Children's Yale-Brown Obsessive Compulsive Scale: Reliability and Validity

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ABSTRACT

Objective: To evaluate the reliability and validity of a semistructured measure of obsessive-compulsive symptom severity in children and adolescents with obsessive-compulsive disorder (OCD). **Method:** Sixty-five children with OCD (25 girls and 40 boys, aged 8 to 17 years) were assessed with the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS). Interrater agreement was assessed by four raters in a subsample ($n = 24$). Discriminant and convergent validity were assessed by comparing CY-BOCS scores to self-ratings of depression, anxiety, and obsessive-compulsive symptoms. **Results:** Internal consistency was high, measuring .87 for the 10 items. The intraclass correlations for the CY-BOCS Total, Obsession, and Compulsion scores were .84, .91, and .66, suggesting good to excellent interrater agreement for subscale and total scores. The CY-BOCS Total score showed a significantly higher correlation with a self-report of obsessive-compulsive symptoms ($r = .62$ for the Leyton survey) compared with the Children's Depression Inventory ($r = .34$) and the Children's Manifest Anxiety Scale ($r = .37$) ($p = .02$ and .05, respectively). **Conclusions:** The CY-BOCS yields reliable and valid subscale and total scores for obsessive-compulsive symptom severity in children and adolescents with OCD. Reliability and validity appear to be influenced by age of the child and the hazards associated with integrating data from parental and patient sources. *J. Am. Acad. Child Adolesc. Psychiatry*, 1997, 36(6):844–852. **Key Words:** obsessive-compulsive disorder, psychiatric disorders in children and adolescents, psychiatric rating scales.

Obsessive-compulsive disorder (OCD) is characterized by the intrusion of unwanted thoughts or disturbing images (obsessions) that are difficult to dislodge and/

or the repetition of routinized behavior (compulsions). The compulsive rituals may be performed to prevent harm, but in some cases, these habits are performed to relieve feelings of subjective discomfort. *DSM-IV* requires that the obsessions, compulsions, or both cause distress and interfere with daily living (American Psychiatric Association, 1994).

Findings from the Epidemiologic Catchment Area program indicate that OCD is more common than previously believed, with a lifetime prevalence of 2.5% in the adult population (Karno et al., 1988). Recent studies in community samples of adolescents have reported similar results, ranging from 1.9% to 3.5% (Flament et al., 1988; Valleni-Basile et al., 1994; Zohar et al., 1992). Finally, reports from clinically ascertained samples have shown that OCD can be fully manifest in childhood and that the clinical picture is similar to that observed in adults (Hanna, 1995; Rasmussen and Eisen, 1992; Riddle et al., 1990; Swedo et al., 1989).

The precise etiology of OCD is unknown, but converging lines of evidence implicate the basal ganglia

and related cortical structures (Insel, 1992). For example, several investigators have reported an unexpectedly high frequency of OCD in individuals with movement disorders such as Tourette's syndrome, Huntington's chorea, and Sydenham's chorea, all of which involve the basal ganglia (Cummings and Cunningham, 1992; Leckman et al., 1992; Swedo et al., 1994). Functional neuroimaging studies have shown increased metabolic activity in the caudate nucleus and related cortical structures such as the cingulate and orbitofrontal regions (Baxter et al., 1992; Rauch et al., 1994).

Issues in the Measurement of Obsessive-Compulsive Symptoms

Common approaches to measuring obsessive-compulsive symptoms include various self-reports, clinician-rated interviews, and clinician-rated global impression scales. Commonly used self-reports include the Leyton Obsessional Inventory (Cooper, 1970) and the Maudsley Obsessive Compulsive Inventory (Rachman and Hodgson, 1980). Although these scales are easy to use, they contain a restricted set of symptom probes and patients may misinterpret one or more items. In addition, these instruments incorporate a mixture of state and trait items, some of which may not be relevant to OCD (Stanley et al., 1993; Steketee, 1993). Clinician-rated global scales such as the Clinician's Global Impression (CGI) scale are also easy to use (Guy, 1976). However, these scales have statistical limitations (Beneke and Rasmus, 1992).

For adults with OCD, the introduction of the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) (Goodman et al., 1989a,b) represents a major advance in the measurement of obsessive-compulsive symptom severity (Steketee, 1993). A considerable body of data attests to the reliability, validity, and sensitivity to change of the original instrument in adult patients with OCD (Goodman et al., 1989a,b; Kim et al., 1990). Although the Y-BOCS (or the children's version of the Y-BOCS) has entered into clinical and research use in children and adolescents (DeVeaugh-Geiss et al., 1992; Hanna, 1995; Leonard et al., 1993; Riddle et al., 1992), data regarding the reliability and validity of this instrument in children and adolescents are lacking.

Accurate and reliable measurement of obsessive-compulsive symptom severity in children and adolescents must overcome several obstacles. First, as with adult patients, obsessions and compulsions may be a secret struggle. Second, children may be less able than adults to distinguish between the distress associated with unwanted thoughts and the urge to perform rituals on one hand and efforts to dislodge such thoughts or refrain from rituals on the other. Third, compared with adults, children may be less able to recognize the excessive nature of their worries and habits or may simply deny the significance of their symptoms (King and Scahill, 1995). Fourth, dependent on cognitive development, children may be less likely to regard their fears as improbable. If so, to avoid anxiety, some children may be reluctant to discuss their symptoms. Finally, the assessment of obsessive-compulsive severity in children and younger adolescents is likely to require reports from both the child and the parent. The complex weighting of inconsistent testimony from each informant requires clinical judgment, which may threaten interrater reliability. The purpose of this study is to evaluate the reliability and validity of the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS).

Description of the CY-BOCS

The CY-BOCS is a modified version of the Y-BOCS, which was developed by Goodman and colleagues for adults with OCD (Goodman et al., 1989a,b). Like the adult version, the CY-BOCS is a 10-item, clinician-rated, semistructured instrument designed to assess the symptom severity of OCD over the previous week. The overall structure, the anchor points, and scoring of the original instrument were retained in the CY-BOCS, but the wording of the probe questions was modified to make them more developmentally appropriate for children and adolescents. For example, the suggested probe for interference in the Obsession subscale is "How much do these thoughts get in the way of school work or doing things with friends?" For the distress item, the suggested probe is "How much do the thoughts bother you?" (A copy of the complete instrument is available on request from Dr. Goodman.)

The CY-BOCS has five primary sections: (1) Instructions, (2) Obsessions Checklist, (3) Severity Items for Obsessions, (4) Compulsions Checklist, and (5) Severity Items for Compulsions. The CY-BOCS also includes a set of investigational items concerning insight, avoidance, indecisiveness, pathological doubting, obsessive slowness, and overvalued ideation, which may be associated with OCD. The reliability and validity

of these items have not been evaluated in adult samples and will not be included in this report.

The Instructions describe the administration and scoring of the CY-BOCS for the clinician using the scale. Unlike the adult instrument, the CY-BOCS often involves two informants: the child and a parent. Depending on age and level of anxiety, the interview may be conducted jointly with the parent and child or sequentially. The clinician conducting the interview is called on to integrate data from all informants into the rating of each item.

The Obsessions Checklist contains a list of commonly endorsed obsessions that are grouped by content area, e.g., aggressive obsessions, contamination obsessions. The presence of a particular obsession, either current (past week) or in the more distant past, is checked. The Compulsions Checklist is also grouped according to content such as washing rituals, checking, and repetitive routines. These checklists are surveyed carefully to identify the most prominent obsessions and compulsions, which are listed as target symptoms.

The severity of the endorsed obsessions, with special emphasis on the target symptoms, is rated on the five Severity Items for Obsessions: time occupied by obsessive thoughts, interference due to obsessive thoughts, distress associated with obsessive thoughts, resistance against obsessive thoughts, and degree of control over obsessive thoughts. Each of these five items is rated on a 5-point, ordinal scale: 0 = none, 1 = mild, 2 = moderate, 3 = severe, 4 = extreme. These values are anchored by a description for each score (e.g., the rating of mild for interference due to obsessive thoughts (item 2) is described as "slight interference with social or school activities, but overall performance not impaired"). The Obsessions Severity Score is obtained by adding the scores for items 1 through 5 (range = 0 to 20).

There are five comparable Severity Items for Compulsions (items 6 through 10), which are also scored from 0 to 4. The Compulsions Severity Score is obtained by adding the scores of items 6 through 10 (range = 0 to 20). Summing the scores for all 10 items yields the CY-BOCS Total score (range = 0 to 40).

METHOD

Setting and Subjects

All 65 subjects received a standard clinical evaluation in the Obsessive Compulsive Disorder Clinic at the Yale Child Study

Center between 1989 and 1995. During the study period, approximately 150 patients younger than 18 years of age were seen in the clinic and received a comprehensive clinical evaluation by a child and adolescent psychiatrist and a child psychiatric nurse practitioner. Of these, 110 received a clinical diagnosis of OCD.

The study sample, which included 65 subjects (40 boys and 25 girls, age range = 8 to 17 years), is a subsample of the 110 children and adolescents who had OCD diagnosed during this period. These 65 children and adolescents received additional evaluation upon entry to various medication trials: both open and placebo-controlled trials (n = 34) (Lombroso et al., 1995; Riddle et al., 1992; Scahill et al., in press), a cognitive-behavioral treatment program (n = 15), and a neuroimaging study (n = 16). Some youngsters participated in more than one project over a period of months or years. Whenever possible, data from the first administration of the CY-BOCS was used in these analyses. Table 1 displays the age and gender distribution of the sample.

Procedures

The study evaluation included semistructured interviews concerning obsessive-compulsive symptoms, tic symptoms, depression, and anxiety. Informants included a parent and the child in the cases of younger patients. Older adolescents were interviewed individually, and additional input was sought from parents as needed.

Diagnosis of OCD. All available materials were assembled for each of the 65 subjects and were reviewed independently by two diagnosticians. Using *DSM-III-R* criteria, the diagnosticians independently assigned the diagnoses of OCD and tic disorder; discrepancies were resolved by consensus (Leckman et al., 1982).

Measures

Revised Children's Manifest Anxiety Scale. The Revised Children's Manifest Anxiety Scale (RCMAS) is a 37-item self-report about general anxiety in children and adolescents. The RCMAS has been standardized by age and gender (Reynolds and Richmond, 1987). The Total score consists of 24 items and is regarded as an index of general anxiety.

Children's Depression Inventory. The Children's Depression Inventory (CDI) is a widely used, 27-item self-report of depressive symptoms for children and adolescents (Kovacs, 1985). Raw scores range from 0 to 54; a score of 16 is often cited as the threshold for depression (Smucker et al., 1986). However, the specificity of the CDI for the diagnosis of depression has been questioned, and some investigators have suggested that it measures emotional distress more generally (Costello and Angold, 1988).

TABLE 1
Age and Gender Distribution of Children and Adolescents With Obsessive-Compulsive Disorder

Age Group	Male	Female	Total
8 to ≤11 yr	15	9	24
>11 to ≤15 yr	17	13	30
>15 to 18 yr	8	3	11
Total	40	25	65

Note: χ^2 (gender and age group) = 0.89, 2 *df*, *p* = .6.

Leyton Survey. The Leyton Survey is a 20-item self-report that was derived from earlier versions of the Leyton Obsessional Inventory (Berg et al., 1986, 1988; Cooper, 1970). This 20-item version has been used in a large community sample of adolescents and found to be a useful method of screening for OCD (Flament et al., 1988). The Leyton Survey yields three scores: Yes score (the symptom count); Interference, which is the sum of the 0 to 3 rating for all Yes responses; and the Total score, which is the sum of both scores. This version of the Leyton was selected because prior versions include a dimension for Resistance that is conceptually incompatible with the notion of resistance in the original Y-BOCS (Goodman et al., 1989b; Kim et al., 1990). Because analysis revealed that the Yes score and Interference score were highly correlated with the Leyton Total (r = .94 and .98, respectively), only the Total score was compared with the CY-BOCS Total.

Child Behavior Checklist. The Child Behavior Checklist (CBCL) is a 118-item questionnaire that is completed by a parent about the child (Achenbach and Edelbrock, 1983). In addition to the 118 questions about specific behaviors and psychiatric symptoms, the CBCL also includes a series of questions concerning the child's academic performance, social competence, and involvement in age-appropriate activities. This instrument has undergone extensive psychometric analysis, and the norms have recently been revised by age and gender for both the general population and clinical populations (Achenbach, 1991). The CBCL yields several scores: three competency scores (School, Social, and Activities), eight narrow-band behavior problem scores, a Total Problem score, and two broad-band scales reflecting Internalizing and Externalizing symptoms.

Analyses

Reliability was evaluated by computing the internal consistency (Cronbach's α) of the CY-BOCS on all 65 interviews. Cronbach's α is a correlational index that reflects the homogeneity of item scores with the total score (Cronbach, 1951).

To assess interrater agreement, 24 interviews were videotaped and scored by four raters. Twenty-one of these videotaped interviews included both the child and a parent for at least part of the session. Three interviews, which involved older adolescents, included only the patient. The original interviews were conducted by one of two clinicians (L.S. and M.M.H.), who then scored the interviews conducted by the other rater. Two additional raters (M.A.R. and S.I.O.) scored all 24 interviews from the videotaped record.

The Obsession subscale, the Compulsion subscale, and the CY-BOCS Total score were treated as continuous variables and analyzed by intraclass correlation (Shrout and Fleiss, 1979). The reliability of the individual Obsession and Compulsion items was estimated by computing a κ coefficient for each item across all four raters (Fleiss, 1981). The κ coefficient provides an estimate of agreement for categorical ratings beyond what is expected by chance.

The capacity of the CY-BOCS to reflect treatment effects was evaluated by comparing change from baseline to endpoint in a subset of 17 children and adolescents who participated in one of two double-blind, crossover trials with fluoxetine (Riddle et al., 1992; Scahill et al., in press). These two clinical trials included a total of 28 patients, but only 17 were children or adolescents with OCD. Symptom change as measured by the CY-BOCS Total score was compared with the change in the CGI using McNemar's test (Fleiss, 1981).

Discriminant validity of the CY-BOCS was assessed by correlating the Total score with the standardized RCMAS Total score and the raw CDI score. To evaluate convergent validity, the CY-BOCS

Total score was correlated with the raw total score on the Leyton. The difference between these correlations was analyzed by Fisher's r to z transformation (Cohen and Cohen, 1975). To examine the impact of OCD symptom severity on overall impairment, we conducted an exploratory analysis comparing standardized CBCL competency scores with CY-BOCS Total scores stratified by severity.

RESULTS

The 65 children and adolescents had a mean age of 12.1 ± 2.66 years (range = 8 to 17 years) and a mean age of onset of 9.1 ± 2.40 years. There was no difference in mean age between boys and girls (means for boys and girls were 12.3 ± 2.83 and 11.7 ± 2.37 years, respectively). Likewise, the mean age of onset was similar for boys (9.3 ± 2.53 years) and girls (8.9 ± 2.22 years) (t =.57, df = 63, p = .57). The mean CY-BOCS Total score for all 65 subjects was 19.8 ± 7.55; boys had a significantly higher mean (21.3 ± 6.51 for boys versus 17.4 ± 8.56 for girls; t = 2.08, df = 63, p = .04). Nearly 85% (n = 55) of the youngsters came from intact families and 69% (n = 45) were from the state of Connecticut (Table 2).

Reliability

Cronbach's α coefficient indicated a high level of internal consistency for the 10 items with the CY-

TABLE 2
Demographic Characteristics of 65 Children and Adolescents
With Obsessive-Compulsive Disorder

Characteristic	No.	%
Sex		
Male	40	62
Female	25	38
Age of onset		
<8 yr	28	43
9–12 yr	32	49
13–16 yr	5	8
Geographic location		
Within state	45	69
Neighboring state	12	19
U.S.	6	9
Outside U.S.	2	3
Living situation		
Intact family	55	85
Parent & stepparent	3	5
Single parent	6	9
Relative/adoptive	1	1
Social status		
I (high)	19	29
II	33	51
III	12	19
IV	1	1

BOCS Total score (N = 65, α = .87). In addition, the five obsession items and the five compulsion items were strongly correlated with their respective subscales, as evidenced by an average Pearson correlation of .87 for the five obsession items with the Obsession subscale (range = .73 to .92, all p values < .0001). Likewise, the five compulsion items had a mean correlation of .81 with the Compulsion subscale (range = .73 to .88, all p values < .0001). By contrast, the average correlation for obsession items with the Compulsion subscale was .57 and .53 for compulsion items with the Obsession subscale, suggesting some degree of independence between the two subscales.

Table 3 displays the mean and range for the Obsession subscale, Compulsion subscale, and CY-BOCS Total score for the 24 interviews that were scored by the four raters. The gender distribution (14 boys and 10 girls), the mean Total CY-BOCS score of 21.5 ± 5.99, and the mean age of 11.7 ± 2.81 were not significantly different from those of the larger sample.

The intraclass correlation coefficient (ICC) for the four raters was .91 for the Obsession subscale, .66 for the Compulsion subscale, and .84 for the CY-BOCS Total score, indicating good agreement for the Compulsion subscale and excellent agreement for the Obsession subscale and the Total score (Table 4). Inspection of the subscales showed that the range of scores was wider for obsessions than compulsions across the four raters. All raters agreed that two subjects had no obsessive symptoms (i.e., Obsessions subscale score = 0), but no subjects had a Compulsive subscale score of 0 across all raters.

This group of 24 was stratified by age at the median of 11 years: 13 subjects were 11 years of age or younger, and 11 subjects were older than 11 years of age. There

TABLE 3
Mean CY-BOCS Subscale and Total Scores for Each of Four Raters

	Obsession Score		Compulsion Score		Total Score	
	Mean	SD	Mean	SD	Mean	SD
Rater 1	9.9	4.37	10.9	2.90	20.8	5.98
Rater 2	9.9	4.53	11.4	2.60	21.3	5.83
Rater 3	9.2	4.41	11.1	3.13	20.3	6.71
Rater 4	10.4	4.23	11.8	2.84	22.2	6.32

Note: Mean value for the original rater: Obsession = 10.0 ± 4.37; Compulsion = 11.5 ± 2.86; total = 21.5 ± 5.99. CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale.

TABLE 4
Intraclass Correlations for CY-BOCS Total Score and Subscales and κ Coefficients for Individual Items Across Four Raters (n = 24)

Item	ICC	κ
Obsession subscale	.91	—
Compulsion subscale	.66	—
Total score	.84	—
Obsession		
Time spent	—	.42
Interference	—	.50
Distress	—	.50
Resistance	—	.48
Control	—	.52
Compulsion		
Time spent	—	.33
Interference	—	.42
Distress	—	.37
Resistance	—	.30
Control	—	.11

Note: CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; ICC = intraclass correlation coefficient.

was no difference in the mean CY-BOCS scores across these two age groups. However, the ICCs were higher in the older age group compared with the younger group: Total, .92 versus .73; Obsession subscale, .95 vs. .84; Compulsion subscale, .72 vs. .63; these findings suggest some loss of reliability in the younger age group.

The mean item-by-item κ coefficient was .40, ranging from poor to fair, with the lowest agreement in the items concerning resistance and control over compulsions (items 9 and 10). The mean κ coefficient was .43 for the five obsession items (range = .42 to .52) and .37 for compulsion items (range = .11 to .42). The generally lower κ values for the compulsion items is consistent with the reduced range of responses for the compulsion items which, in turn, boosts the expected agreement for these items.

Validity

The CY-BOCS Total score showed the strongest correlation with the Leyton Total score (r = .62, p = .0001) compared with .34 and .37 for the CDI and RCMAS Total score, respectively. The difference between these correlations was significant when analyzed by Fisher's r to z transformation (z = 2.07, p = .02 for comparison with CDI and z = 1.88, p = .05 for RCMAS). As shown in Table 5, the mean RCMAS score was in the low end of the clinical range (Reynolds and Richmond, 1987), and the mean CDI score was

TABLE 5
Mean Scores on Measures of Obsessive-Compulsive Symptom
Severity, Anxiety, and Depression and
Correlation With CY-BOCS Total

Measure	No.	Score		Correlation With CY-BOCS Total Score
		Mean	SD	
CY-BOCS				
Obsessions	65	9.6	4.43	.92
Compulsions	65	10.3	3.83	.89
Total	65	19.9	7.51	—
Leyton Total	57	27.7	15.58	.62
RCMAS Total	56	55.5	11.77	.37*
CDI	57	11.6	8.10	.34**

Note: CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; RCMAS = Revised Children's Manifest Anxiety Scale; CDI = Children's Depression Inventory. Fisher's r to z transformation comparing r value of .62 for the Leyton: * p = .05; ** p = .02.

in the subclinical range (Smucker et al., 1986). Taken together, these results indicate convincing divergent and convergent validity.

Sensitivity to Change

In a subset of 17 subjects who participated in controlled trials with fluoxetine, the CY-BOCS was consistent with the CGI in assessing change over time. Eleven subjects (seven of nine receiving active drug and four of eight receiving placebo) showed a positive response on the CY-BOCS and the CGI.

Two subjects showed no change on either measure. There was disagreement between the CY-BOCS and the CGI in only four subjects (one showed improvement on the CY-BOCS only, whereas three showed improvement only on the CGI). Results of McNemar's test, which uses the discordant pairs to evaluate systematic differences between methods, were not significant.

Relationship of CY-BOCS to CBCL Scores

Consistent with the prominence of anxiety in OCD, the mean Internalizing score (70.3) was 2 standard deviations above the population norm. By contrast, the Externalizing score was less than 1 standard deviation from the norm and was significantly lower than the Internalizing score (mean difference = 10.7 ± 10.09; paired t test = 7.92, p = .0001). Two narrow-band problem scales, the Thought Problems score (mean = 75.4) and the Anxious/Depressed score (mean = 73.1), exceeded the clinical threshold of 2 standard deviations above the population mean. School

and Social Competency scores (41.7 and 41.0, respectively) were approximately 1 standard deviation below the population mean, indicating moderate impairment.

To explore further the relationship between OCD symptom severity and overall impairment, the 56 subjects with valid CBCLs were stratified by gender, age, and OCD symptom severity. Three strata were created for age (8 to 11 years, >11 to 15 years, and >15 to 18 years) and for the CY-BOCS Total score (<13, mild; 13 to 22, moderate; >22, severe). To avoid problems of multiple comparisons, these groups were compared on selected CBCL standardized dimensions including the three CBCL Competency dimensions, Internalizing and Externalizing dimensions, Thought Problems, and Anxious/Depressed scores.

Boys had a significantly higher mean Internalizing score of 72.4 ± 9.42, compared with 67.2 ± 6.91 for girls (t = 2.21, df = 54, p = .03). Social competency scores were lower in boys, with a mean of 38.5 ± 10.56 compared with 45.0 ± 8.09 for girls (t = 2.47, df = 54, p = .02). No other differences between boys and girls were detected. Analysis of variance by the three age groups revealed no differences in the means of these selected CBCL dimensions.

When stratified by CY-BOCS Total score, only the Social Competency score was significantly different ($F[2,53]$ = 3.03, p = .05) across the three groups. Post hoc testing revealed that those in the severe CY-BOCS group (CY-BOCS Total >22) had significantly lower Social Competency scores than either the mild or moderate group (p < .05). The mean Social Competency scores for the mild, moderate, and severe OCD groups were 45.1 ± 9.95, 42.8 ± 10.77, and 37.5 ± 8.78, respectively, indicating that OCD symptom severity is associated with poorer social competence.

DISCUSSION

The development of a valid and reliable instrument that accurately measures the severity of obsessive-compulsive symptoms in children and adolescents is essential for both clinical practice and research. The results of this study suggest that the CY-BOCS has the potential for meeting this goal. The CY-BOCS demonstrated a significantly stronger correlation with a self-report measure of obsessive-compulsive symptoms compared with measures of anxiety and depression. It also showed sensitivity to treatment effects. ICCs were excellent for

the Obsession subscale and the CY-BOCS Total score and good for the Compulsion subscale.

Despite the encouraging ICCs for the subscale and total scores, however, the item-by-item κ coefficients were more unstable, with some of the Compulsion items in the low range (Cicchetti and Sparrow, 1981). This apparent discrepancy is partially explained by the more restricted range of scores in the Compulsions subscale and may also be related to the problems of integrating responses from multiple informants. The favorable ICCs for the subscales and total score suggest that clinicians and researchers can rely on these indices of obsessive-compulsive symptom severity despite the scatter across items. It is not unusual to observe greater inconsistency at the item level within a given instrument compared with the subscales or overall scores (Cicchetti and Sparrow, 1989).

There are several possible explanations for the lower interrater agreement in younger children and in the Compulsion subscale. First, in contrast to obsessional symptoms, compulsions involve potentially observable behavior. Consequently, there is a greater possibility for disagreement between parents and children about the frequency and interference of compulsive behaviors. If present, this disagreement would pose a threat to reliability because raters may differ on the weighting of the responses by the two informants.

Second, assessment of the compulsion items generally followed the assessment of the obsession items. Fatigue on the part of the child and/or the parent may have influenced the clarity of their responses. Third, the matter of resistance and control over compulsive behavior may be difficult for children to comprehend. Some children may find it hard to differentiate between the internal struggle concerning whether to perform the ritual and the distress that precedes and accompanies the ritual. The impact of multiple informants, fatigue, and inability to differentiate distress, resistance, and control would presumably be greater in the younger age group.

Fourth, the CY-BOCS regards resistance as an indicator of health, such that greater resistance means a lower severity score. If the rater determines that obsessive or compulsive symptoms are mild and not clinically significant, a score of 0 is assigned. However, the child who reports "little or no resistance" may be rated as severe (score of 3) or extreme (score of 4) on the resistance item despite having relatively mild symptoms.

This potential pitfall could account for some of the zero versus three disagreements on resistance items observed in this study. Problems with the resistance item in both the Obsessions and Compulsions subscales were also noted in a recent study of adults with OCD (Woody et al., 1995). In that study, the resistance item for compulsions was weakly correlated with the subscale score. The resistance item for obsessions showed poor test-retest reliability. The authors suggest that the avoidance item may be a useful addition to evaluation of symptom severity in adults with OCD. Data on the avoidance item were not systematically collected in the study presented here. Hence, the value of avoidance in pediatric populations awaits further study.

Another limitation of this study is the absence of test-retest data. A study designed to study test-retest in children and adolescents with OCD must reconcile several problems. First, if the interval between interviews is brief (e.g., 1 week), reliability may be unfairly enhanced by memory of the prior rating. If the interval is relatively long (e.g., several months), the symptom picture may have changed. Even if there is no actual change in the clinical picture, children may more forthcoming in the second interview because they are more ready to share the details of their symptoms. Finally, there may be developmental differences. For example, results from a recent epidemiological study found that younger children are not reliable informants about psychiatric symptoms on test-retest, even over relatively short periods of time (Schwab-Stone et al., 1994). For the practicing clinician, the CY-BOCS offers a useful method of estimating symptom severity once the diagnosis of OCD has been established. The symptom checklist provides a systematic means of inquiring about a wide range of symptoms. To maximize the utility of the checklist, clinicians can substitute terms such as "worries" and "habits" in place of obsessions and compulsions. Providing examples for the symptoms on the checklist and reassurance that other children have reported similar symptoms can reduce the child's embarrassment about the symptoms and ensure that the child understands the queries. Given the importance of developing a vocabulary for obsessions and compulsions in children and adolescents with OCD who may not have discussed their symptoms before, clinicians should allow ample time for the first administration of the CY-BOCS.

In summary, accurate assessment of the severity of obsessive and compulsive symptoms in children can be complicated by developmental and linguistic issues (King and Scahill, 1995). The capacity and willingness of children to report their internal experience is variable. This variability may be more prominent in younger children and early in the relationship with a clinician (which was when nearly all of these interviews were conducted). Moreover, parents and children may disagree about the severity of observable symptoms. This is particularly salient when rating compulsions, but it may be an issue in rating the severity of obsessions as well. The problem of multiple informants, long recognized in child and adolescent psychiatry (Weissman et al., 1987), could be especially bedeviling here for "videotape raters" who might "weight" parental responses differently than the original interviewer. This difficulty may help to explain the lower κ coefficients on the compulsion items compared with the obsession items.

Administration of the CY-BOCS must account for the developmental differences across the pediatric age group on the one hand and ascertaining reliable responses on the other. For example, a clinician could simply read the anchors to the child and ask the child to choose the most appropriate response. This strategy would probably enhance interrater agreement. However, simply accepting the child's choice does not account for the possibility that the child may minimize the severity of symptoms or misunderstand the concept underlying the severity item. Results from the present study suggest that further research is required to clarify the influence of development on the comprehension of concepts such as resistance and control of obsessions and compulsive behaviors.

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