Published in final edited form as:

J Clin Psychiatry. 2013 July ; 74(7): 685–690. doi:10.4088/JCP.12m07789.

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

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Abstract

Objective—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”, however currently there are no widely accepted, empirically supported criteria for determining wellness in OCD.

Method—Building on previous research, the current study pooled data from four OCD treatment trials (N = 288) that took place between 1990–2011 to examine the Yale-Brown Obsessive Compulsive Disorder Scale (Y-BOCS) score that most reliably identified patients who responded to treatment, those who achieved symptom remission and those who achieved wellness.

Results—Signal detection analyses showed that a pre- to post-treatment reduction of 35% on the Y-BOCS was most predictive of treatment response, as defined by the Clinical Global Impressions (CGI-Improvement). A post-treatment Y-BOCS score of 14 was the best predictor of symptom remission, where a score of 12 was the best predictor of wellness, as defined by symptom remission defined by the CGI-Severity, good quality of life as measured by the Quality of Life Enjoyment and Satisfaction Questionnaire (QLES-Q) and a high-level of adaptive function as assessed by the Social Adjustment Scale (SAS-SR).

Conclusions—Empirically supported criteria for defining wellness in OCD can facilitate comparisons across treatment outcome studies and inform clinical treatment planning.

Keywords

obsessive-compulsive disorder; treatment response; symptom remission; wellness; signal detection

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In the absence of effective treatment, obsessive-compulsive disorder (OCD) tends to have a chronic course, and is associated with poor quality of life¹ and severe impairment of functioning in various domains of life including work, relationships, social life, health, and home responsibilities². 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 (e.g., life enjoyment, quality of physical health, mood, work, social/family relationships) and adaptive functioning (i.e., ability to function successfully with 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 (e.g., depression, panic disorder, social anxiety disorder, generalized anxiety disorder e.g.^{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-BOCS⁹) as the test (predictor) measure in relation to the gold-standard Clinical Global Impressions scale (CGI¹⁰)^{11–14}. The CGI scale assesses overall illness improvement and severity – this scale has thus been used as an indicator of “treatment response” and “symptom remission”, respectively. Reductions of 25 – 35% of the pre-treatment Y-BOCS score have been found to be the most reliably predictive of “treatment response”, as defined by CGI Improvement scale (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 high¹⁵. Instead, several studies have examined percent reduction from pre- to post-treatment on the Y-BOCS that is most reliably related to “symptom remission”, defined by the CGI severity scale (CGI-S; 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 pre-treatment Y-BOCS was 38 would have a post-treatment score of 19, which represents a clinically significant level of OCD symptoms that does not warrant the classification of symptom remission (i.e., minimal to no symptoms). As an alternative, raw post-treatment Y-BOCS scores have most recently been used to define symptom remission^{11–12}. Post-treatment 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, respectively¹²; A single guideline, though currently lacking, is appealing as it may bridge 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 life quality^{3–5,15–17}. In this study, the combination of OCD symptom remission, high quality of life satisfaction and enjoyment, and good adaptive functioning are all components of “wellness”. To date, the validity of Y-BOCS cutoff levels have been evaluated in relation to illness severity only. Therefore the current study aims 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 remission Y-BOCS cutoff scores are too liberal and that the cutoff score for wellness will indeed be a more conservative standard (i.e., defined by a lower Y-BOCS cutoff).

This study pooled data from four 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}, we 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 four randomized controlled OCD clinical trials (N = 288) that were conducted from 1990 – 2011. The first study¹⁸ compared CBT, clomipramine, placebo, and their combination; the second study¹⁹ examined the efficacy of adding Exposure and Ritual Prevention (EX/RP) or Stress Management Training (SMT) to serotonin reuptake inhibitor medication; the third study²⁰ compared EX/RP with and without the addition of motivational interviewing; and the fourth study²¹ compared the addition of either EX/RP, risperidone, or placebo to serotonin reuptake inhibitor medication. Full study descriptions (e.g., timing and length of treatment) are available elsewhere^{18–21}. All participants had primary diagnosis of OCD²² and Y-BOCS score ≥ 16. Exclusion criteria included current substance dependence, bipolar disorder, psychotic disorders, or acute suicidality. All four studies were conducted at two academic sites (Center for the Treatment and Study of Anxiety at the University of Pennsylvania and the Anxiety Disorders Clinic at Columbia University/New York State Psychiatric Institute) that have been collaborating since 1990. Supervision meetings are conducted to ensure reliability for the clinician-administered assessments (i.e., Y-BOCS, CGI), and occur at each site (bimonthly) and across sites (bi-annually). High inter-rater and inter-site reliability has 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.

Measures

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS⁹)—The Y-BOCS is a 10-item clinician-administered assessment of the frequency and severity of obsessions and compulsions. Total scores range from 0 (*non-clinical*) to 40 (*extreme*), and scores ≥ 16, which indicates clinically significant OCD symptoms, were required for study entry. The Y-BOCS has excellent psychometrics properties including reliability and construct validity^{18,23–25}.

Clinical Global Improvement Scale (CGI⁹)—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*) to 7 (*extremely ill*). The CGI has been employed successfully in past OCD clinical trials (e.g.,^{18–19, 26–28}).

Quality of Life Enjoyment and Satisfaction Questionnaire (QLES-Q²⁹)—The QLES-Q is a 16-item self-report measure in which statements relating to life satisfaction and functioning are rated on a 5-point Likert scale, with higher scores representing better quality

of life. This measure includes items related to satisfaction of physical health, mood, work, and social/family relationships. We used the total percent score, by transforming raw scores into a maximum possible score percentages. The QLES-Q is a valid and reliable measure of quality of life among both healthy and OCD subjects³⁰.

Social Adjustment Scale—Self-Report (SAS-SR³¹)—The SAS-SR is a 54-item self-report questionnaire that is used to assess performance in several areas of functioning, including work, academic, social, and family. Mean scores (sum of all items divided by the number of items completed), range from 1.0–5.0, with higher scores indicating greater impairment. The SAS-SR is a validated measure³², and has been found to have adequate reliability³³.

Examining Response, Remission and Wellness

Analyses were completed using all participants with available pre- and post-treatment data. This pooled sample (45.8% female, $M_{age} = 36.8$, $SD = 12.7$) identified as Caucasian (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—Using the CGI improvement scale (CGI-I), scores of 1 (very much improved) or 2 (much improved) were used to indicate response, as previously used in research^{11–14}. To examine the Y-BOCS reduction most predictive of treatment response, the percent reduction from pre- to post-treatment were coded by increments of five percent ranging from reduction 5% to 70%.

Defining Remission—Using the severity scale of the CGI (CGI-S), scores ranging from 1 (*normal, not ill at all*) to 3 (*mildly ill*) were used to indicate remission. This is a standard cutoff that has been used previously used in comparable OCD studies^{12–14}. Raw score cutoffs ranged from Y-BOCS scores 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 quality of life and daily functioning that was in the range of well-functioning individuals³⁴. Raw post-treatment Y-BOCS scores ranging from 5 to 20 were used as the test cutoffs. As the criterion measures, the CGI-S scores of 1 through 3 were used as the gold-standard criterion for OCD remission. Next, measures of quality of life and daily social functioning (QLES-Q and SAS-SR, respectively) were dichotomized and examined in relation to each Y-BOCS cutoff value. The Q-LESQ and SAS-SR were administered in two studies^{19,21} ($n = 159$), so this reduced sample was used for the wellness analyses. Good quality of life was defined as a post-treatment QLES-Q scores 68.91. This criterion was based on the estimated mean for healthy control participants ($M = 78.91\%$; $SD = 13.04$;¹) and the recommended normal range of $\pm 10\%$ from the mean (as proposed by Rapaport et al.³⁵). High daily social functioning was defined as a SAS-SR score 1.31. This criterion was based on the mean for healthy controls ($M = 1.57$; $SD = 0.26$;¹) and a range of ± 1 SD from the mean (as proposed by Weissman et al.³²).

A composite “wellness” variable was computed from all three criteria measures, with one point assigned for each outcome: remission, good quality of life, and high 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 correlation 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 kappa statistic of the Y-BOCS in relation to the criterion outcomes (CGI, QLES-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 negative / (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 Kraemer³⁵ weighted kappa coefficients [$k(0.5)$] were used to correct for chance agreement between the test and the criterion measure by adjusting for base rate rater agreement in the sample.

Results

Descriptive Overview

At pre-treatment, participants presented with severe symptoms of OCD: Y-BOCS scores fell in the severe range ($M = 25.90$, $SD = 4.42$), the CGI-Severity scores were “markedly ill” ($M = 4.98$, $SD = 0.79$), scores on the QLES-Q ($M = 55.97$, $SD = 15.49$) were low, and SAS-SR ($M = 2.19$, $SD = .45$) were high. At post-treatment, the degree of improvement and symptom reduction in OCD, quality of life and adaptive functioning greatly varied, as evidenced by large standard deviations: OCD symptoms reduced on average by 32.83% ($SD = 30.1$), improvement ranged from “minimally” to “much” improved on the CGI-I ($M = 2.57$, $SD = 1.20$), OCD severity was rated as moderate by the Y-BOCS ($M = 17.40$, $SD = 8.30$) and CGI-S ($M = 3.76$, $SD = 1.39$), QLES-Q ($M = 64.14$, $SD = 17.05$) remained lower than healthy controls, and SAS-SR ($M = 1.99$, $SD = .47$) was elevated. All post-treatment predictor and criterion measures were inter-correlated (p 's < .001; see Table 1). The Y-BOCS was strongly associated with both CGI scales (r 's = .78 – .93) and moderately associated with the Q-LESQ ($r = -.57$) and SAS-SR ($r = .49$). Note: negative value reflects the inverse in scoring between Y-BOCS and Q-LESQ; higher values on the Q-LESQ indicate better quality of life and lower values on the Y-BOCS indicate lower OCD symptom severity).

Treatment Response

According to the criterion measure (i.e., CGI-I scores ranging from 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 kappa coefficient values (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 non-responders were correctly identified as non-responders.

Symptom Remission

According to the criterion measure (i.e., CGI-S scores ranging from 1 [*normal, not ill at all*] to 3 [*mildly ill*]), 41.7% of subjects achieved OCD symptom remission post-treatment. As shown in Table 3, post-treatment Y-BOCS scores of 13 and 14 were most reliably related with symptom remission, as evidenced by efficiency values of 0.96. Weighted kappa values were highest at a Y-BOCS score of 14 (.92). At this score, sensitivity (0.93) and specificity (0.98) were both high, and nearly all (97%) of true remitters and non-remitters (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 (i.e., Y-BOCS, QLES-Q and SAS-SR) and then the composite wellness variable. A score 14 was determined to be best predictive of symptom remission (as reported above). A Y-BOCS score 16 or 17 was most reliably related to quality of life (QLES-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. A score 12 and 13 was associated with the highest efficiency value (0.86 and 0.85, respectively) and weighted kappa coefficient values approximately equaling 0.57 at both cutoffs. These kappa values are indicative of moderate agreement. At a cutoff 13, there was equal balance between high sensitivity and specificity (0.85), and 53% of those who achieved wellness were correctly identified as wellness attainers, and 97% of those who did not achieve wellness were correctly identified as such. At a cutoff 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 cutoff score of 12 was selected as the most appropriate cutoff for “wellness” based on high efficiency and specificity, 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 non-responders. 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 non-remitters 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 (e.g., sensitivity and specificity) in order to maximize the translation of empirical research findings to the clinical setting.

Perhaps most notably, a post-treatment Y-BOCS score of 12 was optimally associated with the combination of minimal OCD severity and life satisfaction and adaptive functioning in well-functioning ranges, 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}, so 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) large clinical sample, 2) use of gold-standard, clinician-administered assessment measures, and 3) inclusion of participants who received different interventions for OCD, including EX/RP alone (14.2%), medication only (24.3%), a combination (38.2%), SMT 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 post-treatment. Second, this study focused on post-treatment outcome, and longer-term wellness (“recovery”) was not assessed. We recommend that future studies evaluate these criteria in long-term outcome research³⁶. Third, the definition for “wellness” used in the current study did not include a measure of depression⁶ although the Q-LESQ 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. Lastly, while the observed kappa values for the wellness analyses were moderate in size³⁷, they were lower than those found for response and remission analyses, which were found to have substantial agreement. This might in part be related to the fact that both clinician-administered (CGI-S) and self-report (Q-LESQ and SAS-SR) data were used in the wellness analysis whereby increasing measurement error (i.e., decreasing precision in detecting the criterion outcome). Alternatively, it is possible the wellness cutoff is truly a less reliable outcome, however this 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.

Acknowledgments

This research was supported in part by grants from the National Institute of Mental Health [R01 MH-45404 (E. B. F.), R01 MH-45436 (M.R.L. and H.B.S.), K23 MH-01907 (H. B. S.), and R34 MH071570 (H. B. S)].

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Clinical Points

- The results indicate using a Y-BOCS score of 12 or less to indicate wellness (i.e., OCD symptoms remission, good quality of life satisfaction and enjoyment, and adaptive functioning)
- The Y-BOCS is the gold-standard clinician-administered assessment tool for evaluating OCD symptom severity and can also be used as a proxy for overall wellness.

Table 1

Correlations between Post-Treatment Predictor and Criterion Variables.

Variable	1.	2.	3.	4.	5.
1. Y-BOCS	1	.82*	.93*	-.57*	.49*
2. CGI-I		1	.78*	-.51*	.36*
3. CGI-S			1	-.55*	.47*
4. Q-LESQ				1	-.62*
5. SAS-SR					1

*
p < .001

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

Table 2

Signal Detection Analysis of Predicting Response to Treatment at Various Y-BOCS Percent Reduction Cutoff Points

Y-BOCS % reduction	Sensitivity	Specificity	PPV	NPV	Efficiency	Kappa(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

Note. Y-BOCS = Yale-Brown Obsessive Compulsive Scale; PPV = Positive Predictive Value; NPV = Negative Predictive Value; Grey bar denotes the Y-BOCS cutoff score with strongest signal detection properties.

Table 3
Signal Detection Analysis of Predicting Remission to Treatment at Various Y-BOCS Raw Cutoff Points

Y-BOCS cutoff	Sensitivity	Specificity	PPV	NPV	Efficiency	Kappa(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

Note. Y-BOCS = Yale-Brown Obsessive Compulsive Scale; PPV = Positive Predictive Value; NPV = Negative Predictive Value; Grey bar denotes the Y-BOCS cutoff score with strongest signal detection properties.

Table 4

Signal Detection Analysis of Predicting Composite Wellness Criterion at Various Y-BOCS Raw Cutoff Point

Y-BOCS cutoff	Sensitivity	Specificity	PPV	NPV	Efficiency	Kappa(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

Note. Y-BOCS = Yale-Brown Obsessive Compulsive Scale; PPV = Positive Predictive Value; NPV = Negative Predictive Value; See Method Section for Wellness Criterion; Grey bar denotes the Y-BOCS cutoff scores with strongest signal detection properties.