

Masterthesis

Clinical and Health Psychology
Utrecht University

The relationship
between childhood
trauma and severity
of Obsessive
Compulsive Disorder
in adulthood

J.J. Koopmans, 3160327

I.M. Krah, 3160386

Supervision by:

Prof. Dr. M. van den Hout

Clinical and Health Psychology

Utrecht University

Drs. H.A.D. Visser

Researcher at Netherlands OCD Association

Preface

The present study is based upon the data from the Netherlands Obsessive Compulsive Disorder Association (NOCD) study, an ongoing multi-centre 6-year longitudinal naturalistic cohort study on the course of OCD.

We both were interested in the influence of childhood trauma on later psychopathology and therefore very motivated to study the association between childhood trauma and OCD severity, under supervision of Prof. Dr. Marcel van den Hout of the Utrecht University. Prof. Dr. Marcel van den Hout is specialized in experimental psychology of childhood trauma and provided us theoretical advice. Additionally, we have been working together with Drs. Henny Visser, who is directly involved in the NOCD study and gave us important information about the study. This combination of supervision provided us with a comprehensive insight in the association between childhood trauma and OCD severity and the possibility to discuss relevant topics from two different points of view.

Throughout the entire process of conducting this masterthesis, as researchers we worked this joint project in very good cooperation. It was informative and instructive to discuss about the subject and to consider each others views. We have been writing the thesis together, that is after a part was written by one the other read it thoroughly and wrote further if necessary. Although we have been talking about the content in advance, the discussion we wrote individually.

We would like to owe many thanks to Drs. Henny Visser for the informative and enthusiastic supervision during the study. Furthermore, we would like to express our gratitude to our supervisor Prof. Dr. Marcel van den Hout. His support and advice helped us in accomplishing this masterthesis. Also thanks to Prof. dr. Boelen who gave us statistical advice.

Finally, we wish to express our thanks to our family and friends who have supported us throughout.

Nienke Koopmans
Ilse Kraaij

February 2012

The relationship between childhood trauma and severity of Obsessive Compulsive Disorder in adulthood

Nienke Koopmans, 3160327

Ilse Kraah, 3160386

Supervision by:

Prof. Dr. Marcel van den Hout

Clinical and Health Psychology Utrecht University

Drs. Henny A.D. Visser

Researcher at Netherlands OCD Association

February 2012

Abstract

There is widespread support for the relationship between childhood trauma and psychiatric morbidity in adulthood. However the association with Obsessive Compulsive Disorder has not been studied frequently. It was hypothesized that there is a positive correlation between childhood trauma, distinguished in sexual, physical, emotional abuse, and physical and emotional neglect, and severity of OCD in adulthood. Besides, we expected the association between childhood trauma and OCD to be at least partly accounted for by co-occurring anxiety or depression, OCD cognitions, personality characteristics and other comorbidity. The data for the present study (N = 281) were obtained from the Netherlands Obsessive Compulsive Disorder Association (NOFDA) study, an ongoing multi-centre 6-year longitudinal naturalistic cohort study on the course of OCD. To establish OCD and other current DSM-IV axis I disorders, SCID-I/P was used. Childhood trauma is assessed retrospectively using the Jeugd Vragenlijst, the Dutch version of the Childhood Trauma Questionnaire (CTQ). Pearson correlation indicated that sexual abuse was found to be the only form of abuse having a small but significant correlation with OCD severity. Multivariable regression analyses showed OCD cognitions, neuroticism, number of current diagnoses, anxiety and depression to fully mediate the association between sexual abuse and OCD severity. Only depression remained significant when taking the mediating factors into account altogether. The absence of a direct relationship between childhood trauma and OCD severity may indicate a different etiology for OCD than depression or anxiety. The present study is an initial first step towards evaluating the association between different forms of childhood trauma and the severity of OCD.

Introduction

There is widespread support for the relationship between childhood trauma and psychiatric morbidity in adulthood (Hovens et al., 2009; Browne & Finkelhor, 1986; Kessler et al., 1997). Childhood trauma has been implicated in the pathogenesis of depression in clinical and community surveys (Wiersma et al., 2009; Scott et al. 2010). A relationship between child abuse and the subsequent development of a range of anxiety disorders, including social anxiety disorder, panic disorder, generalized anxiety disorder and specific phobia, has been widely reported as well (Stein, 1996; Cogle, 2010; Scott et al., 2010).

Despite evidence that childhood trauma has far-ranging effects on mental health, its association with obsessive-compulsive disorder (OCD) hasn't been studied frequently. The most compelling evidence for an association between childhood trauma and OCD comes from community samples. Saunders et al. (1992) found in a community sample of 391 women, lifetime rates of OCD to be significantly higher in those who had a history of childhood rape or molestation. Mathews, Kaur and Stein (2008) demonstrated in a sample of 938 undergraduate students that childhood trauma, most consistently emotional abuse, but also physical abuse and physical neglect, had a small but significant association with obsessive-compulsive symptoms. Consistent with these results, the study of Briggs and Price (2009) demonstrated in a community sample consisting of 313 participants that adverse childhood experience was related to obsessive-compulsive symptoms. It should be noted however, that in these community samples only obsessive-compulsive symptoms have been examined, rather than pathological levels of symptoms which fulfill a OCD diagnosis according to the DSM-IV-TR criteria. In the only clinical study published, childhood trauma was assessed in a relative small sample of 74 female OCD patients and compared with healthy controls (Lochner et al., 2002). Levels of childhood trauma in general and emotional neglect in particular, were higher in adult patients with OCD than in controls.

The possible association between childhood trauma and later OCD does not necessarily imply a direct one, since other factors could account for this relationship. Anxiety, depression, cognitive beliefs, personality characteristics and comorbid diagnoses are pointed out as possible mediators in relevant literature.

Firstly, it is possible that a probable association between OCD and childhood trauma is accounted for by the relationship between trauma and a higher order construct related to this specific anxiety disorder, like anxiety or depression (Sadock & Sadock, 2007). In accordance with this assumption, Mathews et al. (2008) found in their sample of 938

students the association between emotional abuse and physical neglect and obsessive-compulsive symptoms to be fully mediated by comorbid anxiety and post traumatic stress disorder. However, in a small subset of respondents with high levels of obsessive-compulsive symptoms, a significant but small positive relationship was found between emotional trauma and obsessive-compulsive symptoms, independent of comorbid anxiety. Briggs and Price (2009) have challenged this independent association. After controlling for anxiety and depression, there was no longer a significant association between adverse childhood experience and obsessive-compulsive symptoms in their community sample. The conclusion was reached that adverse childhood experience was related to obsessive-compulsive symptoms but that this association was indirect, among other things, via the association with anxiety and depression.

Secondly, childhood abuse might modify how children and adolescents perceive both their environments and their responses to them (Stein et al., 1996). Early victimization may lead to hypervigilance, to the overestimation of threat, excessive blame, guilt, and punishment, to an inflated sense of responsibility and the over-importance of thoughts (Salkovskis, Shafran, Rachman, & Freeston, 1999; Sookman & Pinard, 2002; Stein et al., 1996; Briggs & Price, 2009). These maladaptive beliefs have been associated with a greater prevalence of obsessive-compulsive symptoms (Frost & Steketee, 2002). Briggs and Price (2009) claim indeed a relationship between adverse childhood experience and obsessive-compulsive symptoms in a community sample that was found to be partially mediated by OCD-related dysfunctional beliefs. This supports an effect of child abuse on the development of OCD partially via the development of these beliefs.

In addition, childhood trauma might play a role in the development of OCD via the development of specific personality traits. Childhood trauma appeared to be associated with the broader personality trait domains of the Big Five; neuroticism, extraversion, conscientiousness and agreeableness were found to be related to child abuse, while openness was not (Mathews et al., 2008). Besides, Mathews et al. (2008) found in a community sample a positive correlation between obsessive-compulsive symptoms and high levels of conscientiousness, although this was only the case for those with low to moderate symptoms. The conclusion was reached that there was an indirect relationship between childhood trauma and obsessive-compulsive symptoms mediated through the personality facet of conscientiousness. The association between conscientiousness and obsessive-compulsive symptoms has been challenged in a clinical sample. High levels of neuroticism and low levels of extraversion and agreeableness have been proposed as possible

vulnerability traits for several psychiatric disorders in the affective spectrum and specifically for OCD, although no differences were observed on the domains of openness and conscientiousness between OCD patients and community controls (Clark, Watson & Mineka, 1996; Samuels et al., 2000). Replication is needed to clarify the mediating role of personality traits in the association between childhood trauma and OCD severity.

Lastly, childhood trauma seems to be related with the development of multiple mental disorders (Cogle et al., 2008; Widom, DuMont & Czaja, 2007). Also, comorbid psychiatric disorders are common in OCD (Rachman, 2004; Khanna & Reddy, 2004). This could suggest an effect of childhood abuse on the severity of OCD, perhaps accounted for by the development of multiple mental disorders.

So far, results suggest that if any, only a marginal direct relationship between childhood trauma and obsessive-compulsive symptoms in adulthood exists in community samples (Saunders et al., 1992; Mathews et al., 2008; Briggs & Price, 2009). To date, only one study examining the association between childhood trauma and OCD in a clinical sample has been published (Lochner et al., 2002). Due to the small sample size and the exclusive focus on female patients, results of this study may not be generalizable to other clinical populations. Also it failed to examine the effects of any mediating factors. Moreover, none of the published studies has taken the severity of OCD into account. This leads to a gap in scientific knowledge concerning this issue.

The purpose of the present study is to investigate whether childhood trauma, distinguished in sexual, physical, emotional abuse, and physical and emotional neglect, is related to severity of OCD in adulthood. Taking these different types of childhood trauma into account, makes it is possible to specifically examine the association with OCD for each form of trauma. We hypothesize that there is a positive correlation between childhood trauma and severity of OCD in adulthood. Additionally, we want to investigate the extent to which this association reflects a direct connection, or if such connection is mediated by other factors. Based on literature, we expect the association between childhood trauma and OCD to be at least partly accounted for by co-occurring anxiety or depression, OCD cognitions, personality characteristics and other comorbidity.

Method

Subjects

The data for the present study were obtained from the Netherlands Obsessive Compulsive Disorder Association (NOCD) study, an ongoing multi-centre 6-year longitudinal naturalistic cohort study on the course of OCD. Participants are patients aged 18 years or over, with a primary diagnosis of OCD, as determined by the Structural Diagnostic Interview for DSM-IV disorders (SCID I). Patients are admitted for treatment in one of the healthcare centers that participate in the NOCD study. Exclusion criteria were limited to an inadequate understanding of the Dutch language. After complete description of the study to the respondents, written informed consent was obtained. The study was approved by the local ethical committee. Detailed sample characteristics and methodology of NOCD are described elsewhere (Schuurman, 2011). Since participants filled in the Dutch Childhood Trauma Questionnaire (CTQ) one year after the baseline measurement, the participants in the present study are selected when baseline measurement is available as well as the one-year follow-up measurement. Respondents who did not participate in the follow-up measurement did not differ in gender ($p=.14$), age ($p=.14$), level of education ($p=.25$), severity of obsessive compulsive symptoms ($p=.20$), age at onset ($p=.84$), depression ($p=.42$) and neuroticism ($p=.11$). However, they reported more state-anxiety ($p<.05$) and had lower scores on OCD cognitions ($p<.001$). A total of 281 adults constitute the present study.

Measurements

DSM-IV disorders

To establish OCD and other current (in the past month) DSM-IV axis I disorders, the Structured Clinical Interview for DSM-IV-TR (SCID-I/P) (First, Spitzer, Gibbon, Williams, 1996) was used for all patients. The SCID-I/P is a widely used semi-structured interview for diagnosing mental disorders and is a reliable instrument (Luteijn et al., 2008).

OCD severity

OCD severity was assessed using the Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman, Price, Rasmussen, Mazure, & Delgado, 1989a; Goodman, Price, Rasmussen, Mazure, & Fleischmann, 1989b) severity scale. 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. This scale is a reliable and valid instrument for assessing the severity of

OCD symptoms (Goodman et al., 1989b). A total of 281 participants were assessed by the Y-BOCS.

Childhood trauma

Childhood trauma is assessed retrospectively using the *Jeugd Trauma Vragenlijst*, which is the Dutch version of Childhood Trauma Questionnaire (CTQ). This questionnaire is distinguished into 5 subscales; emotional abuse, physical abuse, sexual abuse, physical neglect and emotional neglect. Each subscale consists of 5 items, with the exception of the sexual abuse subscale. Because the translated item, "I believe I was molested", appeared not to be a valid indicator of childhood sexual abuse in the Dutch version (Thombs, Bernstein, Lobbestael & Arntz, 2009), this item was removed. 281 participants were asked to give an indication of the frequency of the particular abuse on a five-point scale, whereas 1 = never true and 5 = very often true. Validity and reliability of the 24-item Dutch CTQ has been reported to be satisfactory (Thombs et al., 2009).

Personality characteristics

Personality characteristics according to the Big Five were established with the 100-item Five-Factor Personality Inventory (Hendriks, Hofstee, & De Raad, 1999), which uses 5 dimensions for personality: extraversion, agreeableness, conscientiousness, neuroticism and openness. The FFPI is a reliable and valid measure of personality (Hendriks, 2003). The number of participants filled in this questionnaire was 280.

Depression

The Beck Depression Inventory (BDI-II) (Beck, Steer & Brown, 1996), a self report questionnaire consisting of 21 items, was used to assess the severity of the cognitive, affective and somatic symptoms of depression. The patients had to choose one of the four statements in accordance with their feelings during the past week. The BDI-II has high reliability and construct validity (Luteijn et al., 2008). 279 participants completed the BDI-II.

Anxiety

The Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown & Steer, 1988) is a 21- item self report measure, used to assess the severity of anxiety symptoms for 281 participants. The patients were asked to rate to which extent they have been bothered by certain anxiety symptoms during the last week, on a 4-point scale, whereas 1 = totally not and 4 = severely. The reliability and validity of the BAI have been demonstrated in several studies (Wilson, Chambless & de Beurs, 2004).

OCD cognition

To measure the interpretation of intrusive thoughts that have occurred recently, 270 participants filled in the III questionnaire (Triple I). The participants were asked to come up with two examples of intrusions and subsequently had to identify in 31 items to what extent they believed negative appraisals of these thoughts. Although this suggests a strong overlap with Y-BOCS, both instruments appear to measure other constructs, since the correlation between these is .30. Besides, there was sufficient variance in the scores, revealing a normal distribution. Examination of validity and reliability indicates high internal consistency, promising validity and excellent reliability (Obsessive compulsive cognitions working group, 2001; Obsessive compulsive cognitions working group, 2003; Sica et al., 2002).

Demographic characteristics

Structured questions were used to determine socio-demographic and socio-economic characteristics.

Data Analysis

Statistical analyses were conducted using Predictive Analytics SoftWare Statistics 18.0. Means, standard deviations and percentages were calculated to describe the sample. Furthermore, Pearson correlations were calculated for all variables. Since the assumption of normality was violated for the sexual abuse variable, a dummy variable was created revealing two options: the presence or absence of sexual abuse. In addition univariate regression analyses were used to calculate the R Square, which indicate the amount of variation which can be explained by a particular variable. Lastly, to examine whether the relationship between childhood abuse and OCD severity still exist after adjusting for anxiety, depression, OCD cognitions, personality characteristic and comorbid current diagnoses, a series of multivariable regression analyses were conducted.

Results

Sample characteristics

The study sample of 281 OCD patients consisted of 41.1% men and 58.3% women. The mean age at baseline was 37.7 years (SD = 11.13). Just over half the sample (55%) reported to be never married. Average years of education were 12.7 (SD = 3.3). The mean (SD) severity of OCD symptoms as established by administration of the Y-BOCS was 19.4 (8.3), which reflects moderate severity. Of the sample 53% met the criteria of at least one other Axis I disorder at the time of the baseline interview. In 18% of the sample there was total absence of any trauma as measured with the Dutch CTQ. The percentage of trauma in Table 1 represents the percentage participants who reported at least no absence of trauma, that is; the participants answered at least one question with 'rarely true'. Table 1 illustrates these main characteristics of the respondents.

Table 1. Demographic characteristics of participants in the present sample

Characteristics	Respondents N = 283
Gender	
Male	118 (41.7%)
Female	165 (58.3%)
Age of baseline interview	
Mean (SD)	37.7 (11.13)
Minimum	17
Maximum	79
Marital status	
Never married	156 (55.1%)
Married	112 (39.6%)
Divorced	14 (4.9%)
Widowed	1 (0.4%)
Years of education, mean (SD)	12.74 (3.28)
OCD severity, mean (SD)	19.43 (8.26)
Current comorbidity (2 or more diagnoses)	53%
Percentage trauma*	
Emotional abuse	72.4%
Physical abuse	19.1%
Sexual abuse	16.3%
Emotional neglect	90.1%
Physical neglect	58%
Total absence of trauma	18%

* Participants reported at least no absence of trauma

As can be seen from Table 2 correlations between physical abuse, emotional abuse, sexual abuse, physical neglect and emotional neglect were modest in magnitude. Sexual abuse was found to be the only form of abuse having a significant correlation with OCD severity. Even total score of trauma didn't correlate with OCD severity.

Table 2. Pearson correlations between OCD severity and forms of trauma

	OCD severity	Emotional abuse	Physical abuse	Sexual abuse	Physical neglect	Emotional neglect	Total trauma
OCD severity	-	.11	.10	.20**	.00	.03	.11
Emotional abuse		-	.56**	.30**	.57**	.69**	.88**
Physical abuse			-	.30**	.45**	.38**	.69**
Sexual abuse				-	.35**	.25**	.51**
Physical neglect					-	.61**	.77**
Emotional neglect						-	.85**
Total trauma							-

** Significant at the .01 level (two-tailed).

Pearson correlation analyses indicated that five variables were significantly related to both severity of OCD and sexual abuse, and therefore might mediate the relationship between OCD severity and sexual abuse: anxiety, depression, OCD cognitions, neuroticism and number of current diagnoses. Results obtained from Pearson correlation analyses are presented in Table 3.

Table 3. Pearson correlations between OCD severity, sexual abuse and all possible mediators

	OCD severity	Sexual Abuse
Anxiety	.41**	.25**
Depression	.46**	.24**
OCD cognitions	.30**	.21**
Extraversion	-.28**	-.10
Openness	-.18**	-.03
Neuroticism	.33**	.17**
Agreeableness	-.04	.02
Conscientiousness	-.00	.05
Number of current diagnoses	.33**	.29**

** Significant at the .01 level (two-tailed).

Since the distribution of sexual abuse was not normal, a dummy variable is created and is used in the analyses. To test to what extent the relationship between sexual abuse and OCD severity is mediated by these five variables, a series of multivariable regression analyses were conducted. The potential mediating factors have been tested one by one to find out to what extent the magnitude of the correlation between sexual abuse and OCD severity changes when taking these into account. As can be seen from Table 4, all five variables were found to fully mediate the relationship between sexual abuse and OCD severity, since sexual abuse was no longer related to OCD severity when controlling for these factors.

Table 4. Multivariable analyses, OCD severity, sexual abuse and the potential mediators one by one

	OCD severity	
	Beta (R)	R square
Sexual abuse	.07	.17
Anxiety	.39**	
Sexual abuse	.05	.21
Depression	.45**	
Sexual abuse	.10	.10
OCD cognitions	.29**	
Sexual abuse	.11	.12
Neuroticism	.31**	
Sexual abuse	.09	.12
Number of current diagnoses	.32**	

** Significant at the .01 level (two-tailed).

In order to examine the unique contribution of each variable to the explained variability in OCD severity, a multivariable analysis containing all possible mediators was performed. The results, presented in Table 5, indicated that there is no independent relationship between sexual abuse and OCD severity, but there is a direct relation between depression and OCD severity. Furthermore, depression explained variability in OCD severity independent of other factors. The factors all together appeared to account for 24% of the total variance of OCD severity ($F = 13.52, p < .00$).

Table 5. Multivariable analysis with OCD severity and the independent variables

	OCD severity
	Beta
Sexual abuse	.02
Anxiety	.12
Depression	.31**
OCD cognitions	.06
Neuroticism	.01
Number of current diagnoses	.05

** Significant at the .01 level (two-tailed).

Another multivariable analysis is performed to test which construct is most important in the relation between sexual abuse and OCD severity when leaving anxiety, depression and number of current diagnoses aside. As can be seen from Table 6, neuroticism appeared to be the only variable significantly related to OCD severity, since OCD cognitions and sexual abuse are no longer significantly associated with OCD severity when taking neuroticism into account. Neuroticism, OCD cognitions and sexual abuse appeared to account for 15% of the total variance of OCD severity ($F = 15.21, p < .00$).

Table 6. Multivariable analysis with OCD severity and OCD cognitions and neuroticism

	OCD severity
	Beta
Sexual abuse	.07
OCD cognitions	.19
Neuroticism	.24**

** Significant at the .01 level (two-tailed).

Discussion

Contrary to expectations, the results of the current study indicate no strong relationship between childhood trauma and OCD severity. Sexual abuse was the only form of childhood trauma having a significant but small correlation with OCD severity. Physical abuse, emotional abuse, physical neglect, emotional neglect and childhood trauma in general did not seem to be significantly associated with OCD severity at all. As expected, after taking several factors into account, sexual abuse was no longer significantly related to OCD severity. Anxiety, depression, current diagnoses, OCD cognitions and neuroticism were found to mediate the relationship between sexual abuse and OCD severity. The prevalence of sexual abuse in the present study was 16 percent and is roughly comparable with prevalence in the community sample of Mathews et al. (13 %) (2008), in which the same questionnaire is used to measure childhood trauma. However, in the clinical sample of Wiersma et al. (2009) prevalence rate of sexual abuse for chronically depressed patients was quite higher (26 %) than the prevalence in the current study, although childhood trauma was assessed by an interview.

An important result to emerge from the current study indicates no relationship between childhood trauma in general and OCD severity in adulthood. This finding is somewhat surprising based on earlier research in which a relation between childhood trauma and OCD is demonstrated (Saunders et al, 1992; Mathews et al., 2008; Briggs & Price, 2009; Lochner et al., 2002). It seems possible that these results are due to the difference in the samples of the studies. The association is mostly demonstrated in community samples which focused on OCD symptoms, rather than the diagnosis (Saunders et al, 1992; Mathews et al., 2008; Briggs & Price, 2009). That is not at once comparable with the present clinical sample. The only clinical study published (Lochner et al., 2002) showed an association between childhood trauma and OCD. However, this study had several limitations; it is restricted to women and failed to take variables such as comorbidity and socio-economic status into account. Therefore this study is not generalizable to other clinical populations. Another explanation for the absence of the association in the present study, could be that the focus in earlier research was on the presence of the OCD diagnose rather than taking the severity into account.

Considering the different types of childhood trauma, the only significant association was found between sexual abuse and OCD severity. However, this small correlation was indirect and mediated by several factors. The finding that sexual abuse is the only type of

childhood trauma which is indirectly associated with OCD severity, differ from some earlier findings (Lochner et al., 2002; Mathews et al., 2008), although it is consistent with Saunders et al. (1992). This contradictory result may have something to do with methodological differences between the studies. Mathews et al. (2008) focused on obsessive-compulsive symptoms in a community sample, instead of the OCD diagnose or the severity. They found an association between emotional abuse and low levels of obsessive-compulsive symptoms, not with high levels of symptoms. This may indicate that sexual abuse is more important for pathological forms of OCD, rather than for obsessive-compulsive symptoms. The difference with the clinical study of Lochner et al. (1992), may be attributed to the considerable bigger sample size in the present study. Saunders et al. (1992) do showed an association with rape and molestation, however only women participated and the number of participants who met de criteria of OCD and experienced some form of sexual assault, is very small. Furthermore, this study involved a community sample.

Several factors can explain the indirect association between sexual abuse and OCD severity in the current study. Anxiety, depression, current diagnoses, OCD cognitions and neuroticism seem to account for the relationship between sexual abuse and OCD severity. After controlling for these factors, sexual abuse was no longer significantly related to OCD severity. The absence of a direct relation between sexual abuse and OCD, could suggest that a history of sexual abuse is associated with a general vulnerability to develop psychopathology. Only depression turned out to have a significant association with OCD severity when taking all potential mediating factors into account. None of the other factors maintain its significance after inclusion of depression in the analysis. This finding indicates that sexual abuse was related to OCD severity but that this association was indirect via depression. The mediating role of depression appears to be most important and the direct association between depression and OCD severity seems to account for the associations between all the factors and OCD severity. The indirect association between sexual abuse and OCD severity is in accordance with expectations based on previous study of Briggs and Price (2009) in a community sample. They found that childhood trauma was related to obsessive-compulsive symptoms indirect through the development of depression and anxiety.

Controversy about this mediating pathway is common. Depression, anxiety and number of current psychopathology refer all to psychological disorders. This cast doubt on the relevance of the conclusion if sexual abuse is associated with severity of OCD via another psychological construct. It seems possible that these results are due to a considerable overlap between the constructs (Brady & Kendall, 1992). Patients with more severe OCD are

likely to report more anxiety and depressive symptoms, which could be the reverse as well. Besides, in the present sample lifetime comorbidity rate of depression is quite high; 62 percent, which contains major depressive disorder and dysthymic disorder (results not presented). Also the number of diagnoses could influence the severity of the disorders. Depression could be secondary related to OCD, or the other way around (Sadock & Sadock, 2007). This raises the question which mediating factors other than depression, anxiety and number of current diagnoses, are most important in the relationship between sexual trauma and OCD severity.

Personality characteristics are pointed out in relevant literature as possible mediators as well. In the present study neuroticism was the only personality facet associated with sexual abuse as well as with OCD severity. High levels of neuroticism were found to be related to OCD severity, independently of sexual abuse. The observed correlation could be attributed to the assumption that neuroticism is a general risk factor in the development of psychiatric disorders such as OCD. Neuroticism and OCD may be alternative expressions of the same underlying diathesis and may predispose to a variety of other anxiety disorders as well (Samuels et al., 2000). This also agrees with the findings of Clark, Watson and Mineka (1998) who showed that high levels of neuroticism are positively related to OCD and appear to be a vulnerability factor for both anxiety and depression disorders, without the influence of child abuse in general. Conscientiousness did not seem to be a part of the relation between sexual abuse and the development of OCD. Although these results differ from the expectations based on a community sample (Mathews et al., 2008), they are consistent with the findings in a clinical population (Samuels et al., 2000).

In addition, the mediating role of OCD cognitions is examined in the present study. In contrast to earlier findings, the role of OCD cognitions seemed to be less important, since OCD cognitions and sexual abuse are no longer associated with OCD severity when taking neuroticism into account. This agrees with the findings of Briggs and Price (2009) who showed that OCD cognitions played a subordinate role to depression and anxiety, in the relation between childhood trauma and OCD. A possible explanation could be that OCD related cognitions may well be an outcome of OCD, rather than the reverse (Briggs & Price, 2009).

In fact, it is somewhat surprising that there was no direct relationship found between childhood trauma and OCD, since a direct association between childhood trauma and other psychopathology is demonstrated in earlier findings, even in clinical samples (Hovens et al., 2009; Wiesma et al., 2009; Stein, 1996; Lochner et al., 2002). These results

may indicate a different etiology for OCD than depression or anxiety disorder in general. For instance, a long standing clinical observation is that stressful life events play a major role in the development of depression. Some theories argue that stressful life events do play a role in the development of OCD as well (Sadock & Sadock, 2007), other theories indicate that OCD is a biological disorder (Stanford School of Medicine, 2012). The possibility of a familial component as well, may suggest that OCD manifest with a more limited role of stressful life events (Sadock & Sadock, 2007). However, caution must be applied with this assumption, since the evidence for biological markers are premature.

A number of limitations need to be acknowledged regarding the present study. The first important limitation is the correlational and cross-sectional nature of the data, hence we do not know if the found association between sexual abuse and OCD severity is a causal relation. Secondly, the data are based on retrospective reports of child abuse. Retrospective acquired data may incur the possibility of reverse causation, that is the presence of depressive and anxiety symptoms could lead patients to perceive and report more childhood trauma in retrospection via mood-congruent recall (Wiersma et al., 2009). However, Scott et al. (2010) have found a significant association between child maltreatment and mood, anxiety and substance use disorders in a community sample in which the child maltreatment is prospectively ascertained by a child protection agency history. This implies that it is indeed child maltreatment that is associated with subsequent poor mental health outcomes, rather than just the memories of maltreatment (Scott et al., 2010). However caution is still necessary. Thirdly, the current study has only examined participants with an OCD diagnose, and fail to take a healthy control group into account. This makes it impossible to compare prevalence rate of childhood abuse with individuals without an OCD diagnose. In addition, another limitation is the moment of interviewing the participants. All the measurements took place in the baseline measurement, except for childhood trauma, which was assessed one year after the first measurement. It could be possible that participants who had experienced more trauma during childhood, did not participate in the second measurement, which may indicate a selection bias. However, in a biographic interview in the baseline measurement (results not presented), participants were asked about the duration and intensity of childhood trauma as well. There were no differences on trauma score between the patients who did participate at baseline and did not participate in the second measurement, so a selection bias is less likely. A final limitation is that the current study has focused on participants who had experienced some form of sexual abuse. Despite the large

sample size of the study, there is only 16.3 percent who had experienced in some way sexual abuse, which is a total of 30 persons. This could reduce the power of the study.

Despite the limitations, the present study could make several contributions to the current literature. It is the second study conducted in a clinical population about the association between childhood trauma and OCD severity. Moreover, rather than only the presence of the OCD diagnose, this study takes the severity of OCD into account. Furthermore, the use of a large and representative sample in which other demographic and clinical characteristics were adjusted, such as level of education, comorbidity and age at onset of OCD, provides more insight into the association between childhood trauma and OCD severity, or lack there of.

Finally, the present study is an initial first step towards evaluating the association between different forms of childhood trauma and the severity of OCD. The limited role of childhood trauma demonstrated in this study, cast doubt on whether putting emphasis on the trauma in treatment. In literature, some researchers found that childhood trauma cause subsequent problems and suggest it is necessary to pay attention to the childhood trauma in treatment of, for instance depression (Hovens et al., 2009; Wiersma et al., 2009). The small association between sexual abuse and severity of OCD, raises the question whether interventions that focus specifically on the sexual abuse, will contribute to a more effective treatment of OCD. This focus could be counterproductive as well and caution is recommended. Besides, evidence based literature about treatment of OCD, pointed out that most effective treatment is cognitive behavioral therapy, sometimes in conjunction with pharmacotherapy (Rachman, 2004). In literature there is no evidence that focusing on childhood trauma would be effective when treating OCD and based on current findings it cannot be recommended either. More research in clinical populations needs to be undertaken to examine this issue. For instance, a crossover study would be a suggestion to examine the implications for clinical practice. In a randomized, clinical trial participants are assigned to two different types of treatment: one with a focus on the childhood abuse and the other treatment condition the focus on childhood abuse is omitted. This could make it possible to directly compare the effectiveness of focusing on the abuse in childhood.

References

- Barlow, D.H. & Durand, V.M. (2005). *Abnormal psychology. An integrative approach*. Belmont: Thomson Wadsworth.
- Brady, E.U. & Kendall, P.C. (1992) Comorbidity of Anxiety and Depression in Children and Adolescents. *Psychological Bulletin*, *111*, 244-255.
- Briggs, E.S. & Price I.R. (2009). The relationship between adverse childhood experience and obsessive-compulsive symptoms and beliefs: The role of anxiety, depression and experiential avoidance. *Journal of Anxiety disorders*, *23*, 1037-1046.
- Browne, A. & Finkelhor, D. (1986) Impact of child sexual abuse: a review of the research. *Psychological Bulletin*, *99*, 66-77.
- Clark, L.A., Watson, D. & Mineka, S. (1996) Temperament, personality, and the mood and anxiety disorders. *Journal of Abnormal Psychology*, *103*, 103-116.
- Cogle, J.R. Tipano, K.R., Sachs-Ericsson, N. Keough, M.E. & Riccardi, C.J. (2010). Explaining the unique relationships between anxiety disorders and childhood physical and sexual abuse in the national comorbidity survey replication. *Psychiatry Research*, *177*, 150-155.
- Donahue, R.D. (2005). The structural relationships among generalized anxiety, obsessions-compulsions, and depression at the syndrome and sub-syndrome level. *Behavioral Research Therapy*, *4*, 1587-1609.
- First, M.B., Spitzer, R.L., Gibbon, M. & Williams, J.B.W. (1996). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition. (SCID-I/P)* New York: Biometrics Research, New York State Psychiatric Institute.
- Frost, R.O. & Steketee, G. (2002). *Cognitive approaches to obsessions and compulsions: theory assessment, and treatment*. Amsterdam, Netherlands: Pergamon/Elsevier Science Ltd.
- Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Delgado, P., Heninger, G. R., et al. (1989a). The Yale-Brown Obsessive Compulsive Scale: validity. *Archives of General Psychiatry*, *46*, 1012–1016.
- Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleischmann, R. L., Hill, C. L., et al. (1989b). The Yale-Brown Obsessive Compulsive Scale: development, use, and reliability. *Archives of General Psychiatry*, *46*, 1006–1011.
- Heim, C. & Nemeroff, C.B. (2001). The role of childhood trauma in neurobiology in mood and anxiety disorders: preclinical and clinical studies. *Society of Biological Psychiatry*, *49*, 1023–1039.
- Hendriks, A. A. J., Hofstee, W. K. B., & De Raad, B. (1999) *Handleiding bij de Five-Factor Personality Inventory (FFPI)* [The Five-Factor Personality Inventory (FFPI) professional manual]. Amsterdam: Harcourt Test.
- Hovens, J.G.M.F., Wiersma, J.E., Giltay, E.J., Oppen, van, P., Spinhoven, P., Penninx, B.W.J.H. & Zitman, F.G. (2009). Childhood life events and childhood trauma in adult patients with depressive, anxiety and comorbid disorders vs. controls. *Acta Psychiatrica Scandinavia*, *122*, 66-74.
- Kessler, R.C. Gillis-Light, J., Magee, W.J., Kendler, K.S., & Eaves, L.J. (1997). Childhood adversity and adult psychopathology. In: Briggs, E.S. & Price I.R. (2009). The relationship between adverse childhood experience and obsessive-compulsive symptoms and beliefs: The role of anxiety, depression and experiential avoidance. *Journal of Anxiety disorders*, *23*, 1037-1046.
- Khanna, S. & Reddy, Y.C.J. (2004). *Obsessive Compulsive Disorder, an Indian perspective*. Mumbai: Abbott India Ltd.

- Lochner, C., du Toit, P.L., Zungu-Dirwayi, N., Marais, A., van Kradenburg, J., Curr, B., Seedat, S., Niehaus, D.J.H. & Stein, D.J. (2002). Childhood trauma in obsessive-compulsive disorder, trichotillomania, and controls. *Depression and Anxiety*, *15*, 66–68.
- Luteijn, F., Barelds, D.P.H., Arrindell, W.A., Deelman, B.G., Kamphuis, J.H. & Vertommen, H. (2008). *Psychologische diagnostiek in de gezondheidszorg*. Den Haag: Lemma.
- Mathews, C.A., Kaur, N., Stein, M.B. (2008). Childhood trauma and obsessive-compulsive symptoms. *Depression and Anxiety*, *25*, p. 742-751.
- Moskvina, V., Farmer, A., Swainson, V., O'Leary, J., Gunasinghe, C., Owen, M., Craddock, N., McGuffin, P. & Korszun, A. (2007). Interrelationship of childhood trauma, neuroticism and depressive phenotype. *Depression and anxiety*, *24*, p. 163-168.
- Obsessive Compulsive Cognitions Working Group (2001). Development and initial validation of the Obsessive Beliefs Questionnaire and the Interpretation of Intrusions Inventory. *Behaviour Research and Therapy*, *39*, 987–1006.
- Obsessive Compulsive Cognitions Working Group. (2003). Psychometric validation of the Obsessive Belief Questionnaire and the interpretation of intrusion inventory. Part 1. *Behaviour Research and Therapy*, *41*, 863–878.
- Rachman, S. (2004). *Anxiety*. Hove, East-Sussex: Psychology Press Ltd.
- Sadock, B.J. & Sadock, V. A. (2007). *Kaplan & Sadock's Synopsis of psychiatry. Behavioral sciences; Clinical psychiatry* (10th Edition). Baltimore: Williams & Wilkins.
- Salkovskis, P. Shafran, R. Rachman, S. & Freeston, M. H. (1999). Multiple pathways to inflated responsibility beliefs in obsessional problems: possible origins and implications for therapy and research. *Behaviour Research and Therapy*, *37*, 1055-1072.
- Samuels, J., Nestadt, G., Bienvenu, O. J., Costa, P. T., Riddle, M. A., & Liang, K. (2000). Personality disorders and normal personality dimensions in obsessive-compulsive disorder. *British Journal of Psychiatry*, *177*, 457–462.
- Saunders, B. E., Villeponteaux, L. A., Lipovsky, J. A., Kilpatrick, D. G., & Veronen, L. J. (1992). Child sexual assault as a risk factor for mental disorders among women: a community survey. *Journal of Interpersonal Violence*, *7*, 189–204.
- Scott, K.M., Smithe, D.R. & Ellis, P.M. (2010). Prospectively ascertained child maltreatment and its association with DSM-IV mental disorders in young adults. *Arch Gen Psychiatry*, *67*, 712-719.
- Sica, C., Carodeschi, D., Sanavio, E., Dorz, S. Manchisi, D. (2004). A study of the psychometric properties of the Obsessive Beliefs Inventory and Interpretations of Intrusions Inventory on clinical Italian individuals. *Journal of Anxiety Disorder*, *18*, 291-307.
- Sookman, D., & Pinard, G. (2002). Overestimation of threat and intolerance of uncertainty in obsessive compulsive disorder. In: R.O. Frost & G. Steketee, *Cognitive approaches to obsessions and compulsions: theory, assessment, and treatment* (pp 63-89). Amsterdam, Netherlands: Pergamon/Elsevier Science.
- Stanford School of Medicine (2012). Stanford School of Medicine: Obsessive-Compulsive and Related Disorders. Retrieved January 5, 2012, from <http://ocd.stanford.edu/about/understanding.html>.
- Stein, M.B., Walker, J.R., Anderson, G., Hazen, A.L., Ross, C.A., Eldridge, G. & Forde, D.R. (1996). Childhood physical and sexual abuse in patients with anxiety disorders and in a community sample. *Am J Psychiatry* *153*:2.
- Thombs, B.D., Bernstein, D.P., Lobbestael, J., & Arntz, A. (2009). A validation study of the Dutch Childhood Trauma Questionnaire-Short Form: Factor structure, reliability, and known-groups validity. *Child Abuse & Neglect*, *33*, 518-522.
- Widom, C.S., DuMont, K. & Czaja, S.J. (2007). A Prospective Investigation of Major Depressive Disorder and Comorbidity in Abused and Neglected Children Grown Up. *Arch Gen Psychiatry*, *64*: 49-56.

- Wiersma, J.E., Hovens, J.G.M.F., Oppen, van, P., Giltay, E.J., Schaik, van, D.J.F., Beekman, G.T.F. & Penninx, B.W.J.H. (2009). The importance of childhood trauma and childhood life events for chronicity of depression in adults. *Journal Clinical Psychiatry*, 70, (7), 983-989.
- Wilson, K.A., Chambless, D.L. & Beurs, E., de (2004). Beck Anxiety Inventory. In: Maruish, M.E. (ed). *The use of psychological testing for treatment planning and outcomes assessment* p. 399 – 420. New Jersey: Lawrence Erlbaum Associates, Inc.