Eur Arch Psychiatry Clin Neurosci (2006) 256 : 146–150 DOI 10.1007/s00406-005-0620-8

ORIGINAL PAPER

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Dissociation and symptom dimensions of obsessive-compulsive disorder

A replication study

Received: 4 April 2005 / Accepted: 7 September 2005 / Published online: 4 November 2005

Abstract *Background* Obsessive-compulsive disorder (OCD) is a phenotypically very heterogeneous disease with high rates of comorbid psychiatric pathology. Previous studies have indicated that OCD is associated with higher levels of dissociation. The aims of the present study were to replicate and extend previous findings of a significant link between certain OCD symptom dimensions and dissociation. *Methods* The study sample comprised 50 patients with OCD, as confirmed by the Mini International Neuropsychiatric Interview, who had a score of at least 16 on the Yale-Brown Obsessive-Compulsive Scale. All patients were assessed with the short version of the Hamburg Obsessive-Compulsive Inventory and the Dissociative Experience Scale (DES). Correlation analyses and multiple regression analyses were performed to evaluate the relationship between OCD symptom dimensions and dissociation. *Results* The checking dimension was most strongly related to dissociation, followed by the symmetry/ordering and obsessive thoughts dimensions. In contrast, no significant relationship was found between dissociation and the washing/cleaning, counting/touching, and aggressive impulses/fantasies dimensions. Multiple regression analyses revealed that: (1) only the checking dimension showed an independent positive correlation with dissociation, and (2) only higher scores on the DES subscale "amnestic dissociation" were associated with higher scores for checking compulsions. *Conclusions* Our results suggest that there might be a specific link between checking behavior and dissociation in OCD. Moreover, checking compulsions seem to be particularly associated with amnestic dissociation. Further studies focusing on amnestic dissociation as a potentially important determinant of checking compulsions are warranted.

Key words obsessive-compulsive disorder · symptom dimensions · dissociation

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Introduction

Obsessive-compulsive disorder (OCD) is a common mental disorder that causes considerable suffering. In the majority of cases, the disease has a chronic course and is often associated with long-term psychosocial handicaps [4, 30]. High rates of comorbid psychiatric pathology have often been reported [2, 5, 9, 11, 31]. Some previous studies have found a significant link between OCD and dissociative symptoms [12, 24, 32]. Although OCD is remarkably heterogeneous in its clinical presentation [22], only few studies systematically evaluated dissociation in psychopathologically different subgroups of OCD patients (e. g., washers, checkers) and in different OCD symptom dimensions, respectively. Goff et al. [12] studied 100 patients with OCD and further characterized the group of the 20 high-dissociative patients [who scored above 20 on the Dissociative Experience Scale (DES)] [3] with regard to OCD symptom subgroups. The Maudsley Obsessional Compulsive Inventory [16] was used to categorize symptom subgroups of OCD (such as washers, checkers, pure obsessionals). The authors found a trend towards high-dissociative OCD patients being more likely to be "checkers" than low dissociative OCD patients, whereas both groups did not differ in prevalence of washing compulsions or obsessions. Grabe et al. [14] assessed 70 outpatients with OCD using the DES and the short version of the Hamburg Obsessive-Compulsive Inventory (HOCI-S) [18]. Correlation analyses showed a significant association of dissociation with the checking and symmetry/ordering dimensions, whereas the symptom dimensions

of "washing/cleaning", "counting/touching/speaking", "obsessive thoughts of words/pictures", and "aggressive impulses/fantasies" were not significantly related to dissociative symptoms. A third study [40] found that dissociation correlated strongly with checking and obsessive intrusions, but the sample consisted of psychiatric patients in general (not diagnosed with OCD) and non-clinical individuals.

In summary, there is as yet limited evidence of a significant association between obsessive-compulsive symptom dimensions and dissociation, and more research is needed to further evaluate whether there is a specific link between checking and dissociation. Therefore, the present study aimed to replicate previous findings that certain symptom dimensions of OCD are more strongly related to dissociation than others. To facilitate comparisons with previous findings, we used the same rating scales of obsessive-compulsive and dissociative symptoms as those used in the Grabe et al. [14] study.

We hypothesized that the checking dimension would be more strongly linked to dissociation than to other OCD symptom dimensions. Moreover, we evaluated whether amnestic dissociation in particular would be linked to the checking dimension. This issue appeared to be clinically and theoretically relevant since many patients with OCD describe memory impairment as a main reason of their checking behavior, but several studies failed to find objective memory impairment [25]. Possibly, high levels of amnestic dissociation, e. g., during anxiety-inducing situations, might cause memory gaps for this situation and low confidence of patients in their memories. As a consequence of both memory gaps and low confidence in memory, repetitive checking might be triggered or aggravated.

Methods

This study was part of an outcome study of behavior therapy for OCD [32]. All patients provided written informed consent before entering the study. Out of 52 consecutive patients with OCD who were referred between 2002 and 2004 to the Behavior Therapy Unit of the University Hospital of Hamburg, two patients did not complete the HOCI-S and were, therefore, excluded from the present study. Thus, the final sample of this study comprised 50 patients (32 females, 64 %), who had a mean age of 34.8 years (SD = 8.1).

A total score of 16 or more on the German version [15] of the Y-BOCS [13] was required to be included in the study, indicating an at least moderate severity of OCD symptoms. The diagnosis of OCD was confirmed by using the German version [1] of the Mini International Neuropsychiatric Interview [20, 35] for DSM-IV and ICD-10, a reliable and valid diagnostic structured interview. Exclusion criteria were psychosis, acute suicidality, substance abuse, and organic brain disorder. All interviews were conducted by trained and clinically experienced raters before treatment started.

OCD symptom dimensions were assessed with the HOCI-S [18], a widely accepted, reliable and validated self-report scale [19]. The HOCI-S consists of 72 items and measures obsessions and compulsions on six different subscales: checking behavior; washing and cleaning behavior; symmetry and ordering behavior; counting, touching, repetitive speaking; thoughts of words and pictures; aggressive impulses and fantasies towards oneself or others. Each of the subscales has 12 items and each item can be answered with "true" or "false". The "true" answers are summed for the subscale scores. Dissociative symptoms were evaluated with the widely used self-rated DES [3] (German version [10]). The German version and the original version of the DES are comparably valid and reliable [7, 10, 36]. A high DES total score, which ranges from 0 to 100 and represents the mean of all 28 item scores, indicates a high level of dissociative experiences. Empirically validated [6], the DES contains three subscales: amnestic dissociations, absorption/imaginative involvement, and depersonalization/derealization experiences.

Associations between measures were examined by using Pearson correlations (two-sided). Subsequently, stepwise multiple regression analyses were used to identify the independent relationship between scores of the HOCI-S dimensions and dissociation. All statistical analyses were conducted with the Statistical Package for Social Sciences (SPSS, version 12.0). A p value of less than 0.05 was considered to indicate statistical significance.

Results

Patients had, on average, severe obsessive-compulsive symptoms with a mean Y-BOCS total score of 25.6 (SD = 4.9). The mean scores for OCD symptom dimensions obtained with the HOCI-S in the current sample are shown in Table 1. The highest mean scores were found in the symmetry/ordering, washing/cleaning, and checking dimensions. All patients scored on two or more HOCI-S dimensions indicating the complexity of their obsessive-compulsive symptoms.

Table 2 presents Pearson Correlations between HOCI-S subscale scores and DES total scores and subscores. Higher dissociation scores were significantly associated with higher scores on the OCD symptom dimensions of checking, symmetry/ordering, and obsessive thoughts. Regarding the three DES subscales, the only significant associations were found between higher scores on the checking dimension and higher scores on all DES subscales. The strongest correlation of subscales was found between checking and amnestic dissociation.

All HOCI-S subscales were included in a stepwise multiple regression analysis to establish independent relationships between these variables and DES total score (as dependent variable). The results revealed that only the checking dimension showed an independent positive correlation with dissociation (Beta = 0.43, SE = 0.42, adjusted $R^2 = 0.17$, $P = 0.02$), whereas the other five HOCI-S dimensions did not enter into the equation. In order to further evaluate this association between disso-

Table 1 Mean scores for OCD symptom dimensions obtained with the HOCI-S in 50 patients with OCD

OCD symptom dimensions	Mean scores (SD) for HOCI-S dimensions
Symmetry/ordering	4.6 (2.5)
Washing/cleaning	4.5 (2.2)
Checking	4.4 (2.7)
Counting/touching/speaking	4.2 (2.8)
Obsessive thoughts of words/pictures	3.6 (2.3)
Aggressive impulses/fantasies	2.6 (2.7)

OCD Obsessive-Compulsive Disorder; *HOCI-S* Hamburg Obsessive-Compulsive Inventory, short version

Table 2 Pearson correlations coefficients between scores on the HOCI-S subscales and the DES and its subscales (n = 50)

HOCI-S dimensions	DES			
	Total score	Amnestic dissociations	Absorption/ imaginative involvement	Depersonalization/ derealization experiences
Symmetry/ordering	0.33*	0.22	0.25	0.28
Washing/cleaning	0.08	0.11	0.02	–0.01
Checking	0.43**	0.42**	0.30*	0.30*
Counting, touching, speaking	0.06	–0.05	–0.04	0.21
Obsessive thoughts	0.29*	0.24	0.17	0.28
Aggressive impulses/fantasies	0.25	0.19	0.23	0.22

*p < 0.05; **p < 0.01
HOCI-S Hamburg Obsessive-Compulsive Inventory, short version; *DES* Dissociative Experience Scale

ciation and checking, a second stepwise multiple regression analysis was performed with the DES subscales as independent variables and the HOCI-S checking dimension as dependent variable. The DES total score was not used in conjunction with the DES subscores to preclude redundancy of the data analyses. The results revealed that only higher scores of the DES subscale "amnestic dissociation" showed an independent association with higher scores for checking (Beta = 0.42, SE = 0.05, adjusted $R^2 = 0.16$, P = 0.004), while "absorption-imaginative involvement" and "depersonalization/derealization experiences" failed to reach significance.

Discussion

Our results clearly demonstrate the importance of assessing different symptom dimensions of OCD separately. The present study contributes to the existing literature by both replicating and extending earlier research. Consistent with two previous studies [12, 14], our results provide further evidence for a significant link between the checking dimension and dissociation in OCD. However, Grabe et al. [14] reported an additional correlation between the symmetry/ordering dimension and the DES. This additional association was also found in the present study, along with a correlation between obsessive thoughts and dissociation. Nevertheless, checking was more strongly related to dissociation than the other two dimensions and the multiple regression analysis revealed that only the checking dimension showed an independent association with dissociative symptoms. Therefore, we conclude that our results indicate a specific link between dissociation and checking in patients with OCD.

A number of previous reports have suggested that OCD might be associated with memory-related problems (for an overview, see [25]). Concerning obsessive-compulsive symptoms, it is discussed that compulsive checking in particular is associated with impaired reality monitoring (which refers to the capacity to discriminate between memories of events that really happened and memories of events that were only imagined). Concerning dissociation, some authors suggested that disruptions of reality monitoring might be linked to higher scores on the DES [17]. However, several studies failed to find differences in reality monitoring ability between OCD patients and nonpatient controls [24] for an association of reality monitoring failures and DES scores [23]. The present study did not investigate (objective) memory impairment in OCD, but rather experiences of (subjective) amnestic dissociation, including loss of memory for actions the patient had actually performed. The finding of a positive association between amnestic dissociation and the checking dimensions might have different plausible explanations. First, amnestic dissociation may directly trigger or aggravate checking compulsions, because patients with more pronounced symptoms of amnestic dissociation might be less able to remember exactly what action they took in a particular situation. For example, a patient who cannot remember exactly and vividly his controls of his cooker may be motivated to repeat checking behavior with the goal to surely prevent expected negative consequences (e. g., that the cooker catch fire). Second, amnestic dissociation may indirectly trigger or aggravate checking compulsions, mediated by reducing patient's confidence in their memories. Evidence for this comes from a study by Merckelbach and Wessel [24] who demonstrated that: (1) patients with OCD had less confidence in their memory functioning compared to nonpatient controls, and (2) higher DES scores were related to reduced confidence in memory. Their observations, together with our results, add some new information to the recent discussion of explanations for low confidence in memory in patients with OCD [25]. Low confidence in memory might be seen as an expression of perfectionism in some patients with OCD, meaning that they wish to have a perfect memory (and are therefore dissatisfied with their memory). A further hypothesis is based on the cognitive model of OCD [26, 27, 33, 34] in which an excessive sense of responsibility is proposed as the core feature of OCD. In this view, memory confidence of patients with OCD, in particular "checkers", might be low only under conditions of high responsibility. This hypothesis received empirical support from the results of a study by Radomsky et al. [28]. Together with Merckelbach and Wessel's [24] findings of a negative association of dissociation

with confidence in memory, our results suggest that the impact of amnestic dissociation on checking compulsions might be mediated by lower confidence in memory. However, the current study was correlational in design and, hence, does not provide evidence for causal associations between dissociation and obsessive-compulsive symptoms. Nevertheless, the data are supportive of the notion that amnestic dissociation is involved in compulsive checking and future research should further investigate this association and the possibly mediating effect of (low) confidence in memory.

Of concern is the question of whether OCD symptoms may partly mimic dissociative symptoms. On the one hand, Grabe et al. [14] concluded from their data that a symptom mimicry of dissociation, assessed with the DES, and OCD symptoms is very unlikely, since they observed high correlations of all DES subcales with the symmetry and ordering dimension. On the other hand, theoretically, some of the DES questions about amnestic dissociation (e. g., item 25: "Some people find evidence that they have done things that they do not remember doing") may reflect an overlap with a compulsive checking symptom. However, most DES items show that the concept of amnestic dissociation is conceptually different from intrusions about the performance of actions (e. g., item 3: "Some people have the experience of finding themselves in a place and having no idea how they got there" or item 4: "Some people have the experience of finding themselves dressed in clothes that they don't remember putting on"). Furthermore, it would be difficult to explain our findings of significant correlations of the checking dimension with all three DES subscales with mimicry of symptoms. Nevertheless, our results need to be confirmed by using the Structured Clinical Interview for DSM-IV Dissociative Disorders-Revised (SCID-D-R) [37] in addition to the DES. The study by Goff et al. [12] used the DES and the Structured Clinical Interview for DSM-III-R Dissociative Disorders (SCID-D) [38] and the results suggested a relatively high rate of psychogenic amnesia in OCD, although forgetfulness or loss of concentration due to OCD were not considered evidence of amnesia.

Our study has important limitations that should be considered. To assess OCD symptom dimensions, we used a self-report questionnaire only. Future studies should use both self-rating and clinician-administered scales, especially because it was previously demonstrated that patients rated their obsessive-compulsive symptoms differently from clinicians [8, 39]. For example, the Y-BOCS Symptom Checklist [13] is a widely used clinician administered instrument to ascertain the most common obsessive-compulsive symptoms. Its dimensional structure has been reasonably replicated [21], but some psychometric properties are yet to be determined (e. g., its interrater reliability) [22]. Thus, an important area for future research is the development of better instruments for the assessment of OCD symptom dimensions. A further limitation of our study is the relatively small sample size. As a consequence, it was impossible to evaluate psychopathologically different subgroups of OCD patients (e. g., washers, checkers, etc.). However, monosymptomatic patients are rare. The evaluation of OCD symptom dimensions has the advantage that each patient can score in one or more symptom dimensions and that it is, therefore, not necessary to divide OCD into mutually exclusive subgroups [22, 29].

To summarize, in spite of these limitations, we found further evidence for a specific link between the checking dimension of OCD and dissociative symptoms. Furthermore, our findings indicate that the checking dimension is associated with amnestic dissociation in particular. These results suggest that future research into the role of amnestic dissociation in checking compulsions and the possible link to memory-related problems in OCD is warranted. Moreover, longitudinal studies would be valuable to evaluate the temporal relationship between amnestic dissociation and checking behavior in OCD.

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