

The Yale-Brown Obsessive Compulsive Scale

II. Validity

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• The development design and reliability of the Yale-Brown Obsessive Compulsive Scale have been described elsewhere. We focused on the validity of the Yale-Brown Scale and its sensitivity to change. Convergent and discriminant validity were examined in baseline ratings from three cohorts of patients with obsessive-compulsive disorder (N=81). The total Yale-Brown Scale score was significantly correlated with two of three independent measures of obsessive-compulsive disorder and weakly correlated with measures of depression and of anxiety in patients with obsessive-compulsive disorder with minimal secondary depressive symptoms. Results from a previously reported placebo-controlled trial of fluvoxamine in 42 patients with obsessive-compulsive disorder showed that the Yale-Brown Scale was sensitive to drug-induced changes and that reductions in Yale-Brown Scale scores specifically reflected improvement in obsessive-compulsive disorder symptoms. Together, these studies indicate that the 10-item Yale-Brown Scale is a reliable and valid instrument for assessing obsessive-compulsive disorder symptom severity and that it is suitable as an outcome measure in drug trials of obsessive-compulsive disorder.

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The Yale-Brown Obsessive Compulsive Scale (Y-BOCS) is a clinician-rated instrument for assessing the severity of obsessive-compulsive symptoms in patients with obsessive-compulsive disorder (OCD). Its development, design, administration, and reliability have been described elsewhere.¹ Using a videotaped interview method, interrater agreement on the Y-BOCS among four trained raters of 40 patients with OCD proved excellent.¹ In addition, the Y-BOCS demonstrated a high degree of internal consistency and each of the 10 score items was significantly correlated with the total score. The establishment of reliability indicates that the major con-

tribution to observed differences in test scores is less likely to be due to measurement error than to real differences in scores.² The establishment of scale validity, on the other hand, involves determining how well the instrument actually measures what it is designed to assess.¹ The validation of the Y-BOCS as a measure of OCD severity is the subject of our present article. Another property of the Y-BOCS of major importance—its sensitivity to change—is also addressed. The validity studies were guided by consideration of the three generally accepted categories of scale validity, ie, content, construct, and criterion-related validity.³

"Content validity" involves an examination of test content to determine if it adequately represents the phenomena being measured.¹ The choice of the items for the Y-BOCS was based on the *DSM-III* criteria for OCD, review of other rating scales, and the extensive clinical experience of the authors with patients with OCD.¹ The Y-BOCS was constructed so that items 1 to 10 correspond to the core symptoms of OCD and items 11 to 16 cover associated features frequently observed in obsessive-compulsive patients. Items covering clinical features not specific to OCD (eg, symptoms of depression) were excluded. The final form of the Y-BOCS was the product of 6 months of pilot testing of numerous preliminary versions in over 40 patients. Based on this clinical and pretest experience, content validity of the Y-BOCS seemed sufficiently established to allow ascertainment of the other forms of validity described below.

"Construct validity" is a second fundamental and more comprehensive aspect of test validation. It refers to how well a test measures the theoretical construct it is designed to measure.¹ One approach to determining construct validity involves comparing scores from the test under study with data from different putative measures of the same construct. For example, the degree of convergence between the Y-BOCS and other OCD scales should help define the behavioral domain that is measured by the Y-BOCS. Similarly, the degree of divergence between the Y-BOCS and other scales intended for measurement of depression or anxiety may reveal how well the Y-BOCS discriminates between these symptom areas.

"Criterion-related validity" is the ability of a scale to predict behavior under specified conditions. It reflects the degree of fit between scale-derived measurements and independent criteria that are known to directly relate to the characteristics under study.¹ Assessment of the criterion-related validity of the Y-BOCS could be approached by comparing Y-BOCS

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scores with direct observations of overt rituals.⁴ However, it is difficult to develop criterion measures that apply to most patients with OCD, because obsessions are inaccessible to observation and many rituals are covert (eg, silent checking). Given these methodological constraints, it was decided not to assess the criterion-related validity of the Y-BOCS in this study.

Although sensitivity to change is not a traditional form of validity,⁷ demonstration of this psychometric property is critical to one of the intended applications of the Y-BOCS. Because of the shortcomings of available OCD scales, a major reason for developing the Y-BOCS was to provide an instrument for specific use in drug treatment studies.¹ In an earlier study of 10 inpatients with severe OCD treated with the serotonin reuptake inhibitor fluvoxamine, mean total Y-BOCS scores decreased significantly from baseline in the nine patients for whom these ratings were available.⁵ Improvement in obsessive-compulsive symptoms, as reflected in decreased Y-BOCS scores, correlated significantly (point biserial $r = .64$; $P < .05$) with the independently determined response status of patients (with "responders" defined by ratings of "much improved" or "very much improved" on a version of the Clinical Global Impression [CGI]⁸ scale adapted to reflect OCD improvement [CGI-OCI]). These preliminary data suggested that use of the Y-BOCS to measure change in OCD severity might be justified.

Our studies were designed to examine those aspects of test validation most relevant to the Y-BOCS as a measure of OCD severity. A major part of the analysis focused on construct validity. Convergence with other independent measures of OCD and divergence from measures of depression and anxiety were examined in three cohorts of patients with OCD. In addition to these studies of validity, the ability of the Y-BOCS to reflect change in the severity of obsessive-compulsive symptoms was examined using data from a previously reported double-blind trial of fluvoxamine in outpatients with OCD.⁷

MATERIALS AND METHODS

These studies utilized the 10-item Y-BOCS (first edition). Six investigational items, 11 (insight), 12 (avoidance), 13 (indecisiveness), 14 (pathological responsibility), 15 (pathological slowness), and 16 (pathological doubting), were not examined. These items were extensively revised in the course of these studies, so that uniform rating criteria were not consistently used.

Data for these studies were derived from ratings of patients who gave informed consent to participate in one of three investigational drug treatment trials for OCD on the Clinical Neuroscience Research Unit at The Connecticut Mental Health Center, New Haven. Patients met *DSM-III* criteria for a principal diagnosis of OCD, with symptoms of OCD present for at least 1 year. Patients were psychotropic drug-free for at least 3 weeks at the start of treatment and there was no evidence of significant medical illness. Patients enrolled in the inpatient⁵ and outpatient⁷ fluvoxamine trials were permitted low-dose benzodiazepines for anxiety and insomnia as needed. In these two studies, patients with major depression were not excluded, provided depressive symptoms were judged secondary to OCD and the onset of depression did not precede the onset of OCD. In the clomipramine (Anafranil) trial (W.K.G., unpublished data, December 1987), patients with OCD were excluded if they met criteria for major depression or if, on the 24-item Hamilton Depression Rating Scale (HAM-D),^{9,10} they had either a total score greater than 16 or a score on item 1 ("severity of depressed mood") greater than 2 (range, 0 to 4). Thus, all clomipramine trial patients had at most minimal depressive symptoms.

Convergent and Discriminant Validity

These aspects of construct validity were examined in baseline ratings from three cohort groups that differed in degree of secondary depression present: fluvoxamine trial inpatients (most patients de-

pressed) ($n = 16$; 4 male, 12 female; mean [\pm SD] age, 36 ± 12 years; (L.H.P., unpublished data, December 1987), fluvoxamine trial outpatients (about 50% of patients depressed) ($n = 45$; 21 male, 24 female; mean [\pm SD] age, 38 ± 10 years¹⁰) (W.K.G., L.H.P., P.S.C., unpublished data, December 1987) and clomipramine trial outpatients (none depressed) ($N = 20$; 7 women, 13 men; 34 ± 11 years of age) (W.K.G., L.H.P., D.S.C., unpublished data, December 1987). Because the Y-BOCS was designed to rate the severity of symptoms in patients with OCD and was not intended as a diagnostic instrument, we did not administer the scale to normal subjects or to patients with a disorder in which obsessions or compulsions were not expected to be present. If a "normal" subject were to attain a nontrivial score on the Y-BOCS, this would most likely suggest a flawed screening process rather than lack of specificity of the Y-BOCS.

To assess convergent validity, Y-BOCS ratings were correlated with the following other commonly used measures of OCD: the National Institutes of Mental Health Global Obsessive Compulsive Scale (NIMH-OC)^{10,11}; a modified form of the CGI⁸ for global severity of OCD, the CGI-Obsessive Compulsive Scale (CGI-OCS); and the Maudsley Obsessional Compulsive Inventory (MOCI).^{12,13} The NIMH-OC was only administered to patients in the clomipramine trial and to some patients in each of the three treatment groups who did not fill out the MOCI.

In comparing the Y-BOCS and the MOCI, the specific hypothesis was tested that total scores on the MOCI were disproportionately affected by the type of obsessive-compulsive symptoms present. Patients participating in the three drug trials were divided into the following two groups: (1) those with contamination obsessions and/or cleaning compulsions ("contamination" group; $n = 34$) and (2) those with all other types of symptoms ("noncontamination" group; $n = 47$). This particular dichotomy was selected because the MOCI seems to be excessively weighted for contamination themes.

To assess discriminant validity, baseline Y-BOCS ratings were correlated with baseline measures of depression (the HAM-D) and anxiety (the Hamilton Rating Scale for Anxiety [HAM-A]¹⁴), in the three cohort groups of patients with OCD described earlier.

Sensitivity to Change and Specificity of Response

Results from an earlier trial of fluvoxamine in inpatients with OCD suggested that the Y-BOCS is sensitive to clinical change.⁵ However, because most of these patients were also depressed, only limited conclusions could be drawn about the specificity of the Y-BOCS in measuring changes in obsessive-compulsive symptoms alone. Consequently, further evaluation of the ability of the Y-BOCS to detect selective changes in obsessive-compulsive symptoms was carried out in a drug trial involving patients with a range of depressive symptoms. This outpatient study ($N = 42$) used a double-blind, parallel-groups design with 6 to 8 weeks of treatment with either fluvoxamine or placebo.⁷ Four different outcome measures of OCD (including the Y-BOCS) were used to show that fluvoxamine was superior to placebo. Fluvoxamine had previously been effective in the treatment of depression.¹⁵ A recent double-blind, crossover study in outpatients with OCD provides additional evidence that fluvoxamine is an effective antiobsessional agent.¹⁶

To further test the specificity of the Y-BOCS in detecting changes in obsessive-compulsive symptoms, point biserial correlations were calculated for the magnitude of improvement from baseline in scores on the Y-BOCS, CGI-OCS, MOCI, HAM-D, HAM-A vs global OCD response category (with OCD "responders" defined by blind CGI-OCI ratings as described above).

RESULTS

Convergent and Discriminant Validity

The mean baseline (pretreatment) Y-BOCS, CGI-OCS, MOCI, NIMH-OC, HAM-D, and HAM-A scores for patients in three different drug OCD trials are summarized in Table 1. Three patients who subsequently dropped out of the outpatient fluvoxamine trial are included in the baseline data. The mean (\pm SD) CGI-OCS score for the three cohorts was 4.0 ± 0.9 , corresponding to a global rating of moderate to severe. Table 2 shows that the Y-BOCS total score at baseline was moderately to strongly correlated with the CGI-OCS in all three treatment groups and in the entire sample ($r = .74$; $P < .0001$; $N = 78$). Similarly, the Y-BOCS was highly convergent with the NIMH-OC in the one treatment group in which it was given ($r = .67$; $P < .001$; $n = 20$).

Table 1.—Baseline Severity of Obsessive-Compulsive Disorder (OCD), Depression, and Anxiety From Three OCD Treatment Studies*

Rating Scale†	Fluvoxamine Trial Outpatients	Clozapine Trial Outpatients	Fluvoxamine Trial Inpatients	Mean of the Three Groups
Y-BOCS	25.1 ± 6 (n = 45)	22.0 ± 4 (n = 20)	29.4 ± 6 (n = 16)	25.1 ± 6 (n = 81)
CGI-OCS	3.9 ± 0.9 (n = 45)	3.9 ± 0.9 (n = 20)	4.4 ± 0.9 (n = 13)	4.0 ± 0.9 (n = 78)
MOCI	16.4 ± 6 (n = 42)	15.7 ± 4 (n = 10)	19.4 ± 6 (n = 14)	16.9 ± 6 (n = 66)
NIMH-OC	...	8.8 ± 2 (n = 20)	...	8.8 ± 2 (n = 20)
HAM-D	18.6 ± 8 (n = 44)	8.4 ± 5 (n = 20)	33.5 ± 12 (n = 16)	19.0 ± 12 (n = 80)
HAM-A	12.5 ± 5 (n = 43)	10.4 ± 6 (n = 20)	21.3 ± 7 (n = 16)	13.7 ± 7 (n = 79)

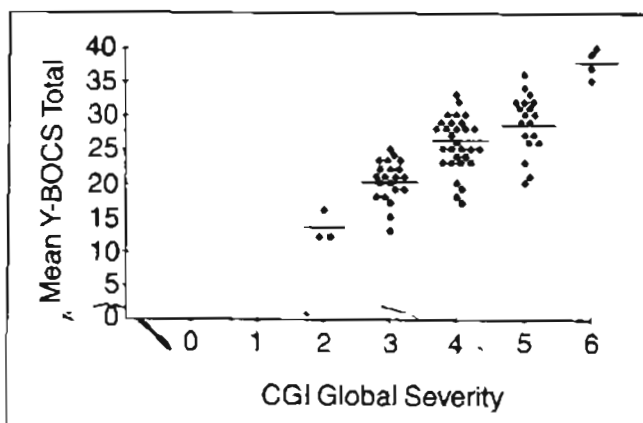
*Part of the reliability and most of the validity data for the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) were generated from these patient samples. Values are mean ± SD.

†CGI-OCS indicates Clinical Global Impression global OCD severity score, adapted from global severity item of Clinical Global Impressions Scale; MOCI, Maudsley Obsessional Compulsive Inventory; NIMH-OC, National Institute of Mental Health Global Obsessive Compulsive Severity Scale; HAM-D, 24-item Hamilton Rating Scale for Depression, obsessive-compulsive item excluded; and HAM-A, Hamilton Rating Scale for Anxiety.

Table 2.—Convergent and Discriminant Validity: Correlations of Total Y-BOCS Score With Other Measures of Obsessive-Compulsive Disorder, Depression, and Anxiety*

Rating Scale Correlated With Y-BOCS	Treatment Study Group							
	Fluvoxamine Trial Outpatients		Clozapine Trial Outpatients		Fluvoxamine Trial Inpatients		Combined Patient Sample	
	r	P	r	P	r	P	r	P
CGI-OCS	.85 (n = 45)	<.0001	.80 (n = 20)	<.01	.55 (n = 13)	<.05	.74 (n = 78)	<.0001
MOCI	.59 (n = 42)	<.001	-.40 (n = 10)	.26	.47 (n = 14)	.08	.53 (n = 66)	<.0001
NIMH-OC67 (n = 20)	<.00167 (n = 20)	<.001
HAM-D	.38 (n = 44)	<.01	.38 (n = 20)	.10	.70 (n = 16)	<.01	.60 (n = 80)	<.0001
HAM-A	.11 (n = 43)	.47	.58 (n = 20)	<.01	.63 (n = 16)	<.01	.47 (n = 79)	<.0001

*Pearson Product-Moment Coefficients were calculated from blind baseline ratings of three obsessive-compulsive disorder treatment study groups. Y-BOCS indicates Yale-Brown Obsessive Compulsive Scale; CGI-OCS, modified version of Clinical Global Impression Scale for Global Severity of obsessive-compulsive disorder; MOCI, Maudsley Obsessional Compulsive Scale; NIMH, National Institute of Mental Health Global Obsessive Compulsive Scale; HAM-D, 24-item Hamilton Rating Scale for Depression; and HAM-A, Hamilton Rating Scale for Anxiety.



Pretreatment relationship between mean total Yale-Brown Obsessive Compulsive Scale (Y-BOCS) score and level of global severity in 78 patients with obsessive-compulsive disorder. The patient sample consisted of 20 outpatients enrolled in a clozapine study, 45 patients enrolled in a fluvoxamine trial, and 13 inpatients enrolled in a fluvoxamine maleate study. CGI Global Severity indicates modified version of Clinical Global Impression Scale for Global Severity of obsessive-compulsive disorder.

The association between the Y-BOCS total and global severity of OCD is shown in Fig 1 with scatterplots of total Y-BOCS scores at each level of global severity as measured by the CGI-OCS. The data consisted of baseline ratings from all patients in the three drug trials who were rated on both the Y-BOCS and CGI-OCS (N = 78). The linearity of this association shows that total Y-BOCS scores increase

Table 3.—Relationship Between Change in Ratings of Obsessive-Compulsive Disorder (OCD), Depression, and Anxiety From Baseline and Response of OCD Symptoms to Treatment*

Rating Scale†	r‡	P	No. of Responders
Y-BOCS	.65	<.01	21
CGI-OCS	.77	<.001	21
MOCI	.24	.40	19
HAM-D	.26	.30	21
HAM-A	.44	.08	19

*Responder was defined by Clinical Global Impression (CGI) global improvement as "much improved" or "very much improved." Data were derived from a placebo-controlled trial of fluvoxamine in 42 outpatients with OCD. Above calculations were based on active treatment group.

†Y-BOCS indicates Yale-Brown Obsessive Compulsive Scale; CGI-OCS, CGI Obsessive Compulsive Scale; MOCI, Maudsley Obsessional Compulsive Scale; HAM-D, 24-item Hamilton Rating Scale for Depression; and HAM-A, Hamilton Rating Scale for Anxiety.

‡r indicates point-biserial correlation coefficient. Responders = 1, nonresponders = 0.

proportionately to global severity in patients with OCD presenting for treatment.

In contrast to the CGI-OCS and NIMH-OC, the MOCI was not consistently correlated with the Y-BOCS across different patient samples (Table 2). Significant correlations between the Y-BOCS and MOCI were only found in the outpatient fluvoxamine trial and in the combined patient sample ($r = .53$; $P < .0001$; $n = 66$). This lack of convergence with the MOCI was not limited to the Y-BOCS. In the

clomipramine treatment group, although the sample size was smaller ($n = 10$), neither the NIMH-OC nor the CGI-OCS significantly correlated with the MOCI ($r = .44$, $P = .20$ and $r = .22$, $P < .56$, respectively). Also, in the sample of inpatients receiving fluvoxamine, the CGI-OCS and MOCI were not significantly correlated ($r = .12$; $P = .73$; $n = 11$).

To examine the relative influence of type of obsessive-compulsive symptoms on the Y-BOCS and the MOCI, patients were dichotomized (as described earlier) according to predominant type of symptoms present. Twenty-three patients in the contamination group and 43 patients in the noncontamination group were rated on both the Y-BOCS and MOCI. Student's t tests revealed that there were significant differences between the contamination group and noncontamination group when based on MOCI scores (20.9 ± 5 vs 14.8 ± 5 , $P < .001$), but not when assessed by the total Y-BOCS scores (26.7 ± 6 vs 24.8 ± 6). Thus, when rated with the MOCI, patients with contamination symptoms appeared to have significantly more severe OCD.

The Y-BOCS correlated only weakly with the HAM-D in the group receiving clomipramine and the outpatients in the fluvoxamine trial, but moderately strong correlations were observed between the Y-BOCS and depression ratings in the inpatient group receiving fluvoxamine and in the total patient group (Table 2). Thus, the least discrimination between Y-BOCS and depression ratings was achieved in the group with the most secondary depression. The Y-BOCS and HAM-A were moderately correlated at baseline in all but the outpatient group receiving fluvoxamine. In the inpatient sample the two non-OCD measures (HAM-D and HAM-A) were more highly correlated with the Y-BOCS than were the two other OCD measures (MOCI and CGI-OCS) (Table 2).

Sensitivity to Change

The results of the placebo-controlled outpatient fluvoxamine trial provide evidence that the Y-BOCS is sensitive to drug-induced changes in severity of obsessive-compulsive symptoms.⁷ Fluvoxamine proved superior to placebo on all four OCD outcome measures, including the Y-BOCS. After 6 to 8 weeks of treatment, mean total Y-BOCS scores significantly decreased 20% to 25% below baseline values, with no change in the group receiving placebo. In patients defined as "responders" (9 of 21 in the fluvoxamine group), the mean decrease in Y-BOCS scores from baseline was 42%. In contrast, MOCI scores among responders decreased by only 20% from baseline.

The reduction of Y-BOCS scores from baseline was significantly correlated with global response of OCD symptoms to drug treatment (Table 3). Similarly, there was a strong association between changes in CGI-OCS ratings and clinical response. In contrast, changes in MOCI scores were not significantly correlated with response to fluvoxamine. Evidence that reductions in Y-BOCS scores specifically reflect improvement in OCD symptoms is provided by the failure to demonstrate significant correlations between changes in either the HAM-D or HAM-A with response of OCD to drug treatment (Table 3).

Examination of end point scores in the active fluvoxamine treatment group ($n = 21$)⁷ provides further evidence that the Y-BOCS is measuring the effects of treatment on obsessive-compulsive symptoms. After 6 to 8 weeks of treatment, total Y-BOCS scores were strongly correlated with CGI-OCS ratings ($r = .89$; $P < .0001$), whereas the correlation with the HAM-D was less robust ($r = .45$; $P < .05$). Endpoint Y-BOCS scores were not significantly correlated with endpoint MOCI or HAM-A ratings. Endpoint MOCI scores also did not significantly correlate with endpoint CGI-OCS ratings.

COMMENT

Overall, the present findings indicate that the Y-BOCS is a valid measure of OCD severity. Based on baseline data from three cohorts of OCD patients ($N = 81$), there were significant and moderately strong correlations between total Y-BOCS scores and two independent global measures of OCD, the CGI-OCS and NIMH-OC. This combined patient sample was composed of patients with a range in severity and types of obsessive-compulsive symptoms and with different degrees of secondary depression. The finding of proportional in-

creases in mean Y-BOCS totals for incremental increases in levels of global severity, as measured by the CGI-OCS, provides further support for the construct validity of the Y-BOCS. These data suggest that scores on the Y-BOCS accurately reflect severity of illness over the spectrum of severity and types of symptoms presented by patients with OCD.

Convergence of the Y-BOCS with a third OCD scale, the MOCI, was less consistent across samples. Incomplete convergence between the MOCI and the other OCD measures may simply relate to differences in method of administration (the MOCI was the only self-administered OCD instrument). It is also possible that because the MOCI is a symptom inventory, differences in scores between patients might in some cases reflect differences in the types of symptoms present instead of differences in symptom severity. This is supported by the finding that patients categorized as having obsessions and compulsions concerning contamination scored significantly higher on the MOCI than patients with other types of symptoms. In contrast, Y-BOCS scores in the two groups did not differ.

In examining the discriminant validity of the Y-BOCS in baseline ratings from the three patient cohorts, weaker correlations between total Y-BOCS score and ratings of depression (HAM-D) and anxiety (HAM-A) were only observed in the patient samples with lower levels of depressive symptoms. This suggests that total scores on these scales do not help differentiate OCD from depression or anxiety when measured before treatment in patients with OCD with secondary major depression. The finding of significant correlations between the Y-BOCS and HAM-D (and HAM-A), especially in the most depressed patient samples, was disappointing but not surprising. Neither the Y-BOCS, HAM-D, nor HAM-A are diagnostic instruments,¹⁴ and therefore may not be able to distinguish one diagnostic group from another on the basis of total scores alone. For example, many items assessed on the HAM-D are not unique to major depression, and patients with OCD may manifest problems with energy, concentration, or sleep as a consequence of their obsessive-compulsive symptoms. Patients with OCD commonly report that they are exhausted by time-consuming compulsive behaviors, are not able to focus on anything but their obsessions, or are prevented from getting to sleep because of bedtime rituals. Moreover, in patients with primary OCD, it is reasonable to expect that the severity of the secondary depressive syndrome would be greater in patients with more severe obsessive-compulsive symptoms. Structured interviews with 44 patients with OCD revealed that 80% complained of depressed mood.⁹ In most of these cases the depressive symptoms appeared after the onset of disability produced by their obsessive-compulsive behaviors.¹⁷

Because this scale was not intended as a diagnostic instrument, proving that baseline scores on the Y-BOCS differentiate between diagnostic groups (eg, OCD vs depression) may be less critical than determining whether the Y-BOCS is useful in discriminating the treatment response of obsessive-compulsive symptoms from that of other psychiatric symptoms (eg, depressive symptoms). The placebo-controlled outpatient fluvoxamine trial showed the Y-BOCS to be sensitive to changes in obsessive-compulsive symptoms.⁷ In this same trial, calculation of point biserial correlations between drug-induced changes in rating scale scores and OCD response category indicated that reductions in Y-BOCS scores specifically reflected improvement in obsessive-compulsive symptoms. There were significant and moderately strong correlations between OCD response and the magnitude of improvement measured on both the Y-BOCS and NIMH-OC, whereas neither changes in the HAM-D nor HAM-A were related to OCD response. Thus, the Y-BOCS seems to provide a specific, as well as sensitive, measure of changes in severity of obsessive-compulsive symptoms.

The Y-BOCS validation procedures described here were

predicated on the presumed meaningfulness of other clinical measures. A problem confronting the validation of the Y-BOCS, as well as any other instrument introduced as a measure of OCD severity, was the lack of a gold standard for comparison. This limitation was offset by the use of multiple rating scales and validation techniques. Nevertheless, future studies should address the criterion-related validity of the Y-BOCS. Comparison of Y-BOCS scores with direct observation of rituals could be carried out in patients selected for overt compulsions (eg, bathroom rituals) by monitoring in an inpatient setting or by relying on outside informants in the patient's home.

In conclusion, the studies reported here and elsewhere show that the 10-item Y-BOCS is a reliable and valid instrument for assessing the severity of obsessive-compulsive symptoms in patients with OCD. It does not appear useful in discriminating severity of OCD from severity of depression or anxiety in patients with OCD with marked secondary depres-

sion. The Y-BOCS also provides a sensitive measure of changes in symptom severity and is well-suited to studies evaluating specific effects of drug treatment on obsessive-compulsive symptoms. Because the total Y-BOCS score is not directly determined by the number or particular types of obsessive-compulsive symptoms present, the severity of OCD can be compared in patients with different types of obsessions or compulsions. Additional studies are needed to evaluate the psychometric properties and utility of the investigational items of the Y-BOCS.

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References

1. Goodman WK, Price LH, Rasmussen SA, Mazure C, Fleischmann R, Hill CL, Heninger GR, Charney DS. The Yale-Brown Obsessive-Compulsive Scale. I: development, use, and reliability. *Arch Gen Psychiatry*. 1989;46:1008-1011.
2. Anastasi A. *Psychological Testing*, 5th ed. New York, NY: MacMillan Publishing Co Inc; 1962.
3. Bartko JJ, Carpenter WT Jr. On the methods and theory of reliability. *J Nerv Ment Dis*. 1976;163:307-316.
4. Cottraux J, Bouvard M, Defayolle M, Measy P. Validity and factorial structure study of the compulsive activity checklist. *Behav Ther*. 1983;19:45-58.
5. Price LH, Goodman WK, Charney DS, Rasmussen SA, Heninger GR. Treatment of severe obsessive-compulsive disorder with fluvoxamine. *Am J Psychiatry*. 1987;144:1069-1081.
6. Guy W. *ECDEU Assessment Manual for Psychopharmacology*. Washington, DC: US Department of Health, Education, and Welfare publication 76-838; 1976.
7. Goodman WK, Price LH, Rasmussen SA, Delgado PL, Heninger GR, Charney DS. Efficacy of fluvoxamine in obsessive compulsive disorder: a double-blind comparison with placebo. *Arch Gen Psychiatry*. 1989;46:36-44.
8. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry*. 1960;23:56-62.
9. Hamilton M. Development of a rating scale for primary depressive illness. *Br J Soc Clin Psychol*. 1967;6:278-296.
10. Insel TR, Murphy DL, Cohen RM, Alterman I, Kilts C, Linville M. Obsessive-compulsive disorder: a double-blind trial of clomipramine and clorgyline. *Arch Gen Psychiatry*. 1983;40:606-612.
11. Murphy DL, Pickar D, Alterman IS. Methods for the quantitative assessment of depressive and manic behavior. In: Burdick EI, Sudilovsky A, Gerahon S, eds. *The Behavior of Psychiatric Patients*. New York, NY: Marcel Dekker Inc; 1982:355-392.
12. Hodgson RJ, Rachman S. Obsessional-compulsive complaints. *Behav Res Ther*. 1977;15:389-396.
13. Rachman SJ, Hodgson RJ. *Obsessions and Compulsions*. Englewood Cliffs, NJ: Prentice-Hall International Inc; 1980.
14. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol*. 1959;32:50-55.
15. Guy W, Wilson WH, Ban TA, King DL, Manov G, Fjetland OK. A double-blind clinical trial of fluvoxamine and imipramine in patients with primary depression. *Drug Dev Res*. 1984;4:143-153.
16. Perse TL, Greist JH, Jefferson JW, Rosenfeld R, Dar R. Fluvoxamine treatment of obsessive-compulsive disorder. *Am J Psychiatry*. 1987;144:1543-1548.
17. Rasmussen SA, Tsuang MT. Clinical characteristics and family history in DSM-III obsessive-compulsive disorder. *Am J Psychiatry*. 1986;143:817-822.