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Trauma History And Its Differential Relationship To Obsessive-Compulsive Disorder And Body Dysmorphic Disorder Symptomatology

Linda Renee Keenan

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TRAUMA HISTORY AND ITS DIFFERENTIAL RELATIONSHIP TO OBSESSIVE-
COMPULSIVE DISORDER AND BODY DYSMORPHIC DISORDER
SYMPTOMATOLOGY

by

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This dissertation, submitted by Linda Renee Keenan in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

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Title Trauma History and its Differential Relationship to Obsessive-Compulsive Disorder and Body Dysmorphic Disorder Symptomatology

Department Psychology

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Linda Renee Keenan
June 4, 2016

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ABSTRACT

Body Dysmorphic Disorder (BDD) and Obsessive-Compulsive Disorder (OCD) are often severe and disabling psychiatric conditions. Many similarities have been noted between the two disorders, and it has been suggested that BDD may best be understood as existing along the OCD spectrum. Limited empirical evidence exists to suggest that childhood trauma history may be associated with both OCD and BDD symptomatology, but few studies have compared the two disorders directly in this regard. In addition, some research has indicated that OCD symptom dimensions are differentially related to specific types of trauma exposure. The goal of this study was to examine trauma history and its associations with symptoms of BDD and subclinical OCD subtypes, in order to better understand the potential relationship between BDD and OCD. A series of multiple regression analyses and post-hoc contrasts were used to analyze these relationships in two separate samples. The first sample consisted of 474 university participants, while the second consisted of 137 participants from Mechanical Turk, which is an online labor market. In Sample 1, BDD symptoms and OCD checking and obsessing subtype symptoms were found to be significant predictors of physical abuse, sexual abuse, emotional abuse, neglect, and total abuse. Washing symptoms were significant predictors of sexual abuse, neglect, and total abuse, while ordering symptoms were significant

predictors of neglect, emotional abuse, and total trauma. Further, BDD symptoms were significantly more predictive of all OCD symptoms across sexual abuse, emotional abuse, neglect, and total trauma, while they were as equally predictive of physical abuse as were checking and obsessing symptoms. The results of Sample 2 did not replicate the majority of these findings, although BDD symptoms were found to be predictive of neglect, emotional abuse, and total abuse, while obsessing symptoms were found to be predictive of emotional abuse. Possible explanations for these discrepancies are discussed.

Although results were not conclusive in establishing clear relationships between BDD symptoms and OCD symptom dimensions across samples, the significant and consistent findings of Sample 1 suggest that trauma exposure may be a causal factor in the etiology of both OCD and BDD. Physical abuse may contribute equally to the development of BDD and OCD obsessing and checking subtypes, while sexual abuse, emotional abuse, and neglect may play a larger contributory role to the development of BDD than to that of all OCD subtypes. Although a relationship between the two disorders may exist, the inconsistent results across samples suggest that this relationship is complex and requires further research to conceptualize.

Key Words: BDD Disorder, OCD Disorder, Childhood Trauma, Subtypes, Symptom Dimensions

CHAPTER I

INTRODUCTION

Body Dysmorphic Disorder (BDD) is a poorly-understood disorder that has been receiving an increasing amount of research attention in the last decade. Frequently a severe and disabling condition, BDD is characterized by an intense, distressing fixation with appearance, either by way of perceiving flaws that are not apparent to others, or being excessively concerned with slight defects that do exist. Although concerns with appearance are common for most individuals, only one percent of the general population is thought to experience concerns severe enough to warrant a diagnosis of BDD (Phillips, 2001). BDD tends to be underdiagnosed, given that many individuals with BDD do not seek treatment out of embarrassment or shame; moreover, cases of BDD that do present may not be recognized and go undiagnosed. Symptoms of BDD often first emerge in early adolescence with a chronic course, and may result in substantial academic, occupational, and psychosocial impairment, along with social isolation and suicidality (Didie et al., 2010).

The preoccupations reported by individuals with BDD are often limited to a single area of the body, but they may also encompass many areas simultaneously. Some of the most frequent areas reported to be distressing include skin, teeth, hair, and facial proportions (Phillips et al., 2006a), although it is not unusual for areas of concern to extend to the body. These preoccupations can be extremely time-consuming, with some

individuals reporting spending several hours per day ruminating about their distressing thoughts. As such, these ruminations can interfere with several domains of an individual's life, and can substantially reduce quality of that life. Individuals with BDD often engage in various avoidance behaviors and compulsive behaviors in an attempt to relieve their distress (Phillips et al., 2006a), and engaging in repetitive behaviors or mental acts in response to appearance-related concerns comprises part of the diagnostic criteria. Behaviors such as avoidance of social activities, camouflaging, excessive exercise, repetitive mirror-checking, reassurance-seeking, and seeking cosmetic surgery are common.

Although BDD has received more attention in recent years, there is still little known regarding its nosology and classification. However, given its clinical presentation, associated features, and the emerging research base investigating its etiology, it has been proposed by many researchers that BDD may best be conceptualized as an OCD Spectrum Disorder (OCSD). The *OCD Spectrum* is a hypothesized latent network which is comprised of a variety of interconnected disorders once thought to be distinct. These disorders are thought to share underlying symptom features of impulsivity, compulsivity, and obsessionality, and have been found to share other commonalities in terms of etiology, presentation, and treatment. Obsessive-Compulsive Disorder (OCD), Trichotillomania, Kleptomania, and BDD, among others, are some of the disorders thought to be included within this spectrum (Sulkowski, Mancil, Reid, Chakoff, & Storch, 2011). The potential relationship between OCD and BDD has been recognized enough to warrant categorical changes in the most recent *Diagnostic and*

Statistical Manual of Mental Disorders (DSM-5), which included the addition of an Obsessive Compulsive and Related Disorders (OCRD) diagnostic category, and the inclusion of BDD within this category (American Psychiatric Association, 2013). Prior to this diagnostic shift, BDD was categorized as a somatoform disorder and thus has only recently been formally recognized as having ties to other obsessive and/or compulsive disorders. Recent research has also suggested that the shared etiology between OCRDs appears to contain a moderate genetic component (Monzani, Rijdsdijk, Harris, & Mataix-Cols, 2014).

The Hypothesized Relationship between BDD and OCD

Obsessive-Compulsive Disorder is a common condition, characterized by the presence of obsessions and/or compulsions, although most individuals present with both obsessions and compulsions (American Psychiatric Association, 2013). Obsessions are defined as recurrent, persistent, and intrusive thoughts, urges, or images that an individual attempts to ignore or neutralize in some way, and that cause significant distress or impairment in an individual's life. Compulsions are defined as repetitive mental acts or behaviors that occur in response to obsessions or strict rules that an individual has internalized, and that are performed as means of reducing or eliminating distress. OCD often presents in adolescence or early adulthood, and has a lifetime prevalence rate of approximately two percent in the general population (Kessler et al, 2005). OCD tends to have a chronic course, and can be quite disabling and debilitating depending on symptom severity. Like BDD, OCD made a categorical shift in the newest DSM-5 (American Psychiatric Association, 2013): previously classified as an anxiety disorder, OCD has

now been moved to the Obsessive Compulsive and Related Disorders diagnostic category.

Several similarities seem to emerge when comparing BDD and OCD, and these apparent similarities occur across a number of domains. Of these domains, perhaps most obvious is that concerning the clinical presentation and symptomatology of the two disorders, which look markedly similar. The intense appearance-related fixations characteristic within BDD appear to fit the diagnostic definition of an OCD obsession remarkably well, given that they are recurrent, persistent, intrusive thoughts that are difficult to ignore and cause marked distress and anxiety (American Psychiatric Association, 2013). Moreover, the camouflaging, mirror-checking, and reassurance-seeking behaviors frequently observed in BDD resemble the diagnostic definition of OCD compulsions, given that they are repetitive behaviors or mental acts that an individual feels driven to engage in with the goal of reducing anxiety or distress. In addition, OCD has been found to be the most frequent comorbid disorder of clinical and subclinical BDD (Altamura, Paluello, Mundo, Medda, & Mannu, 2001), and comorbidity levels as high as 38% have been reported between BDD and OCD (Hollander, 2005).

Clinical features also appear to be a point of overlap when comparing the two disorders. Phillips et al. (2007) found that individuals with BDD and those with OCD did not demonstrate significant differences in demographic, age of onset, illness duration, general functioning, and most comorbidity. Differences do tend to emerge, however, on measures of insight and suicidality, with the BDD group exhibiting poorer insight and higher suicidality. Genetic, cognitive, and neurobiological similarities between the two

disorders have also been reported. Family studies have implicated a possible genetic relationship, as BDD has been found to occur more frequently in the first-degree relatives of OCD probands than in control probands (Bienvenu et al., 2000). Cognitive deficits also appear to be a point of overlap, as individuals with BDD and OCD have been found to be similarly impaired on measures of executive function (Hanes, 1998). At the neurobiological level, individuals with BDD and OCD both tend to display heightened levels of metabolic activity within the limbic system, and serotonin involvement has been implicated in the pathophysiology of both disorders (Hollander, 2005).

In addition, OCD and BDD have each separately been associated with visual processing deficits (Feusner, Townsend, Bystritsky, & Bookheimer, 2007; Feusner, Hembacher, Moller, & Moody, 2011; Rankins, Bradshaw, & Georgiou-Karistianis, 2005); executive function deficits (Bailey, 2004; Deckersbach et al., 2000a; Dunai, Labuschagne, Castle, Kyrios, & Rossell, 2010; Hanes, 1998), emotional interference (Buhlmann, McNally, Wilhelm, & Florin, 2002; Rao, Arasappa, Reddy, Venkatasubramanian, & Reddy, 2010); and emotion recognition deficits (Aigner et al., 2007; Buhlmann, McNally, Etcoff, Tuschen-Caffier, & Wilhelm, 2004; Corcoran, Woody, & Tolin, 2008; Grisham, Henry, Williams, & Bailey, 2010; Jung et al., 2010).

Symptom Dimensions within OCD

OCD is often considered to be a heterogeneous disorder, with OCD patients demonstrating significant diversity in clinical presentation. Demographics, cognitive correlates, clinical features, and associated features of the disorder appear to vary widely among individuals diagnosed. It has been proposed that these inconsistencies are likely

due to the wide variety in symptoms that individuals can present with while still receiving the same diagnosis. While persistent obsessions and/or compulsions are present for each individual diagnosed, some individuals only demonstrate, for example, repetitive checking behaviors, while others demonstrate excessive concerns with cleanliness and washing. Much empirical work has suggested that OCD may be better conceptualized if it is classified by subtypes, given the possibility that treatment options may vary according to clinical presentation. A number of subtyping classification systems have been proposed in light of this, one of which is based on the primary cluster of symptoms an individual presents with (e.g. checking, washing, etc.). These clusters of symptoms are often referred to as *symptom dimensions*.

A number of significant differences have been identified between individuals who present with various primary symptom dimensions of OCD, however, the question of how best to enumerate and classify these symptom dimensions is still a matter of debate (Leckman et al., 2010). Utilizing an item- and category-level factor analysis, Pinto et al. (2008) proposed a five-factor model of Symmetry/Ordering, Taboo Thoughts, Hoarding, Doubt/Checking, and Contamination/Cleaning. Alternatively, four-factor models have also been proposed, such as that presented by Bloch, Landeros-Weisenberger, Rosario, Pittenger, & Leckman (2008), whose meta-analysis determined that a four-factor structure of Symmetry, Forbidden Thoughts, Cleaning, and Hoarding accounted for much of the heterogeneity among OCD symptoms. It is important to note, however, that these factor analyses were conducted prior to the most recent DSM-5, in which hoarding behavior is now accounted for within the criteria of Hoarding Disorder, resulting in a

diagnostic shift away from OCD for many individuals who display predominant hoarding behavior. It is therefore unclear what effects these changes would have on future factor analyses attempting to quantify OCD symptom dimensions.

Some of the differences found to exist between OCD symptom dimensions include deficits in emotion recognition (Jhung et al, 2010; Lawrence et al., 2007; Montagne et al., 2008); emotional interference in visual processing (Rao, Arasappa, Reddy, Venkatasubramanian, & Reddy, 2010); and executive function deficits (Hashimoto et al., 2011; Jang et al.; 2010; Lawrence et al., 2006; Nedeljkovic et al., 2009; Omori et al., 2007).

Trauma History in OCD and BDD

Trauma history among individuals with OCD, and the potential role it has in the development of OCD, has only recently begun to be investigated and thus the empirical base within this domain is still emerging. However, the relevant literature amassed so far suggests that traumatic life events do seem to be over-represented in individuals with OCD, in comparison with the general population, and may thus contribute in some regard to the pathogenesis of this disorder.

In a study examining childhood trauma among individuals with OCD and non-clinical controls, Hemmings et al. (2013) found that experiencing childhood emotional abuse and neglect significantly increased the likelihood of having OCD. Although this study utilized retrospective report, other studies examining childhood OCD have corroborated this link. Lafleur et al. (2011) examined trauma history among children and adolescents diagnosed with OCD, and found that incidence of PTSD and trauma

exposure was significantly higher among these children, as compared with non-clinical controls. Further, they found that OCD symptom severity was higher among those children with comorbid PTSD.

Studies using specific subgroups of OCD-diagnosed individuals have also supported a relationship between trauma history and symptomatology. Gershuny, Baer, Parker, Gentes, Infield, & Jenike, (2008) found that, among individuals with treatment-resistant OCD, 82% reported experiencing at least one trauma, and about one quarter reported experiencing physical and/or sexual abuse in childhood. Further, almost 40% of this sample met the diagnostic criteria for PTSD. In another study examining individuals in methadone maintenance treatment, it was found that those with OCD reported a higher incidence of experiencing rape over their lifetime as compared to those without a diagnosis of OCD (Peles, Adelson, & Schreiber, 2009).

Although much empirical work has supported a genetic component to the development of OCD, exposure to trauma and other environmental variables may potentially affect the course of the disorder. Cath, van Grootheest, Willemsen, van Oppen, & Boomsma (2008) found that, among monozygotic twins, those scoring high on OCD symptoms reported a higher rate of sexual assault as compared to their lower-scoring twin counterparts, suggesting a potential environmental influence in the pathogenesis of OCD.

A small handful of studies have also examined trauma history in relation to OCD symptom dimensions. Cromer, Schmidt, & Murphy (2007) found that, among four symptom dimensions examined, symmetry/ordering and obsessions/checking symptoms

were associated with traumatic life events in general. Further, they found that symptom severity among individuals with OCD was significantly associated with these events. Another notable study went on to examine the relationship between symptom dimensions and specific types of traumatic events. In a longitudinal study assessing individuals from birth through adulthood, Grisham et al. (2011) found that retrospectively reported childhood physical and sexual abuse were significantly predictive of a diagnosis of OCD in adulthood, and this association held even after controlling for the presence of a PTSD diagnosis. In addition, when examining the relationship between trauma history and OCD symptom dimensions, it was found that childhood sexual abuse was associated with the Harm/checking, Symmetry/ordering, and Shameful Thoughts dimensions, but not with the Contamination/washing dimension. Childhood physical abuse was associated with the Shameful thoughts dimension, while experiencing the loss of a parent in childhood was associated with the Harm/checking and Shameful Thoughts dimensions.

Research on the history of trauma in individuals with BDD is even more limited than that for individuals with OCD. However, the few studies that have examined the relationship between BDD and trauma history have found initial evidence to suggest that early negative life events may potentially play a role in the development of BDD. Didie et al. (2006) found that, among individuals with BDD, a high proportion reported experiencing some form of childhood maltreatment (78.7%), with emotional neglect being the most commonly reported of these (68%). Emotional abuse was reported by 56% of the sample, physical abuse was reported by 34.7%, physical neglect was reported by 33.3%, while sexual abuse was reported by 28% of the sample. In addition, perceived

sexual abuse was found to be significantly associated with BDD symptom severity, and individuals reporting a history of trauma were also significantly more likely to have a history of attempting suicide.

In a study comparing individuals with BDD to non-clinical controls, Buhlmann, Marques, & Wilhelm (2012) found that individuals with BDD reported significantly higher incidences of traumatic experiences overall in childhood and adolescence. In terms of specific forms of traumatic experiences, these significant differences occurred for both physical and sexual abuse, but not for emotional abuse.

Only one known study has compared OCD and BDD directly on trauma history (Neziroglu, Khemlani-Patel, Yaryura-Tobias, 2006). Rates of abuse overall were 38% in the BDD group, as compared to 14% in the OCD group. In terms of specific forms of abuse, it was found that rates of emotional and sexual abuse were significantly higher among individuals with BDD than those with OCD (28% vs. 2% and 22% vs. 6%, respectively), while no significant differences were found for rates of physical abuse.

Overall, these findings suggest that history of trauma exposure in childhood and adolescence may potentially play a contributory role to the development of OCD and BDD symptoms.

The Present Study

The purpose of the present study is to compare subclinical OCD and BDD symptomatology on measures of self-reported trauma history, with the goal of further investigating the nosological relationship between OCD and BDD. There is still much to understand regarding the relationships between BDD and OCD, as well as between

OCRDs in general, and clarifying the nature of these relationships could potentially impact treatment options. In light of the heterogeneity often seen within OCD, as well as the recent research suggesting that OCD should potentially be classified by symptom dimension subtypes, it seems especially important to clarify where BDD exists in relation to these symptom dimensions. Doing so may further inform treatment efficacy for both disorders. This study, then, has six related research questions:

1. Do BDD symptoms predict trauma according to type of trauma?
2. Is any trauma type more associated with BDD symptoms than another?
3. Do OCD symptom clusters predict trauma according to type of trauma?
4. Is any OCD symptom cluster more associated with any given trauma type than another?
5. Is any trauma type more associated with any given OCD symptom cluster than another?
6. Are the associations between BDD symptoms and trauma type different than those between each OCD symptom dimension and trauma type?

Preliminary Hypotheses

Although only a few studies have examined trauma exposure in relation to BDD and OCD symptoms, preliminary hypotheses were formed based on these limited findings, and are as follows:

1. BDD, ordering, obsessing, and checking symptoms will be significantly and equally predictive of physical trauma.

2. BDD, checking, and ordering symptoms will be significant predictors of sexual trauma, but BDD symptoms will be significantly more so.
3. BDD symptoms will be significantly more predictive of sexual trauma than washing symptoms.
4. BDD, ordering, obsessing, and checking symptoms will be significantly predictive of neglect trauma.
5. BDD, ordering, obsessing, and checking symptoms will be significantly predictive of emotional abuse trauma, but BDD symptoms will be significantly more predictive of emotional abuse than OCD symptoms.

CHAPTER II

METHOD

Participants and Procedure

Participants were drawn from two samples. Sample 1 consisted of 474 students attending a large Midwestern university. Females comprised 82.9% of the sample, and Caucasians accounted for 88% of the sample. All subjects were between the ages of 18 and 41, with a mean of 19.97 years and SD of 2.68 years, were enrolled in undergraduate psychology classes and participated in the study for one hour of course credit.

Participants were recruited through SONA, which serves as the online human subjects pool in the university. Psychological studies are listed in the SONA database, and individuals can choose which studies they would like to participate in. Studies are made available to participants based on certain eligibility criteria; in the present study, individuals were required to be at least 18 years of age. Participants received course credit through SONA following completion of the study.

Sample 2 consisted of 137 participants recruited via Amazon Mechanical Turk (MTurk; www.mturk.com), an online labor market which has been utilized for data collection by behavioral researchers. Although Casler, Bickel, and Hackett (2013) found that samples obtained from MTurk were more ethnically and socio-economically diverse than those obtained using traditional face-to-face methods, they also found that test

results between the two methods were not significantly different. Goodman, Cryder, and Cheema (2013) also concluded that MTurk serves as a viable method for data collection, but advised that participants be screened for attention and language comprehension. Individuals were compensated 25 cents for completing the study. Females comprised 62% of the sample, and Caucasians accounted for 77.4% of the sample. All subjects were between the ages of 18 and 58, with a mean of 32.04 years and SD of 8.33 years.

All data was collected through an online survey. Subjects participated in the study individually, and were provided a consent form to read and assent to prior to the beginning of the study. They then completed the demographic form, followed by the questionnaires. The demographics form obtained information about gender, age, ethnicity, education, annual income, and previous psychiatric diagnoses. The questionnaires were administered in a randomized order to prevent order effects. Two attention checks were also utilized to assist with pre-analysis data exclusion; the first check gauged attention to instructions, while the second gauged attention to question content. The experiment lasted approximately 20 minutes. Participants were then debriefed and thanked for their efforts, and were either provided course credit or compensation.

Materials

Child Abuse and Trauma Scale

The Child Abuse and Trauma Scale (CATS) is a self-report scale designed to assess the frequency and extent of traumatic experiences in childhood and adolescence (Sanders & Becker-Lausen, 1995). It is a 38-item Likert-type rating scale, consisting of

three subscales measuring various types of negative childhood experiences: Sexual Abuse, Punishment, and Neglect/Negative Home Environment. Internal consistency among a non-clinical college sample was excellent for the total score ($\alpha = .90$) and ranged between good and acceptable for the subscales (.76, .63, and .86, respectively). Test-retest reliability for the total score ($r = 0.89$) and subscale scores (ranging between 0.71 and 0.91) were high. The total score also correlated significantly with measures of dissociation ($r = .24-.33$), depression ($r = .40$), and stressful life events ($r = .29$), suggesting validity of the CATS. Kent and Waller (1998) identified a fourth subscale of Emotional Abuse in the CATS, utilizing, with one exception, items from the CATS that had not previously been assigned to a specific subscale. Among their non-clinical female sample, they found internal consistency and test-retest reliability of the total score and subscales to be generally equivalent to that found by Sanders and Becker-Lausen (1995). In addition, internal consistency for the Emotional Abuse subscale was high ($\alpha = .88$), and the scale correlated significantly with measures of depression and anxiety ($r = .352$ and $.384$, respectively).

Trauma History Questionnaire

The Trauma History Questionnaire (THQ) is a 24-item self-report scale that assesses the occurrence and frequency of a number of traumatic experiences across three domains: Crime-related Events, General Disaster & Trauma, and Physical & Sexual Experiences (Hooper, Stockton, Krupnick, & Green, 2011). Test-retest reliability for the items are reported to range from fair to excellent, and the THQ has been found to correlate significantly with other measures of traumatic experiences, conflict exposure,

and PTSD. The THQ also assesses the age at which each reported traumatic event occurred. For the purposes of this study, only traumatic events within the general domain and those reported to have occurred prior to age 18 were included in analyses.

OCD Inventory – Revised

The OCD Inventory – Revised (OCI-R) is a self-report measure designed to assess various symptoms of OCD in both clinical and non-clinical populations (Foa et al., 2002). It consists of 18 questions that are rated on a five-point Likert scale, which are formed to create six subscales representing symptom categories that are common within OCD: Washing, Checking, Ordering, Obsessing, Hoarding, and Neutralizing. For this study, only the washing, checking, ordering, and obsessing scores were used. The hoarding subscale was excluded due to the fact that hoarding behavior is now classified as a distinct disorder within the DSM-5. The neutralizing subscale was also excluded, given that no previous research has found it to be correlated with traumatic events.

Internal consistency of the OCI-R among non-clinical controls for the total score has been found to be high ($\alpha = 0.89$). Four of the six subscales, including ordering, hoarding, and washing, also have been found to have high internal consistency, ranging from 0.73 to 0.89, while internal consistency for the checking score is acceptable ($\alpha = .65$). Test-retest reliability among non-clinical controls for the total score ($r = 0.84$) and subscale scores (ranging between 0.57 and 0.87) were high.

Dysmorphic Concern Questionnaire

The Dysmorphic Concern Questionnaire (DCQ) is self-report scale designed to assess excessive concern with physical appearance and bodily functioning (Oosthuizen,

Lambert, & Castle, 1998), and has also been used as a screening measure for BDD (Mancuso, Knoesen, Castle, 2010). It consists of seven questions that are rated on a Likert-type scale, and has high internal consistency ($\alpha = 0.88$).

Depression Anxiety Stress Scales

The Depression Anxiety Stress Scales (DASS) is a 42-item self-report scale to assess negative mood states across the domains of depression, anxiety, and stress. Three subscale scores are provided for each of these domains. It has been shown to demonstrate acceptable to excellent internal consistency and concurrent validity among both clinical and non-clinical groups (Antony, Bieling, Cox, Enns, & Swinson, 1998). In this study, the Depression subscale was used as a covariate to factor out any results attributable to depressive symptomatology. The two samples differed on this measure, with the Mechanical Turk participants demonstrating significantly higher depression scores than the university participants.

Data Analysis

SPSS 20 (IBM Corp, 2011) and Stata 13 (StataCorp, 2013) were used to conduct all statistical analyses. Prior to analysis, data was screened and the means of the independent and dependent variables were compared for those who failed the attention checks and those who did not. Subscales from the CATS and THQ served as the dependent variables: physical abuse (PA), sexual abuse (SA), emotional abuse (EA), neglect (NG), general trauma (GT), and total abuse (TA). A series of regression analyses was conducted for each sample, with each consisting of the DASS covariate and one symptom variable (i.e. washing, checking, ordering, obsessing, or DCQ).

Post-Hoc Analyses

In order to determine which independent variables were most equivalent to and different from each other in terms of predictive power, following the multiple regressions for each dependent variable, a series of comparisons between the regression coefficients was conducted to examine statistical equivalence. These comparisons were performed using the *Sureg* procedure in Stata (StataCorp, 2013), which is an appropriate method when comparing regression coefficients that have correlated errors.

CHAPTER III

RESULTS

All analyses were first conducted separately for Sample 1 and Sample 2, and then were again conducted for a combined dataset that was created from the two samples. The two samples were compared statistically using t-tests conducted on each of the variables of interest to determine any significant differences between the two datasets. It was anticipated that the data from the MTurk participants would not differ from that of the university participants, but the majority of the variables of interest, as well as several demographic variables, did demonstrate significant differences. The MTurk sample was comprised of fewer females (62% vs. 82.9%), older participants ($M = 32.04$ years vs. 19.97 years), fewer Caucasians (77.4% vs. 88%), and more educated participants (a high school diploma or GED was the highest education obtained for 44.5% vs. 95.7%).

Descriptive Analyses and Zero-Order Correlations

Tables 1 and 2 outline the demographic statistics and the score means, standard deviations, minimums, and maximums for each measure. Table 3 outlines the correlations between each of the dependent variables and the other measures.

Statistical Analyses for Sample 1

Eighteen cases with extreme values were eliminated, and all scores were transformed with square root or logarithmic transformations due to non-normality. Only

Table 1. Demographic Statistics.

	Sample 1		Sample 2		Combined Sample	
	N	%	N	%	N	%
<i>Gender</i>	472		137		604	
Male	79	16.7	52	38.0	130	21.5
Female	393	82.9	85	62.0	474	78.2
<i>Age</i>	474		136		605	
18-24	460	97.0	25	18.2	483	79.7
25-29	6	1.3	34	24.8	39	6.4
30-34	1	0.2	29	21.2	30	5.0
35-39	6	1.3	22	16.1	28	4.6
40-44	1	0.2	12	8.8	13	2.1
45-58	0	0.0	14	10.2	12	2.0
<i>Annual Household Income</i>	470		136		601	
< \$20,000	195	41.1	34	24.8	226	37.3
\$20,000 - \$35,000	28	5.9	27	19.7	56	9.2
\$35,000 - \$55,000	38	8.0	35	25.5	72	11.9
\$55,000 - \$75,000	66	13.9	15	10.9	79	13.0
\$75,000 - \$100,000	47	9.9	13	9.5	60	9.9
> \$100,000	96	20.3	12	8.8	108	17.8
<i>Ethnicity</i>	472		137		604	
American Indian/Alaskan Native	10	2.1	0	0.0	9	1.5
Asian	10	2.1	8	5.8	18	3.0
Black/African American	3	0.6	8	5.8	11	1.8
Hispanic	9	1.9	6	4.4	14	2.3
Native Hawaiian/Pacific Islander	1	0.2	1	0.7	2	0.3
Caucasian/White	417	88.0	106	77.4	521	86.0
Other	2	0.4	3	2.2	5	0.8
More than one race	20	4.2	5	3.6	24	4.0
<i>Highest Education</i>	473		137		605	
HS Diploma	451	95.1	46	33.6	496	81.8
GED	3	0.6	10	7.3	13	2.1
Bachelors	5	1.1	47	34.3	50	8.3
Masters	2	0.4	11	8.0	13	2.1
Doctorate	1	0.2	4	2.9	4	0.7
Vocational	11	2.3	14	10.2	25	4.1
None	0	0.0	5	3.6	4	0.7

Table 2. Descriptive Statistics of All Measures.

Sample 1	N	Mean	<i>SD</i>	Min.	Max.
Wash	474	1.76	2.34	0.00	12.00
Order	474	3.41	3.00	0.00	12.00
Obsess	474	2.15	2.69	0.00	15.00
Check	474	2.57	2.53	0.00	15.00
DCQ	474	5.99	4.67	0.00	21.00
Sexual Abuse	474	1.19	2.33	0.00	11.00
Physical Abuse	474	7.77	3.31	0.00	18.00
Neglect	474	9.88	9.53	0.00	48.00
Emotional Abuse	474	6.23	5.20	0.00	27.00
General Trauma	474	0.81	1.27	0.00	8.00
Total Abuse	474	32.67	18.24	5.00	104.00
Depression	474	7.46	8.98	0.00	42.00
Sample 2	N	Mean	<i>SD</i>	Min.	Max.
Wash	137	2.07	3.19	0.00	12.00
Order	137	3.62	3.59	0.00	12.00
Obsess	137	3.61	3.72	0.00	12.00
Check	137	2.73	2.70	0.00	11.00
DCQ	137	6.53	5.44	0.00	21.00
Sexual Abuse	136	1.40	2.74	0.00	14.00
Physical Abuse	136	10.01	4.44	0.00	21.00
Neglect	136	17.65	13.58	0.00	50.00
Emotional Abuse	136	9.43	7.02	0.00	26.00
General Trauma	137	0.55	1.03	0.00	5.00
Total Abuse	136	46.06	26.64	8.00	115.00
Depression	136	13.15	12.95	0.00	42.00
Combined Sample	N	Mean	<i>SD</i>	Min.	Max.
Wash	606	1.82	2.56	0.00	12.00
Order	606	3.47	3.15	0.00	12.00
Obsess	606	2.49	3.04	0.00	15.00
Check	606	2.62	2.58	0.00	15.00
DCQ	606	6.16	4.94	0.00	28.00
Sexual Abuse	606	1.24	2.43	0.00	14.00
Physical Abuse	606	8.30	3.68	0.00	21.00
Neglect	606	11.65	11.09	0.00	50.00
Emotional Abuse	606	6.98	5.80	0.00	27.00
General Trauma	606	0.76	1.23	0.00	8.00
Total Abuse	606	35.80	21.17	7.00	115.00
Depression	606	8.83	10.38	0.00	43.00

Table 3. Zero-Order Correlations.

Sample 1	Wash	Order	Obsess	Check	DCQ	Depression
Sexual Abuse	0.446	0.273	0.434	0.368	0.475	0.494
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Physical Abuse	0.388	0.277	0.382	0.373	0.416	0.357
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Neglect	0.227	0.270	0.374	0.255	0.420	0.452
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Emotional Abuse	0.303	0.345	0.424	0.323	0.450	0.517
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
General Trauma	0.110	0.080	0.073	0.097	0.116	.120
<i>p</i>	0.016*	0.081	0.114	0.035*	0.011*	0.009*
Total Abuse	0.376	0.339	0.478	0.376	0.541	0.537
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Sample 2	Wash	Order	Obsess	Check	DCQ	Depression
Sexual Abuse	0.127	0.199	0.298	0.210	0.246	0.286
<i>p</i>	0.139	0.020*	<.001**	0.014*	0.004**	0.001**
Physical Abuse	0.032	0.052	0.214	0.165	0.223	0.226
<i>p</i>	0.713	0.545	0.012*	0.055	0.009**	0.008**
Neglect	0.159	0.221	0.360	0.216	0.410	0.448
<i>p</i>	0.064	0.010*	<.001**	0.012*	<.001**	<.001**
Emotional Abuse	0.143	0.219	0.383	0.223	0.398	0.419
<i>p</i>	0.098	0.011*	<.001**	0.009**	<.001**	<.001**
General Trauma	-0.095	0.043	0.000	-0.010	0.100	.088
<i>p</i>	0.268	0.614	1.000	0.911	0.244	0.306
Total Abuse	0.142	0.205	0.376	0.226	0.408	.440
<i>p</i>	0.100	.017*	<.001**	0.008**	<.001**	<.001**
Combined Sample	Wash	Order	Obsess	Check	DCQ	Depression
Sexual Abuse	0.376	0.266	0.402	0.337	0.382	0.461
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Physical Abuse	0.306	0.227	0.331	0.307	0.319	0.306
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Neglect	0.260	0.293	0.424	0.287	0.460	0.537
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
Emotional Abuse	0.269	0.320	0.435	0.289	0.424	0.525
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**
General Trauma	0.064	0.075	0.032	0.068	0.071	0.087
<i>p</i>	0.113	0.063	0.434	0.095	0.080	0.032*
Total Abuse	0.309	0.308	0.469	0.323	0.486	0.551
<i>p</i>	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**

** . Correlation is significant at the .01 level (2-tailed).

* . Correlation is significant at the .05 level (2-tailed).

the second attention check demonstrated significant differences between variable means, and the 23 cases failing this were eliminated. Table 4 presents the summarized results of the regressions for the OCD and BDD variables of interest by trauma type. Tables 5 and 6 present the summarized results of the contrasts that were performed. Results are presented according to both trauma type and symptom variable.

Results by Trauma Type

Physical abuse. Significant predictors of Physical Abuse included Check, $\beta = .109$, $z = 2.67$, $p = .008$; Obsess, $\beta = .108$, $z = 3.11$, $p = .002$; and DCQ, $\beta = .085$, $z = 2.20$, $p = .028$. No contrast analyses between these predictors reached statistical significance, indicating that they were all equivalently predictive of Physical Abuse.

Sexual abuse. Significant predictors of Sexual Abuse included Wash, $\beta = .294$, $z = 6.48$, $p < .001$; Check, $\beta = .191$, $z = 4.08$, $p < .001$; Obsess, $\beta = .147$, $z = 3.68$, $p < .001$; and DCQ, $\beta = .283$, $z = 6.58$, $p < .001$. Several contrasts between these predictors reached statistical significance. The coefficient for DCQ was significantly larger than those for Wash ($\chi^2 = 28.43$, $p < .001$), Check ($\chi^2 = 34.30$, $p < .001$), and Obsess ($\chi^2 = 35.61$, $p < .001$), while Wash was significantly larger than Obsess ($\chi^2 = 8.07$, $p = .005$) and Check ($\chi^2 = 5.56$, $p = .018$). This indicates that DCQ was the most significant predictor of Sexual Abuse, followed by Wash, followed by Check and Obsess, which were equally predictive.

Neglect. Significant predictors of Neglect included Wash, $\beta = .106$, $z = 2.22$, $p = .027$; Check, $\beta = .136$, $z = 2.83$, $p = .005$; Order, $\beta = .141$, $z = 2.91$, $p = .004$; Obsess, $\beta = .134$, $z = 3.31$, $p = .001$; and DCQ, $\beta = .307$, $z = 7.08$, $p < .001$. Contrast analyses

Table 4. Regression Coefficients by Trauma Type - Sample 1.

<i>Physical Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Sexual Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	1.96	0.080	0.050	Wash	6.48	0.294	<.001**
Check	2.67	0.109	0.008**	Check	4.08	0.191	<.001**
Order	1.61	0.067	0.106	Order	1.73	0.083	0.084
Obsess	3.11	0.108	0.002**	Obsess	3.68	0.147	<.001**
DCQ	2.20	0.085	0.028*	DCQ	6.58	0.283	<.001**
<i>Neglect</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Emotional Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	2.22	0.106	0.027*	Wash	1.95	0.092	0.052
Check	2.83	0.136	0.005**	Check	2.81	0.134	0.005**
Order	2.91	0.141	0.004**	Order	3.72	0.178	<.001**
Obsess	3.31	0.134	0.001**	Obsess	3.20	0.128	0.001**
DCQ	7.08	0.307	<.001**	DCQ	5.20	0.229	<.001**
<i>General Trauma</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Total Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	1.38	0.057	0.167	Wash	3.92	0.187	<.001**
Check	1.09	0.045	0.277	Check	4.13	0.199	<.001**
Order	0.74	0.031	0.461	Order	3.34	0.163	0.001**
Obsess	-0.14	-0.005	0.885	Obsess	4.50	0.182	<.001**
DCQ	1.35	0.053	0.176	DCQ	8.32	0.358	<.001**

** . Coefficient is significant at the 0.01 level (2-tailed).

* . Coefficient is significant at the 0.05 level (2-tailed).

Table 5. Contrasts Between BDD and OCD Coefficients by Trauma Type - Sample 1.

<i>Physical Abuse</i>		χ^2	<i>p</i>	<i>Sexual Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	3.42	0.064	DCQ	Wash	28.43	<.001**
	Check	2.89	0.089		Check	34.30	<.001**
	Order	3.48	0.062		Order	39.42	<.001**
	Obsess	2.68	0.102		Obsess	35.61	<.001**
Wash	Order	0.05	0.816	Wash	Order	18.40	<.001**
	Obsess	0.72	0.398		Obsess	8.07	0.005**
	Check	0.36	0.548		Check	5.56	0.018*
Order	Obsess	0.92	0.337	Order	Obsess	1.69	0.193
	Check	0.68	0.409		Check	4.04	0.044*
Obsess	Check	0.07	0.791	Obsess	Check	0.29	0.588
<i>Neglect</i>		χ^2	<i>p</i>	<i>Emotional Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	46.79	<.001**	DCQ	Wash	24.66	<.001**
	Check	44.26	<.001**		Check	22.52	<.001**
	Order	41.93	<.001**		Order	19.39	<.001**
	Obsess	42.95	<.001**		Obsess	21.89	<.001**
Wash	Order	0.68	0.409	Wash	Order	3.56	0.059
	Obsess	0.60	0.438		Obsess	0.88	0.349
	Check	0.25	0.617		Check	0.56	0.454
Order	Obsess	0.00	0.955	Order	Obsess	0.75	0.385
	Check	0.12	0.725		Check	1.42	0.234
Obsess	Check	0.09	0.769	Obsess	Check	0.04	0.834
<i>General Trauma</i>		χ^2	<i>p</i>	<i>Total Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	1.21	0.270	DCQ	Wash	58.96	<.001**
	Check	1.36	0.243		Check	57.68	<.001**
	Order	1.47	0.226		Order	57.73	<.001**
	Obsess	2.03	0.154		Obsess	56.77	<.001**
Wash	Order	0.33	0.566	Wash	Order	0.12	0.731
	Obsess	2.19	0.139		Obsess	0.03	0.869
	Check	0.11	0.739		Check	0.00	0.957
Order	Obsess	0.63	0.427	Order	Obsess	0.21	0.648
	Check	0.07	0.796		Check	0.16	0.687
Obsess	Check	1.39	0.239	Obsess	Check	0.01	0.909

** Contrast is significant at the 0.01 level

* Contrast is significant at the 0.05 level

Table 6. Contrasts Between Types of Trauma for All BDD and OCD Coefficients - Sample 1.

<i>DCQ</i>				<i>Wash</i>				<i>Obsess</i>			
		χ^2	<i>p</i>			χ^2	<i>p</i>			χ^2	<i>p</i>
SA	PA	0.33	0.568	SA	PA	0.57	0.450	SA	PA	1.95	0.163
	EA	11.39	0.001**		EA	0.01	0.923		EA	4.79	0.029*
	NG	36.04	<.001**		NG	0.91	0.339		NG	7.33	0.007**
	TA	56.66	<.001**		TA	7.73	0.005**		TA	16.66	<.001**
	GT	16.15	<.001**		GT	15.42	<.001**		GT	8.41	0.004**
PA	EA	10.91	0.001**	PA	EA	0.33	0.569	PA	EA	1.00	0.318
	NG	33.47	<.001**		NG	1.57	0.211		NG	3.17	0.075
	TA	60.05	<.001**		TA	10.09	0.002**		TA	9.88	0.002**
	GT	2.44	0.118		GT	1.78	0.182		GT	8.57	0.003**
EA	NG	22.05	<.001**	EA	NG	1.47	0.226	EA	NG	2.26	0.132
	TA	46.75	<.001**		TA	16.20	<.001**		TA	11.30	0.001**
	GT	21.84	<.001**		GT	2.39	0.122		GT	9.78	0.002**
NG	TA	1.73	0.188	NG	TA	10.50	0.001**	NG	TA	3.83	0.050
	GT	45.04	<.001**		GT	3.78	0.052		GT	10.88	0.001**
TA	GT	61.48	<.001**	TA	GT	12.81	<.001**	TA	GT	19.67	<.001**
<i>Check</i>				<i>Order</i>							
		χ^2	<i>p</i>			χ^2	<i>p</i>				
SA	PA	0.68	0.410	SA	PA	0.65	0.421				
	EA	2.79	0.095		EA	11.15	0.001**				
	NG	4.43	0.035*		NG	7.40	0.007**				
	TA	12.82	<.001**		TA	10.85	0.001**				
	GT	5.69	0.017*		GT	0.71	0.399				
PA	EA	0.84	0.359	PA	EA	5.59	0.018*				
	NG	2.30	0.129		NG	4.36	0.037*				
	TA	9.02	0.003**		TA	7.50	0.006**				
	GT	4.35	0.037*		GT	1.54	0.215				
EA	NG	1.46	0.228	EA	NG	0.16	0.689				
	TA	10.66	0.001**		TA	0.76	0.385				
	GT	5.99	0.014*		GT	11.64	0.001**				
NG	TA	5.27	0.022*	NG	TA	0.25	0.618				
	GT	6.75	0.009**		GT	7.51	0.006**				
TA	GT	14.75	<.001**	TA	GT	9.81	0.002**				

** Contrast is significant at the 0.01 level

* Contrast is significant at the 0.05 level

PA=Physical Abuse, SA=Sexual Abuse, EA=Emotional Abuse, NG=Neglect, GT=General Trauma, TA=Total Abuse

between the significant predictors revealed that the coefficient for DCQ was significantly larger than those for Wash ($\chi^2 = 46.79$, $p < .001$), Check ($\chi^2 = 44.26$, $p < .001$), Order ($\chi^2 = 41.93$, $p < .001$), and Obsess ($\chi^2 = 42.95$, $p < .001$). This indicates that DCQ was the most significant predictor of Neglect, followed by Wash, Check, Order, and Obsess, which were all equivalently predictive.

Emotional abuse. Significant predictors of Emotional Abuse included Check, $\beta = .134$, $z = 2.81$, $p = .005$; Order, $\beta = .178$, $z = 3.72$, $p < .001$; Obsess, $\beta = .128$, $z = 3.20$, $p = .001$; and DCQ, $\beta = .229$, $z = 5.20$, $p < .001$. Contrast analyses between the significant predictors revealed that the coefficient for DCQ was significantly larger than those for Check ($\chi^2 = 22.52$, $p < .001$), Order ($\chi^2 = 19.39$, $p < .001$), and Obsess ($\chi^2 = 21.89$, $p < .001$). This indicates that DCQ was the most significant predictor of Emotional Abuse, followed by Check, Order, and Obsess, which were all equivalently predictive.

General trauma. Regression results indicated that no variables significantly predicted the General Trauma score.

Total abuse. Significant predictors of Total abuse included Wash, $\beta = .187$, $z = 3.92$, $p < .001$; Check, $\beta = .199$, $z = 4.13$, $p < .001$; Order, $\beta = .163$, $z = 3.34$, $p = .001$; Obsess, $\beta = .182$, $z = 4.50$, $p < .001$; and DCQ, $\beta = .358$, $z = 8.32$, $p < .001$. Contrast analyses between the significant predictors revealed that the coefficient for DCQ was significantly larger than those for Wash ($\chi^2 = 58.96$, $p < .001$), Check ($\chi^2 = 57.68$, $p < .001$), Order ($\chi^2 = 57.73$, $p < .001$), and Obsess ($\chi^2 = 56.77$, $p < .001$). This indicates that

DCQ was the most significant predictor of Total abuse, followed by Wash, Check, Order, and Obsess, which were all equivalently predictive.

Results by Subclinical Symptom Variable

BDD symptoms. DCQ was significantly predictive of Physical Abuse, $\beta = .085$, $z = 2.20$, $p = .028$; Sexual Abuse, $\beta = .283$, $z = 6.58$, $p < .001$; Neglect, $\beta = .307$, $z = 7.08$, $p < .001$; Emotional Abuse, $\beta = .229$, $z = 5.20$, $p < .001$; and Total Abuse, $\beta = .358$, $z = 8.32$, $p < .001$. Neglect and Total Abuse were significantly larger than Sexual Abuse ($\chi^2 = 36.04$, $p < .001$; $\chi^2 = 56.66$, $p < .001$), Physical Abuse ($\chi^2 = 33.47$, $p < .001$; $\chi^2 = 60.05$, $p < .001$), and Emotional Abuse ($\chi^2 = 22.05$, $p < .001$; $\chi^2 = 46.75$, $p < .001$). Sexual Abuse was larger than Emotional Abuse ($\chi^2 = 11.39$, $p = .001$), which was larger than Physical Abuse ($\chi^2 = 10.91$, $p < .001$). This indicates that DCQ is equally predictive of Total Abuse and Neglect, and more predictive of these than Sexual Abuse, Physical Abuse, and Emotional Abuse. Sexual Abuse and Physical Abuse were equally predictive, as were Neglect and Total Abuse.

Washing symptoms. Wash was significantly predictive of Sexual Abuse, $\beta = .294$, $z = 6.48$, $p < .001$; Neglect, $\beta = .106$, $z = 2.22$, $p = .027$; and Total abuse, $\beta = .187$, $z = 3.92$, $p < .001$. Contrast analyses between the significant predictors revealed that Sexual Abuse was larger than Total abuse ($\chi^2 = 7.73$, $p = .005$), while Total abuse was larger than Neglect ($\chi^2 = 10.50$, $p < .001$).

Obsessing symptoms. Obsess was significantly predictive of Physical Abuse, $\beta = .108$, $z = 3.11$, $p = .002$; Sexual Abuse, $\beta = .147$, $z = 3.68$, $p < .001$; Neglect, $\beta = .134$, $z = 3.31$, $p = .001$; Emotional Abuse, $\beta = .128$, $z = 3.20$, $p = .001$; and Total abuse, $\beta =$

.182, $z = 4.50$, $p < .001$. Contrast analyses between the significant predictors revealed that Total abuse was larger than Sexual Abuse ($\chi^2 = 16.66$, $p < .001$), Physical Abuse ($\chi^2 = 9.88$, $p = .002$), and Emotional Abuse ($\chi^2 = 11.30$, $p = .001$). Sexual Abuse was larger than both Emotional Abuse ($\chi^2 = 4.79$, $p = .029$) and Neglect ($\chi^2 = 7.33$, $p = .007$). This indicates that Obsess is more predictive of Total abuse than of Sexual Abuse, Physical Abuse, and Emotional Abuse. Sexual Abuse and Physical Abuse were equally predictive, Physical Abuse, Emotional Abuse, and Neglect were equally predictive, and Neglect and Total abuse were equally predictive.

Checking symptoms. Check was significantly predictive of Physical Abuse, $\beta = .109$, $z = 2.67$, $p = .008$; Sexual Abuse, $\beta = .191$, $z = 4.08$, $p < .001$; Neglect, $\beta = .136$, $z = 2.83$, $p = .005$; Emotional Abuse, $\beta = .134$, $z = 2.81$, $p = .005$; and Total abuse, $\beta = .199$, $z = 4.13$, $p < .001$. Contrast analyses between the significant predictors revealed that Total abuse was larger than Sexual Abuse ($\chi^2 = 12.82$, $p < .001$), Physical Abuse ($\chi^2 = 9.03$, $p < .001$), Emotional Abuse ($\chi^2 = 10.66$, $p = .001$), and Neglect ($\chi^2 = 5.27$, $p = .022$). Sexual Abuse was larger than Neglect ($\chi^2 = 4.43$, $p = .035$). This indicates that Check is more predictive of Total abuse than of Sexual Abuse, Physical Abuse, Emotional Abuse, and Neglect. Sexual Abuse, Physical Abuse, and Emotional Abuse were equally predictive, as were Physical Abuse, Emotional Abuse, and Neglect.

Ordering symptoms. Order was significantly predictive of Neglect, $\beta = .141$, $z = 2.91$, $p = .004$; Emotional Abuse, $\beta = .178$, $z = 3.72$, $p < .001$; and Total abuse, $\beta = .163$, $z = 3.34$, $p = .001$. Contrast analyses revealed no significant differences between these

predictors, indicating that Order is equivalently predictive of Neglect, Emotional Abuse, and Total Abuse.

Statistical Analyses for Sample 2

Most scores were transformed with square root or logarithmic transformations due to non-normality, except Physical Abuse and Depression. Only the second attention check demonstrated significant differences between means, and the 20 cases failing this were eliminated. Table 7 presents the summarized results of the regressions by trauma type. Tables 8 and 9 present the summarized results of the post-hoc contrasts.

Results by Trauma Type

Physical abuse. No coefficients significantly predicted Physical Abuse.

Sexual abuse. No coefficients significantly predicted Sexual Abuse.

Neglect. Only DCQ significantly predicted Neglect, $\beta = .220$, $z = 2.74$, $p = .006$.

Emotional abuse. Obsess ($\beta = .162$, $z = 2.16$, $p = .031$) and DCQ ($\beta = .217$, $z = 2.75$, $p = .006$) significantly predicted Emotional Abuse and were equally predictive.

General trauma. No variables significantly predicted the General Trauma score.

Total abuse. DCQ significantly predicted Total Abuse ($\beta = .221$, $z = 2.77$, $p = .006$).

Results by Subclinical Symptom Variable

BDD symptoms. DCQ was significantly predictive of Neglect, $\beta = .220$, $z = 2.74$, $p = .006$; Emotional Abuse, $\beta = .217$, $z = 2.75$, $p = .006$; and Total abuse, $\beta = .221$,

Table 7. Regression Coefficients by Trauma Type - Sample 2.

<i>Physical Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Sexual Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	-0.64	-0.052	0.525	Wash	0.42	0.035	0.675
Check	0.91	0.072	0.360	Check	1.25	0.010	0.211
Order	-0.41	-0.032	0.685	Order	1.42	0.114	0.157
Obsess	1.16	0.082	0.247	Obsess	1.94	0.139	0.052
DCQ	1.44	0.108	0.151	DCQ	1.32	0.101	0.187
<i>Neglect</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Emotional Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	0.11	-0.010	0.912	Wash	-0.17	-0.015	0.864
Check	0.28	0.024	0.778	Check	0.58	0.049	0.559
Order	0.65	0.056	0.518	Order	0.80	0.069	0.421
Obsess	1.51	0.116	0.132	Obsess	2.16	0.162	0.031*
DCQ	2.74	0.220	0.006**	DCQ	2.75	0.217	0.006**
<i>General Trauma</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Total Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	-1.55	-0.122	0.120	Wash	-0.27	-0.024	0.786
Check	-0.59	-0.045	0.555	Check	0.52	0.044	0.604
Order	0.29	0.023	0.772	Order	0.53	0.046	0.595
Obsess	-0.84	-0.058	0.401	Obsess	1.87	0.142	0.062
DCQ	0.66	0.048	0.510	DCQ	2.77	0.221	0.006**

** . Coefficient is significant at the 0.01 level (2-tailed).

* . Coefficient is significant at the 0.05 level (2-tailed).

Table 8. Contrasts Between BDD and OCD Coefficients by Trauma Type - Sample 2.

<i>Physical Abuse</i>		χ^2	<i>p</i>	<i>Sexual Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	2.59	0.108	DCQ	Wash	0.45	0.500
	Check	0.30	0.586		Check	0.04	0.849
Order	Order	2.10	0.147	Order	Order	0.02	0.898
	Obsess	0.09	0.765		Obsess	0.21	0.643
	Wash	0.04	0.844		Wash	0.80	0.371
Wash	Obsess	2.65	0.103	Wash	Obsess	1.66	0.198
	Check	1.94	0.164		Check	0.39	0.531
Order	Obsess	2.13	0.144	Order	Obsess	0.11	0.742
	Check	1.60	0.207		Check	0.16	0.694
Obsess	Check	0.10	0.758	Obsess	Check	0.59	0.444
<i>Neglect</i>		χ^2	<i>p</i>	<i>Emotional Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	4.70	0.030*	DCQ	Wash	4.95	0.026*
	Check	4.58	0.032*		Check	3.64	0.057
Order	Order	2.43	0.119	Order	Order	2.06	0.151
	Obsess	1.29	0.257		Obsess	0.36	0.551
	Wash	0.46	0.498		Wash	0.76	0.382
Wash	Obsess	2.03	0.154	Wash	Obsess	4.21	0.040*
	Check	0.12	0.731		Check	0.43	0.512
Order	Obsess	0.50	0.479	Order	Obsess	1.26	0.261
	Check	0.19	0.659		Check	0.11	0.735
Obsess	Check	1.52	0.217	Obsess	Check	2.52	0.112
<i>General Trauma</i>		χ^2	<i>p</i>	<i>Total Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	3.01	0.083	DCQ	Wash	5.41	0.020*
	Check	1.05	0.306		Check	3.91	0.048*
Order	Order	0.07	0.785	Order	Order	2.82	0.093
	Obsess	1.75	0.185		Obsess	0.73	0.392
	Wash	2.69	0.101		Wash	0.52	0.473
Wash	Obsess	0.54	0.461	Wash	Obsess	3.60	0.058
	Check	1.06	0.304		Check	0.49	0.484
Order	Obsess	1.11	0.293	Order	Obsess	1.31	0.253
	Check	0.72	0.397		Check	0.01	0.916
Obsess	Check	0.08	0.772	Obsess	Check	1.87	0.172

** Contrast is significant at the 0.01 level

* Contrast is significant at the 0.05 level

Table 9. Contrasts Between Types of Trauma for All BDD and OCD Coefficients - Sample 2.

<i>DCQ</i>		χ^2	<i>p</i>	<i>Wash</i>		χ^2	<i>p</i>	<i>Obsess</i>		χ^2	<i>p</i>
SA	PA	1.86	0.172	SA	PA	0.46	0.497	SA	PA	1.07	0.301
	EA	6.49	0.011*		EA	0.10	0.757		EA	3.00	0.084
	NG	7.25	0.007**		NG	0.04	0.836		NG	1.51	0.219
	TA	7.73	0.005**		TA	0.15	0.700		TA	2.75	0.097
	GT	0.53	0.465		GT	1.32	0.250		GT	4.21	0.040*
PA	EA	0.70	0.402	PA	EA	0.47	0.492	PA	EA	0.48	0.491
	NG	0.22	0.637		NG	0.48	0.490		NG	0.46	0.499
	TA	0.22	0.638		TA	0.48	0.489		TA	0.31	0.579
	GT	1.97	0.160		GT	0.32	0.573		GT	1.44	0.231
EA	NG	1.70	0.193	EA	NG	0.00	0.991	EA	NG	0.00	0.963
	TA	3.21	0.073		TA	0.09	0.760		TA	0.70	0.404
	GT	7.02	0.008**		GT	0.01	0.921		GT	5.48	0.019*
NG	TA	0.09	0.761	NG	TA	0.18	0.674	NG	TA	1.05	0.304
	GT	7.30	0.007**		GT	0.01	0.939		GT	2.69	0.101
TA	GT	7.40	0.007**	TA	GT	0.01	0.926	TA	GT	3.98	0.046*
<i>Check</i>		χ^2	<i>p</i>	<i>Order</i>		χ^2	<i>p</i>				
SA	PA	0.70	0.402	SA	PA	0.27	0.605				
	EA	0.07	0.796		EA	0.20	0.656				
	NG	0.00	0.962		NG	0.17	0.682				
	TA	0.10	0.750		TA	0.09	0.764				
	GT	1.75	0.186		GT	0.96	0.326				
PA	EA	0.78	0.377	PA	EA	0.52	0.472				
	NG	0.88	0.348		NG	0.58	0.447				
	TA	0.86	0.353		TA	0.65	0.418				
	GT	0.88	0.347		GT	0.18	0.674				
EA	NG	0.04	0.848	EA	NG	0.02	0.886				
	TA	0.06	0.802		TA	0.00	0.995				
	GT	0.48	0.490		GT	0.57	0.452				
NG	TA	0.40	0.529	NG	TA	0.05	0.815				
	GT	0.13	0.722		GT	0.38	0.538				
TA	GT	0.35	0.554	TA	GT	0.25	0.618				

** Contrast is significant at the 0.01 level

* Contrast is significant at the 0.05 level

PA=Physical Abuse, SA=Sexual Abuse, EA=Emotional Abuse, NG=Neglect, GT=General Trauma, TA=Total Abuse

$z = 2.77$, $p = .006$, and these were equally predictive.

Washing symptoms. Wash did not significantly predict any trauma type.

Obsessing symptoms. Obsess was significantly predictive of Emotional Abuse, $\beta = .162$, $z = 2.16$, $p = .031$.

Checking symptoms. Check did not significantly predict any trauma type.

Ordering symptoms. Order did not significantly predict any trauma type.

Statistical Analyses for the Combined Sample

The combined sample was comprised of 606 participants. Twenty-three cases with extreme values were eliminated, and all scores were transformed with square root or logarithmic transformations due to non-normality. Only the second attention check demonstrated significant differences between variable means, and the 43 cases failing this were eliminated. Table 10 presents the summarized results of the regressions by trauma type. Tables 11 and 12 present the summarized results of the post-hoc contrasts.

Results by Trauma Type

Physical abuse. Significant predictors of Physical Abuse included Wash, $\beta = .190$, $z = 5.05$, $p < .001$; Check, $\beta = .187$, $z = 5.01$, $p < .001$; Order, $\beta = .109$, $z = 2.84$, $p = .005$; Obsess, $\beta = .141$, $z = 4.50$, $p < .001$; and DCQ, $\beta = .171$, $z = 4.85$, $p < .001$. DCQ was larger than Obsess ($\chi^2 = 8.17$, $p = .004$), but smaller than Wash ($\chi^2 = 12.48$, $p < .001$) and Check ($\chi^2 = 11.36$, $p = .001$). Wash, Check, Order, and Obsess were equally predictive, as were DCQ and Order.

Sexual abuse. Significant predictors of Sexual Abuse included Wash, $\beta = .222$, $z = 5.51$, $p < .001$; Check, $\beta = .165$, $z = 4.10$, $p < .001$; Order, $\beta = .093$, $z = 2.24$, $p = .025$;

Table 10. Regression Coefficients by Trauma Type - Combined Sample.

<i>Physical Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Sexual Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	5.05	0.190	<.001**	Wash	5.51	0.222	<.001**
Check	5.01	0.187	<.001**	Check	4.10	0.165	<.001**
Order	2.84	0.109	0.005**	Order	2.24	0.093	0.025*
Obsess	4.50	0.141	<.001**	Obsess	3.60	0.122	<.001**
DCQ	4.85	0.171	<.001**	DCQ	4.53	0.172	<.001**
<i>Neglect</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Emotional Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	0.81	0.035	0.419	Wash	1.26	0.054	0.208
Check	1.50	0.065	0.132	Check	1.73	0.074	0.084
Order	2.20	0.096	0.028*	Order	3.23	0.139	0.001**
Obsess	2.66	0.095	0.008**	Obsess	3.38	0.119	0.001**
DCQ	6.16	0.243	<.001**	DCQ	5.02	0.198	<.001**
<i>General Trauma</i>	<i>z</i>	<i>β</i>	<i>p</i>	<i>Total Abuse</i>	<i>z</i>	<i>β</i>	<i>p</i>
Wash	0.72	0.026	0.470	Wash	2.23	0.097	0.026*
Check	0.79	0.029	0.427	Check	2.49	0.108	0.013*
Order	1.06	0.039	0.288	Order	2.56	0.113	0.011*
Obsess	-0.86	-0.026	0.388	Obsess	4.10	0.147	<.001**
DCQ	0.72	0.025	0.474	DCQ	6.95	0.275	<.001**

** . Coefficient is significant at the 0.01 level (2-tailed).

* . Coefficient is significant at the 0.05 level (2-tailed).

Table 11. Contrasts Between BDD and OCD Coefficients by Trauma Type - Combined Sample.

<i>Physical Abuse</i>		χ^2	<i>p</i>	<i>Sexual Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	12.48	<.001**	DCQ	Wash	16.79	<.001**
	Check	11.36	0.001**		Check	6.63	0.010*
	Order	1.95	0.163		Order	0.79	0.373
	Obsess	8.17	0.004**		Obsess	4.25	0.039*
Wash	Order	3.43	0.064	Wash	Order	8.15	0.004**
	Obsess	0.85	0.357		Obsess	4.42	0.036*
	Check	0.15	0.699		Check	2.68	0.102
Order	Obsess	0.83	0.362	Order	Obsess	0.59	0.442
	Check	2.56	0.109		Check	2.00	0.158
Obsess	Check	0.34	0.562	Obsess	Check	0.30	0.581
<i>Neglect</i>		χ^2	<i>p</i>	<i>Emotional Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	1.25	0.263	DCQ	Wash	0.10	0.751
	Check	0.31	0.575		Check	0.00	0.971
	Order	0.15	0.699		Order	3.02	0.083
	Obsess	0.30	0.586		Obsess	2.77	0.096
Wash	Order	1.97	0.161	Wash	Order	3.93	0.047*
	Obsess	2.30	0.130		Obsess	2.88	0.090
	Check	0.34	0.557		Check	0.12	0.730
Order	Obsess	0.00	0.950	Order	Obsess	0.10	0.749
	Check	0.84	0.359		Check	3.17	0.075
Obsess	Check	1.00	0.317	Obsess	Check	2.07	0.151
<i>General Trauma</i>		χ^2	<i>p</i>	<i>Total Abuse</i>		χ^2	<i>p</i>
DCQ	Wash	0.25	0.614	DCQ	Wash	0.01	0.926
	Check	0.31	0.577		Check	0.04	0.850
	Order	0.73	0.393		Order	0.28	0.600
	Obsess	1.33	0.248		Obsess	3.05	0.081
Wash	Order	0.14	0.712	Wash	Order	0.18	0.671
	Obsess	2.09	0.148		Obsess	1.89	0.169
	Check	0.00	0.988		Check	0.01	0.935
Order	Obsess	2.86	0.091	Order	Obsess	0.75	0.387
	Check	0.15	0.702		Check	0.14	0.707
Obsess	Check	2.38	0.123	Obsess	Check	1.87	0.171

** Contrast is significant at the 0.01 level

* Contrast is significant at the 0.05 level

Table 12. Contrasts Between Types of Trauma for All BDD and OCD Coefficients - Combined Sample.

<i>DCQ</i>		χ^2	<i>p</i>	<i>Wash</i>		χ^2	<i>p</i>	<i>Obsess</i>		χ^2	<i>p</i>
SA	PA	1.32	0.250	SA	PA	4.05	0.044*	SA	PA	0.19	0.661
	EA	0.08	0.772		EA	12.51	<.001**		EA	0.06	0.801
	NG	5.32	0.021*		NG	11.74	0.001**		NG	0.05	0.825
	TA	0.07	0.793		TA	21.45	<.001**		TA	1.32	0.250
	GT	9.73	0.002**		GT	14.99	<.001**		GT	11.38	<.001**
PA	EA	1.96	0.161	PA	EA	5.27	0.022*	PA	EA	0.01	0.916
	NG	11.30	0.001**		NG	4.38	0.036*		NG	0.01	0.921
	TA	1.92	0.166		TA	12.61	<.001**		TA	0.98	0.321
	GT	7.32	0.007**		GT	8.01	0.005**		GT	13.28	<.001**
EA	NG	9.13	0.003**	EA	NG	0.07	0.799	EA	NG	0.00	0.987
	TA	0.90	0.342		TA	0.09	0.768		TA	1.36	0.243
	GT	11.98	0.001**		GT	0.30	0.586		GT	10.16	0.001**
NG	TA	18.51	<.001**	NG	TA	0.28	0.595	NG	TA	0.91	0.340
	GT	23.58	<.001**		GT	0.10	0.754		GT	7.54	0.006**
TA	GT	14.02	<.001**	TA	GT	0.74	0.390	TA	GT	10.66	0.001**
<i>Check</i>		χ^2	<i>p</i>	<i>Order</i>		χ^2	<i>p</i>				
SA	PA	0.34	0.560	SA	PA	0.06	0.812				
	EA	3.97	0.046*		EA	0.57	0.450				
	NG	2.86	0.091		NG	0.15	0.703				
	TA	8.12	0.004**		TA	0.51	0.476				
	GT	7.49	0.006**		GT	1.27	0.261				
PA	EA	3.28	0.070	PA	EA	1.23	0.267				
	NG	1.84	0.175		NG	0.35	0.556				
	TA	10.44	0.001**		TA	0.44	0.505				
	GT	7.58	0.006**		GT	1.29	0.257				
EA	NG	0.04	0.836	EA	NG	0.21	0.644				
	TA	0.04	0.849		TA	6.38	0.012*				
	GT	0.75	0.385		GT	3.50	0.061				
NG	TA	0.15	0.694	NG	TA	2.19	0.139				
	GT	0.76	0.383		GT	1.76	0.185				
TA	GT	0.94	0.333	TA	GT	0.64	0.422				

** Contrast is significant at the 0.01 level

* Contrast is significant at the 0.05 level

Obsess, $\beta = .122$, $z = 3.60$, $p < .001$; and DCQ, $\beta = .172$, $z = 4.53$, $p < .001$. Wash was significantly larger than DCQ ($\chi^2 = 16.79$, $p < .001$), Order ($\chi^2 = 8.15$, $p = .004$), and Obsess ($\chi^2 = 4.42$, $p = .036$), while DCQ was larger than Check ($\chi^2 = 6.63$, $p = .010$) and Obsess ($\chi^2 = 4.25$, $p = .039$). Order, Obsess, and Check were equally predictive, Wash and Check were equally predictive, and DCQ and Order were equally predictive.

Neglect. Significant predictors of Neglect included Order, $\beta = .096$, $z = 2.20$, $p = .028$; Obsess, $\beta = .095$, $z = 2.66$, $p = .008$; and DCQ, $\beta = .243$, $z = 6.16$, $p < .001$. No contrasts between these predictors were significant, indicating that they were all equally predictive of Neglect.

Emotional abuse. Significant predictors of Emotional Abuse included Order, $\beta = .139$, $z = 3.23$, $p = .001$; Obsess, $\beta = .119$, $z = 3.38$, $p = .001$; and DCQ, $\beta = .198$, $z = 5.02$, $p < .001$. No contrasts between these predictors were significant, indicating that they were all equally predictive of Emotional Abuse.

General trauma. No variables significantly predicted the General Trauma score.

Total abuse. Significant predictors of Total abuse included Wash, $\beta = .097$, $z = 2.23$, $p = .026$; Check, $\beta = .108$, $z = 2.49$, $p = .013$; Order, $\beta = .113$, $z = 2.56$, $p = .011$; Obsess, $\beta = .147$, $z = 4.10$, $p < .001$; and DCQ, $\beta = .275$, $z = 6.95$, $p < .001$. No contrasts between these predictors were significant, indicating that they were all equally predictive of Total Abuse.

Results by Subclinical Symptom Variable

BDD symptoms. DCQ was significantly predictive of Physical Abuse, $\beta = .171$, $z = 4.85$, $p < .001$; Sexual Abuse, $\beta = .172$, $z = 4.53$, $p < .001$; Neglect, $\beta = .243$, $z = 6.16$,

$p < .001$; Emotional Abuse, $\beta = .198$, $z = 5.02$, $p < .001$; and Total abuse, $\beta = .275$, $z = 6.95$, $p < .001$. Neglect was significantly larger than Sexual Abuse ($\chi^2 = 5.32$, $p = .021$), Physical Abuse ($\chi^2 = 11.30$, $p = .001$), and Emotional Abuse ($\chi^2 = 9.13$, $p = .003$), while Neglect was smaller than Total abuse ($\chi^2 = 18.51$, $p < .001$). Sexual Abuse, Physical Abuse, Emotional Abuse, and Total abuse were all equally predictive.

Washing symptoms. Wash was significantly predictive of Physical Abuse, $\beta = .190$, $z = 5.05$, $p < .001$; Sexual Abuse, $\beta = .222$, $z = 5.51$, $p < .001$; and Total abuse, $\beta = .097$, $z = 2.23$, $p = .026$. Sexual Abuse was larger than Physical Abuse ($\chi^2 = 4.05$, $p = .044$) and Total abuse ($\chi^2 = 21.45$, $p < .001$), while Physical Abuse was larger than Total abuse ($\chi^2 = 12.61$, $p < .001$).

Obsessing symptoms. Obsess was significantly predictive of Physical Abuse, $\beta = .141$, $z = 4.50$, $p < .001$; Sexual Abuse, $\beta = .122$, $z = 3.60$, $p < .001$; Neglect, $\beta = .095$, $z = 2.66$, $p = .008$; Emotional Abuse, $\beta = .119$, $z = 3.38$, $p < .001$; and Total abuse, $\beta = .147$, $z = 4.10$, $p < .001$. No contrast analyses between the significant predictors were significant, indicating that they were all equivalently predicted by Obsess.

Checking symptoms. Check was significantly predictive of Physical Abuse, $\beta = .187$, $z = 5.01$, $p < .001$; Sexual Abuse, $\beta = .165$, $z = 4.10$, $p < .001$; and Total abuse, $\beta = .108$, $z = 2.49$, $p = .013$. Total Abuse was smaller than both Sexual Abuse ($\chi^2 = 8.12$, $p = .004$) and Physical Abuse ($\chi^2 = 10.44$, $p = .001$). Sexual Abuse and Physical Abuse were equally predictive.

Ordering symptoms. Order was significantly predictive of Physical Abuse, $\beta = .109$, $z = 2.84$, $p = .005$; Sexual Abuse, $\beta = .093$, $z = 2.24$, $p = .025$; Neglect, $\beta = .096$, $z =$

2.20, $p = .028$; Emotional Abuse, $\beta = .139$, $z = 3.23$, $p = .001$; and Total abuse, $\beta = .113$, $z = 2.56$, $p = .011$. Contrast analyses revealed that Emotional Abuse was larger than Total abuse ($\chi^2 = 6.38$, $p = .012$). Sexual Abuse, Physical Abuse, Neglect, and Total abuse were equally predictive, as were Sexual Abuse, Physical Abuse, Emotional Abuse, and Neglect.

Results of Hypotheses

The results as they pertain to each study hypothesis are presented first by each sample separately, and then by aggregated findings common to Samples 1 and 2, and Samples 1, 2, and Combined.

Hypothesis 1: DCQ, Order, Obsess, and Check will be significantly and equally predictive of Physical Abuse.

Sample 1. Hypothesis 1 was partially supported. Order failed to reach statistical significance, but DCQ, Obsess, and Check were significantly and equally predictive of Physical Abuse.

Sample 2. Hypothesis 1 was not supported. No symptom variables significantly predicted Physical Abuse.

Combined samples. Hypothesis 1 was partially supported. DCQ, Order, Obsess, and Check were all significantly predictive of Physical Abuse, but DCQ was larger than Obsess and smaller than Check.

Aggregate findings. Hypothesis 1 was not supported across Samples 1 and 2, nor was it supported across Samples 1, 2, and Combined.

Hypothesis 2: DCQ, Check, and Order will be significant predictors of Sexual Abuse, but DCQ will be significantly more so.

Sample 1. Hypothesis 2 was partially supported. Order failed to reach significance, but DCQ and Check were significant predictors of Sexual Abuse and DCQ was significantly more predictive than Check and Order.

Sample 2. Hypothesis 2 was not supported. There were no significant predictors of Sexual Abuse.

Combined samples. Hypothesis 2 was partially supported. DCQ Check, and Order were significant predictors of Sexual Abuse. DCQ was significantly more predictive than Check but was as equivalently predictive as Order.

Aggregate findings. Hypothesis 2 was not supported across Samples 1 and 2, nor was it supported across Samples 1, 2, and Combined.

Hypothesis 3: DCQ will be significantly more predictive of Sexual Abuse than Wash.

Sample 1. Hypothesis 3 was supported.

Sample 2. Hypothesis 3 was not supported. Neither DCQ nor Wash was significantly predictive of Sexual Abuse.

Combined samples. Hypothesis 3 was not supported. Wash was, in fact, more significantly predictive than DCQ.

Aggregate findings. Hypothesis 3 was not supported across Samples 1 and 2, nor was it supported across Samples 1, 2, and Combined.

Hypothesis 4: DCQ, Order, Obsess, and Check will be significantly predictive of Neglect.

Sample 1. Hypothesis 4 was supported.

Sample 2. Hypothesis 4 was partially supported. DCQ was significantly predictive of Neglect, but Order, Obsess, and Check were not.

Combined samples. Hypothesis 4 was partially supported. DCQ, Order, and Obsess were all significantly predictive of Neglect, but Check was not.

Aggregate findings. Hypothesis 4 was partially supported across Samples 1 and 2. DCQ, Order, and Obsess were significantly predictive of Neglect. It was also partially supported across Samples 1, 2, and Combined. DCQ was significantly predictive of Neglect.

Hypothesis 5. DCQ, Order, Obsess, and Check will be significantly predictive of Emotional Abuse, but DCQ will be significantly more so.

Sample 1. Hypothesis 5 was supported.

Sample 2. Hypothesis 5 partially supported. DCQ and Obsess were significantly and equivalently predictive of Emotional Abuse, but Order and Check were not significantly predictive.

Combined samples. Hypothesis 5 was partially supported. DCQ, Order, and Obsess were all significantly and equivalently predictive of Emotional Abuse, but Check was not a significant predictor.

Aggregate findings. Hypothesis 5 was partially supported across Samples 1 and 2. DCQ, Order, and Obsess were all significantly predictive of Emotional Abuse. It was

also partially supported across Samples 1, 2, and Combined. DCQ and Obsess were significantly predictive of Emotional Abuse.

Results of Research Questions

The results as they pertain to each research question are presented first by each sample separately, and then by aggregated findings common to Samples 1 and 2, and Samples 1, 2, and Combined. The results in relation to significant contrasts between the symptom variables are presented for only significant coefficients.

Question 1: Do BDD symptoms significantly predict trauma according to type of trauma?

Sample 1. BDD symptoms were significantly predictive of physical abuse, sexual abuse, neglect, emotional abuse, and total abuse.

Sample 2. BDD symptoms were significantly predictive of neglect, emotional abuse, and total abuse.

Combined samples. BDD symptoms were significantly predictive of physical abuse, sexual abuse, neglect, emotional abuse, and total abuse.

Aggregate findings. Across Samples 1 and 2, and Samples 1, 2, and Combined, BDD symptoms were significantly predictive of neglect, emotional abuse, and total abuse.

Question 2: Is any trauma type significantly more associated with BDD symptoms than another?

Sample 1. BDD symptoms were equally predictive of sexual abuse and physical abuse; and of neglect and total abuse. They were more predictive of total abuse and

neglect than of sexual abuse, physical abuse, and emotional abuse; of sexual abuse than of emotional abuse; and of emotional abuse than of physical abuse.

Sample 2. BDD symptoms were equally predictive of emotional abuse, neglect, and total abuse.

Combined samples. BDD symptoms were equally predictive of sexual abuse, physical abuse, emotional abuse, and total abuse. They were more predictive of neglect than sexual abuse, physical abuse, and emotional abuse; and of total abuse than neglect.

Aggregate findings. Across Samples 1 and 2, BDD symptoms were equally predictive of neglect and total abuse.

Question 3: Do OCD symptom clusters significantly predict trauma according to type of trauma?

Sample 1. Washing symptoms were significantly predictive of sexual abuse, neglect, and total abuse. Checking symptoms were significantly predictive of physical abuse, sexual abuse, neglect, emotional abuse, and total abuse. Ordering symptoms were significantly predictive of neglect, emotional abuse, and total abuse. Obsessing symptoms were significantly predictive of physical abuse, sexual abuse, neglect, emotional abuse, and total abuse.

Sample 2. Washing symptoms were not significantly predictive of any trauma. Checking symptoms were not significantly predictive of any trauma. Ordering symptoms were not significantly predictive of any trauma. Obsessing symptoms were significantly predictive of emotional abuse.

Combined samples. Washing symptoms were significantly predictive of physical abuse, sexual abuse, and total abuse. Checking symptoms were significantly predictive of physical abuse, sexual abuse, and total abuse. Ordering symptoms were significantly predictive of physical abuse, sexual abuse, neglect, emotional abuse, and total abuse. Obsessing symptoms were significantly predictive of physical abuse, sexual abuse, neglect, emotional abuse, and total abuse.

Aggregate findings. Across Samples 1 and 2, and 1, 2, and Combined, obsessing symptoms were significantly predictive of emotional abuse.

Question 4: Is any OCD symptom cluster significantly more associated with any given trauma type than another?

Sample 1.

Washing symptoms. Washing symptoms were equally predictive of sexual abuse and neglect. They were more predictive of sexual abuse than of total abuse; and of total abuse than of neglect.

Obsessing symptoms. Obsessing symptoms were equally predictive of sexual abuse and physical abuse; of physical abuse, emotional abuse, and neglect; and of neglect and total abuse. They were more predictive of total abuse than of sexual abuse, physical abuse, and emotional abuse; and of sexual abuse than of emotional abuse and neglect.

Checking symptoms. Checking symptoms were equally predictive of sexual abuse, physical abuse, and emotional abuse; and of physical abuse, emotional abuse, and neglect. They were more predictive of total abuse than of sexual abuse, physical abuse, and emotional abuse; and of sexual abuse than of neglect.

Ordering symptoms. Ordering symptoms were equally predictive of emotional abuse, neglect, and total abuse.

Sample 2. Only one OCD symptom variable was significant, and it was predictive of only one trauma type.

Combined samples.

Washing symptoms. Washing symptoms were more predictive of sexual abuse than of physical abuse and total abuse; and of physical abuse than of total abuse.

Obsessing symptoms. Obsessing symptoms were equally predictive of sexual abuse, physical abuse, emotional abuse, neglect, and total abuse.

Checking symptoms. Checking symptoms were equally predictive of sexual abuse and physical abuse. They were more predictive of sexual abuse and physical abuse than of total abuse.

Ordering symptoms. Ordering symptoms were equally predictive of sexual abuse, physical abuse, neglect, and total abuse; and of emotional abuse, sexual abuse, physical abuse, and neglect. They were more predictive of emotional abuse than of total abuse.

Aggregate findings. There were no common findings pertaining to this question across Samples 1 and 2, or Samples 1, 2, and Combined.

Question 5: Is any trauma type significantly more associated with any given OCD symptom cluster than another?

Sample 1.

Physical abuse. Checking and obsessing symptoms were equally predictive of physical abuse.

Sexual abuse. Washing symptoms were more predictive of sexual abuse than were checking and obsessing symptoms; and checking and obsessing symptoms were equally predictive of sexual abuse.

Neglect. Washing, checking, ordering, and obsessing symptoms were equally predictive of neglect.

Emotional abuse. Checking, ordering, and obsessing symptoms were equally predictive of emotional abuse.

Total abuse. Washing, checking, ordering, and obsessing symptoms were equally predictive of total abuse.

Sample 2. Only one OCD symptom variable was predictive of any trauma type.

Combined samples.

Physical abuse. Washing, checking, ordering, and obsessing symptoms were equally predictive of physical abuse.

Sexual abuse. Washing and checking symptoms were equally predictive of sexual abuse; ordering, obsessing, and checking symptoms were equally predictive of sexual abuse. They were more predictive of sexual abuse than were ordering and obsessing symptoms.

Emotional abuse. Ordering and obsessing symptoms were equally predictive of emotional abuse.

Neglect. Ordering and obsessing symptoms were equally predictive of neglect.

Total abuse. Washing, checking, ordering, and obsessing symptoms were equally predictive of total abuse.

Aggregate findings. There were no common findings pertaining to this question across Samples 1 and 2, or Samples 1, 2, and Combined.

Question 6: Are the associations between BDD symptoms and trauma type significantly different than those between each OCD symptom dimension and trauma type?

Sample 1.

Physical abuse. BDD symptoms were equally predictive of physical abuse as checking and obsessing symptoms.

Sexual abuse. BDD symptoms were significantly more predictive of sexual abuse than were washing, checking, and obsessing symptoms.

Neglect. BDD symptoms were significantly more predictive of neglect than were washing, checking, ordering and obsessing symptoms.

Emotional abuse. BDD symptoms were significantly more predictive of emotional abuse than were checking, ordering, and obsessing, symptoms.

Total abuse. BDD symptoms were significantly more predictive of total abuse than were washing, checking, ordering, and obsessing symptoms.

Sample 2.

Emotional abuse. BDD symptoms were equally predictive of emotional abuse as obsessing symptoms.

Combined samples.

Physical abuse. BDD symptoms were as equally predictive of physical abuse as ordering symptoms. They were more significantly more predictive of physical abuse than were obsessing symptoms, while they were less predictive than were washing symptoms and checking symptoms.

Sexual abuse. BDD symptoms were as equally predictive of sexual abuse as ordering symptoms. They were significantly more predictive of sexual abuse than were checking and obsessing, while they were less predictive than washing symptoms.

Neglect. BDD symptoms were as equally predictive of neglect as ordering and obsessing symptoms. They were not significantly more predictive of neglect than any OCD symptoms.

Emotional abuse. BDD symptoms were as equally predictive of emotional abuse as ordering and obsessing symptoms. They were not significantly more predictive of neglect than any OCD symptoms.

Total abuse. BDD symptoms were as equally predictive of total abuse as washing, checking, ordering, and obsessing symptoms.

Aggregate findings. There were no findings common to Samples 1 and 2, or to Samples 1, 2, and Combined.

CHAPTER IV

DISCUSSION

The goal of the present study was to compare subclinical BDD and OCD subtype symptomatology on self-reported trauma history, with the hope of further clarifying the relationship between the two disorders. No previous study had examined a potential link between these two disorders by comparing the trauma history of BDD symptoms and OCD symptom dimensions. It was expected that BDD symptoms and OCD ordering, obsessing, and checking symptoms would be significantly predictive of physical abuse, neglect, and emotional abuse, while BDD symptoms, checking, and ordering symptoms would be significantly predictive of sexual abuse. It was further expected that BDD symptoms would be equivalently predictive of physical abuse as OCD symptoms, while they would be significantly more predictive of sexual abuse, emotional abuse, and neglect.

Although only some of these hypotheses were met, the results indicated that a significant relationship between OCD symptoms, BDD symptoms, and trauma history may potentially exist, even after controlling for depressive symptomatology. In Sample 1, physical abuse, sexual abuse, emotional abuse, neglect, and total abuse were found to be significantly associated with BDD symptoms as well as two of the four OCD symptom dimensions, i.e., checking symptoms and obsessing symptoms. These results are similar to those of previous studies (Cromer, Schmidt, & Murphy, 2007; Didie et al., 2006).

Washing symptoms were associated with sexual abuse, neglect, and total abuse, while ordering symptoms were associated with neglect, emotional abuse, and total abuse. In addition, a clear hierarchical structure of these associations emerged. With the exception of physical abuse, which did not demonstrate significant differences between predictors, BDD symptoms were significantly more predictive of abuse and neglect than were any of the OCD symptom dimensions. These results are similar to those from the only study to compare OCD and BDD directly, which found sexual abuse and emotional abuse to be more strongly predicted by BDD than by OCD, but physical abuse to be equally predicted by the two disorders (Neziroglu, Khemlani-Patel, Yaryura-Tobias, 2006). Overall, these results suggest that trauma exposure may be a causal factor in the etiology of both OCD and BDD, but that trauma types may contribute differentially to these, and to each individual OCD subtype. Physical abuse may contribute equally to the development of BDD and OCD obsessing and checking subtypes, while sexual abuse, emotional abuse, and neglect may play a larger contributory role to the development of BDD than to that of all OCD subtypes. Sexual abuse may play more of a causal role in the development of washing symptoms relative to other OCD subtypes.

The results of Sample 2, however, failed to demonstrate the majority of these significant associations or patterns of relationships. Only two variables were found to be significantly predictive of any trauma type: BDD symptoms were predictive of neglect, emotional abuse, and total abuse, while obsessing symptoms were predictive of emotional abuse. Further, BDD and obsessing symptoms were equally predictive across

emotional abuse. Given that no differences between the two samples were expected, it is not clear why such dramatic differences did in fact emerge.

One possibility concerns the quality of the data of the second sample, which was obtained entirely through Mechanical Turk. Several studies have noted significantly reduced attention when comparing Mechanical Turk participants to traditional study participants (Goodman, Cryder, & Cheema, 2013; Peer, Vosgerau, & Acquisti, 2014). Although these findings prompted the use of attention checks in the present study, it is possible that these were not sufficient, or that seasoned MTurk workers have learned to identify these checks and respond accordingly. A frequency comparison between Samples 1 and 2 indicated that the MTurk participants failed the content attention check at a significantly higher rate than university participants (12.7% vs. 4.5%) and completed the study in significantly less time on average (14:06 min. vs. 21:55 min.), suggesting that they may have paid less attention to survey content and put forth less effort in answering questions. Further, some researchers have suggested that the use of attention checks may generate an unintended selection bias, in that participants who pass attention checks and those who do not may differ on variables relevant to the investigation at hand (Oppenheimer, Meyvis, & Davidenko, 2009). The discrepancies in results between samples may also be due to participant characteristics. The samples differed on a number of demographic variables, with the MTurk sample consisting of fewer females, older participants, fewer Caucasians, and more educated participants. Thus, these variables, or unmeasured variables associated with them, may have accounted for the differences in results.

Most of the significant relationships observed in Sample 1, however, remained when the samples were combined, with a few exceptions. Washing and checking symptoms were no longer significant predictors of emotional abuse and neglect, but washing symptoms became predictive of physical abuse, while obsessing symptoms became predictive of physical abuse and sexual abuse. However, the nature of these relationships differed from those in Sample 1, in that BDD symptoms were no longer the strongest predictor across most of the trauma types. Washing symptoms were a stronger predictor of sexual abuse and physical abuse than were BDD symptoms, and across emotional abuse, neglect, and total abuse, no differences between the BDD and OCD predictors were found. This suggests that these relationships did potentially exist in Sample 2, but that factors such as lower statistical power due to the differences in sample size may have prevented them from reaching significance, and confounding factors such as those mentioned above may have obscured the precise nature of the relationship between BDD and OCD symptoms across trauma types.

Although the primary purpose of the study was to compare the relationships of OCD symptoms and BDD symptoms for each trauma type, each symptom variable was also examined in terms of relative predictive power across trauma types. In Sample 1, BDD, obsessing, and checking symptoms were more predictive of total abuse than of physical abuse, emotional abuse, and sexual abuse. This suggests that, while BDD and OCD symptoms are associated with single trauma types, individuals who experience multiple forms of trauma may be at more risk for developing these symptoms than those who experience only one form. Neither Sample 2 results nor the combined results

supported these findings; in fact, the combined sample results found that washing and checking symptoms were both more predictive of sexual abuse than of other forms of abuse. These inconsistent findings point to the need for future research to examine these relationships in greater depth, possibly with larger and more diverse samples so as to adequately capture the nature of such relationships.

One surprising finding of this study was its failure to demonstrate significant associations between the general trauma score and any of the symptom variables. This finding was most notable in Sample 1, given that BDD and OCD symptoms were predictive of every trauma type *except* general trauma. However, several studies have found interpersonal trauma (e.g. abuse, neglect, bullying, domestic violence), in comparison to trauma resulting from non-interpersonal sources (e.g. personal illness, natural disasters) to be more strongly associated with depressive symptoms, anxiety, post-traumatic stress disorder, and general psychopathology (Chu, Williams, Harris, Bryant, & Gatt, 2013; Hetzel-Riggin & Roby, 2013; Luthra et al., 2009). In the present study, all of the trauma types except general trauma could be classified as interpersonal trauma, given that they pertain to either neglect or some form of abuse. Thus, it is possible that the hypothesized relationship between OCD symptoms, BDD symptoms, and trauma only exists within the context of interpersonal trauma and not more generalized, non-intentional traumatic events.

Conclusion

The results of this study could potentially have important clinical implications. The etiology and nosology of BDD is still not well understood, and while OCD has

received much empirical attention, the heterogeneous nature of its clinical presentation often results in contradictory and ambiguous results regarding its conceptualization. Attempts to examine the nature of the relationship between BDD and OCD, as well as the relationship between BDD and OCD symptom dimensions, may help to shed light on the etiological contributions of both disorders, the most efficacious methods of treatment, and may also provide insight into preventative measures. Although Sample 2 failed to demonstrate many associations between BDD and OCD symptoms in relation to trauma exposure, the results of Sample 1 make a strong case for the potentiality of such a link. Further research could extend and elaborate on these findings in order to clarify the relative relationships of trauma to BDD symptoms and each of the OCD symptom variables.

An important limitation of this study that should be noted is its reliance on self-report. The measures used to obtain trauma history and BDD and OCD symptomatology all utilized self-report and the results therefore have the potential to be skewed by misrepresentation or poor memory. In addition, this study only assessed individuals with subclinical profiles and will only assess symptomatology of OCD and BDD rather than actual diagnoses. It could be valuable to replicate the findings of this study with individuals who have obtained clinical diagnoses of BDD and OCD and who have had OCD symptom domains assessed through a clinical structured interview, in order to examine whether the hypothesized relationships between BDD and OCD still exist in a clinical setting.

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