Concurrent Validity of the Yale–Brown Obsessive–Compulsive Scale–Symptom Checklist

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Despite the frequent use of the Yale–Brown Obsessive–Compulsive Scale–Symptom Checklist (Y-BOCS-SC; Goodman et al., 1989a) and the Obsessive–Compulsive Inventory-Revised (OCI-R; Foa et al., 2002), there are limited data on the psychometric properties of the two instruments. In the present research, clinician ratings on the Y-BOCS-SC for 112 patients with obsessive–compulsive disorder (OCD) were compared to their self-report ratings on the OCI-R. In addition, Y-BOCS-SC and OCI-R scores were compared to measures of OCD symptom severity and self-report measures of anxiety (State–Trait Anxiety Inventory–Trait Subscale [STAI-T]; Spielberger, Gorusch, & Lushene, 1970) and depression (Beck Depression Inventory-II [BDI-II]; Beck,

Steer, & Brown, 1996). The six symptom scales of the OCI-R had good internal consistency reliabilities (αs). For the Y-BOCS-SC, three of five scales had good reliabilities (αs > .80), but αs for symmetry/ordering and sexual/religious symptom scales were inadequate. Total scores for the two instruments were strongly correlated with their corresponding ''checking'' scales, but no individual symptoms scales were identified as indices of overall OCD symptom presence. Scales assessing washing/contamination, symmetry/ordering, and hoarding from the two OCD instruments correlated well, but lower correlations for the other scales suggested differences in symptom coverage by the two instruments. Most symptom scales from the Y-BOCS-SC and OCI-R had low correlations with the BDI-II and STAI-T, but the OCI-R obsessing scale was well correlated ($r = .54$) with the STAI-T. These findings reveal some of the strengths and weaknesses of these two OCD instruments, and the results provide guidance for selecting scales that are suitable for measuring OCD symptoms. © 2008 Wiley Periodicals, Inc. J Clin Psychol 64:1338–1351, 2008.

The *Diagnostic and Statistical Manual, Fourth Edition–Text Revision* (*DSM-IV-TR*; American Psychiatric Association, 2000) defines obsessive–compulsive disorder (OCD) as a psychiatric disorder marked by the presence of recurrent intrusive thoughts (obsessions) and/or repetitive anxiety-reducing behaviors (compulsions) that cause significant distress and/or impairment across one or more domains of psychosocial functioning. However, this definition does not consider the heterogeneous nature of OCD symptoms or allow for the assessment of OCD patient subtypes (e.g., contamination symptoms, hoarding, etc.). Therefore, in the absence of psychometric data, clinicians and researchers may rely on symptom-specific OCD measures for research purposes and treatment planning (e.g., Rufer, Grothusen, Mass, Peter, & Hand, 2005). Considering the importance of accurately identifying specific symptoms in patients, this study explored the psychometric properties of two commonly used symptom-specific measures of OCD, namely the Yale–Brown Obsessive–Compulsive Scale–Symptoms Checklist (Y-BOCS-SC; Goodman et al., 1989a) and the Obsessive–Compulsive Inventory-Revised (OCI-R; Foa et al., 2002).

The Y-BOCS (Goodman et al., 1989a) is a commonly employed semistructured clinician-administered instrument that assesses the nature and severity of OCD symptoms over a week's time. Considered the standard for OCD assessment (Frost, Steketee, Krause, & Trepanier, 1995; Grabill et al., 2008), the Y-BOCS assesses both the presence and severity of OCD symptoms independently from the number of presenting obsessions and compulsions (Mataix-Cols, Fullana, Alonso, Menchon, & Vallejo, 2004). The Y-BOCS consists of the Yale–Brown Obsessive–Compulsive Scale–Symptoms Checklist (Y-BOCS-SC) and the Yale–Brown Obsessive–Compulsive Scale–Severity Scale (Y-BOCS-SS). The Y-BOCS-SS has been researched extensively (Frost et al., 1995; Goodman et al., 1989a; Goodman et al., 1989b; Kim, Dysken, & Kuskowski, 1990; Storch et al., 2005; Taylor, 1995; Woody, Steketee, & Chambless, 1995), but the psychometric properties of the Y-BOCS-SC have received little attention.

Developed to augment the Y-BOCS-SS, the Y-BOCS-SC assesses 54 identified OCD symptoms across 17 categories of obsessions and compulsions using a

dichotomous rating format to indicate the presence or absence of a particular symptom. Factor-analytic studies have examined the factor structure of the Y-BOCS-SC and found support for the presence of either four (Cullen et al., 2006; Leckman et al., 1997; Summerfeldt, Richter, Antony, & Swinson, 1999) or five dimensions of OCD symptoms (Calamari, Wiegartz, & Janeck, 1999; Mataix-Coles et al., 2004; Mataix-Cols, Rosario-Campos, & Leckman, 2005; Rufer, Grothusen, Mass, Peter, & Hand, 2006). The Y-BOCS-SC 5-factor model generally includes contamination/washing, aggressive/checking, religious/sexual, symmetry/ordering/repeating, and hoarding OCD symptoms, whereas the 4-dimensional model often combines sexual/religious and aggressive/checking symptoms into a single dimension (Cullen et al., 2006). A study by Mataix-Cols et al. (2002) explored the reliabilities of the Y-BOCS-SC five symptom scales and found good symptom stability over 2 years. However, despite providing support for the reliability of the Y-BOCS-SC, this study did not explore validity. In fact, only one study has compared the Y-BOCS-SC to other OCD measures. In a sample of 56 patients, Mataix-Cols et al. (2004) compared the Y-BOCS-SC to two self-report OCD measures: the Maudsley Obsessional Compulsive Inventory (MOCI; Hodgson & Rachman, 1977) and the Padua Inventory (PI; Sanavio, 1988). They found small to moderate correlations between corresponding Y-BOCS-SC symptom scales and other OCD symptom subscales. For example, moderate correlations were found between the Y-BOCS-SC contamination/washing scale and the washing subscale on the MOCI ($r = .59$) and between the Y-BOCS-SC contamination/washing scale and the washing subscale on the PI ($r = .60$). Additionally, small but significant correlations were found between Y-BOCS-SC hoarding scale and the MOCI slowness ($r = .47$) and doubt ($r = .33$) symptom subscales as well as between checking symptoms on the Y-BOCS-SC and PI ($r = .30$). These results are limited, however, because the MOCI does not assess a broad spectrum of OCD symptoms (Thordarson et al., 2004) and the PI fails to assess hoarding symptoms and to discriminate between general worries and obsessions (Burns, Keortge, Formea, & Sternberger, 1996).

The OCI-R (Foa et al., 2002) is an abbreviated version of the Obsessive–Compulsive Inventory (OCI; Foa, Kozak, Salkovskis, Coles, & Amir, 1998). The OCI-R was modified to improve the measure's ease of administration, to eliminate several redundant items, to reduce overlap across subscales, and to simplify scoring procedures. The OCI-R is an 18-item self-report OCD scale with 6-factor analytically derived symptom scales (three items per scale). Each item is rated on a 5-point Likert scale that indicates the degree of distress. With this format, the OCI-R simultaneously assesses the frequency and severity of OCD symptoms on the following six factors: washing, checking, ordering, obsessing, hoarding, and mental neutralizing symptoms. Unlike the Y-BOCS-SC, the OCI-R does not require the use of a trained rater to administer.

Relative to the Y-BOCS-SC, more psychometric data exist for the OCI-R. The OCI-R has been shown to have good internal consistency reliability ($\alpha s = .81–.88$; Abramowitz & Deacon, 2006; Foa et al., 2002; Fullana et al., 2005). Test-retest stability for the OCI-R scores ($rs = .70–.91$) was adequate in clinical samples (Foa et al., 2002), and adequate stability was demonstrated with college students (Hajcak, Huppert, Simmons, & Foa, 2004). One published study identified small correlations ($r = -.03–.35$) between patient scores on OCI-R scales and ratings on the Y-BOCS-SS (Abramowitz & Deacon, 2006). In a nonclinical sample of 178 college students, Hajcak et al. (2004) found moderate to strong correlations between OCI-R scales

and corresponding subscales (e.g., cleaning, contamination, checking) on the MOCI (Hodgson & Rachman, 1977) and the Padua Inventory–Washington State University Revision (PI-WSR; Burns, Keortge, Formea, & Sternberger, 1996), suggesting that these measures assess similar constructs. Specifically, moderate to strong correlations were found between the OCI-R washing scale and cleaning/contamination subscales on the MOCI ($r = .50$) and PI-WSR ($r = .71$). Moderate to strong correlations were also identified between the OCI-R checking scale and checking subscales on the MOCI ($r = .58$) and PI-WSR ($r = .74$). Small but significant correlations were found between the OCI-R checking, ordering, obsessing, hoarding, and neutralizing scales and cleaning/contamination subscales on the MOCI ($r = .16$–.42) and PI-WSR ($r = .23$–.44). In a clinical study of 215 adults with OCD, Foa et al. (2002) identified strong relationships between corresponding OCI-R scales and MOCI subscales, as strong correlations were identified between washing ($r = .78$) and checking ($r = .72$) symptoms. Thus far, several studies have found the OCI-R to demonstrate good discriminant validity with self-reported anxiety and depressive symptoms (Abramowitz & Deacon, 2006; Foa et al., 2002; Gönner, Leonhart, & Ecker, 2008; Hajcak et al., 2004; Huppert et al., 2007).

Despite the frequent use of the Y-BOCS-SC and OCI-R, no previous study has directly compared the two instruments. Therefore, the goal of this study was to assess the psychometric characteristics of the Y-BOCS-SC and OCI-R in a clinical sample of adult OCD patients. Specifically, the following research questions are addressed: (a) What are the internal consistencies of the Y-BOCS-SC total score and symptom scales and OCI-R total score and scales? (b) What are the relationships between Y-BOCS and OCI-R scales? (c) To what extent are the Y-BOCS-SC and OCI-R scales associated with OCD symptom severity (Y-BOCS-SS) and with self-report measures of anxiety and depression?

Method

Participants

One-hundred twelve patients (51% men, $n = 58$) between the ages of 18 and 79 years (mean age $= 30.43 \pm 11.38$ years) completed human subjects informed consent documents approved by the University of Florida Institutional Review Board to participate in this study. Participants had a principal diagnosis of OCD made by a licensed psychologist with experience in assessing and diagnosing OCD. Diagnoses were corroborated through administering the Anxiety Disorder Interview Schedule for the DSM-IV (ADIS-IV; Brown, DiNardo, & Barlow, 1994) and confirmed by a second clinical psychologist based on a discussion about the patient's clinical presentation and review of records. Patients were excluded if they presented with any of the following diagnoses: active psychotic disorders, cognitive impairments as determined from the clinical interview, pervasive developmental disorders, documented neurological disorders (e.g., Parkinson's disorder), or an active substance abuse disorder. Patients with comorbid Axis I disorders were not excluded if their primary diagnosis was OCD.

Instruments

Yale–Brown Obsessive–Compulsive Scale. As described previously, the Y-BOCS (Goodman et al., 1989a) consists of the Y-BOCS-SC, which is a 54-item symptom

checklist, and the Y-BOCS-SS, which is a 10-item clinician-administered instrument that is rated on a 4-point Likert scale. The Y-BOCS-SS assesses the severity of OCD symptoms over the past 7 days, and severity of obsessions and compulsions are rated separately with scores ranging from 0 to 20 for each composite (higher scores indicate greater impairment). Specifically, the severity of obsessions are assessed by items such as, ''How much of your time is occupied by obsessive thoughts?,'' and ''How much do your obsessive thoughts interfere with your social or work (or role) functioning?'' Compulsions are assessed through items such as ''How strong is the drive to perform the compulsive behavior?,'' and ''How much effort do you make to resist the compulsions?'' By combining clinicians' ratings on obsession and compulsion severity scales, a total symptom severity score is calculable (range = 0–40). The Y-BOCS-SS also contains six supplementary items that were designed to assess insight, indecisiveness, avoidance, sense of responsibility, inertia, and pathological doubting, but these items were not used in this study.

The Y-BOCS-SS has demonstrated good interrater reliabilities (intraclass correlations range from .93–.99) in several studies (Frost et al., 1995; Goodman et al., 1989a; Woody et al., 1995), and good test-retest reliabilities (rs = .81–.97) have also been obtained (Goodman et al., 1989b; Kim et al., 1990; Woody et al., 1995). The Y-BOCS-SS also has acceptable criterion-related validity, as OCD patients score higher on the measure than do normal controls or patients with other anxiety disorders (Goodman et al., 1989b; Kim et al., 1990). Research suggests that the Y-BOCS-SS has good treatment sensitivity (Foa et al., 2005; Taylor, 1995). Convergent validity for the measure has been established with several self-report OCD measures (rs = .43–.55) in a study by Woody et al. (1995), but the Y-BOCS-SS appears to correlate as well with self-report measures of anxiety (rs = .23–.47; Goodman et al., 1989b; Woody et al., 1995) and depression (rs = .42–.60; Storch et al., 2005; Taylor, 1995; Woody et al., 1995).

The Y-BOCS-SC (Goodman et al., 1989a) assesses the presence of 54 OCD symptoms, which are grouped into 17 rationally derived categories of obsessions and compulsions. By using a dichotomous (present or absent) rating format, clinicians are able to document whether a patient has aggressive, contamination, sexual, hoarding, scrupulous, symmetry, or somatic obsessions as well as washing, checking, repeating, counting, ordering, or hoarding compulsions. Obsessive–compulsive symptoms (e.g., excessive list making, fears of losing things) that do not fit neatly into a symptom categories are also included in a miscellaneous category. The psychometric properties of the Y-BOCS-SC were discussed above.

Obsessive–Compulsive Inventory-Revised. As explained previously, the OCI-R (Foa et al., 2002) is a shortened version of the OCI (Foa et al., 1998) that contains 18-items that are scored on six symptom subscales (three items per subscale). Each item assesses on a 5-point Likert scale the degree of distress experienced by the respondent. The OCI-R correlates highly with the OCI (r = .98) and assesses the following symptom dimensions: washing, checking, ordering, obsessing, hoarding, and mental neutralizing. In contrast to the Y-BOCS-SC, which separately assesses the presence of symptoms and overall symptom severity, the OCI-R allows for the presence and severity of OCD symptoms to be identified concomitantly.

State–Trait Anxiety Inventory. The STAI (Spielberger et al., 1970) is a 40-item self-report measure of enduring and transient anxiety. Twenty questions assess state anxiety (i.e., current anxiety level) and 20 questions assess trait anxiety (i.e., propensity to be anxious). Items on the STAI are rated on a 4-point Likert scale with

higher scores relating to more severe levels of anxiety. The STAI has good internal consistency reliabilities for the State and Trait subscales (Barnes, Harp, & Jung, 2002; Spielberger, 1983). Consistent with state–trait distinction, test-retest reliability coefficients have been found (Barnes et al., 2002; Metzger, 1976; Spielberger, 1983) to be higher for the STAI Trait Subscale ($rs = .73–.86$) than for the State Subscale ($rs = .16–.60$). The STAI is well correlated with the Taylor Manifest Anxiety Scale, IPAT Anxiety Scale, Multiple Affect Adjective Checklist (Spielberger et al., 1970), and Beck Anxiety Inventory (Bieling, Antony, & Swinson, 1998; Fydrich, Dowdall, & Chambless, 1992). Discriminant validity for the STAI in relation to measures of depression is questionable (Bieling et al., 1998; Fountoulakis et al., 2007). Because we were primarily interested in enduring anxiety symptoms, we only included items from the STAI Trait Subscale in this study.

Beck Depression Inventory–Second Edition. The BDI-II (Beck et al., 1996) is a 21-item self-report measure of depression that offers a more accurate representation of *DSM-IV* diagnostic depression criteria than previous versions (e.g., the Beck Depression Inventory; Beck, 1967). The BDI-II has been shown to have good internal consistency ($\alpha s = .89–.94$) in adult patients (Arnau, Meagher, Rorris, & Bramson, 2001; Dozois, Dobson, & Ahnberg, 1998; Steer, Ball, Ranieri, & Beck, 1999) and college students (Beck et al., 1996). The BDI-II was also found to have good one-week test-retest stability ($r = .93$) in depressed patients (Beck et al., 1996), but one-week test-retest stability was found to be .60 in college students (Longwell & Truax, 2005). The BDI-II has been found to correlate well with the Reynolds Adolescent Depression Scale ($r = .84$; Krefetz, Steer, Gulab,& Beck, 2002) and with the Structured Clinical Interview for DSM-IV Axis I Disorders ($r = .83$; Sprinkle et al., 2002).

Procedures

All participants were first interviewed in a 90-minute clinical interview by a licensed psychologist with experience assessing and diagnosing OCD. Thereafter, the ADIS-IV (Brown et al., 1994) and then the Y-BOCS were administered by a trained research assistant to confirm the principal diagnosis of OCD and any comorbid diagnoses. Following these procedures, diagnoses were confirmed by a second experienced clinical psychologist after review of relevant records and case discussion. All research assistants underwent extensive training under the supervision of the second author. Research assistants were required to attend an instructional meeting, observe at least five clinical administrations of the measure, and administer the Y-BOCS at least four times under direct observation. After administration of the Y-BOCS, participants completed the OCI-R, BDI-II, and STAI-T. No external incentives were offered for participating in this study.

Data Analysis

Internal consistency reliabilities for each symptom scale on the Y-BOCS-SC were assessed using Kuder–Richardson (K-R 20), and internal consistency reliabilities for the OCI-R, BDI-II, and STAI-T were calculated using Cronbach's alpha. Symptom scale scores on the Y-BOCS-SC were computed by summing the number of endorsed items for each variable of interest. For example, Y-BOCS-SC symptom scale scores were calculated by summing the number of items endorsed as present under each symptom scale (e.g., hoarding, contamination/washing). Pearson product-moment

Table 1

Number of Items, Means, Standard Deviations, and Internal Consistencies of Included Measures

Measures	Number of items	*M*	SD	α
Y-BOCS-SC Total score	69	18.23	10.43	.87
Contamination/washing	15	3.81	3.59	.85
Sexual/religious	8	1.00	1.39	.66
Aggression/checking	17	4.26	3.50	.81
Symmetry/ordering	3	1.07	0.96	.44
Hoarding	2	.46	0.83	.95
Y-BOCS-SS Total score	12	27.87	5.49	.86
Y-BOCS-SS Obsessions	6	13.98	2.68	.72
Y-BOCS-SS Compulsions	6	13.89	2.67	.84
OCI-R Total score	18	24.22	3.36	.80
Washing	3	4.12	4.27	.90
Obsessing	3	6.37	3.58	.78
Checking	3	4.68	4.13	.90
Neutralizing	3	2.39	3.24	.82
Hoarding	3	2.25	3.00	.84
Ordering	3	4.34	3.79	.94
BDI-II Total score	21	16.24	10.48	.91
STAI-T Total score	20	43.28	6.21	.79

Note. Y-BOCS-SC = Yale–Brown Obsessive–Compulsive Scale–Symptoms Checklist; Y-BOCS-SS = Yale–Brown Obsessive–Compulsive Scale–Severity Scale; OCI-R = Obsessive–Compulsive Inventory-Revised; BDI-II = Beck Depression Inventory, Second Edition; STAI-T = State–Trait Anxiety Inventory–Trait Subscale.

correlations were used to assess convergent validity between the five identified Y-BOCS-SC symptom scales (Calamari et al., 1999; Mataix-Cols et al., 2005, 2004; Rufer et al., 2006) and the six OCI-R symptom scales established in previous research (Foa et al., 2002; Hajcak et al., 2004). Pearson product-moment correlations were used to assess the discriminant validity of the Y-BOCS-SC symptom scales relative to total scores on the Y-BOCS-SS, STAI-T, and BDI-II. *Z* statistic tests (Meng, Rosenthal, & Rubin, 1992) were used to assess the strength of associations between Y-BOCS-SC symptom scales and corresponding OCI-R scales relative to the magnitude of relationships between these measures and scales that assess different constructs (e.g., depression, anxiety).

Results

Table 1 presents the number of items included in each measure/subscale as well as means, standard deviations, and reliabilities; Table 2 presents Pearson product-moment correlations between study measures. A moderately strong relationship was identified between the total scores on the Y-BOCS-SC and OCI-R ($r = .63$, $p < .01$), but as seen by the correlations in Table 2, these total scores are primarily determined by the checking scales for the two instruments. Moreover, scales of the two instruments are minimally correlated. Therefore, total scores cannot be considered to represent general OCD symptom presence. In other words, no individual OCD symptom scales are indices of total OCD symptom presence.

Strong correlations were observed between the Y-BOCS-SC contamination/washing symptom scale and the OCI-R washing scale ($r = .80$, $p < .01$) and between the Y-BOCS-SC and OCI-R hoarding scales ($r = .65$, $p < .01$). The Y-BOCS-SC

Table 2
Correlations Between Measures of Obsessive–Compulsive Disorder (OCD) Symptomatology, OCD Symptom Severity, Depressive Symptoms, and Anxiety

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Y-BOCS-SC Total Score	--	.65**	.42**	.80**	.32**	.23*	.12	.13	.09	.63**	.47**	.30**	.46**	.35**	.17	.23*	.07	.29**
2. Contamination/washing		--	.08	.33**	.11	-.01	.20*	.17	.19	.47**	.80**	-.03	.31**	.06	-.02	.13	.01	.13
3. Sexual/religious			--	.37**	-.03	.10	-.15	-.05	-.22*	.09	-.01	.47**	-.08	-.02	.03	-.09	.12	.30**
4. Aggression/checking				--	.12	.11	-.07	.01	-.12	.39**	.20*	.35**	.42**	.18	.05	.06	.06	.27*
5. Symmetry/ordering					--	.07	.13	.01	.20*	.45**	.17	-.03	-.08	.29**	.10	.62**	-.16	.06
6. Hoarding						--	.13	.09	.15	.28**	-.03	.05	.08	.11	.65**	.18	.21*	.05
7. Y-BOCS-SS Total score							--	.89**	.93**	.25*	.22*	.03	.15	.10	.07	.10	.36**	.20
8. Y-BOCS-SS Obsessions								--	.65**	.24*	.20*	.18	.13	.10	.05	.02	.40**	.27*
9. Y-BOCS-SS Compulsions									--	.21*	.21*	.03	.13	.09	.08	.14	.27**	.16
10. OCI-R Total score										--	.53**	.31**	.71**	.61**	.44**	.59**	-.03	.23*
11. Washing											--	-.09	.26**	.15	-.05	.18	.36**	.08
12. Obsessing												--	.04	.14	.14	-.13	.17	.47**
13. Checking													--	.31**	.17	.40**	.17	.14
14. Neutralizing														--	.15	.24*	-.09	.15
15. Hoarding															--	.16	-.22*	.08
16. Ordering																--	.15	.01
17. BDI-II Total score																	--	.58**
18. STAI-T Score																		--

Note. Correlations significant at the p<.01 or p<.05 level are indicated in boldface; Y-BOCS-SC = Yale–Brown Obsessive–Compulsive Scale–Symptoms Checklist; Y-BOCS-SS = Yale–Brown Obsessive–Compulsive Scale–Severity Scale; OCI-R = Obsessive–Compulsive Inventory–Revised; BDI-II = Beck Depression Inventory, Second Edition; STAI-T = State–Trait Anxiety Inventory–Trait Subscale.
**p<.01; *p<.05.

hoarding scale also had a weak correlation ($r = .21$, $p < .05$) with the BDI-II. The associations between the corresponding Y-BOCS-SC and OCI-R contamination/washing scores were stronger than the associations between these indices and the Y-BOCS SS ($z = 6.50$, $p < .01$), STAI-T ($z = 4.71$, $p < .01$), and BDI-II ($z = 5.46$, $p < .01$). The correlation between the Y-BOCS-SC hoarding symptom scale and OCI-R hoarding scale was larger than the correlations between these indices and the Y-BOCS SS ($z = 4.92$, $p < .01$), STAI-T ($z = 4.68$, $p < .01$), and BDI-II ($z = 5.46$, $p < .01$).

The Y-BOCS-SC symmetry/ordering scale was well correlated ($r = .62$, $p < .01$) with the OCI-R ordering scale, and a small correlation was identified between the Y-BOCS-SC symmetry/ordering scale and OCI-R neutralizing scale ($r = .29$, $p < .01$). Moderate correlations were observed between the Y-BOCS-SC sexual/religious scale and the obsessing OCI-R scale ($r = .47$, $p < .01$) and between the Y-BOCS-SC aggressive/checking scale and the OCI-R checking scale ($r = .42$, $p < .01$). Relationships between these Y-BOCS-SC and OCI-R scales were larger than relationships between these variables and the Y-BOCS-SS ($z = 4.78$ and 3.40, $p < .01$), Y-BOCS Obsessions Severity Scale ($z = 4.80$ and 3.83, $p < .01$), Y-BOCS Compulsions Severity Scale ($z = 4.73$ and 3.62, $p < .01$), and BDI-II ($z = 6.17$ and 2.70, $p < .01$). Associations between Y-BOCS-SC and OCI-R hoarding ($z = 5.03$, $p < .01$) and Y-BOCS-SC symmetry/ordering and OCI-R ordering ($z = 5.70$, $p < .01$) were larger than associations between these symptom scales and STAI-T scores. However, no significant differences in the magnitude of correlations were found between STAI-T scores and aggressive/checking ($z = 1.07$, $p = .28$) or sexual/religious symptoms ($z = .84$, $p = .49$).

Table 2 presents the associations between the Y-BOCS-SC and OCI-R score and total scores on the Y-BOCS-SS, STAI-T, and the BDI-II. Only small to moderate correlations were found between OCD symptoms and divergent constructs. Among the significant relationships identified, the Y-BOCS-SS had small positive correlations with the Y-BOCS-SC contamination/washing scale ($r = .20$, $p < .05$) and OCI-R washing scale ($r = .22$, $p < .05$). Relatively small correlations were found between the Y-BOCS-SC sexual/religious scale ($r = .30$, $p < .01$) and the STAI-T and between the Y-BOCS-SC aggressive/checking scale and STAI-T ($r = .27$, $p < .05$). No other significant correlations were identified for Y-BOCS-SC and OCI-R scores with scores on the STAI-T or BDI-II ($p > .05$).

Discussion

This study explored the reliability, convergent validity, and discriminant validity of the Y-BOCS-SC and OCI-R. Both measures demonstrated good to excellent internal consistencies across total scores, but total scores were found to be primarily representative of aggression/checking for the Y-BOCS-SC, and checking was the highest correlate of total score for the OCI-R. Moreover, internal consistencies across the Y-BOCS-SC scales ranged from poor to excellent, whereas internal consistencies for the OCI-R were good to excellent. Therefore, the OCI-R symmetry/ordering and sexual/religious scales have satisfactory reliabilities. Lower internal consistency reliabilities on Y-BOCS-SC symptom scales (e.g., symmetry/ordering, sexual/religious) might be due to the small number of items contained on each scale. Furthermore, the heterogeneity of symptoms on these two scales may decrease reliability (Moritz et al., 2002).

In the current study, moderate to strong correlations were observed between corresponding Y-BOCS-SC and OCI-R scales. The strongest associations were between theoretically similar symptom scales (e.g., Y-BOCS-SC contamination/washing symptoms and OCI-R washing scale), whereas only small correlations were identified between theoretically unrelated symptom scales (e.g., Y-BOCS-SC sexual/religious symptoms and the OCI-R washing scale).

Weak but significant associations were found between the Y-BOCS-SC and several unrelated symptom scales. For example, the Y-BOCS-SC symmetry/ordering symptom scale was weakly related to the checking and neutralizing OCI-R scales. Because the OCI-R neutralizing scale includes items that assess counting and repeating compulsions as well as numeric obsessions that overlap with the Y-BOCS-SC symmetry/ordering scale, this association makes some intuitive sense. The small but statistically significant association between the Y-BOCS-SC sexual/religious scale and the OCI-R washing scale may be explained, in part, by findings that people with intrusive thoughts may neutralize their distressing cognitions through cleansing rituals (Tek & Ulug, 2001).

Generally speaking, the Y-BOCS-SC and OCI-R demonstrated good discriminant validity as each measure was relatively independent of measures of OCD symptom severity (obsessions, compulsions, and total severity), depressive symptoms, and symptoms of anxiety. Additionally, results of this study also illustrate that there is little overlap between the presentation and severity of identified symptoms on the Y-BOCS, as the Y-BOCS-SC scales were not correlated to the Y-BOCS-SS in a clinically meaningful manner. This finding is not surprising as the Y-BOCS was designed to allow clinicians to measure both the presentation and severity of OCD symptoms separate from each other's confounding influence (Goodman et al., 1989a; Mataix-Cols et al., 2004). The OCI-R scales were also relatively independent of the Y-BOCS-SS, suggesting that the OCI-R may be best conceptualized as a measure of symptom presence rather than a primary measure of symptom severity. These results are consistent with previous findings, in that generally small relationships have been observed between OCI-R scales and Y-BOCS-SS ratings ($r = .15$–$.35$), and moderate relationships (rs $= .41$–$.43$) between total OCI-R scores and Y-BOCS-SS ratings (Abramowitz & Deacon, 2006; Gönner et al., 2008).

Despite research indicating that depression and OCD are highly comorbid (Carter, Pollock, Suvak, & Pauls, 2004; Nestadt et al., 2001; Overbeek, Schruers, Vermetten, & Griez, 2002), the Y-BOCS-SC and OCI-R were minimally correlated with the BDI-II. In the current study, only one significant, but weak, correlation was found between a Y-BOCS-SC scale (hoarding) and the BDI-II. High levels of depression have been found in compulsive hoarders (Frost, Krause, & Steketee, 1996; Frost, Steketee, Williams, & Warren, 2000; LaSalle-Ricci et al., 2006), but it is unclear if these findings have any pertinence to the small correlation between hoarding and the BDI-II.

Two significant correlations were found between Y-BOCS-SC scales and the STAI-T. A moderate correlation was for the Y-BOCS-SC sexual/religious scale, and a weak correlation was found between the STAI-T and Y-BOCS-SC aggression/checking. These associations might be related to the nature of included items on the STAI-T because the measure may assess obsessional thoughts in addition to state and trait anxiety. For example, statements such as, "I have disturbing thoughts" and "I get in a state of tension or turmoil as I think over my recent concerns and interests" may also describe intrusive and disturbing obsessional thoughts akin to obsessions. Another possibility is that the presence of certain symptoms might be

associated with increased anxiety. In fact, consistent with cognitive theories of symptom appraisal in OCD patients (i.e., Rachman, 1997), Rowa, Purdona, Summerfeldt, and Anthony (2005) found that patients who experience obsessive thoughts that strongly contradicted their values or self-image tended to have heightened levels of personal distress as compared to patients who did not have such thoughts. The distress stemming from dissonant thoughts such as aggressive, sexual, or religious obsessions might then increase the amount of anxiety experienced by OCD patients as they inflate the significance of their obsessions and begin to dread experiencing them in the future.

The present results should assist the clinician in choosing between the two instruments and provide some guidance as to their respective strengths and weaknesses when applied in clinical samples. The Y-BOCS-SC allows clinicians to assess OCD symptoms and symptom severity independently across multiple symptoms. In addition, the clinician-rated format of the Y-BOCS-SC allows a rater to make appropriate inquiries beyond the original query to better determine the presence or absence of specific symptoms. However, two Y-BOCS-SC scales (i.e., symmetry/ordering, sexual/religious) do have inadequate reliability, and the Y-BOCS-SC requires training to administer, which makes it less easy to apply. The OCI-R may have some advantages over the Y-BOCS-SC, as its scales have good reliabilities and generally good discriminant validities in relation to self-report scales that assess anxiety and depression. Given its self-report style, the OCI-R also allows practitioners to quickly assess OCD symptoms in individuals. Disadvantages of the OCI-R may be the relatively small number of items (symptom sampling) and the limitations of its self-report methodology.

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