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Assessing Sexually Intrusive Thoughts: Parsing Unacceptable Thoughts on the Dimensional Obsessive-Compulsive Scale

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Abstract

Sexual obsessions are a common symptom of obsessive-compulsive disorder (OCD), often classified in a broader symptom dimension that includes aggressive and religious obsessions, as well. Indeed, the Dimensional Obsessive-Compulsive Scale (DOCS) Unacceptable Thoughts Scale includes obsessional content relating to sexual, violent, and religious themes associated with rituals that are often covert. However, there is reason to suspect that sexual obsessions differ meaningfully from other types of unacceptable thoughts. We conducted two studies to evaluate the factor structure, initial psychometric characteristics, and associated clinical features of a new DOCS scale for sexually intrusive thoughts (SIT). In the first study, nonclinical participants ($N = 475$) completed the standard DOCS with additional SIT questions and we conducted an exploratory factor analysis on all items and examined clinical and cognitive correlates of the different scales, as well as test-retest reliability. The SIT Scale was distinct from the Unacceptable Thoughts Scale and was predicted by different obsessional cognitions. It had good internal consistency and there was evidence for convergent and divergent validity. In the second study, we examined the relationships among the standard DOCS and SIT scales, as well as types of obsessional cognitions and symptom severity, in a clinical sample of individuals with OCD ($N = 54$). There were indications of both convergence and divergence between the Unacceptable Thoughts and SIT scales, which were strongly correlated with each other. Together, the studies demonstrate the potential utility of assessing sexually intrusive thoughts separately from the broader category of unacceptable thoughts.

Keywords

OCD; sexual obsessions; unacceptable thoughts; assessment; symptom dimensions

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Obsessive-Compulsive Disorder (OCD) is characterized by intrusive thoughts (obsessions), which give rise to performance of rituals (compulsions) as part of an effort to neutralize, suppress, or reduce distress or perceived harmful effects associated with obsessions (American Psychiatric Association [APA], 2013). OCD is heterogeneous in its manifestation of obsessional content and types of compulsions, which can lead to difficulty in assessing OCD adequately and comprehensively (Glazier, Calixte, Rothschild, & Pinto, 2013; Sussman, 2003).

OCD and associated symptoms may best be conceptualized from a dimensional perspective rather than a categorical perspective (e.g., Abramowitz et al., 2010; Mataix-Cols, Rosario-Campos, & Leckman, 2005). However, instruments such as the Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989) focus largely on identification and assignment of symptoms to individual categories. This may result in test construction that is theoretically inconsistent with a dimensional conceptualization. As a result, current assessment instruments may be lengthy due to exhaustive symptom lists, theoretically inconsistent with the current empirical literature, and lack a clear assessment of overall OCD severity independent of the number or type of obsessions and compulsions (Abramowitz et al.).

In response to the need for theoretically consistent measures, the Dimensional Obsessive-Compulsive Scale (DOCS; Abramowitz et al., 2010) was developed to address several of the shortcomings inherent in many categorical measures such as the Y-BOCS. The DOCS assesses OCD on the basis of four dimensions pertaining to contamination, responsibility for harm and mistakes, unacceptable thoughts, and symmetry and completeness. These four dimensions are the most frequently replicated factors identified in previous structural analyses (e.g., Bloch, Landeros-Weisenberger, Rosario, Pittenger, & Leckman, 2008), and were therefore included as primary OCD dimensions. For each symptom dimension, individuals completing the DOCS rate the amount of time spent on obsessions and compulsions, extent of avoidance and functional interference, degree of distress, and difficulty disregarding obsessions and refraining from compulsions. The structure of the DOCS allows for the assessment of obsessive-compulsive symptoms while addressing several difficulties inherent in the categorical assessment of OCD.

Of specific interest in the current investigation is the structure of the DOCS as it pertains to the inclusion of sexual obsessions in the unacceptable thoughts symptom group. Sexual obsessions often include thoughts about inappropriate or taboo sexual behavior, such as with children or animals, incest, or using violence. They may also include concerns about sexual orientation (Williams & Farris, 2011). Sexual obsessions are fairly common, affecting 13% to 21% of individuals with OCD at any given time (Grant, Pinto, Gunnip, Mancebo, Eisen, & Rasmussen, 2006; Pinto et al., 2008). The Unacceptable Thoughts DOCS Scale includes obsessional content relating to sexual, religious, or violent themes associated with rituals that are often characterized by covert attempts to neutralize or suppress the aforementioned obsessions. Although several factor analytic studies support this grouping, there is evidence to suggest that there may be utility in separating them from one another. For example, Siev, Steketee, Fama, and Wilhelm (2011) found that sexual and religious obsessions were associated with different obsessional cognitive styles and personality characteristics from

each other. In fact, sexual obsessions loaded as a unique symptom component in one study of African-Americans with OCD (Williams, Elstein, Buckner, Abelson, & Himle, 2012).

Smith, Wetterneck, Short, Hart, and Little (2011) added a fifth dimension to the DOCS to assess sexually intrusive thoughts (DOCS-SIT) by adapting content from the existing Unacceptable Thoughts Scale and specifying a wider range of sexual obsessional content. In an initial investigation, the DOCS-SIT and Unacceptable Thoughts scales were moderately correlated with each other ($r = .38$), although the association was not significant ($p = .09$) in the small sample ($N = 44$) (Smith et al., 2011). The magnitude of this correlation implies that the DOCS-SIT is not redundant with the Unacceptable Thoughts Scale, even if they are related. The latter may not provide an adequate representation of the breadth of sexually intrusive thought content.

We conducted two studies to evaluate the factor structure, initial psychometric characteristics, and associated clinical features of the DOCS-SIT. In the first study, nonclinical participants completed the standard DOCS with additional SIT questions and we conducted an exploratory factor analysis on all items and examined clinical and cognitive correlates of the different scales, as well as test-retest reliability. In the second study, we examined the relationships among the standard DOCS and DOCS-SIT scales, as well as types of obsessional cognitions and symptom severity, in a clinical sample of individuals with OCD. Some of the data for some of the participants in the second study have been published previously in the context of a different investigation (Smith, Wetterneck, Hart, Short, & Björgvinsson, 2012). However, data on the SIT Scale—the focus of this study—have not been published for any of the participants. The focus of this investigation is specifically on the utility and features associated with the SIT Scale, with particular attention to similarities and differences between the DOCS Unacceptable Thoughts Scale and the SIT Scale.

Study 1

Method

Data were collected via the Internet at www.surveymonkey.com during the 2009–2010 academic year at a large southern university. All participants were enrolled in an introductory psychology course and were awarded class credit for their participation in the study. Participants were recruited via an open invitation that was viewable to all introductory psychology students. Participants in the initial and test-retest samples were recruited in the exact same fashion. Previous research has shown that data on OCD symptoms and cognitions collected online are equivalent to those collected in person (Coles, Cook, & Blake, 2007). The study was approved by the Institutional Review Board of the University of Arkansas, and all participants provided informed consent.

Participants

Validity and reliability sample: Four hundred seventy-five participants completed the online questionnaire packet. A majority of the sample was female ($n = 297$, 62.5%) and the age of participants ranged from 18 to 55 ($M = 19.60$, $SD = 3.20$). A majority of the participants were European-American/Non-Hispanic White ($n = 411$, 87%), 19 (4%) were

African-American, 20 (4%) were Asian-American, 13 (3%) were Hispanic-American, 4 (1%) were Native-American, and 8 (2%) selected “other” for their race.

Test-retest sample: A subset of 134 students completed a second administration of the DOCS and the DOCS-SIT roughly 1 month after the first administration. A majority of the sample was female ($n = 88$, 66%) and the age of participants ranged from 18 to 34 ($M = 19.21$, $SD = 1.73$). A majority of the participants were White ($n = 121$, 90%), 5 (4%) were African-American, 2 (2%) were Asian-American, 3 (2%) were Hispanic-American, 1 (1%) was Native-American, and 2 (2%) selected “other” for their race.

Measures

The Dimensional Obsessive-Compulsive Scale (DOCS; Abramowitz et al., 2010) is a 20-item self-report measure of four distinct OC symptom dimensions: (a) contamination and washing, (b) responsibility and checking, (c) unacceptable thoughts, and (d) symmetry. Participants are oriented to types of concerns, such as unacceptable thoughts, provided with several examples of concerns of that type, and then asked to rate questions about their experiences with those types of concerns. Each scale of the DOCS is composed of five items measured on a 5-point scale, that inquire about time spent, avoidance, distress, functional disturbance, and difficulty disregarding thoughts related to that symptom dimension. Items are rated from 0 (*none/not at all*) to 4 (*equivalent to extreme/severe, depending on the question*), yielding scores on each scale ranging from 0 – 20. Exploratory and confirmatory factor analyses have shown that the DOCS has strong factor reliability in student and clinical populations (Abramowitz et al.). Each of the DOCS subscales has strong convergent and divergent validity, and the DOCS has adequate test-retest reliability over a 12-week period ($r = .55 - .66$). In an OCD sample, mean scores on each scale ranged from 6.53 – 9.73 (30.06 total score; Abramowitz et al.). The SIT subscale was created by adding a fifth category labeled “Sexually Intrusive Thoughts” composed of the same questions asked for each symptoms dimension (Smith et al., 2011). See the Appendix for a copy of the SIT subscale. The DOCS Unacceptable Thoughts Scale was not altered from its original, validated form, which includes reference to “unpleasant thoughts about sex.”

The 21-item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) is a self-report measure of symptoms of depression, anxiety, and stress over a 2-week time period. Each subscale of the DASS-21 is composed of seven items that are measured on a 4-point scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). In order to facilitate comparisons between the DASS-21 and the 42-item DASS, scores are doubled, yielding scores on each subscale ranging from 0 – 42. Mean DASS-21 scores in an OCD sample were 13.43 for depression, 8.80 for anxiety, and 17.57 for stress (Antony, Bieling, Cox, Enns, & Swinson, 1998). Factor analytic research has shown that the DASS-21 is internally reliable and convergent validity tests indicate that the DASS-21 is a psychometrically valid measure of the unique symptoms of depression, anxiety, and stress (Antony et al., 1998; Henry & Crawford, 2005). Two-week test-retest reliability ranged from $r = .71 - .81$ in a small clinical sample for the three scales of the longer, 42-item DASS (Brown, Chorpita, Korotitsch, & Barlow, 1997).

The Obsessive Beliefs Questionnaire-44 (OBQ-44; Obsessive Compulsive Cognitions Working Group [OCCWG], 2005) consists of three empirically derived subscales thought to represent key belief domains of OCD. The subscales capture responsibility and threat estimation (OBQ-RT; 16 items), perfectionism and intolerance of uncertainty (OBQ-PC; 16 items), and importance and control of thoughts (OBQ-ICT; 12 items). Participants indicate their general level of agreement with items on a 7-point Likert-type scale that ranges from 1 (*disagree very much*) to 7 (*agree very much*). Therefore, the OBQ-RT and OBQ-PC subscales have scores ranging from 16 – 112, and the OBQ-ICT scores range from 12 – 84. Internal consistency of the OBQ-44 is high for all subscales ($\alpha = .89$ to $.95$) and each of the subscales have evidenced adequate convergent validity (OCCWG, 2005). Previous research has shown that all OBQ-44 subscales are significantly correlated with one another, $r = .42$ to $.73$ (OCCWG, 2005). Mean OBQ-44 scores in a large OCD sample were 64.5 (OBQ-RT), 69.9 (OBQ-PC), and 39.8 (OBQ-ICT; OCCWG, 2005). There was evidence for good test-retest reliability in the original, longer version of the OBQ (OCCWG, 2003).

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a 20-item measure of affect that comprises two scales measuring positive and negative affect, respectively. Participants rate their experience of 20 emotions on a 5-point scale from 0 (*very slightly or not at all*) to 4 (*extremely*), yielding positive and negative affect scales that each range from 0 – 40. In this investigation, participants were asked to “indicate to what extent you generally feel this way, that is, how you feel on the average.” The PANAS and its subscales are reliable and valid. Eight-week test-retest reliabilities for the PANAS scales administered with the directions used in this study were $r = .68$ for positive affect and $.71$ for negative affect (Watson et al., 1988).

Data Analysis—Missing values were dealt with based on the recommendations of Tabachnick and Fidell (2007). Individuals who did not complete at least 75% of any given questionnaire were completely removed from the data set. Inspection of all indicator variables suggested that no individual variable was missing more than 1.5%, thus imputation was deemed appropriate. Per the recommendations of Kline (2004), regression was used to impute all missing data. All further analyses were conducted using the imputed data set.

In order to examine the factor structure of the DOCS with the SIT items, all 20 original DOCS items and the five SIT items were simultaneously submitted to an exploratory factor analysis (EFA) using principle axis factoring as the extraction method with direct oblimin (oblique) factor rotation. Parallel analysis was used to decide factor retention (Hayton, Allen, & Scarpello, 2004). These specific factor analytic techniques were chosen to map directly onto the methods used by Abramowitz and colleagues (2010) in the initial DOCS factor analysis.

To test for construct validity, we first tested the relations between the four subscales of the DOCS and the SIT Scale by running a series of zero-order correlations. Next, using partial correlational analyses, we tested the degree to which these factors related to one another after controlling for negative affect. We then calculated a series of zero-order correlational analyses between the four DOCS subscales, the SIT Scale, and several other constructs related to OCD (OBQ-44 factors), a measure of depression, anxiety, and stress (DASS-21),

and a measure of generic positive and negative affect (PANAS). Lastly, we calculated regression analyses to examine which obsessional beliefs uniquely predicted scores on the DOCS scales after controlling for demographic variables (age, gender, and race) and depression. The SIT score was also regressed onto demographics, depression (DASS-21 depression scale), and all three OBQ-44 factors. This method is similar to that used by Wheaton, Abramowitz, Berman, Riemann, and Hale (2010). Controlling for depression removes variance associated with general symptoms of psychopathology that are not OCD or anxiety-specific.

In order to evaluate test-retest reliability, a subset of participants ($n = 134$) completed the study measures a second time, approximately 1 month after the original administration. On average, participants completed the second administration of the SIT Scale roughly 1 month after the first administration ($M = 33.07$, $SD = 5.98$; range of duration = 27 – 57 days). The SIT total scores were computed for Time 1 and Time 2 and compared. The correlation between Time 1 and Time 2 scores is an index of test-retest reliability.

Results

EFA—EFA of the 25 items clearly suggested a 5-factor solution. The first 5 eigenvalues were 9.19 (Unacceptable Thoughts), 2.46 (Sexual Thoughts), 2.00 (Symmetry), 1.69 (Contamination), and 1.34 (Responsibility). These 5 factors cumulatively explained 66.73% of the overall variance. Parallel analysis supported a 5-factor solution, as eigenvalues of the 5 EFA extracted factors were all larger than their parallel Monte Carlo generated eigenvalues (1.44, 1.37, 1.32, 1.28, and 1.24, respectively). All 25 items loaded onto their intended factors, with 5 items on each of the four DOCS factors and 5 items on the SIT factor. All items adequately loaded (loadings $> .5$) onto their respective factor and there were no complexly loaded items (loadings $> .3$ on another factor; Table 1).

Internal consistency statistics for each of the four DOCS factors and the SIT factor were strong. Cronbach's alpha was high for the Contamination ($\alpha = 0.82$), Responsibility ($\alpha = 0.87$), Unacceptable Thoughts ($\alpha = 0.90$), Symmetry ($\alpha = 0.90$), and Sexual Thoughts ($\alpha = 0.84$) factors. Item-total and interitem correlations were within acceptable range for the Sexual Thoughts subscale (0.74 – 0.82 and 0.38 – 0.60, respectively).

Validity—As can be seen in Table 2, the SIT factor was significantly ($p < .001$) related to each of the four DOCS factors, even after controlling for negative affect. However, it should be noted that the relations between the SIT factor and each of the four DOCS factors were slightly smaller than the observed relations among the four DOCS factors. As expected, the SIT factor was significantly related to symptoms of anxiety, depression, stress, negative affect, and obsessive beliefs (all $ps < .01$), providing evidence of convergent validity. As can be seen in Table 3, these relations were similar to those observed between the four DOCS factors and measures of anxiety, depression, stress, negative affect, and obsessive beliefs. Conversely, the SIT Scale was not significantly related ($p = .11$) to positive affect, thus providing evidence for divergent validity.

The results of the regressions are presented in Table 4. After controlling for demographics and depression, the SIT Scale was significantly predicted only by OBQ-ICT, $\beta = 0.17$, $t =$

2.53, $p = .012$ and OBQ-RT, $\beta = 0.17$, $t = 1.98$, $p = .049$. In contrast, the Unacceptable Thoughts Scale was significantly predicted only by OBQ-RT, $\beta = 0.37$, $t = 4.95$, $p < .001$.

Overall, these results provide modest evidence that the SIT Scale possesses utility above and beyond the existing measures of OC symptom dimensions.

Test-Retest Reliability—Test-retest participants did not differ from Time-1-only participants on any demographic variables (i.e., age, gender, and race; all $ps > .05$), any DOCS factors, or SIT total scores (all $ps > .05$). Test-retest participants did, however, score higher on the perfectionism and intolerance of uncertainty sub-scale of the OBQ-44 ($t = 2.44$, $p = .015$) and scored marginally higher on the stress subscale of the DASS-21 ($t = 1.82$, $p = .070$) and the negative affect subscale of the PANAS ($t = 1.73$, $p = .085$). A paired t-test indicated that there was not a significant difference between Time 1 ($M = 7.16$, $SD = 2.70$) and Time 2 ($M = 6.88$, $SD = 2.41$) SIT total scores, $t(133) = 1.33$, $p = .19$. Pearson correlation coefficients between Time 1 and Time 2 scores also indicated that scores were stable over time, $r(134) = .55$, $p < .001$. This correlation was not meaningfully changed when controlling for perfectionism and intolerance of uncertainty, stress, and negative affect, $r(134) = .53$, $p < .001$. Overall, these data suggest that the SIT Scale has poor to modest temporal stability.

Brief Summary

This first study examined the utility of assessing sexual intrusive thoughts separately from the broad category of unacceptable thoughts. We added 5 items assessing sexual symptoms to the 20-item DOCS and administered the measure to a large nonclinical sample. An EFA yielded a 5-factor solution composed of the four original DOCS scales in addition to the SIT Scale. The SIT Scale had good internal consistency and poor to modest test-retest reliability, and there was evidence for convergent and divergent validity. Moreover, the SIT Scale was predicted by different obsessional cognitions than the Unacceptable Thoughts Scale. Overall, the SIT Scale does not appear to be redundant with the other DOCS scales.

In Study 2, we sought to examine correlates and characteristics of the SIT Scale in a clinical population.

Study 2

In the second study, we extended the investigation by examining correlates and characteristics of the SIT Scale in a clinical population of individuals with OCD.

Method

Participants—A complete description of the recruitment of the majority of this sample can be found in a previously published study (Smith et al., 2012). Fifty-four participants completed the study measures. Twenty were in a residential treatment setting, 10 in intensive outpatient treatment, 15 in outpatient treatment, and 9 were nonreferred participants, who were recruited at the annual conference of the International OCD Foundation. The gender ratio was equal, with 27 women and 27 men. Eighty percent of the sample identified as European-American/Non-Hispanic White, 87% identified as

heterosexual, and 44% were married. The mean age was 31.35 ($SD = 9.86$). All participants were identified as having OCD by their treating clinician. The mean Y-BOCS score was 20.57 ($SD = 7.51$). Participants earned \$10 for participation and completed paper measures. The study was approved by the Institutional Review Board of the University of Houston–Clear Lake, and all participants provided informed consent.

Measures

Participants completed the DOCS, including the SIT Scale, and the OBQ-44 (see Study 1). In addition, participants completed the Yale-Brown Obsessive Compulsive Scale Self-Report (Y-BOCS-SR; Steketee, Frost, & Bogart, 1996). The Y-BOCS-SR is a 10-item measure of OCD symptom severity, modified from the clinician-administered Y-BOCS (Goodman et al., 1989). Participants rate each item on a 5-point scale from 0 (*equivalent to none*) to 4 (*equivalent to extreme*), yielding a total score that ranges from 0 – 40. A minimal score of 16 indicates clinical severity for the clinician-administered Y-BOCS, and demonstrated good sensitivity but poor specificity for the Y-BOCS-SR (Steketee et al., 1996). The Y-BOCS-SR demonstrates excellent validity and reliability in clinical and nonclinical samples. One-week test-retest reliability was excellent ($r = .88$; Steketee et al., 1996).

The Obsessive Compulsive Inventory–Revised (OCI-R; Foa et al., 2002) is an 18-item measure of OCD symptoms. Participants rate how much symptoms have distressed or bothered them during the previous month on a 5-point scale from 0 (*not at all*) to 4 (*extremely*). The OCI-R yields a total score (ranging from 0 – 72), as well as six symptom subscales (ranging from 0 – 12). Of particular interest in this study were the OCI-R total score and obsessing subscale, which measures symptoms most directly related to unacceptable thoughts symptoms. The mean OCI-R total scores in two large samples of individuals with OCD were 26.3 and 28.01 (Foa et al., 2002; Huppert et al., 2007). The OCI-R has acceptable psychometric properties in OCD and nonclinical populations (Foa et al., 2002; Huppert et al., 2007). Test-retest reliability was $r = .82$ and $.84$ for individuals with OCD (after 2 weeks) and nonanxious controls (after 1 week; Foa et al., 2002).

Data Analysis—Similar to the analyses in Study 1, we first tested the relations between the four subscales of the DOCS and the SIT Scale by running a series of zero-order correlations. We then calculated a series of zero-order correlational analyses between the four DOCS subscales, the SIT Scale, and the OBQ-44 factors. To establish convergent validity using a specific index of sexual thoughts, we also examined the correlations between the DOCS and SIT scales and Item 32 of the OBQ-44, which is, “Having an unwanted sexual thought or image means I really want to do it.” Lastly, we calculated regression analyses to examine whether scores on the SIT Scale were predicted by the same obsessional cognitive beliefs as were scores on the unacceptable thoughts scale. Each DOCS and SIT Scale was regressed on all three OBQ-44 scales after controlling for demographic variables (age, gender, and race). We were most interested in the pattern of results for the SIT and Unacceptable Thoughts scales. Finally, DOCS and SIT scales were correlated with Y-BOCS-SR and OCI-R scores to examine the relationship between overall severity and separate symptom dimension severity.

Results

Internal consistency statistics for each of the four DOCS factors and the SIT factor were strong. Cronbach's alpha was high for the Contamination ($\alpha = 0.97$), Responsibility ($\alpha = 0.96$), Unacceptable Thoughts ($\alpha = 0.95$), Symmetry ($\alpha = 0.96$), and SIT ($\alpha = 0.97$) factors.

Thirty-five of the 54 participants scored higher than 0 on the SIT Scale, indicating the minimal presence of sexually intrusive thoughts. As can be seen in Table 5, in contrast with the results of Study 1, the SIT factor was significantly correlated only with the unacceptable thoughts DOCS factor, $r(54) = .53, p < .001$, but not any other factor (all $|r[54]|s < .17$, all $ps > .22$), for which effect sizes were all small. In terms of obsessive beliefs, the SIT factor was significantly correlated with beliefs about the importance and control of thoughts, $r(54) = .30, p = .028$, but, unlike in Study 1, not beliefs about responsibility and threat estimation, or perfectionism and intolerance of uncertainty ($|r[54]|s < .06, ps < .70$). The unacceptable thoughts DOCS factor was moderately or highly correlated with all three OBQ-44 scales. In addition, OBQ-44 item #32 was moderately correlated with the SIT and DOCS unacceptable thoughts scales, but not the other three DOCS scales (see Table 5).

The results of the regressions are presented in Table 6 and differ from those in Study 1. The SIT Scale was significantly predicted only by OBQ-ICT, $\beta = 0.44, t = 2.85, p = .006$. Similarly, the Unacceptable Thoughts Scale was significantly predicted only by OBQ-ICT, $\beta = 0.41, t = 3.10, p = .003$.

Y-BOCS-SR and OCI-R total scores were significantly correlated with all DOCS scales, $r(53)s > .29, ps < .04$, except for the SIT Scale (with Y-BOCS-SR, $r[53] = .16, p = .24$; with OCI-R total, $r[53] = .10, p = .48$). In contrast with the SIT Scale, the Unacceptable Thoughts Scale was strongly correlated with both the Y-BOCS-SR, $r(53) = .49, p < .001$, and the OCI-R total, $r(53) = .51, p < .001$. However, the OCI-R obsessing subscale, which measures symptoms more specifically relevant to unacceptable thoughts and sexual obsessions, was strongly correlated with both the DOCS Unacceptable Thoughts Scale, $r(46) = .72, p < .001$, and SIT Scale, $r(46) = .59, p < .001$.

Brief Summary

The second study examined the relationships between DOCS and SIT scales, as well as associated cognitive features, in a clinical population. There were indications of both convergence and divergence between the Unacceptable Thoughts and SIT scales, which were strongly correlated with each other. In contrast to the Unacceptable Thoughts Scale, the SIT Scale was associated with fewer cognitive belief domains and, although with obsessing symptoms, not with overall OCD symptom severity. However, both scales were predicted uniquely only by the importance and control of thoughts OBQ scale.

Discussion

The purpose of this investigation was to examine the utility of assessing sexually intrusive thoughts separately from unacceptable thoughts using the DOCS. First, a factor analysis using a large nonclinical sample demonstrated that items designed to measure sexually intrusive thoughts loaded on a unique factor, separate from unacceptable thoughts items.

The two scales did not appear to be redundant in terms of the magnitude of their correlation with each other. Moreover, they were uniquely associated with different obsessional cognitions. Lastly, there was evidence for poor to modest test-retest reliability in the nonclinical sample.

The DOCS with the SIT Scale was then administered to a clinical population of individuals with OCD. In this population, the SIT and Unacceptable Thoughts scales were correlated with each other and the former was not significantly correlated with any other DOCS scale. In addition, they were both uniquely predicted only by the importance and control of thoughts scale of the OBQ, above and beyond the other scales. Nevertheless, zero-order correlations indicated that the Unacceptable Thoughts Scale of the DOCS was associated with all three obsessional cognitive styles, whereas the SIT Scale was only correlated with importance and control of thoughts. Overall OCD symptom severity was strongly related to unacceptable thoughts, but uncorrelated with SIT. However, obsessing symptoms were strongly correlated with both.

Together, the two studies demonstrate that sexually intrusive thoughts may be a distinct subcategory of unacceptable thoughts, which has several clinical and theoretical implications. With respect to assessment, although the unacceptable thoughts category is empirically driven, most OCD measures have few questions assessing religious and sexual obsessions. It is difficult to conclude that assessing a group of symptoms as a unitary category is sufficient when that category was derived without comprehensive attention to its components. Therefore, there is potential utility in assessing sexually intrusive thoughts separately from the broader category of unacceptable thoughts. Similarly, aggregating separate symptom presentations by subsuming sexual obsessions in the broader category of unacceptable thoughts may decrease instruments' sensitivity to change. That is, when several components of a category do not change, a composite score is less likely to detect changes on any one component. The fact that the SIT Scale did not correlate with overall OCD severity scores, but did correlate strongly with the OCI-R obsessing subscale, is further evidence for the specificity of sexual symptoms. These symptoms are not measured well by preexisting measures and do not correlate with overall severity when severity is assessed using a scale that does not sufficiently ask about relevant symptoms. These findings are consistent with the conclusion that sexual obsessions are not sufficiently measured by other OCD symptom measures, are related to unique symptoms, and that subsuming them in broader symptom categories risks missing important details about symptom presentation and severity.

With respect to treatment, attention to differences between sexual obsessions and other unacceptable thoughts, as well as other thematic variations may help guide cognitive-behavior therapy. It may also clarify important potential treatment targets, such as when conducting exposure and response prevention (ERP) or modular cognitive therapy (e.g., Wilhelm & Steketee, 2006). Furthermore, treatment outcome requires careful consideration of each patient's particular core fears, and subsuming all unacceptable thoughts and obsessions in a unitary category increases the likelihood of assuming commonalities that are misleading. Consider, for example, the relationship between scrupulosity and sexual obsessions, both typically conceptualized in the unacceptable thoughts category. A patient

with sexual obsessions may fundamentally fear the meaning of the thought vis-à-vis his own character (e.g., “I am a pedophile for having these thoughts”), the behavioral implications (e.g., “I will molest someone”), or the moral consequences (e.g., “Thinking this is sinful and God will punish me”). The last example is actually best described as scrupulous, although the specific content is sexual. However, consider other examples of scrupulosity, such as a Jewish patient who fears accidentally cross-contaminating kosher and non-kosher food, or a Catholic patient who obsesses about dropping the Host during Communion. These examples have more in common with secular contamination and accidental harm fears, respectively, than with distress associated with unacceptable thoughts, per se. Yet another example of scrupulosity is the case of a patient who is plagued by intrusive blasphemous thoughts, which, although not sexual, are feared specifically because they are deemed repugnant or unacceptable. These examples illustrate that, on the one hand, sometimes subcategories of unacceptable thoughts overlap (as when the patient fears sexual thoughts for scrupulous reasons), sometimes they share common features (e.g., distress about the very presence of disturbing thoughts), and sometimes they are not even best described as unacceptable thoughts at all (such as when the obsession has to do with the possibility of causing harm). Although there is variability within any unacceptable thoughts subcategory, as well, splitting factors into their empirically supported components may better allow the clinician to tailor treatment to each patient's idiographic presentation with greater specificity.

In many ways, the results of this investigation are consistent with previous studies. However, there are two exceptions, both in the first study. Whereas Wheaton et al. (2010) found that unacceptable thoughts were associated uniquely with beliefs about the importance and control of thoughts when including all obsessional belief types and while controlling for depression, in Study 1 they were associated uniquely with responsibility and threat estimation beliefs. Similarly, whereas Wheaton et al. found that symmetry was predicted uniquely by perfectionism and intolerance of uncertainty, in Study 1 it was predicted by all three obsessional belief types. However, in the clinical OCD sample in Study 2, the results were as expected and consistent with the previous literature. It is notable that in the clinical sample, both the Unacceptable Thoughts and Sexually Intrusive Thoughts scales were uniquely predicted by the same OBQ-44 scale, importance and control of thoughts. This is not surprising and likely does not temper the conclusion that unacceptable thoughts and sexually intrusive thoughts are meaningfully separable. In fact, both contamination and responsibility DOCS scales were also uniquely predicted by the same OBQ-44 scale as each other, the responsibility and threat estimation scale.

It is worthy of emphasis that in creating a separate SIT Scale, we did not alter the DOCS Unacceptable Thoughts Scale, which still referred to sexual symptoms. This likely inflated the extent to which the SIT Scale was associated with the Unacceptable Thoughts Scale because there was overlapping content. Therefore, these results indicate that not only are sexually intrusive thoughts distinguishable from other types of unacceptable thoughts, but they are not redundant with the entire domain of unacceptable thoughts, even including sexual symptoms. In the long run, if the standard DOCS were modified to include a separate SIT Scale, it would likely make sense to modify the Unacceptable Thoughts Scale by removing sexual content or by separating it entirely into its components. In fact, considering that sexually intrusive thoughts meaningfully differ from unacceptable thoughts more

broadly, future research should examine whether the same is true of religious or violent symptoms. Most assessment measures (e.g., the Y-BOCS checklist) have even fewer items measuring scrupulous (religious or moral) symptoms than sexual symptoms. Perhaps dividing the Unacceptable Thoughts Scale into its component parts is warranted, rather than simply adding a Sexually Intrusive Thoughts Scale.

A primary limitation to this study is that the factor structure was determined in a nonclinical sample and the clinical sample was not large enough to replicate these results. It would certainly be beneficial to replicate the 5-factor structure in an OCD sample. However, this characteristic may account for other findings and discrepancies between the two studies. Specifically, there are low symptom levels in a nonclinical sample, resulting in attenuated range of scores. This may account for the relatively low test-retest correlation coefficient. Nevertheless, internal consistency was extremely high for all of the scales in the clinical sample, suggesting that the factors derived in a nonclinical sample were reliable in the clinical sample, as well. In addition, in a nonclinical sample participants do not have a primary clinical symptom presentation, which likely accounts for the fact that in Study 1 the SIT and all DOCS scales were correlated with each other, whereas in Study 2 there was specificity in the intercorrelations.

There are several additional limitations to this study. First, we did not have data on symptoms of depression or comorbid diagnoses in Study 2. Therefore, unlike in Study 1 and in Wheaton et al. (2010), regression analyses examining which obsessional belief domains predicted each DOCS scale were not conducted controlling for depression. Nevertheless, the results for the standard DOCS scales were similar to those in Wheaton et al. Moreover, we used mood and anxiety measures in Study 1 to evaluate validity. In contrast, Study 2 was intended to examine the correlates of the new SIT Scale and how they relate to the correlates of the extant Unacceptable Thoughts Scale, rather than to examine validity. Second, there was little ethnic or racial diversity in either study sample. Third, diagnostic OCD status was determined by report of the treating therapist and there was not a uniform diagnostic assessment procedure. Limitations notwithstanding, this investigation highlights the potential utility in assessing symptoms of sexually intrusive thoughts separately and in detail, rather than subsumed in a broader unacceptable thoughts category. Supplementing the DOCS with the SIT Scale is a promising means of doing so.

Appendix

The next questions ask about your experiences with sexual thoughts that come to mind against your will and behaviors designed to deal with these thoughts over the last month. Keep in mind that your experiences might be slightly different than the examples listed above. Please circle the number next to your answer:

1. About how much time have you spent each day with sexually intrusive thoughts and with behavioral or mental actions to deal with them?
0 None at all
1 Less than 1 hour each day

2 Between 1 and 3 hours each day

3 Between 3 and 8 hours each day

4 8 hours or more each day

2. To what extent have you been avoiding situations, places, objects and other reminders (e.g., numbers, people) that trigger sexually intrusive thoughts?

0 None at all

1 A little avoidance

2 A moderate amount of avoidance

3 A great deal of avoidance

4 Extreme avoidance of nearly all things

3. When sexually intrusive thoughts come to mind against your will how distressed or anxious did you become?

0 Not at all distressed/anxious

1 Mildly distressed/anxious

2 Moderately distressed/anxious

3 Severely distressed/anxious

4 Extremely distressed/anxious

4. To what extent has your daily routine (work, school, self-care, social life) been disrupted by sexually intrusive thoughts and efforts to avoid or deal with such thoughts?

0 No disruption at all.

1 A little disruption, but I mostly function well.

2 Many things are disrupted, but I can still manage.

3 My life is disrupted in many ways and I have trouble managing.

4 My life is completely disrupted and I cannot function at all.

5. How difficult is it for you to disregard sexually intrusive thoughts and refrain from using behavioral or mental acts to deal with them when you try to do so?

0 Not at all difficult

1 A little difficult

2 Moderately difficult

3 Very difficult

4 Extremely difficult

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Category 5: Sexually Intrusive Thoughts Examples...

- Unpleasant thoughts about someone of the same sex if you are heterosexual
- Thoughts about doing awful, improper, or embarrassing things of a sexual nature that you don't really want to do (including sexual acts with children or authority figures)
- Thoughts about forcing someone to do something sexually or of being forced to do a sexual act
- Repeating an action or following a special routine because of sexually intrusive thoughts
- Mentally performing an action or saying prayers to get rid of an unwanted or unpleasant sexual thought
- Avoidance of people, place, situations, or other triggers of sexually intrusive thoughts

Table 1
Factor Loadings From an Exploratory Factor Analysis of the Original Dimensional Obsessive-Compulsive Scale Items and Sexually Intrusive Thoughts Items

Items	Factor 1 Unacceptable Thoughts	Factor 2 Sexual Thoughts	Factor 3 Symmetry	Factor 4 Contamination	Factor 5 Responsibility	Item Communalities
1. Contamination: Time Spent	0.01	0.01	-0.04	0.63	0.08	.45
2. Contamination: Avoidance	0.05	-0.02	-0.02	0.72	0.03	.50
3. Contamination: Distress	0.05	-0.11	0.10	0.65	-0.00	.48
4. Contamination: Interference	0.00	0.08	0.05	0.68	0.02	.53
5. Contamination: Control	0.04	0.06	0.05	0.60	0.02	.44
6. Responsibility: Time Spent	0.04	0.02	0.00	-0.04	0.72	.54
7. Responsibility: Avoidance	-0.03	0.06	0.03	0.15	0.61	.52
8. Responsibility: Distress	0.01	-0.07	0.01	-0.02	0.83	.60
9. Responsibility: Interference	-0.03	0.08	-0.00	0.04	0.71	.57
10. Responsibility: Control	0.06	-0.03	0.04	-0.02	0.76	.61
11. Unacceptable Thoughts: Time Spent	0.65	0.01	-0.00	-0.00	0.12	.54
12. Unacceptable Thoughts: Avoidance	0.70	0.07	-0.07	0.17	-0.02	.63
13. Unacceptable Thoughts: Distress	0.83	-0.03	0.02	0.02	-0.01	.67
14. Unacceptable Thoughts: Interference	0.78	0.01	0.08	-0.00	0.03	.72
15. Unacceptable Thoughts: Control	0.87	0.02	0.02	0.08	-0.01	.68
16. Symmetry: Time Spent	0.06	-0.06	0.74	0.04	0.07	.65
17. Symmetry: Avoidance	-0.06	0.12	0.58	0.27	-0.06	.54
18. Symmetry: Distress	0.06	-0.02	0.88	-0.06	0.00	.74
19. Symmetry: Interference	-0.05	0.05	0.75	0.04	0.09	.69
20. Symmetry: Control	0.05	0.02	0.87	-0.06	0.01	.74
21. Sexual Thoughts: Time Spent	0.05	0.61	0.04	-0.01	-0.02	.41
22. Sexual Thoughts: Avoidance	0.02	0.64	-0.08	0.15	0.02	.48
23. Sexual Thoughts: Distress	0.01	0.70	0.02	0.01	0.08	.53
24. Sexual Thoughts: Interference	-0.02	0.76	0.05	-0.06	0.02	.54
25. Sexual Thoughts: Control	0.01	0.80	0.00	-0.07	-0.02	.55

Note. Exploratory factor analysis using principle axis factoring and direct oblimin (oblique) rotation.

Table 2
Zero-Order and Partial Correlations Between the 4 Factors of the DOCS and the SIT Scale in a Nonclinical Sample

OC Dimensions	OC Dimensions			
	DOCS Contamination	DOCS Responsibility	DOCS Unacceptable Thoughts	Sexually Intrusive Thoughts
DOCS-Contamination	1.00	.46	.40	.23
DOCS-Responsibility	.50	1.00	.52	.31
DOCS-Unacceptable Thoughts	.45	.58	1.00	.38
DOCS-Symmetry	.48	.53	.43	.28
Sexually Intrusive Thoughts	.26	.35	.42	1.00

Note. Cross diagonal are zero-order correlations and off diagonal are partial correlations after controlling for negative affect. DOCS = Dimensional Obsessive Compulsive Scale; SIT = Sexually Intrusive Thoughts Scale. In a sample of 475 participants, correlations .16 are significant at the $p = .001$ level.

Table 3
Zero-Order Correlations Between the 4 DOCS Factors, the SIT Scale, and Measures of Obsessive Beliefs, Affect, and Mood in a Nonclinical Sample

	DOCS Contamination	DOCS Responsibility	OC Dimensions		
			DOCS Unacceptable Thoughts	DOCS Symmetry	SIT
OBO-RT	.36	.41	.41	.40	.26
OBO-ICT	.30	.27	.31	.26	.27
OBO-PC	.30	.32	.31	.38	.19
OBO-Total	.35	.37	.38	.39	.26
DASS-Anxiety	.30	.40	.47	.36	.22
DASS-Depression	.17	.36	.47	.30	.26
DASS-Stress	.25	.43	.50	.34	.18
Negative Affect	.24	.35	.39	.29	.18
Positive Affect	-.02	-.11	-.13	-.05	-.08

Note. DOCS = Dimensional Obsessive Compulsive Scale; SIT = Sexually Intrusive Thoughts Scale; OBO = Obsessive-Beliefs Questionnaire-44; RT = Responsibility and Threat Estimation Scale; ICT = Importance and Control of Thoughts Scale; PC = Perfectionism and Intolerance of Uncertainty Scale; and DASS = Depression Anxiety Stress Scales-21. In a sample of 475 participants, correlations are significant at the $p = .001$ level.

Table 4
Regression Analyses With Obsessive Beliefs as Predictors of DOCS Factors and the SIT Scale After Controlling for Demographics (Age, Gender, and Race) and Depression in a Nonclinical Sample

OBQ Factor	OC Dimensions				DOCS Symmetry $\beta(t, p\text{-value})$	SIT $\beta(t, p\text{-value})$
	DOCS Contamination $\beta(t, p\text{-value})$	DOCS Responsibility $\beta(t, p\text{-value})$	DOCS Unacceptable Thoughts $\beta(t, p\text{-value})$			
OBQ-RT	.29 (3.55, <.001)	.42 (5.40, <.001)	.37 (4.95, <.001)		.27 (3.44, .001)	.17 (1.98, .049)
OBQ-ICT	.08 (1.14, .26)	-.08 (-1.18, .24)	.01 (0.19, .85)		-.13 (-2.01, .045)	.17 (2.53, .012)
OBQ-PC	-.01 (-0.13, .89)	-.05 (-0.77, .44)	-.12 (-1.73, .084)		.19 (2.69, .007)	-.09 (-1.23, .22)

Note. DOCS = Dimensional Obsessive Compulsive Scale; SIT = Sexually Intrusive Thoughts Scale; OBQ = Obsessive-Beliefs Questionnaire-44; RT = Responsibility and Threat Estimation Scale; ICT = Importance and Control of Thoughts Scale; and PC = Perfectionism and Intolerance of Uncertainty Scale. Depression was measured using the Depression Anxiety Stress Scales-21.

Results significant at $p < .05$ are in bold.

Table 5
Zero-Order Correlations Between the 4 Factors of the DOCS, the SIT Scale, and Measures of Obsessive Beliefs in an OCD Sample

OC Dimensions	OC Dimensions			
	DOCS Contamination	DOCS Responsibility	DOCS Unacceptable Thoughts	SIT
DOCS-Contamination	1.00			
DOCS-Responsibility	.29*	1.00		
DOCS-Unacceptable Thoughts	.07	.44**	1.00	
DOCS-Symmetry	.07	.29*	.34*	1.00
Sexually Intrusive Thoughts	-.17	-.08	.53***	1.00
OBQ-RT	.29*	.61***	.39**	-.05
OBQ-ICT	-.07	.27*	.51***	.30*
OBQ-PC	.02	.29*	.38**	.01
OBQ item #32	-.15	<.01	.36***	.41**

Note. DOCS = Dimensional Obsessive Compulsive Scale; SIT = Sexually Intrusive Thoughts Scale; OBQ = Obsessive-Beliefs Questionnaire-44; RT = Responsibility and Threat Estimation Scale; ICT = Importance and Control of Thoughts Scale; and PC = Perfectionism and Intolerance of Uncertainty Scale; OBQ item #32 = "Having an unwanted sexual thought or image means I really want to do it."

* denotes $p < .05$

** denotes $p < .01$

*** denotes $p < .001$.

Table 6
Regression Analyses With Obsessive Beliefs as Predictors of DOCS Factors and the SIT Scale After Controlling for Demographics (Age, Gender, and Race) in an OCD Sample

OBQ Factor	OC Dimensions			
	DOCS Contamination $\beta(t, p\text{-value})$	DOCS Responsibility $\beta(t, p\text{-value})$	DOCS Unacceptable Thoughts $\beta(t, p\text{-value})$	DOCS Symmetry $\beta(t, p\text{-value})$
OBQ-RT	.49 (3.15, .003)	.66 (4.62, <.001)	.22 (1.57, .12)	-.003 (-0.02, .98)
OBQ-ICT	-.24 (-1.67, .10)	.02 (0.11, .91)	.41 (3.10, .003)	-.17 (-1.27, .21)
OBQ-PC	-.08 (-0.48, .64)	-.06 (-0.40, .69)	.04 (0.30, .77)	.56 (3.84, <.001)

Note. DOCS = Dimensional Obsessive Compulsive Scale; SIT = Sexually Intrusive Thoughts Scale; OBQ = Obsessive-Beliefs Questionnaire-44; RT = Responsibility and Threat Estimation Scale; ICT = Importance and Control of Thoughts Scale; and PC = Perfectionism and Intolerance of Uncertainty Scale.

Results significant at $p < .05$ are in bold.