

# The Yale-Brown Obsessive Compulsive Scale

## I. Development, Use, and Reliability

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• **The Yale-Brown Obsessive Compulsive Scale was designed to remedy the problems of existing rating scales by providing a specific measure of the severity of symptoms of obsessive-compulsive disorder that is not influenced by the type of obsessions or compulsions present. The scale is a clinician-rated, 10-item scale, each item rated from 0 (no symptoms) to 4 (extreme symptoms) (total range, 0 to 40), with separate subtotals for severity of obsessions and compulsions. In a study involving four raters and 40 patients with obsessive-compulsive disorder at various stages of treatment, interrater reliability for the total Yale-Brown Scale score and each of the 10 individual items was excellent, with a high degree of internal consistency among all item scores demonstrated with Cronbach's  $\alpha$  coefficient. Based on pretreatment assessment of 42 patients with obsessive-compulsive disorder, each item was frequently endorsed and measured across a range of severity. These findings suggest that the Yale-Brown Scale is a reliable instrument for measuring the severity of illness in patients with obsessive-compulsive disorder with a range of severity and types of obsessive-compulsive symptoms.**

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The recent recognition that obsessive-compulsive disorder (OCD) is not uncommon,<sup>1</sup> coupled with the need to test new treatments for OCD, underscores the importance of reliable and valid outcome measures. To date, assessment of drug efficacy in OCD has been hampered by the shortcomings of existing rating instruments. In particular, there is need for an instrument that is sensitive to and selective for changes in severity of obsessive-compulsive symptoms. The absence of a broadly accepted scale for OCD also makes it difficult to compare the results of different treatment trials.

A number of rating instruments have been used in the assessment of OCD, but all have serious limitations. The instruments most widely used in the evaluation of adults are the Leyton Obsessional Inventory,<sup>2,4</sup> the Maudsley Obsession-

al Compulsive Inventory,<sup>5,6</sup> the Obsessive Compulsive Subscale of the Comprehensive Psychopathological Rating Scale,<sup>7,8</sup> and the National Institutes of Mental Health Global Obsessive Compulsive Scale.<sup>9,10</sup> Some interrater reliability data are available for these scales, but either their validity has not been established, or they are not suitable for drug treatment studies. For example, the original rater-assisted version of the Leyton Obsessional Inventory is cumbersome to administer,<sup>2</sup> and both the Leyton Obsessional Inventory<sup>2,4</sup> and the Maudsley Obsessional Compulsive Inventory rely on self-ratings, confound measurement of trait with state variables, and examine only certain types of obsessions and compulsions. A major drawback of the Obsessive Compulsive Subscale of the Comprehensive Psychopathological Rating Scale is that it contains items that rate symptoms (eg, depression) not specific to OCD. The Obsessive Compulsive Subscale of the Comprehensive Psychopathological Rating Scale was not designed de novo to assess OCD, but was derived from a factor analysis of the parent scale, the Comprehensive Psychopathological Rating Scale. A weakness of the National Institute of Mental Health Obsessive Compulsive Scale is characteristic of all single-item global measures of severity, namely, information about severity and response of individual symptoms of OCD is lost because the scale score cannot be resolved into separate components.

The Yale-Brown Obsessive Compulsive Scale (Y-BOCS) was designed to remedy the problems of existing scales by providing a specific measure of the severity of symptoms of OCD (as defined by *DSM-III-R*) that is not influenced by the type or number of obsessions or compulsions present. In contrast to other rating scales, assessment of OCD severity with the Y-BOCS does not focus on the content of a patient's symptoms. The development, use, and reliability of the Y-BOCS are discussed herein, as are the psychometric properties of individual Y-BOCS items. Studies of scale validity are described elsewhere.<sup>11</sup>

### DEVELOPMENT AND DESIGN

Item selection was based on the extensive clinical experience of the principal developers of the Y-BOCS (W.K.G., S.A.R., and L.H.P.), who collectively have examined more than 300 patients with OCD. Several versions of the scale were piloted over a 6-month period until the current form (first edition) was finalized. To maximize specificity for OCD, an

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**YALE-BROWN OBSESSIVE COMPULSIVE SCALE\***

|                                  | None                    | Mild              | Moderate              | Severe              | Extreme                |
|----------------------------------|-------------------------|-------------------|-----------------------|---------------------|------------------------|
| 1. TIME SPENT ON OBSESSIONS      | 0                       | 1                 | 2                     | 3                   | 4                      |
| 2. INTERFERENCE FROM OBSESSIONS  | 0                       | 1                 | 2                     | 3                   | 4                      |
| 3. DISTRESS OF OBSESSIONS        | 0                       | 1                 | 2                     | 3                   | 4                      |
| 4. RESISTANCE                    | Definitely resists<br>0 | 1                 | 2                     | 3                   | Completely yields<br>4 |
| 5. CONTROL OVER OBSESSIONS       | Complete control<br>0   | Much control<br>1 | Moderate control<br>2 | Little control<br>3 | No control<br>4        |
| <hr/>                            |                         |                   |                       |                     |                        |
| 6. TIME SPENT ON COMPULSIONS     | 0                       | 1                 | 2                     | 3                   | 4                      |
| 7. INTERFERENCE FROM COMPULSIONS | 0                       | 1                 | 2                     | 3                   | 4                      |
| 8. DISTRESS FROM COMPULSIONS     | 0                       | 1                 | 2                     | 3                   | 4                      |
| 9. RESISTANCE                    | Definitely resists<br>0 | 1                 | 2                     | 3                   | Completely yields<br>4 |
| 10. CONTROL OVER COMPULSIONS     | Complete control<br>0   | Much control<br>1 | Moderate control<br>2 | Little control<br>3 | No control<br>4        |

\* A complete transcript of item probes and anchor points is available on request. For example the full version of item 10 is as follows:

|   |   |
|---|---|
| <p><b>10. DEGREE OF CONTROL OVER COMPULSIVE BEHAVIOR</b><br/>How strong is the drive to perform the compulsive behavior? (pause) How much control do you have over the compulsions? (In contrast to the preceding item on resistance, the ability of the patient to control his compulsions is more closely related to the severity of the compulsions)</p> | <p>0 = Complete control.<br/>1 = Much control, experience pressure to perform the behavior, but usually able to exercise voluntary control over it.<br/>2 = Moderate control, strong pressure to perform behavior, can control it only with difficulty.<br/>3 = Little control, very strong drive to perform behavior, must be carried to completion, can only delay with difficulty.<br/>4 = No control, drive to perform behavior experienced as completely involuntary and overpowering, rarely able to even momentarily delay activity.</p> |
|---|---|

Fig 1.—Answer key for the 10-item Yale-Brown Obsessive Compulsive Scale and the complete text for item 10.

attempt was made to exclude items that seemed to reflect symptoms of depression or other anxiety disorders. To enhance the sensitivity of the Y-BOCS to change, items intended to measure putative state variables were included in the core portion of the Y-BOCS, while items believed to reflect personality traits (eg, perfectionism) were excluded. Certain clinical features commonly associated with OCD, but not clearly related to the severity of the illness, were assessed by items in the investigational component of the Y-BOCS.

The Y-BOCS is a 10-item clinician-rated scale, each item rated from 0 (no symptoms) to 4 (extreme symptoms) (Fig 1) (complete copy available on request). The Y-BOCS was designed as an observer-rated instrument because of evidence from assessment of other disorders that ratings based on self-report alone, particularly during acute stages of illness, correlate poorly with more objective evaluations.<sup>12,13</sup> For all items, a higher numerical score corresponds to greater illness severity. The total Y-BOCS score is the sum of items 1 to 10 (range, 0 to 40). There are separate subtotals for severity of obsessions (sum of items 1 through 5) and compulsions (sum of items 6 through 10). Symptoms are assessed with regard to how much they occupy the patient's time, interfere with normal

functioning, cause subjective distress, are actively resisted by the patient, and can actually be controlled by the patient. Thus, the core items (1 to 10) of the Y-BOCS measure the severity of the cardinal symptoms of OCD (ie, obsessions and compulsions) along the dimensions of time, interference, distress, resistance, and control.

The rationale for including items 1 to 3 and 6 to 8 was relatively straightforward; the degree to which obsessions or compulsions occupy the patient's time, interfere with functioning, or cause distress were considered directly related to severity of illness. To safeguard the specificity of the Y-BOCS in measuring the severity of OCD, the instructions corresponding to these items were designed to aid the rater in excluding consideration of other (non-OCD) symptoms. For example, item 4 (distress from obsessions) instructs the interviewer to "only rate anxiety that seems triggered by obsessions, not generalized anxiety or anxiety associated with other symptoms."

Items 4 and 9, which respectively measure the degree of resistance to obsessions and compulsions, deserve further description because several other rating scales have defined "resistance" differently.<sup>8,9</sup> In the Y-BOCS, resistance is a

| Table 1.—Interrater Reliability: Mean Y-BOCS Total and Subtotal Scores for Four Raters of 40 Patients With Obsessive Compulsive Disorder* |          |          |          |          |
|---|----------|----------|----------|----------|
| Scores†   | Rater    |          |          |          |
|   | W. G.    | L. P.    | R. F.    | C. H.    |
| Obsession subtotal  |          |          |          |          |
| Mean ± SD   | 10.7 ± 4 | 10.6 ± 4 | 10.6 ± 5 | 10.8 ± 5 |
| Range   | 0 = 18   | 0 = 20   | 0 = 19   | 0 = 19   |
| Compulsion subtotal   |          |          |          |          |
| Mean ± SD   | 11.1 ± 4 | 11.1 ± 4 | 11.4 ± 4 | 11.3 ± 4 |
| Range   | 0 = 18   | 0 = 19   | 0 = 19   | 0 = 19   |
| Y-BOCS total  |          |          |          |          |
| Mean ± SD   | 21.8 ± 8 | 21.7 ± 8 | 21.9 ± 8 | 22.1 ± 8 |
| Range   | 2 = 34   | 1 = 37   | 4 = 36   | 2 = 36   |

\*Patients were at various stages of treatment. Y-BOCS indicates Yale-Brown Obsessive Compulsive Scale.

†Obsession subtotal scores were the sum of items 1 through 5, compulsion subtotal scores were the sum of items 6 through 10, and Y-BOCS total was the sum of items 1 through 10.

|       | Raters                      |                             |                             |       |
|-------|-----------------------------|-----------------------------|-----------------------------|-------|
|       | W. G.                       | L. P.                       | R. F.                       | C. H. |
| W. G. |                             |                             |                             |       |
| L. P. | $r = .97595$<br>$P < .0001$ |                             |                             |       |
| R. F. | $r = .97855$<br>$P < .0001$ | $r = .97454$<br>$P < .0001$ |                             |       |
| C. H. | $r = .97937$<br>$P < .0001$ | $r = .98556$<br>$P < .0001$ | $r = .98255$<br>$P < .0001$ |       |

Fig 2.—Pearson correlation coefficients for pair-wise ratings of 40 patients with obsessive-compulsive disorder.

measure of how much effort the patient exercises in opposing obsessions or compulsions. It is assumed that a lower score (greater resistance) on items 4 or 9 is a manifestation of health, ie, the more the patient tries to resist his/her symptoms, the less impaired is this aspect of his/her functioning. This is based on the experience of the developers of the Y-BOCS that patients with OCD with more severe illness tend, in general, to make less of an effort to resist their symptoms.

Items 5 and 10 assess how much control the patient has over his/her obsessions or compulsions, respectively. The decision to include separate items for resistance and control was based on observations during pilot studies that how much a patient attempted to resist symptoms did not always correlate with how well those symptoms could be successfully controlled.

Items 11 to 16 make up the investigational component of the Y-BOCS and assess insight, avoidance, indecisiveness, pathological responsibility, pathological slowness, and pathological doubting. Ratings on these six items are not included in the computation of the total Y-BOCS because of insufficient evidence that they measure core features of OCD. However, insight (the patient's recognition of his/her symptoms as irra-

tional) and avoidance (the patient's attempt to control his/her OCD symptoms by avoiding situations that trigger them) may have some bearing on assessment of OCD severity.

## USE AND ADMINISTRATION

The intended purpose of the Y-BOCS is the quantification of symptom severity in patients with diagnosed OCD and the assessment of their response to treatment. The Y-BOCS was not designed for use as a diagnostic instrument. It is primarily meant for use in adults or older children, although a modified version of the Y-BOCS, the Children's Y-BOCS (CY-BOCS) (copy available on request) (W.K.G., L.H.P., S.A.R., C.M., G.R.H., D.S.C.; Judith L. Rapoport, Child Psychology Branch, National Institute of Mental Health, Bethesda, Md, unpublished data, October 1986), has been adapted for administration to younger children. The main difference between the Y-BOCS and the Children's Y-BOCS is the substitution of simpler language for the various item probes.

Information elicited during a semistructured interview is compared with the anchor points in the Y-BOCS manual to yield a rating for each item. (Detailed instructions on administration are available on request.) When used to assess the response of OCD symptoms to treatment, the Y-BOCS is designed to be administered on a weekly basis, but with minor modifications in wording it can be administered at different intervals. In the first assessment session, before beginning the ratings, the patient is asked to enumerate his/her current obsessions and compulsions to generate a list of target symptoms. This list is briefly reviewed at the start of each rating session, forming the basis for all severity ratings. The target symptoms are not rated separately. The final score for each Y-BOCS item reflects a composite rating of all of the patient's obsessions or compulsions independent of their content. When necessary, eg, if new types of obsessions or compulsions appear, the target symptom list is updated. To ensure that symptoms are not overlooked, a comprehensive list of different types of obsessions and compulsions is used. The Y-BOCS Symptom Checklist (available on request) includes over 50 different types of obsessions and compulsions divided into 15 larger categories according to the behavioral expression (eg, washing or cleaning) or thematic content (eg, aggression or contamination) of the symptoms. This list was derived from the clinical experience of the Y-BOCS developers and from material contained in other symptom inventories.<sup>2,5</sup>

## STUDY I: RELIABILITY

The reliability of a scale refers to the consistency with which it performs its measurements.<sup>14</sup> A number of different types of reliability have been described,<sup>15</sup> but only interrater reliability and a measurement of internal consistency are appropriate to the psychometric analysis of the Y-BOCS. Test-retest reliability is more appropriate for examination of scales that measure traits that remain relatively stable during the time between repeated test administrations or for examination of past events that would lead to a lifetime psychiatric diagnosis. Differences obtained between successive administrations of the Y-BOCS might reflect real changes in the severity of the symptoms under study. In contrast, interrater reliability and calculation of Cronbach's  $\alpha$  coefficient as a test of internal consistency<sup>16</sup> require only one administration of the rating instrument and reflect reliability in the method of administration and consistency in sampling of content, respectively.

The interrater reliability of the 10-item Y-BOCS was initially evaluated in a pilot study involving six raters and videotaped interviews of six patients with OCD. Spearman correla-

Table 2.—Interrater Reliability: Intraclass Correlation Coefficients (ICCs) for Four Raters of 40 Patients With Obsessive Compulsive Disorder

|  | ICCs† |
|--|-------|
| Y-BOCS items*                              |       |
| 1  | .95   |
| 2  | .96   |
| 3  | .92   |
| 4  | .90   |
| 5  | .93   |
| 6  | .91   |
| 7  | .97   |
| 8  | .88   |
| 9  | .93   |
| 10   | .86   |
| Obsession subtotal<br>(sum of items 1-5)   | .97   |
| Compulsion subtotal<br>(sum of items 6-10) | .96   |
| Total (sum of items 1-10)                  | .98   |

\*Y-BOCS indicates Yale-Brown Obsessive Compulsive Scale.

†All correlations are highly significant at  $P < .0001$ .

Table 3.—Range of Severity and Frequency of Scores for Each Item of the Y-BOCS\*

| Item | Range of Severity,<br>No. of Endorsements |    |    |    |    | Frequency of<br>Scores Above 0, % |
|------|---|----|----|----|----|-----------------------------------|
|      | 0   | 1  | 2  | 3  | 4  |                                   |
| 1    | 1   | 3  | 12 | 15 | 11 | 97.6                              |
| 2    | 2   | 4  | 22 | 12 | 2  | 95.2                              |
| 3    | 1   | 1  | 21 | 17 | 2  | 97.6                              |
| 4    | 2   | 12 | 10 | 14 | 4  | 95.2                              |
| 5    | 1   | 1  | 9  | 26 | 5  | 97.6                              |
| 6    | 1   | 3  | 10 | 19 | 9  | 97.6                              |
| 7    | 2   | 5  | 18 | 13 | 4  | 95.2                              |
| 8    | 1   | 3  | 14 | 18 | 6  | 97.6                              |
| 9    | 3   | 3  | 13 | 17 | 6  | 92.9                              |
| 10   | 1   | 2  | 7  | 22 | 10 | 97.6                              |

\*Data were derived from baseline assessments of 42 outpatients with obsessive-compulsive disorder entered in fluvoxamine maleate trial. Y-BOCS indicates Yale-Brown Obsessive Compulsive Scale.

tions revealed that raters generally agreed with each other on how to rank order the patients. All rater pairs demonstrated significant correlations ( $r = .72$  to  $.98$ ;  $P < .05$ ). Calculation of intraclass correlations revealed  $r = .80$  ( $P < .05$ ).<sup>17,18</sup> These findings led to the larger study of interrater reliability and internal consistency described below.

## MATERIALS AND METHODS

Based on results from the pilot study, the required sample size for an extended interrater reliability study was calculated according to the method described by Cohen and Cohen.<sup>19</sup> For an estimated intraclass correlation coefficient of  $r = .80$ , there is a 95% confidence limit that the true  $r$  will be between  $.65$  and  $.89$  if  $n = 40$ . It was anticipated that this sample size would be large enough to allow for inclusion of patients with a wide range of symptom severity.

Forty patients (10 inpatients, 30 outpatients; 14 men, 26 women; mean age =  $33 \pm 8$  [SD] years) meeting *DSM-III* criteria for a principal diagnosis of OCD gave informed consent for videotaped interviews. These patients were enrolled in placebo-controlled drug trials (either fluvoxamine maleate<sup>20,21</sup> or clomipramine hydrochloride) (W.K.G., L.H.P., D.S.C., unpublished data, December 1987) at the Clinical Neuroscience Research Unit of The Connecticut Mental Health Center, New Haven, and represented all clinic patients with

Table 4.—Correlation of Individual Items With Total Yale-Brown Obsessive Compulsive Scale (Y-BOCS) Score

| Item | $r^*$ | $P$    |
|------|-------|--------|
| 1    | .44   | <.01   |
| 2    | .60   | <.0001 |
| 3    | .42   | <.01   |
| 4    | .36   | <.05   |
| 5    | .42   | <.01   |
| 6    | .64   | <.0001 |
| 7    | .76   | <.0001 |
| 8    | .53   | <.001  |
| 9    | .64   | <.0001 |
| 10   | .43   | <.01   |

\*Pearson's Product-Moment Correlation Coefficient for correlation between item score and total Y-BOCS score minus item score at baseline in 42 outpatients entered in fluvoxamine maleate trial.

OCD appearing consecutively for their routine therapy/evaluation appointments during the duration of the reliability study. Patients were rated with the Y-BOCS on a weekly basis, and the duration of the protocols ranged from 6 to 12 weeks. As a result of this design, patients in the reliability study were at various stages of drug or placebo treatment. Only 1 patient refused to be videotaped. At the time the videotaped interview was conducted, 19 patients were at the beginning of treatment, 12 were midway in their treatment protocol, and 9 had completed their drug protocols. Thus, about half of the patients were naive to the test instrument. The majority of the patients rated after they had already started treatment were receiving active medication.

Four raters (two psychiatrists, W.K.G. and L.H.P.; one psychiatric nurse, R.F.; and one master's level research associate, C.H.) independently scored the 40 interviews and remained blind to each other's scores until the study was completed. All raters were trained in the use of the Y-BOCS before starting the study. To minimize self-correction effects on subsequent ratings, no discussion about Y-BOCS administration or scoring was allowed during the course of the study. Each rater was randomly assigned 10 patients to interview. In two cases, because of scheduling difficulties, the patient's clinician conducted the videotaped interview, so that two of the raters conducted only nine interviews. In the majority of cases, the interviewer was unfamiliar with the details of the patient's symptoms. Raters were instructed to base their scores solely on material presented in the interview, even if they were aware of additional information that might otherwise influence the ratings.

Pearson's correlation coefficients were calculated to assess relative agreement between rater pairs for individual items (1 to 10) and total Y-BOCS scores. Intraclass correlation coefficients, corresponding to a one-way random-effects ANOVA model, were also computed to assess interrater reliability.<sup>16,17</sup> Both measures are sensitive to inconsistency among raters (relative disagreement) but only the intraclass correlation coefficient reflects differences in absolute values of scores.<sup>14,22</sup> Cronbach's  $\alpha$  coefficient was calculated for each rater as a measure of internal consistency of the Y-BOCS.<sup>15,16</sup>  $\alpha$  Coefficient represents the average intercorrelation among all the items of a test, such that  $\alpha$  ranges from 0.0 to 1.0, with 1.0 reflecting perfect homogeneity.

## RESULTS

### Interrater Reliability

Pearson's correlation coefficients between rater pairs and intraclass correlation coefficients demonstrated excellent agreement between all raters for the Y-BOCS totals and individual items. Based on scores of rater 1, patients had a mean ( $\pm$  SD) total Y-BOCS score of  $21.8 \pm 8$  (range, 2 to 34) (Table 1). Very high correlations were found between the two psychiatrists for total Y-BOCS scores ( $r = .98$ ;  $P < .0001$ ) (Fig 2). The relative degree of agreement for total Y-BOCS scores was equally high between all other rater pairs, eg, correlation

between the research associate (C.H.) and one of the psychiatrists (W.K.G.) was .98 (Fig 2). The lowest pairwise Pearson correlation coefficients for the obsession and compulsion subtotals were .95 and .96, respectively ( $P < .0001$ ). The lowest correlations between rater pairs for each individual item of the Y-BOCS were as follows: .93 (item 1), .94 (item 2), .86 (item 3), .80 (item 4), .90 (item 5), .87 (item 6), .95 (item 7), .82 (item 8), .92 (item 9), and .85 (item 10) ( $P < .0001$  for all values).

There was also excellent agreement among the four raters for the absolute (as well as relative) value of total, subtotal, and individual item scores of the Y-BOCS, as demonstrated by significant intraclass correlation coefficients (Table 2).

### Internal Consistency

Computations based on the individual item scores of all patients by all raters demonstrated the Y-BOCS to be highly homogeneous. The  $\alpha$  coefficients were as follows: rater 1,  $\alpha = .90$ ; rater 2,  $\alpha = .88$ ; rater 3,  $\alpha = .90$ ; rater 4,  $\alpha = .91$ ; and the mean of all raters,  $\alpha = .89$  ( $P < .001$ ).

## STUDY II: ANALYSIS OF INDIVIDUAL ITEMS

This study examined the psychometric properties of the core Y-BOCS items. The purpose was to determine the frequency of endorsements, range of severity, and correlation of each item with the total Y-BOCS score.

### MATERIALS AND METHODS

The number of endorsements and range of severity of each of the first 10 Y-BOCS items were examined in pretreatment ratings from 42 outpatients with OCD entered in a trial of fluvoxamine vs placebo.<sup>21</sup> Eighteen of these patients were also included in study I, but only five Y-BOCS baseline rating sessions were common to both studies. The ratings were conducted by clinicians trained in the use of the Y-BOCS. To determine the degree of association between each item and the total score, correlations were calculated between the scores of each item and the Y-BOCS totals minus the score of that item. This set of ratings was chosen for the analysis of individual items because it was obtained from patients representing a wide range of symptom types and severity. For example, a variety of compulsions were present in these patients, including mental rituals, checking, washing, repeating, and counting. All but two patients had both obsessions and compulsions. This study included patients with OCD both with and without substantial secondary depressive symptoms (ie, about 50% met *DSM-III* criteria for major depression), reflecting a typical sample of patients presenting for treatment.<sup>23</sup>

### RESULTS

Each item was frequently endorsed (Table 3). No item received a score of 0 (symptom not present) in more than 8% of the cases rated. Also, each of the 10 core Y-BOCS items was scored across a range of severity (Table 2). Items 1 (time occupied by obsessions), 6 (time occupied by compulsions), and 20 (control over compulsions) received the largest number of "extreme" severity scores. The distribution of scores for item 4 (effort resisting obsessions) was considerably different from all other items, with a suggestion that it might be bimodal. The two most frequently scored responses to item 4 were "tries to resist most of the time" ( $n = 12$ ) and "yields to all obsessions...with some reluctance" ( $n = 14$ ).

Correlations between each item and the total Y-BOCS score minus that item ranged from  $r = .36$  to  $.77$  (Table 4). With regard to the resistance items, there was a moderately strong correlation ( $r = .64$ ;  $P < .0001$ ) for item 9 (resistance against compulsions), but a weak correlation ( $r = .36$ ;  $P < .05$ ) for item 4 (resistance against obsessions). The latter weak correlation is not surprising considering the wide distribution of scores obtained on item 4, as noted above.

### COMMENT

These studies show that the 10-item Y-BOCS is a reliable instrument for assessing the severity of obsessive-compulsive symptoms in patients with diagnosed OCD. The interrater reliability study generated particularly strong findings,

with all intraclass correlation coefficients above  $r = .85$  for the total Y-BOCS score and for each of the individual Y-BOCS items. These results suggest that the Y-BOCS should be reliable across a range of symptom severity, because the rating interviews were conducted with patients at various stages of treatment. Values of Cronbach's  $\alpha$  coefficient additionally showed the Y-BOCS to be a highly homogeneous instrument. It is possible that rater familiarity with the test instrument may have favorably influenced the interrater reliability results. However, if this were a major factor, pairwise agreement between the two raters (W.H.G. and L.K.P.) directly involved in the development of the Y-BOCS would be expected to be higher than that of any other rater pairs. Pearson correlations for total Y-BOCS scores were, in fact, above .97 in all rater pairs. The videotaped interview method may also have contributed to the findings of very high interrater agreement, but is unlikely to have fully accounted for the magnitude of these results.

Examination of the individual items of the Y-BOCS revealed that each of the first 10 items was frequently endorsed and measured across a range of severity. All 10 items correlated significantly with the Y-BOCS total. Analysis of item 4 (resistance against obsessions) and item 9 (resistance against compulsions) suggests that, in most of the patients tested, less of an effort to resist obsessive thoughts or compulsive behaviors was associated with higher OCD severity ratings, as measured by the sum of the other Y-BOCS items. These findings support the scoring system adopted by the Y-BOCS, particularly for resistance against performing compulsions. In contrast, the direction in which resistance is rated on the Leyton Obsessional Inventory and National Institutes of Mental Health Obsessive-Compulsive Scale is toward higher scores (ie, greater resistance) reflecting more severe illness. In the case of the Leyton Obsessional Inventory, a possible explanation for this difference in approaches to scoring may relate to the use of this scale as a diagnostic instrument. On the Leyton Obsessional Inventory, higher scores on the resistance items (eg, "This upsets me...I try very hard to stop...") seem to suggest that the patient is experiencing the symptom as egodystonic, thus increasing the likelihood that it is a bona fide symptom of OCD.

Several advantages of the Y-BOCS design are worth highlighting. The Y-BOCS was not constructed as a symptom inventory, therefore, unlike the Leyton Obsessional Inventory or the Maudsley Obsessional Compulsive Inventory it is not biased in favor of particular types of obsessions and compulsions. Because the Leyton Obsessional Inventory was initially geared to "house-proud" homemakers, its items place "a particular emphasis upon domestic topics such as household cleanliness and tidiness."<sup>22</sup> The focus of the ratings generated by the Y-BOCS is on form rather than content; the Y-BOCS measures the net effect of the obsessions and compulsions, not what they are about. Current obsessions and compulsions are organized into a list of target symptoms as a way of establishing a symptom profile for the patient. However, it is the composite effect of these symptoms that determines the severity ratings on the Y-BOCS. This approach also endows the Y-BOCS with sufficient flexibility to permit its use in rating the severity of disorders related to OCD. For example, symptoms of body dysmorphic disorder that bear a resemblance to obsessive-compulsive behavior (eg, checking for imperfections in the mirror) could conceivably be rated with the Y-BOCS.<sup>24</sup>

In keeping with *DSM-III-R* criteria for OCD, an attempt was made to avoid an unbalanced weighting of obsessions and compulsions by including an equal number of analogous items for both core phenomena. Most patients present with both obsessions and compulsions.<sup>23</sup> In most previous studies, it has been difficult to ascertain whether a given treatment has

differential effects on obsessions or compulsions. The subtotals of the Y-BOCS for obsessions (sum of items 1 through 5) and compulsions (sum of items 6 through 10) permit the treatment response of obsessions and compulsions to be separately evaluated and compared.

These studies confirm the ability of the Y-BOCS to reliably rate the severity of obsessive-compulsive symptoms in patients with OCD with a wide range of severity and symptom types. This was reflected in excellent interrater reliability for the total Y-BOCS score and the 10 individual items. There was a high degree of internal consistency and all items were significantly correlated with the total Y-BOCS score. The direction

of ratings on the resistance items conformed to expectations, with higher scores (less effort resisting symptoms) associated with more severe illness. The primary use of the Y-BOCS is in rating the severity of OCD, with particular emphasis on the ability to reflect changes in severity during treatment. Validation of the Y-BOCS for this application is addressed elsewhere.<sup>11</sup>

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