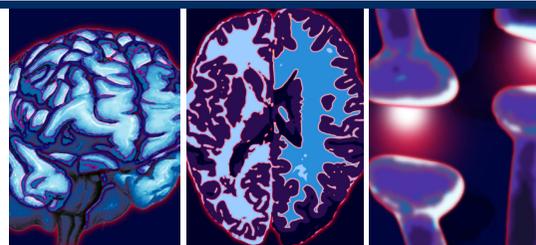


REVIEW

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Assessment scales for obsessive–compulsive disorder



Eric A Storch[†], Kristen Benito¹ & Wayne Goodman²

Practice points

- In addition to unstructured clinical interviews, there are a number of valid clinician-administered and patient-report scales that can be used to assess presence of obsessive–compulsive symptoms and their associated severity.
- Patient-report measures can be easily integrated into clinical practice to assess symptom presence and severity, and monitor treatment progress.
- Although clinician-administered measures such as the Yale–Brown Obsessive–Compulsive Scale take modest time to administer, they are considered the gold standard for assessing obsessive–compulsive symptom presence and severity.
- The heterogeneity of obsessive–compulsive disorder requires an array of scales to assess relevant constructs, such as insight, cognitive factors and family accommodation. Such scales should be considered in the assessment of people with obsessive–compulsive disorder.
- Multi-informant assessment approaches that include measures completed by clinicians, patients, and significant others are likely to be most informative.

SUMMARY Numerous assessment scales have been introduced in the obsessive–compulsive disorder (OCD) literature. Such scales have considerable clinical utility because OCD is often misdiagnosed and there is a need to monitor treatment course and response. This article briefly reviews adult OCD assessment scales, specifically clinician-administered interviews and patient-report measures. The manuscript concludes with a discussion of future directions.

Obsessive–compulsive disorder (OCD) is a relatively common anxiety disorder affecting 1–2% of adults and children [1]. Affected patients experience obsessions (i.e., intrusive, anxiety-provoking thoughts) and/or

compulsions (i.e., maladaptive, repetitive behaviors) [2]. By nature, the clinical presentation of OCD is quite heterogeneous. Patients present with a wide array of obsessions and compulsions, including those related

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to contamination, checking, taboo thoughts, hoarding, and symmetry/ordering [3,4]. Other clinical constructs also hold relevance in OCD, including degree of insight, pathological doubt and uncertainty, avoidance, and inflated sense of responsibility [5]. Symptoms tend to run a chronic course in the absence of treatment, and OCD differentiates itself from other anxiety disorders by virtue of heightened impairment levels [6].

Accurate assessment of obsessive–compulsive symptoms is necessary to ensure optimal therapeutic outcome. Two treatments have established efficacy: cognitive-behavioral therapy (CBT) with exposure and response prevention, and antidepressant medications [7,8]. Yet, access to such interventions is dependent on accurately determining that a person has clinically significant obsessive–compulsive symptoms. Furthermore, psychometrically sound measures are required to precisely measure the effectiveness of interventions. Finally, the heterogeneous clinical presentation of OCD requires an array of symptoms and comorbid presentations to be fully assessed. With these points in mind, this review focuses exclusively on providing a brief overview of commonly used assessment scales in adult OCD (see Merlo *et al.* [9] for a review of child scales). Although there have been other reviews on OCD assessment instruments (e.g., [10]), these reports were quite long and may have been geared for researchers rather than applied clinicians. In addition, several scales discussed in the present review (e.g., Yale–Brown Obsessive Compulsive Scale [Y-BOCS]-II) have not received attention in past assessment reviews. Through increased knowledge of available assessment scales, it is our contention that more patients may be identified and treated with appropriate psychological and psychiatric interventions, with the ultimate goal of improving patient outcomes.

Method

Electronic literature searches (all years to December 2010) of PUBMED, PsychINFO, MEDLINE, EMBASE, and Google Scholar were conducted to identify relevant measures for inclusion. Key words included: the specific names of known measures (e.g., ‘Y-BOCS’), ‘obsessive compulsive disorder’, ‘assessment’, ‘measurement’, ‘reliability’, ‘validity’, ‘factor analysis’ and ‘self-report’. Furthermore, the reference sections of psychometric articles of

OCD measures were reviewed to identify measures not found through the aforementioned search engines. Finally, OCD treatment outcome studies were examined for measures that may not have been identified through the aforementioned methodology. See **Table 1** for a discussion of strengths and considerations in commonly used clinician and self-report measures of obsessive–compulsive symptom presence and severity.

Clinician-administered measures

Given the importance of evidence-based assessment, structured/semi-structured clinician-administered interviews and patient-/care-giver-report measures are increasingly used. Clinician-administered measures (e.g., diagnostic interviews and symptom severity scales) provide detailed information about the nature and severity of symptoms and ensure that patients may elaborate or clarify items [11]. However, this class of measures requires relatively extensive training and takes considerable time to implement in research and clinical practice (with the possibility of no reimbursement in the latter). Among diagnostic interviews, the Anxiety Disorders Interview Schedule for DSM-IV (ADIS) [12] and Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) [13] are widely used to establish primary, comorbid, and differential diagnoses among adults with OCD and other psychiatric disorders.

Besides diagnostic measures, there are several OCD-specific scales that are widely used to measure OCD symptom severity. Most notable are the Y-BOCS and Y-BOCS-II. The Y-BOCS [14,15] is a semi-structured, clinician-administered measure that has been used as the primary outcome across virtually all contemporary clinical trials in OCD. It consists of two primary sections: the Symptom Checklist and Severity Scale. The Symptom Checklist assesses the presence of 64 obsessions and compulsions, both currently and in the patient’s past. The Severity Scale includes ten items anchored on a five-point scale that assesses distress, frequency, interference, resistance, and symptom control of obsessions and compulsions. Three primary Severity Scale scores are derived: Obsessions Severity Score (range = 0–20), Compulsions Severity Score (range = 0–20), and Total Score (range = 0–40). Despite strong psychometric properties including good reliability (i.e., internal consistency and inter-rater) and construct

Table 1. Strengths and considerations in commonly used clinician and self-report measures of obsessive–compulsive symptom presence and severity.

Measure	Format	Description	Strengths	Considerations	Ref.
Y-BOCS/ Y-BOCS-II	Clinician	Assesses obsessive–compulsive symptom presence and severity	Widely used across clinical studies Generally strong psychometric properties Y-BOCS-II addresses some criticisms of Y-BOCS	Modest discriminant validity with depressive and anxiety symptoms Inconsistent findings on the Y-BOCS factor structure Requires training and takes a modest amount of time to administer	[14–16]
NIMH-GOCS	Clinician	One-item rating of obsessive–compulsive symptom severity (1–15 scale)	Simplicity Adequate psychometric properties	Provides limited information about symptom presentation and severity	[18]
OCI-R	Self-report	Assesses self-reported obsessive–compulsive symptoms across six dimensions in terms of associated distress	Well-researched measure with established psychometric properties Assesses multiple symptom domains Ease of administration	May be better conceptualized as a measure of severity of specific dimensions versus overall obsessive–compulsive severity May assess symptom presence rather than severity Total score may be affected by differential ratings across dimensions	[28]
FOCI	Self-report	Assesses symptom presence and associated severity on a unitary scale	Strong psychometric properties Ease of administration	Psychometrics not established by independent research group	[32]
Y-BOCS-self-report	Self-report	Self-report measure that corresponds to the Y-BOCS	Strong psychometric properties	Somewhat lengthy to complete May not be suited as a screening measure given poor specificity	[34]
LOI-Survey Form	Self-report	Assesses presence of common obsessive–compulsive symptoms	Has been widely used in the past and translated into several languages	Fair-to-poor psychometric properties overall Limited treatment sensitivity	[37,38]
DOCS	Self-report	Assesses severity of four obsessive–compulsive symptom dimensions	Initial psychometrics are strong Ease of administration	Further study of psychometrics and treatment sensitivity are needed	
VOCI	Self-report	Assesses severity of obsessive–compulsive symptoms across varied domains	Strong psychometric properties Ease of administration	May be better conceptualized as a measure of severity of specific dimensions versus overall obsessive–compulsive severity Total score may be affected by differential ratings across dimensions	[35]
SCOPI	Self-report	Assesses degree of interference/distress linked to varied obsessive–compulsive symptoms	Good psychometric properties Ease of administration	Lack of data about treatment sensitivity	[44]
PI-R	Self-report	Assesses degree of disturbance linked to common obsessive–compulsive symptoms	Good psychometric properties Ease of administration Translated into several languages	Hoarding symptoms are not assessed	[45,46]

DOCS: Dimensional Obsessive–Compulsive Scale; FOCI: Florida Obsessive–Compulsive Inventory; LOI: Leyton Obsessional Inventory; NIMH-GOCS: National Institute of Mental Health Global Obsessive Compulsive Rating Scale; OCI-R: Obsessive–Compulsive Inventory-Revised; PI-R: Padua Inventory-Revised; SCOPI: Schedule of Compulsions, Obsessions, and Pathological Impulses; VOCI: Vancouver Obsessional Compulsive Inventory; Y-BOCS: Yale–Brown Obsessive Compulsive Scale.

validity (i.e., convergent and divergent validity, treatment sensitivity, known groups validity), the Y-BOCS has several shortcomings including:

- Difficulty assessing more severe cases
- The item that assesses resistance against obsessions has yielded poor psychometric properties
- Unclear conceptualization of active avoidance into ratings

With these conceptual issues in mind, the Y-BOCS-II [16] was developed. While relatively new to the field the initial psychometric properties are promising. These include both strong reliability (i.e., internal consistency, test-retest and inter-rater) and construct validity (i.e., convergent and divergent validity and factorial validity) [16,17].

In addition to the Y-BOCS/Y-BOCS-II, the National Institute of Mental Health (NIMH) Global Obsessive Compulsive Scale (GOCS) and Clinical Global Impressions (CGI)–Severity Scale [18] have been used as one-item clinician ratings of OCD symptom severity and overall illness severity. Regarding the NIMH-GOCS, severity ratings are anchored on a 1–15 Likert-type scale with detailed descriptions of numeric ratings. The CGI-Severity Scale provides descriptions about overall illness severity that the clinician uses to rate their impression of overall psychopathology. While advantages of each include the brevity, wide use, and good psychometric properties, each fails to provide detailed clinical information about the patient's symptom severity.

The Dimensional Y-BOCS (DY-BOCS) [19] was derived from the Y-BOCS and assesses the severity of six symptom dimensions separately (i.e., contamination, hoarding and sexual/religious obsessions). Separate severity scores are derived for each dimension, which may hold advantages for assessing treatment response in a particular symptom domain. The DY-BOCS has demonstrated adequate psychometric properties in its initial study; however, the limited available data suggest that its reliability and validity should be tested further.

There exist several clinician-rated measures that assess ancillary components of OCD such as family accommodation and insight. The Family Accommodation Scale (FAS) [20,21] is administered to a patient's significant other (i.e., parent, spouse) to assess family accommodation of obsessive–compulsive symptoms. While two slightly different versions of this measure exist, both have demonstrated robust psychometric properties in adults and youth with OCD [20–23]. The Brown Assessment of Beliefs Scale (BABS) [24] is a semi-structured clinician interview that assesses delusional thinking and patient insight. This assessment begins with two initial questions regarding beliefs that are of the most concern to the patient. The remainder of the BABS consists of

seven questions assessing conviction of beliefs, perception of other's views of beliefs, explanation of differing views, fixity of ideas, attempt to disprove ideas, insight, and a supplemental item assessing ideas/delusions of reference. Total scores ≥ 12 indicate poor insight [25]. The BABS has demonstrated excellent inter-rater and test-retest reliability, and a high degree of internal consistency [24–26]. The Overvalued Ideas Scale (OVIS) [27] is an 11-item semi-structured clinician interview that taps into the degree of overvalued ideation by the patient (e.g., strength of belief and resistance against belief) over the past week. The OVIS allows for refined questioning of the respondent by the examiner, and demonstrates good reliability (i.e., excellent internal consistency and 4-week test-retest reliability) and validity properties (i.e., moderate-to-strong correlation with the Y-BOCS) [27].

Patient-report measures

A number of self-administered measures of obsessive–compulsive presence and/or severity are available. Advantages of such measures include their practicality, brevity, relative accuracy and minimal patient burden. Disadvantages include lack of independent verification of responses, potential for response bias, lack of translation into certain languages or applicability to those with low reading level and a reduced flexibility compared with clinician-administered assessments.

Widely used, the Obsessive–Compulsive Inventory-Revised (OCI-R) [28] was derived from the 42-item Obsessive–Compulsive Inventory [29] to reduce subject burden and item redundancy. The OCI-R contains 18 items broken down into six factorally derived subscales: washing, checking, ordering, obsessing, hoarding, and mental neutralizing. Items are rated based on the degree to which they cause the respondent distress (0 = not at all, 4 = extremely). Although the OCI-R has shown generally good psychometric properties (i.e., excellent reliability and modest convergence with the Y-BOCS [28,30]), there is concern that the measure assesses symptom presence rather than severity, and that the OCI-R total score may misrepresent overall symptom severity in some patients (e.g., a person with severe distress in only one domain will look less 'severe' than a person with modest symptoms across multiple domains) [31].

The Florida Obsessive Compulsive Inventory (FOCI) [32] is a 25-item measure of symptom presence (items 1–20) and severity (items 21–25). The Symptom Checklist assesses the presence of 20 commonly occurring obsessions and compulsions. The Severity Scale assesses five dimensions of severity: time occupied, interference, distress, degree of avoidance and degree of control. The FOCI has demonstrated good psychometric properties including strong reliability (i.e., internal consistency) and construct validity (i.e., convergence with the Y-BOCS and treatment sensitivity) [32,33]. While the availability of psychometric data is more limited relative to the OCI-R, the Severity Scale corresponds strongly with clinician ratings of obsessive–compulsive severity (i.e., Y-BOCS-Severity Scale) suggesting that this measure may serve as a good patient-report assessment of symptom severity.

The Y-BOCS-Self Report (Y-BOCS-SR) [34] has a similar composition to the Y-BOCS [14,15] in terms of a symptom checklist and severity scale. The presence of 58 obsessions and compulsions are reported, followed by the respondent endorsing three primary obsessions and compulsions each. With these primary symptoms in mind, the respondent answers ten questions pertaining to the time occupied by obsessions/compulsions, interference due to obsessions/compulsions, distress related to obsessions/compulsions, resistance against obsessions/compulsions, and degree of control over obsessions/compulsions [34]. Like other patient-report measures, the Y-BOCS-SR has strong psychometric properties including reliability (i.e., internal consistency and test-retest), and construct validity (i.e., good convergence with clinician-rated obsessive–compulsive symptom severity, diagnostic sensitivity). While clinically informative, the Y-BOCS-SR may take up to 30 min to complete and, thus, there is modest patient burden in applied clinical practice relative to other patient-report scales.

The Vancouver Obsessional Compulsive Inventory (VOCI) [35] is a revision of the Maudsley Obsessional Compulsive Inventory (MOCI) [36]. The MOCI was targeted for revision given concerns regarding the dichotomous response format, modest psychometric properties (e.g., treatment insensitivity), and item redundancy [35]. The VOCI demonstrates strong psychometric properties including excellent reliability (i.e., internal consistency, 47-day test-retest reliability) and construct validity (i.e., good convergence with self-reported obsessive–compulsive symptom severity,

modest divergence with self-reported depressive and non-OCD anxiety symptoms) [35]. However, in the original validation study, the VOCI showed a weak relationship with clinician-rated obsessive–compulsive severity, which may be due to the VOCI total scale reflecting scores across multiple symptom domains.

The Leyton Obsessional Inventory Survey Form (LOI-SF) [37,38] is one of the original assessment patient-report scales to be published. It contains 30 items that assess the presence of obsessive–compulsive symptoms. Interestingly, few psychometric properties for this measure have been published in clinical samples [37] and some results for the child version of this measure have suggested poor reliability and validity [39–41].

The Dimensional Obsessive–Compulsive Scale (DOCS) [42] is a recently published 20-item measure that assesses the severity of four major symptom dimensions (contamination, responsibility for harm, unacceptable obsessional thoughts and symmetry/completeness/exactness) on time occupied, avoidance, distress, functional impairment and difficulty disregarding obsessions/compulsions. The uniqueness of the DOCS is that it considers severity as a function of symptom typology, which has received recent increased clinical attention [43]. Initial psychometric properties are strong, including reliability (i.e., internal consistency and 12-week test-retest reliability) and construct validity (i.e., convergence with other metrics of obsessive–compulsive severity, divergence with measures of depression and overall anxiety, treatment sensitivity and factorial stability).

The Schedule of Compulsions, Obsessions, and Pathological Impulses (SCOPI) [44] consists of a 45-item scale that assesses varied symptom dimensions (i.e., checking, cleanliness, hoarding and pathological impulses). The SCOPI has sound psychometric properties overall (i.e., good internal consistency and test-retest reliability, construct validity) although its ability to detect treatment effects is unknown.

The Padua Inventory [45] assesses 60 self-reported obsessions and compulsions on a five-point scale reflecting the degree of disturbance associated with that symptom. The measure was later revised, into the Padua Inventory-Revised [46], which consists of 39 items assessing common obsessions and compulsions. Generally good psychometric properties exist for both forms (e.g., high internal consistency, convergent validity, known groups validity) [45,46].

Ancillary measures

The etiology and maintenance of OCD is multi-determined, involving an interplay of behavioral, biological, genetic, cognitive, immune and environmental factors [47]. Given the role of cognitive factors in OCD and other anxiety disorders, several measures have been created that assess the manner in which people make meaning of cognition and the relevance of this to OCD. The Interpretation of Intrusions Inventory [48] consists of 31 items that assess the respondent's interpretations of unwanted, distressing obsessions and compulsions. The Thought–Action Fusion Scale [49] measures the tendency to believe that thoughts are equivalent to actions. The Obsessive Beliefs Questionnaire is an 87-item self-report measure of OCD-related beliefs [50]. The Frost Indecisiveness Scale is a 15-item self-report scale to assess fears regarding making the wrong decision and positive attitudes about decision-making [51]. The Responsibility Attitude Scale is a 26-item questionnaire designed to assess the respondent's sense of responsibility [52]. The Responsibility Interpretations Questionnaire assesses the frequency of, and belief in, specific interpretations of intrusive thoughts about possible harm [52]. Across each measure, generally good psychometric properties have been reported. Finally, measures of functional impairment related to psychopathology such as the Sheehan Disability Scale [53] may be useful as well as assessments of quality of life (e.g., Short-Form 36 [54,55]).

Conclusion & future perspective

Use of appropriate assessment scales is a critical component in the assessment and treatment of OCD patients. Which measure to select should be based on the strengths and weaknesses of the respective scale, suitability of purpose (e.g., assessing outcome vs screening for symptom presence), and context or setting (e.g., research and clinical practice). For example, research practice likely involves the use of clinician-administered measures with patient-report scales used in an adjunctive fashion. Nonresearch clinical settings, by contrast, may utilize patient-report scales given their brevity; positive endorsements may signal the need for more comprehensive assessment procedures.

There are a number of future directions and considerations we highlight in the realm of OCD assessment scales. First, increased attention is given to assessing OCD symptom

dimensions given potential etiological and treatment implications. For example, certain symptom dimensions have been associated with attenuated psychotherapy and/or pharmacotherapy response [43,56], different patterns of neural activity [57–59], and strength of genetic loading [60,61]. With this in mind, dimension-specific treatments have been developed in hope that tailoring interventions to the individual will yield better outcomes [62,63]. Second, extending extant measures used in adults to youth with OCD is needed. Developmentally appropriate measures of insight, cognitive processes, and parent-rated symptom severity scales are not available. Third, considerable debate exists regarding the diagnostic classification of hoarding within OCD. It is widely recognized that pathological hoarding frequently exists separate from OCD [64,65] and a separate hoarding disorder is planned for the DSM-5. This creates a conundrum for assessment scales that include assays of hoarding symptoms within their total score (e.g., OCI-R). It may be necessary to revise and re-norm such instruments. Finally, the next phase of treatment research for OCD will require dissemination of CBT into the community (e.g., community mental health centers and primary care settings). This shift in treatment focus requires continued adaptation of assessment tools for use in those settings (e.g., increased need for brevity, careful consideration of comorbidity and evaluation of multiple life stressors).

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