impact on treatment outcome of OCD, even after controlling for several clinical factors. Despite the clinical consequence of dissociation, research on its impact on treatment outcome is scarce. An earlier investigation on this issue reported dissociative symptoms to be predictive of poor treatment response, high relapse

rates, and poor maintenance over a 1-year follow-up in subjects meeting diagnostic criteria for agoraphobia with panic attacks who had been treated with CBT [38]. Rufer et al. [20] found that higher levels of dissociation in OCD patients might predict poorer response to CBT. They proposed that patients with higher dissociation levels might have become dissociative as a result of high levels of affect during exposure, inhibiting reality testing, regulation of emotional arousal and habituation. In therapeutic settings, it is important to be especially aware of possible co-occurrence of OCD and high levels of dissociative symptoms. A more recent study measured the efficacy of CBT on medication-resistant patients with OCD identified higher scores in Y-BOCS, poorer insight, low resistance to symptoms, high level of dissociation, obsessions focused on control/symmetry and obsessive slowness/ambivalence as negative predictors of therapeutic response [16]. While previous studies were limited to CBT [20] and brief psychodynamic psychotherapy [39], our results suggest that dissociative symptoms influence general treatment response in an in- and outpatient OCD sample.

The overlap between dissociation and OCD has been suggested to be interpreted in at least three different but not mutually exclusive ways [40]. Firstly, the presence of dissociation could be a marker of more severe obsessive–compulsive symptoms [15]. Secondly, dissociative symptoms could be a type of defense mechanism that emerges when an individual with OCD exhibit some sort of difficulty dealing with the negative affect that results from the exposure to aversive stimuli [41]. Finally, some obsessive–compulsive symptoms may be undistinguishable from dissociative phenomenas, such as flashbacks [42].

In this study, we only investigated the levels of dissociation, but not comorbid diagnoses of dissociative disorders. However, this association between OCD and dissociation may be bi-directional. The level of dissociation is correlated with the severity of obsessive–compulsive symptoms in patients with OCD. Besides, more severe OCD symptoms have been demonstrated in patients with a higher degree of dissociation [43]. Some of the dissociative patients have comorbid OCD. Kluft [44] summarized epidemiological studies suggesting that one-third of dissociative identity disorder (DID) patients had obsessive–compulsive symptomatology. Among children, instructions of a persecutory alter personality may resemble an OCD at the surface unless the patient is able to report the connection to dissociative symptoms [45]. Ross and Anderson explored the overlap in comorbidity of OCD and multiple personality disorder (MPD; a term used previously to describe DID) in a small series of cases [46]. They found a phenomenological overlap between MPD and certain cases of OCD, including diagnoses of panic disorder, generalized anxiety disorder, major depression, borderline personality

disorder, high DES scores, and many Schneiderian first rank symptoms. They raised the question about whether obsessive patients with prominent dissociative features are a psychologically and biologically distinct subgroup.

In a recent study identifying the dissociative symptoms and entire dissociative disorder comorbidity in patients with OCD, 14 % of the patients had comorbid dissociative disorder; depersonalization disorder was the most prevalent disorder [47]. It is proposed that there is a link between obsessive symptoms and chronic depersonalization [48]. Findings linking depersonalization and obsessive tendencies were reported also by Hollander and Benzaquen [49]. In a resting state single photon emission computed tomography (SPECT) case study, left fronto-temporal activation in depersonalization disorder was interpreted as evidence for a common neurobiological basis for depersonalization and OCD, in which increased frontal activation has been associated with the urge to ritualize [50]. Goff et al. also found that patients with markedly elevated DES scores who primarily had a diagnosis of depersonalization disorder had more severe OCD and were also more likely to be depressed and to have Axis II problems as well [15].

It is hard to say, if the OCD patients are prone to display elevated levels of dissociativity or that people with higher levels of dissociation exhibit obsessive–compulsive symptoms. It is not clear why some obsessive–compulsive patients do not exhibit dissociative symptoms or why dissociative patients do not always experience obsessions or compulsions. It might also prove a useful clinical study to focus on obsessions and compulsions in dissociative disorder and dissociative experiences in OCD to clarify their similarity, distinction, comorbidity, and relationship.

There are most likely other factors contributing to this complex relationship, theorists suggest that the dissociative and obsessive's inability to attend to new facts respond to changes in the environment, and assimilate/accommodate peripheral information into pre-existing schemas about the self and the world may explain some of their clinical overlap in perception, cognition, and behavior [51].

From a clinical perspective, Spitzer et al. [39] proposed a theoretical pathway with regard to how dissociation interferes with treatment response: With respect to CBT, it was argued that individuals prone to dissociate do so as a response to negative psychophysiological states occurring before and during exposure therapy. A lack of adequate response to CBT may be consequence of dissociation, inhibiting effective exposure or paradoxical intention. Thus, reality testing, regulation of emotional arousal and habituation may be impaired, leading to less favorable outcomes in these patients [20, 38]. Given the growing evidence for a relationship between dissociative phenomena and interpersonal trauma, particularly childhood maltreatment [17], it is not surprising that increased levels of

dissociation have been associated with an insecure, especially disorganized attachment pattern [52], which in turn negatively affects the therapeutic relationship [53].

In addition to dissociation, insight and duration of illness were particularly predictive of treatment resistance. Our result is compatible with findings of Pigott and Sean [6] and Saxena et al. [54], who found a relationship between poor therapeutic response and longer duration of illness and chronicity of OC symptoms. Insight is indicated in the relevant literature as a possible mediator as well. In the present study, insight was one of the predictor factors of treatment-resistant OCD. Poorer insight was found to be correlated to OCD severity. The observed correlation could be attributed to the assumption that insight is a general risk factor for the greater clinical severity and worse prognosis of psychiatric disorders such as OCD. Although Eisen et al. [55] reported that the degree of insight at baseline did not predict response to sertraline treatment, our result is consistent with the findings of Hantouche et al. [7] who carried out a naturalistic 1-year study with 155 patients with OCD, and found that mainly poor insight was a predictor of inadequate therapeutic response to SSRI and behavioral treatment.

On the other hand, religious obsessions were not associated with worse therapeutic response although they were correlated clinical severity. In the study of Alonso et al. [8], obsessions with sexual/religious content were related to poorer treatment outcome. The reason why the results of this study differ from those in Europe and America might be due to traditional and religious differences in between.

In closing, a number of limitations need to be acknowledged regarding the present study. First, because the OCD diagnosis was confirmed by relevant section of structured interview, we may have missed some comorbid disorders, which may be an important predictor of treatment outcome. Second, the use of retrospective reporting of childhood traumatic events should also be noted as a limitation to our study, although a recent review of data collection in this way suggests that false negatives are seen at a substantial rate, but false positive reports are probably rare [56]. A considerable proportion of subjects with borderline personality disorder have been reported to have a comorbid dissociative disorder [57]. Clinical comorbidity of Axis II disorders was not detected in this study. Finally, a clinical comparison group was not studied yet. Therefore, it remains unclear whether these findings are specific for OCD. These would be addressed in further studies.

Despite the limitations, the present study could make several contributions to the current literature. It is one of the limited studies conducted in a clinical population about the association between childhood trauma, dissociation, and OCD severity. In addition to the clinical severity, this study also takes the treatment resistance into account. Furthermore, inclusion of demographic and other clinical characteristics provides more insight into this association. Our findings offer important implications for both clinical practice and research. Considering that dissociation may prevent treatment response, all patients should routinely be screened for dissociative symptoms at the beginning of the therapeutic process. Different pathways from dissociation into OCD should be examined to provide more insight that is required for the construction of more adequate treatment programs for treatment-resistant OCD patients.

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