Treatment Response, Symptom Remission, and Wellness in Obsessive-Compulsive Disorder

Samantha G. Farris, MA; Carmen P. McLean, PhD; Page E. Van Meter, PhD; Helen Blair Simpson, MD, PhD; and Edna B. Foa, PhD

ABSTRACT

Background: Obsessive-compulsive disorder (OCD) is defined both by intrusive, unwanted thoughts, images, or impulses and by repetitive behavioral or mental acts that are often performed to try to alleviate anxiety. The ultimate goal of treatment for OCD is to reduce the symptoms as well as help patients achieve "wellness." Currently, however, there are no widely accepted, empirically supported criteria for determining wellness in OCD.

Method: Building on previous research, the current study examined the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) score that most reliably identified patients who responded to treatment, those who achieved symptom remission, and those who achieved wellness. The current study pooled data from 4 randomized controlled OCD treatment trials (N = 288), which took place between 1990 and 2011 at 2 academic sites. Participants (mean age = 36.8 years) had a primary diagnosis of *DSM-IV-TR* OCD (mean Y-BOCS score = 25.9).

Results: Signal detection analyses showed that a pretreatment-to-posttreatment reduction of ≥ 35% on the Y-BOCS was most predictive of treatment response as defined by the Clinical Global Impressions (CGI)-Improvement scale. A posttreatment Y-BOCS score of ≤ 14 was the best predictor of symptom remission, whereas a score of ≤ 12 was the best predictor of wellness, as defined by symptom remission (defined by the CGI-Severity scale), good quality of life (as measured by the Quality of Life Enjoyment and Satisfaction Questionnaire), and a high level of adaptive functioning (as assessed by the Social Adjustment Scale-Self-Report). Because efficiency (0.86) and specificity (0.88) were highest at the cutoff of ≤ 12, this cutoff score was determined to be the best indicator of wellness.

Conclusions: The present findings support the convergent validity of the Y-BOCS with other measures of well-being (quality of life, adaptive functioning) and highlight the utility of a Y-BOCS score ≤ 12 as a solo indicator of wellness in outcome studies. The use of empirically supported criteria for defining wellness in OCD is recommended to facilitate comparisons across treatment outcome studies and to inform clinical treatment planning.

Trial Registration: Pooled data analyzed in this study were from 4 clinical trials, 3 of which are registered at ClinicalTrials.gov (identifiers: NCT00045903, NCT00389493, NCT00316316).

J Clin Psychiatry 2013;74(7):685–690

Submitted: *March 16, 2012; accepted November 27, 2012 (doi:10.4088/JCP.12m07789).*
Corresponding author: *Samantha G. Farris, MA, Department of Psychology, University of Houston, 126 Heyne Building, Houston, TX 77204-5502 (sgfarris@uh.edu).*

In the absence of effective treatment, obsessive-compulsive disorder (OCD) tends to have a chronic course and is associated with poor quality of life[1] and severe impairment of functioning in various domains of life, including work, relationships, social life, health, and home responsibilities.[2] As of late, researchers have attempted to identify empirically supported criteria for treatment outcomes in OCD in order to provide practicing clinicians clear guidelines for treatment planning and to facilitate comparisons across outcome research studies. The term *treatment response* refers to the observation that an intervention has produced significant therapeutic improvements. *Symptom remission* is a more stringent criterion for evaluating the efficacy of treatment. *Remission* denotes minimal to no symptoms and no significant distress and impairment associated with OCD.

Although treatment research tends to focus on reduction of symptoms, the ultimate goal of our interventions is to help patients achieve wellness. *Wellness* is a broader concept than treatment response or symptom remission that includes symptom reduction but also takes into account improvements in quality of life (eg, life enjoyment, quality of physical health, mood, work, social/family relationships) and adaptive functioning (ie, the ability to function successfully within work, academic, social, and family domains), which are arguably as important (if not more important) than symptom reduction in assessing treatment outcomes.[3–8] To date, substantial gains have been made in examining wellness outcomes for some mood and anxiety disorders (eg, depression, panic disorder, social anxiety disorder, generalized anxiety disorder[6–8]); however, currently there are no widely accepted, empirically supported criteria for determining wellness in OCD.

Studies examining definitions for OCD treatment outcomes have typically used the Yale-Brown Obsessive Compulsive Scale (Y-BOCS)[9] as the test (predictor) measure in relation to the gold-standard Clinical Global Impressions (CGI)[10] scale.[11–14] The CGI scale assesses overall illness improvement and severity; thus, this scale has been used as an indicator of treatment response and symptom remission, respectively. Reductions of 25%–35% of the pretreatment Y-BOCS score have been found to be the most reliable predictor of treatment response, as defined by CGI-Improvement (CGI-I) ratings of much or very much improved.[11,12,14] While treatment response implies a meaningful decrease in symptoms, it may not be a rigorous criterion for evaluating the efficacy of treatment or for treatment planning, as the risk for relapse and ongoing suffering remains high.[15] Instead, several studies have examined the percent reduction from pretreatment to posttreatment on the Y-BOCS that is most reliably related to symptom remission, defined by the CGI-Severity (CGI-S) scale (35%–55%[12,14]). However, using reduction on the Y-BOCS to evaluate symptom remission is not ideal because percent reduction is dependent upon baseline severity. For example, even after

achieving a reduction of 50%, as proposed by Lewin et al,[12] a patient whose pretreatment Y-BOCS score was 38 would have a posttreatment score of 19, which represents a clinically significant level of OCD symptoms that does not warrant the classification of symptom remission (ie, minimal to no symptoms). As an alternative, raw posttreatment Y-BOCS scores have most recently been used to define symptom remission.[11,12] Posttreatment scores of ≤ 12 and ≤ 14 have been identified as the best Y-BOCS cutoff scores for determining remission in clinical (emphasizing sensitivity) and research (emphasizing specificity) settings, respectively.[12] A single guideline, though currently lacking, is appealing as it may bridge the gap between academic researchers.

Notably, given that even mild levels of OCD symptoms can be associated with impairment of quality of life and functioning,[1,5,15–17] it is important to assess symptom status in conjunction with functioning and quality of life.[3–5,15–17] In this study, we conceptualized wellness as the combination of OCD symptom remission, high quality of life satisfaction and enjoyment, and good adaptive functioning; however, to date, the validity of Y-BOCS cutoff levels have been evaluated in relation to illness severity only. Therefore, the current study aimed to extend this line of research by concurrently examining symptom remission, quality of life satisfaction and enjoyment, and adaptive functioning. It is possible that the current Y-BOCS remission cutoff scores are too liberal and that the cutoff score for wellness will indeed be a more conservative standard (ie, defined by a lower Y-BOCS cutoff).

This study pooled data from 4 clinical trials of OCD to develop criteria for identifying patients who (1) responded to treatment; (2) attained symptom remission; and (3) achieved wellness, defined by symptom remission coupled with good quality of life and adaptive functioning. Similar to previous studies,[12–14] the current study used signal detection analyses to identify Y-BOCS criteria most predictive of each of the clinical outcomes of interest: response, remission, and wellness.

METHOD

Overview

Data were pooled from 4 randomized controlled OCD clinical trials[18–21] (N = 288) that were conducted from 1990 to 2011 (3 of the trials are registered at ClinicalTrials.gov [identifiers: NCT00045903,[19] NCT00389493,[20] NCT00316316[21]]). The first study[18] compared cognitive-behavioral therapy, clomipramine, placebo, and their combination. The second study[19] examined the efficacy of adding exposure and ritual prevention or stress management training to serotonin reuptake inhibitor medication. The third study[20] compared exposure and ritual prevention with and without the addition of motivational interviewing. The fourth study[21] compared the addition of exposure and ritual prevention, risperidone, or placebo to serotonin reuptake inhibitor medication. Full study descriptions (eg, timing and length of treatment) are available elsewhere.[18–21] All participants had a primary diagnosis of *DSM-IV-TR* OCD[22] and a Y-BOCS score ≥ 16. Exclusion criteria included current substance dependence, bipolar disorder, psychotic disorders, or acute suicidality. All 4 studies were conducted at 2 academic sites (the Center for the Treatment and Study of Anxiety at the University of Pennsylvania, Philadelphia, and the Anxiety Disorders Clinic at Columbia University/New York State Psychiatric Institute, New York). Supervision meetings were conducted to ensure reliability for the clinician-administered assessments (ie, Y-BOCS, CGI); these meetings occurred at each site every 2 months and across sites twice per year. High interrater reliability and intersite reliability have been documented for all studies. Participants were provided no-cost treatment in return for their participation in all studies and did not receive monetary compensation. Each study was approved by the institutional review board at each site, and participants provided written informed consent prior to entry.

Clinical Points

- Wellness is the ultimate outcome posttreatment and was conceptualized broadly in the current study to include obsessive-compulsive disorder symptom remission and improvements in quality of life and adaptive functioning.
- Study results indicate the use of a Yale-Brown Obsessive Compulsive Scale score of ≤ 12 as a reliable proxy indicator of wellness.

Measures

Yale-Brown Obsessive Compulsive Scale. The Y-BOCS is a 10-item clinician-administered assessment of the frequency and severity of obsessions and compulsions. Total scores range from 0 (nonclinical) to 40 (extreme), and scores ≥ 16, which indicate clinically significant OCD symptoms, were required for study entry. The Y-BOCS has excellent psychometric properties, including reliability and construct validity.[18,23–25]

Clinical Global Impressions scale. The CGI is a clinician-rated scale that assesses overall improvement (CGI-I) and severity (CGI-S). Improvement is a single item, scored 1 (very much improved) to 7 (very much worse). Symptom severity is a single item, scored 1 (normal, not ill at all) to 7 (extremely ill). The CGI has been employed successfully in past OCD clinical trials.[18,19,26–28]

Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q). The Q-LES-Q[29] is a 16-item self-report measure in which statements relating to life satisfaction and enjoyment are rated on a 5-point Likert scale, with higher scores representing better quality of life. This measure includes items related to satisfaction with physical health, mood, work, and social/family relationships. We used the total percent score by transforming raw scores into maximum possible score percentages. The Q-LES-Q is a valid and reliable measure of quality of life among both healthy and OCD subjects.[30]

Social Adjustment Scale-Self-Report (SAS-SR). The SAS-SR[31] is a 54-item self-report questionnaire that is used to assess performance in several areas of functioning, including work, academic, social, and family domains. Mean scores for the SAS-SR (sum of all items divided by the number of items

completed), range from 1.0 to 5.0, with higher scores indicating greater impairment. The SAS-SR is a validated measure[32] and has been found to have adequate reliability.[33]

Examining Response, Remission, and Wellness

Analyses were completed using all participants with available pretreatment and posttreatment data. This pooled sample (45.8% female; mean age = 36.8 years, standard deviation [SD] = 12.7 years) identified as white (84.7%), Asian (4.5%), Hispanic (4.5%), African American (3.8%), and other (2.4%). Treatment response, symptom remission, and wellness were examined using signal detection analyses.

Defining response. A CGI-I score of 1 (very much improved) or 2 (much improved) was used to indicate *response*, in line with previous research.[11–14] To examine the Y-BOCS reduction that was most predictive of treatment response, the percent reduction from pretreatment to posttreatment was coded in increments of 5%, ranging from a reduction of ≥ 5% to ≥ 70%.

Defining remission. *Remission* was indicated by CGI-S scores ranging from 1 (normal, not ill at all) to 3 (mildly ill). This cutoff is standard, based on comparable OCD studies.[12–14] Raw Y-BOCS score cutoffs ranged from ≤ 5 to ≤ 20, increasing in 1-point increments, with lower scores indicating lower symptom severity.

Defining wellness. *Wellness* was defined as achieving OCD symptom remission in combination with good quality of life and daily functioning, comparable to levels documented among well-functioning individuals.[34] Raw posttreatment Y-BOCS scores ranging from ≤ 5 to ≤ 20 were used as the test cutoffs. Regarding criterion measures, a CGI-S score of 1–3 was used as the gold-standard criterion for OCD remission. Next, measures of quality of life and adaptive functioning (Q-LES-Q and SAS-SR, respectively) were dichotomized and examined in relation to each Y-BOCS cutoff value. The Q-LES-Q and SAS-SR were administered in 2 studies[19,21] (n = 159), so this reduced sample was used for the wellness analyses. Good quality of life was defined as a posttreatment Q-LES-Q scores ≥ 68.91. This criterion was based on the estimated mean for healthy control participants (mean = 78.91%, SD = 13.04%)[1] and the recommended normal range of ± 10% from the mean (as proposed by Rapaport et al[30]). High adaptive functioning was defined as an SAS-SR score ≤ 1.31. This criterion was based on the mean for healthy controls (mean score = 1.57; SD = 0.26)[1] and a range of ± 1.00 SD from the mean (as proposed by Weissman et al[32]).

A composite wellness variable was computed from all 3 criteria measures, with 1 point assigned for each outcome: remission, good quality of life, and a high level of adaptive functioning. Subjects with a score of 3 were considered to have achieved wellness on the composite criterion, whereas scores < 3 were short of meeting the proposed criterion.

Data Analytic Plan

First, the correlations between all predictor and criterion variables were examined. Next, using signal detection analysis, we evaluated the sensitivity, specificity, predictive value of a positive test, predictive value of a negative test, efficiency, and weighted κ statistic of the Y-BOCS in relation to the criterion outcomes (CGI, Q-LES-Q, SAS-SR, and composite wellness). *Sensitivity* is the probability that the test measure will correctly detect positive responses according to the gold-standard criterion [true positives/(true positives + false negatives)]. *Specificity* is the probability that the Y-BOCS test measure will correctly detect negative responses according to the gold-standard criterion [true negatives/(true negatives + false positives)]. The positive predictive value test is the probability that the gold-standard criterion correctly identifies positive responses on the Y-BOCS test measure [true positives/(true positives + false positives)], and the negative predictive value test is the probability that the gold-standard criterion test correctly identifies negative responses on the Y-BOCS test measure [true negatives/(true negatives + false negatives)]. Efficiency, also known as accuracy of detections [(true positives + true negatives)/total N], is the rate of agreement between the test and criterion measures. As recommended by Chmura Kraemer et al,[35] weighted κ coefficients [κ(0.5)] were used to correct for chance agreement between the test and the criterion measure by adjusting for base-rate rater agreement in the sample.

Table 1. Correlations Between Posttreatment Predictor and Criterion Variables

Variable	1	2	3	4	5
Y-BOCS	1.00	0.82*	0.93*	−0.57*	0.49*
CGI-I		1.00	0.78*	−0.51*	0.36*
CGI-S			1.00	−0.55*	0.47*
Q-LES-Q				1.00	−0.62*
SAS-SR					1.00

*$P < .001$.

Abbreviations: CGI-I = Clinical Global Impressions-Improvement scale, CGI-S = Clinical Global Impressions-Severity scale, Q-LES-Q = Quality of Life Enjoyment and Satisfaction Questionnaire, SAS-SR = Social Adjustment Scale-Self-Report, Y-BOCS = Yale-Brown Obsessive Compulsive Scale.

RESULTS

Descriptive Overview

At pretreatment, participants presented with severe symptoms of OCD: Y-BOCS scores fell in the severe range (mean = 25.90, SD = 4.42), the CGI-S scores indicated marked illness (mean = 4.98, SD = 0.79), scores on the Q-LES-Q (mean = 55.97, SD = 15.49) were low, and SAS-SR scores (mean = 2.19, SD = 0.45) were high. At posttreatment, the degree of improvement and symptom reduction in OCD, quality of life, and adaptive functioning greatly varied, as evidenced by large standard deviations: mean reduction in OCD symptoms was 32.83% (SD = 30.1%), with improvement ratings that ranged from minimally to much improved on the CGI-I (mean = 2.57, SD = 1.20); OCD severity was rated as moderate by the Y-BOCS (mean = 17.40, SD = 8.30) and the CGI-S (mean = 3.76, SD = 1.39); the Q-LES-Q ratings (mean = 64.14, SD = 17.05) remained lower than in healthy controls; and the SAS-SR scores (mean = 1.99, SD = 0.47) remained elevated. All posttreatment predictor and criterion measures were intercorrelated (all *P* values < .001) (Table 1).

The Y-BOCS was strongly associated with both CGI scales (r values = 0.78–0.93) and moderately associated with the Q-LES-Q ($r = -0.57$) and the SAS-SR ($r = 0.49$). (Note: the negative value reflects the inverse in scoring between the Y-BOCS and the Q-LES-Q; higher values on the Q-LES-Q indicate better quality of life, and lower values on the Y-BOCS indicate lower OCD symptom severity.)

Treatment Response

According to the criterion measure (ie, a CGI-I score of 1 [very much improved] or 2 [much improved], 45.9% of participants were treatment responders. As shown in Table 2, Y-BOCS reductions of 30% and 35% were associated with the highest efficiency values (0.91 and 0.92, respectively). A 35% cutoff was associated with the highest weighted κ coefficient value (0.84) and with the optimal compromise between high sensitivity (0.90) and specificity (0.94). At a 35% Y-BOCS reduction cutoff, 94% of true responders were correctly identified as responders, and 90% of true nonresponders were correctly identified as nonresponders.

Symptom Remission

According to the criterion measure (ie, CGI-S scores ranging from 1 [normal, not ill at all] to 3 [mildly ill]), 41.7% of subjects achieved OCD symptom remission posttreatment. As shown in Table 3, posttreatment Y-BOCS scores of ≤ 13 and ≤ 14 were most reliably related with symptom remission, as evidenced by an efficiency value of 0.96. The weighted κ value was highest at a Y-BOCS score of ≤ 14 (0.91). At this score, sensitivity (0.93) and specificity (0.98) were both high, and nearly all true remitters (97%) and nonremitters (95%) were correctly classified.

Wellness

To identify the Y-BOCS raw score that most reliably predicted wellness, separate signal detection analyses were conducted for each individual criterion measure (ie, Y-BOCS, Q-LES-Q, and SAS-SR) and then the composite wellness variable. A score of ≤ 14 was determined to be the best predictor of symptom remission (as reported above). A Y-BOCS score of ≤ 16 or ≤ 17 was most reliably related to quality of life (Q-LES-Q, efficiency = 0.71) and adaptive functioning (SAS-SR, efficiency = 0.67).

Table 4 presents the characteristics of Y-BOCS raw scores predicting the composite criterion measure for wellness. Scores of ≤ 12 and ≤ 13 were associated with the highest efficiency values (0.86 and 0.85, respectively) and with weighted κ coefficient values approximately equaling 0.57 at both cutoffs. These κ values are indicative of moderate agreement. At a cutoff of ≤ 13, there was equal balance between high sensitivity and specificity (0.85), 53% of those who achieved wellness were correctly identified as wellness attainers, and 97% of

Table 2. Signal Detection Analysis of Predicting Response to Treatment at Various Y-BOCS Percent Reduction Cutoff Points[a]

Y-BOCS Percent Reduction Cutoff	Sensitivity	Specificity	PPV	NPV	Efficiency	κ(0.5)
≥ 5	1.00	0.44	0.64	1.00	0.719	0.438
≥ 10	1.00	0.51	0.67	1.00	0.757	0.514
≥ 15	1.00	0.67	0.75	1.00	0.837	0.674
≥ 20	0.99	0.76	0.80	0.99	0.875	0.750
≥ 25	0.95	0.84	0.86	0.96	0.899	0.799
≥ 30	0.91	0.90	0.90	0.91	0.906	0.812
≥ 35	**0.90**	**0.94**	**0.94**	**0.90**	**0.920**	**0.840**
≥ 40	0.83	0.94	0.94	0.81	0.875	0.750
≥ 45	0.77	0.97	0.96	0.70	0.837	0.674
≥ 50	0.73	0.97	0.96	0.63	0.802	0.604
≥ 55	0.66	0.99	0.99	0.49	0.743	0.486
≥ 60	0.61	0.99	0.98	0.37	0.681	0.361
≥ 65	0.58	0.99	0.98	0.28	0.639	0.278
≥ 70	0.57	0.99	0.97	0.24	0.615	0.229

[a]Gray bar denotes the Y-BOCS cutoff point with the strongest signal detection properties.
Abbreviations: NPV = negative predictive value, PPV = positive predictive value, Y-BOCS = Yale-Brown Obsessive Compulsive Scale.

Table 3. Signal Detection Analysis of Predicting Remission at Various Y-BOCS Raw Cutoff Points[a]

Y-BOCS Cutoff Score	Sensitivity	Specificity	PPV	NPV	Efficiency	κ(0.5)
5	0.18	1.00	1.00	0.63	0.656	0.198
6	0.23	1.00	1.00	0.65	0.681	0.262
7	0.28	1.00	1.00	0.66	0.694	0.316
8	0.33	1.00	1.00	0.68	0.722	0.368
9	0.44	1.00	1.00	0.71	0.767	0.480
10	0.53	1.00	1.00	0.75	0.802	0.563
11	0.61	1.00	1.00	0.78	0.837	0.644
12	0.67	1.00	1.00	0.81	0.913	0.700
13	0.80	0.99	0.99	0.87	0.958	0.816
14	**0.93**	**0.98**	**0.97**	**0.95**	**0.955**	**0.914**
15	0.98	0.93	0.91	0.99	0.938	0.908
16	0.99	0.90	0.88	0.99	0.941	0.881
17	1.00	0.85	0.82	1.00	0.910	0.820
18	1.00	0.79	0.77	1.00	0.878	0.760
19	1.00	0.72	0.72	1.00	0.837	0.682
20	1.00	0.65	0.67	1.00	0.795	0.606

[a]Gray bar denotes the Y-BOCS cutoff score with the strongest signal detection properties.
Abbreviations: NPV = negative predictive value, PPV = positive predictive value, Y-BOCS = Yale-Brown Obsessive Compulsive Scale.

Table 4. Signal Detection Analysis of Predicting the Composite Wellness Criterion at Various Y-BOCS Raw Cutoff Points[a]

Y-BOCS Cutoff Score	Sensitivity	Specificity	PPV	NPV	Efficiency	κ(0.5)
5	0.22	0.99	0.86	0.86	0.862	0.304
6	0.26	0.98	0.78	0.87	0.862	0.332
7	0.30	0.97	0.67	0.87	0.855	0.341
8	0.41	0.96	0.69	0.89	0.868	0.441
9	0.52	0.92	0.58	0.90	0.855	0.463
10	0.67	0.90	0.58	0.93	0.862	0.537
11	0.70	0.88	0.54	0.94	0.849	0.521
12	**0.78**	**0.88**	**0.57**	**0.95**	**0.862**	**0.572**
13	0.85	0.85	0.53	0.97	0.849	0.567
14	0.96	0.78	0.47	0.99	0.811	0.526
15	0.96	0.70	0.39	0.99	0.742	0.419
16	1.00	0.67	0.39	1.00	0.730	0.413
17	1.00	0.63	0.36	1.00	0.692	0.365
18	1.00	0.61	0.34	1.00	0.673	0.343
19	1.00	0.55	0.31	1.00	0.623	0.290
20	1.00	0.49	0.29	1.00	0.579	0.248

[a]See Method section for wellness criterion. The gray bar denotes the Y-BOCS cutoff score with the strongest signal detection properties.
Abbreviations: NPV = negative predictive value, PPV = positive predictive value, Y-BOCS = Yale-Brown Obsessive Compulsive Scale.

those who did not achieve wellness were correctly identified as such. At a cutoff of ≤ 12, sensitivity (0.78) and specificity (0.88) were still high, and positive predictive value (0.57) and negative predictive value (0.95) were slightly more balanced. A Y-BOCS cutoff score of ≤ 12 was selected as the most appropriate cutoff for wellness on the basis of high efficiency in conjunction with high specificity.

DISCUSSION

The current study aimed to determine the Y-BOCS score that best defined response to treatment, symptom remission, and wellness (a combination of symptom remission, good quality of life, and high level of adaptive functioning). Our results indicate that a Y-BOCS reduction of ≥ 35% relative to baseline is most predictive of treatment response when response is defined as much or very much improved on the CGI-I. At ≥ 35% Y-BOCS reduction, nearly all of the participants who responded to treatment (90%) were correctly classified as responders, and nearly all of those who did not respond to treatment (94%) were correctly classified as nonresponders. This finding is consistent with earlier studies examining OCD treatment response (≥ 30%,[14] ≥ 35%,[12] ≥ 45%[12]).

Symptom remission, defined as having mild to no symptoms on the CGI-S, was most reliably associated with a Y-BOCS score of ≤ 14. Using this criterion, 93% of symptom remitters and 98% of nonremitters were correctly identified as such. This finding matches the criterion recommended by Lewin et al[12] for use in treatment research. We sought to identify a single cutoff score for remission that counterbalances important characteristics (eg, sensitivity and specificity) to maximize the translation of empirical research findings to the clinical setting.

Perhaps most notably, a posttreatment Y-BOCS score of ≤ 12 was optimally associated with the combination of minimal OCD severity and good life satisfaction and adaptive functioning and therefore represents a reliable proxy for wellness. Historically, this Y-BOCS cutoff score has been used in treatment outcome studies as an "ideal" indicator of mild OCD severity[11,36]; therefore, in this light, these results may not be surprising. Notwithstanding, these results uniquely confirm the convergent validity of the Y-BOCS with other measures of well-being (quality of life, adaptive functioning) and highlight the utility of this Y-BOCS score as a solo indicator of wellness in outcome studies.

Our study has several strengths: (1) a large clinical sample; (2) use of gold-standard clinician-administered assessment measures; and (3) inclusion of participants who received different interventions for OCD, including exposure and ritual prevention alone (14.2%), medication only (24.3%), a combination (38.2%), stress management training plus medication (16.0%), or placebo medication only (7.3%). The inclusion of different treatment approaches means that the results may be used across various OCD treatment modalities as a standard for determining wellness.

A few limitations should be noted. First, our definition of symptom remission focused on the presence of minimal symptoms only and did not examine participants' diagnostic status at posttreatment. Second, this study focused on posttreatment outcome, and longer-term wellness (recovery) was not assessed. We recommend that future studies evaluate these criteria in long-term outcome research. Third, the definition for *wellness* used in the current study did not include a measure of depression,[6] although the Q-LES-Q does include items concerning mood satisfaction. Nonetheless, a separate measure of depression could be used as an additional criterion outcome in future research to further evaluate the ability of the Y-BOCS to detect wellness. Last, while the observed κ values for the wellness analyses were moderate in size,[37] they were lower than those found for response and remission analyses, which were found to have substantial agreement. This finding might in part be related to the fact that both clinician-administered (CGI-S) and self-report (Q-LES-Q and SAS-SR) data were used in the wellness analysis, thereby potentially increasing measurement error (ie, decreasing precision in detecting the criterion outcome). Alternatively, it is possible that the wellness cutoff is truly a less reliable outcome; however, this possibility is unlikely given the empirical associations between OCD symptom reduction and quality of life and functioning improvements.[1,6]

Identifying a single criterion for determining wellness in OCD will assist in the standardization of research studies and allow for greater comparison among studies, as well as provide a guideline for therapists for planning and evaluating their interventions. The current study is an attempt to move beyond the traditional symptom-reduction model to a broader focus on wellness and recovery.

Drug names: clomipramine (Anafranil and others), risperidone (Risperdal and others).

Author affiliations: Department of Psychiatry, University of Pennsylvania, Philadelphia (Ms Farris and Drs McLean and Foa); and New York State Psychiatric Institute, Columbia University, New York, New York (Drs Van Meter and Simpson). Ms Farris is now at the Department of Psychology, University of Houston, Houston, Texas.

Potential conflicts of interest: **Dr Simpson** has received research support from Janssen and Transcept and has received royalties from Cambridge University Press. **Dr Foa** has received grant/research support from Pfizer, Solvay, Eli Lilly, SmithKline Beecham, GlaxoSmithKline, Cephalon, Bristol-Myers Squibb, Forest, Ciba Geigy, Kali-Duphar, and the American Psychiatric Association; has been a member of the speakers bureaus for Pfizer, GlaxoSmithKline, Forest, Jazz, and the American Psychiatric Association; and has been a consultant for Actelion. **Ms Farris** and **Drs McLean** and **Van Meter** report no financial or other affiliations relevant to the subject of this article.

Funding/support: This research was supported in part by grants from the National Institute of Mental Health: R01 MH-45436, K23 MH-01907, and R34 MH071570 (Dr Simpson); and MH-04504-05A2, MH-04504-10A1, and MH-04504-19 (Dr Foa).

REFERENCES

1. Huppert JD, Simpson HB, Nissenson KJ, et al. Quality of life and functional impairment in obsessive-compulsive disorder: a comparison of patients with and without comorbidity, patients in remission, and healthy controls. *Depress Anxiety*. 2009;26(1):39–45.
2. Ruscio AM, Stein DJ, Chiu WT, et al. The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey Replication. *Mol Psychiatry*. 2010;15(1):53–63.
3. Gladis MM, Gosch EA, Dishuk NM, et al. Quality of life: expanding the scope of clinical significance. *J Consult Clin Psychol*. 1999;67(3):320–331.
4. Kazdin A. Almost clinically significant ($P < .10$): current measures may only approach clinical significance. *Clin Psychol Sci Pract*. 2001;8(4):455–462.

5. Moritz S, Rufer M, Fricke S, et al. Quality of life in obsessive-compulsive disorder before and after treatment. *Compr Psychiatry*. 2005;46(6):453–459.
6. Bandelow B, Baldwin DS, Dolberg OT, et al. What is the threshold for symptomatic response and remission for major depressive disorder, panic disorder, social anxiety disorder, and generalized anxiety disorder? *J Clin Psychiatry*. 2006;67(9):1428–1434.
7. Davidoff J, Christensen S, Khalili DN, et al. Quality of life in panic disorder: looking beyond symptom remission. *Qual Life Res*. 2012;21(6):945–959.
8. Zimmerman M, Martinez J, Attiullah N, et al. Further evidence that the cutoff to define remission on the 17-item Hamilton Depression Rating Scale should be lowered. *Depress Anxiety*. 2012;29(2):159–165.
9. Goodman WK, Price LH, Rasmussen SA, et al. The Yale-Brown Obsessive Compulsive Scale, 2: validity. *Arch Gen Psychiatry*. 1989;46(11):1012–1016.
10. Guy W. *ECDEU Assessment Manual for Psychopharmacology.* US Department of Health, Education and Welfare publication (ADM) 76-338. Rockville, MD: National Institute of Mental Health; 1976:218–222.
11. Simpson HB, Huppert JD, Petkova E, et al. Response versus remission in obsessive-compulsive disorder. *J Clin Psychiatry*. 2006;67(2):269–276.
12. Lewin AB, De Nadai AS, Park J, et al. Refining clinical judgment of treatment outcome in obsessive-compulsive disorder. *Psychiatry Res*. 2011;185(3):394–401.
13. Storch EA, Lewin AB, De Nadai AS, et al. Defining treatment response and remission in obsessive-compulsive disorder: a signal detection analysis of the Children's Yale-Brown Obsessive Compulsive Scale. *J Am Acad Child Adolesc Psychiatry*. 2010;49(7):708–717.
14. Tolin DF, Abramowitz JS, Diefenbach GJ. Defining response in clinical trials for obsessive-compulsive disorder: a signal detection analysis of the Yale-Brown Obsessive Compulsive Scale. *J Clin Psychiatry*. 2005;66(12):1549–1557.
15. Simpson HB, Franklin ME, Cheng J, et al. Standard criteria for relapse are needed in obsessive-compulsive disorder. *Depress Anxiety*. 2005;21(1):1–8.
16. Bystritsky A, Saxena S, Maidment K, et al. Quality-of-life changes among patients with obsessive-compulsive disorder in a partial hospitalization program. *Psychiatr Serv*. 1999;50(3):412–414.
17. Koran LM. Quality of life in obsessive-compulsive disorder. *Psychiatr Clin North Am*. 2000;23(3):509–517.
18. Foa EB, Liebowitz MR, Kozak MJ, et al. Randomized, placebo-controlled trial of exposure and ritual prevention, clomipramine, and their combination in the treatment of obsessive-compulsive disorder. *Am J Psychiatry*. 2005;162(1):151–161.
19. Simpson HB, Foa EB, Liebowitz MR, et al. A randomized, controlled trial of cognitive-behavioral therapy for augmenting pharmacotherapy in obsessive-compulsive disorder. *Am J Psychiatry*. 2008;165(5):621–630.
20. Simpson HB, Maher MJ, Wang Y, et al. Patient adherence predicts outcome from cognitive behavioral therapy in obsessive-compulsive disorder. *J Consult Clin Psychol*. 2011;79(2):247–252.
21. Simpson HB, Foa EB. A randomized controlled trial of cognitive-behavioral therapy versus risperidone for augmenting serotonin reuptake inhibitors in obsessive-compulsive disorder. Presented at the Annual Meeting of the American College of Neuropsychopharmacology. *Neuropsychopharmacology.* 2012;38:S330–S331.
22. American Psychiatric Association. *Diagnostic and Statistical Manual Of Mental Disorders*, Fourth Edition, Text Revision. Washington, DC: American Psychiatric Association; 2000.
23. Goodman WK, Price LH. Assessment of severity and change in obsessive compulsive disorder. *Psychiatr Clin North Am*. 1992;15(4):861–869.
24. Goodman WK, Price LH, Rasmussen SA, et al. The Yale-Brown Obsessive Compulsive Scale, 1: development, use, and reliability. *Arch Gen Psychiatry*. 1989;46(11):1006–1011.
25. Woody SR, Steketee G, Chambless DL. Reliability and validity of the Yale-Brown Obsessive Compulsive Scale. *Behav Res Ther*. 1995;33(5):597–605.
26. Bergeron R, Ravindran AV, Chaput Y, et al. Sertraline and fluoxetine treatment of obsessive-compulsive disorder: results of a double-blind, 6-month treatment study. *J Clin Psychopharmacol*. 2002;22(2):148–154.
27. Hollander E, Koran LM, Goodman WK, et al. A double-blind, placebo-controlled study of the efficacy and safety of controlled-release fluvoxamine in patients with obsessive-compulsive disorder. *J Clin Psychiatry*. 2003;64(6):640–647.
28. Pallanti S, Bernardi S, Antonini S, et al. Ondansetron augmentation in treatment-resistant obsessive-compulsive disorder: a preliminary, single-blind, prospective study. *CNS Drugs*. 2009;23(12):1047–1055.
29. Endicott J, Nee J, Harrison W, et al. Quality of Life Enjoyment and Satisfaction Questionnaire: a new measure. *Psychopharmacol Bull*. 1993;29(2):321–326.
30. Rapaport MH, Clary C, Fayyad R, et al. Quality-of-life impairment in depressive and anxiety disorders. *Am J Psychiatry*. 2005;162(6):1171–1178.
31. Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. *Arch Gen Psychiatry*. 1976;33(9):1111–1115.
32. Weissman MM, Prusoff BA, Thompson WD, et al. Social adjustment by self-report in a community sample and in psychiatric outpatients. *J Nerv Ment Dis*. 1978;166(5):317–326.
33. Fischer J, Corcoran K. *Measures for Clinical Practice*. Vol. 2. New York, NY: Free Press; 1994:580.
34. Jacobson NS, Roberts LJ, Berns SB, et al. Methods for defining and determining the clinical significance of treatment effects: description, application, and alternatives. *J Consult Clin Psychol*. 1999;67(3):300–307.
35. Chmura Kraemer H, Periyakoil VS, Noda A. Kappa coefficients in medical research. *Stat Med*. 2002;21(14):2109–2129.
36. Eddy KT, Dutra L, Bradley R, et al. A multidimensional meta-analysis of psychotherapy and pharmacotherapy for obsessive-compulsive disorder. *Clin Psychol Rev*. 2004;24(8):1011–1030.
37. Viera AJ, Garrett JM. Understanding interobserver agreement: the kappa statistic. *Fam Med*. 2005;37(5):360–363.