A 2-Year Prospective Follow-Up Study of the Course of Obsessive-Compulsive Disorder

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Background: Surprisingly little is known about the long-term course of obsessive-compulsive disorder (OCD). This prospective study presents 2-year course findings, as well as predictors of course, from the Brown Longitudinal Obsessive Compulsive Study, the first comprehensive prospective investigation of the observational course of OCD in a large clinical sample.

Method: The sample included 214 treatment-seeking adults with *DSM-IV* OCD at intake who identified OCD as the most problematic disorder over their lifetime. Subjects were enrolled from 2001–2004. At annual interviews, data on weekly OCD symptom status were obtained using the Longitudinal Interval Follow-Up Evaluation. Probabilities of full remission and partial remission over the first 2 years of collected data and potential predictors of remission were examined.

Results: The probability of full remission from OCD was 0.06, and the probability of partial remission was 0.24. Of the 48 subjects whose OCD symptoms partially or fully remitted, only 1 relapsed within the first 2 years. Earlier age at onset of OCD, greater severity of symptoms at intake, older age at intake, and being male were associated with a decreased likelihood of remission. Insight, diagnostic comorbidity, and treatment were not found to be associated with the likelihood of achieving full or partial remission.

Conclusions: Though one-quarter of the sample had periods of subclinical OCD symptoms during the prospective period, full remission was rare, consistent with the view of OCD as a chronic and persistent illness. Age at onset, OCD symptom severity, current age, and sex emerged as potent predictors of course.

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Obsessive-compulsive disorder (OCD) is a common and frequently debilitating psychiatric disorder with considerable burden to both the individual and society in terms of lost productivity. Despite the increased recognition of the public health significance of OCD over the last 2 decades, surprisingly little is known about the long-term course and prognosis of the disorder.

Clinical trials of cognitive-behavioral therapy (CBT) and/or serotonin reuptake inhibitors (SRIs), and much less frequently neurosurgery, document sustained effects of treatment.[1–6] Prospective, observational studies of illness course have several advantages over follow-up studies of treatment trials. Most treatment trials, due to sample size, have limited power to address the likelihood of remission and relapse over time or which clinical characteristics affect these probabilities. Efficacy studies also have more stringent inclusion criteria and often exclude comorbid disorders such as depression, substance abuse, personality disorders, and medical problems, limiting the generalizability of the sample. Observational studies of illness course are designed to detect patterns of remission and relapse in representative clinical samples. These studies, which now exist for the other psychiatric disorders, have added valuable, new, unanticipated information on prognosis, patterns of remission and relapse, factors affecting these patterns, and the underutilization of effective treatments.[7–11]

Early retrospective reports of OCD course suggested the illness is usually chronic and lifelong.[12] In contrast, a study by Skoog and Skoog[13] on the course of OCD in 144 inpatients treated prior to the introduction of current OCD treatments reported low remission rates within the first decade (11% full remission; 17% partial remission) but slightly higher rates at the 40-year follow-up (20% full remission; 28% partial remission). Despite these low remission rates, two-thirds of the inpatients were improved within a decade after onset of OCD, and 83% were improved at the 40-year follow-up.

Course findings from studies of adults with OCD conducted since the 1990s, when effective treatments of OCD (namely, CBT and SRIs) became widely available, have been inconsistent.[4,14–19] Four prospective studies in particular have reported on the long-term course of treatment-seeking adults with OCD in naturalistic clinical settings.[14–16,18] Rates of achieving at least partial remission (subclinical OCD symptoms) range from 52% of 66 outpatients treated over a 2-year prospective period in a US OCD specialty clinic[15] to 76% of 75 patients followed up 11–13 years after initial treatment at a psychiatric hospital in India.[18] Rates of full remission (no OCD symptoms) in these studies range from 17%[15] to 43%.[18] Differences in methodology may account for some of the variability in remission rates across studies. For example, in the study conducted by Reddy and colleagues,[18] the majority of subjects were drug treatment–naive at study intake. All but one study were limited by small sample sizes,[15,16,18] and the study with the largest sample size (N = 100) comprised patients ascertained for an anxiety disorder other than OCD.[14]

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For Clinical Use

- Full remission from obsessive-compulsive disorder (OCD) in adults is rare.
- Being female and having a later age at onset are associated with a greater likelihood of remission from OCD.
- Only hoarding was associated with a poor prognosis. In contrast, individuals with overresponsibility are more likely to achieve remission.

This article presents the first 2 years of longitudinal observation from the Brown Longitudinal Obsessive Compulsive Study (BLOCS). In this prospective study, we followed 214 patients whose primary reason for seeking clinical treatment was OCD and who reported that OCD was the most problematic disorder over their lifetime. On the basis of previous findings,[13,15] we hypothesized that a substantial proportion of subjects would improve to the point of partial remission (subclinical symptoms), but full remission (no symptoms) would be observed less frequently. On the basis of our clinical experience and a review of putative predictors of outcome in OCD,[17,19–21] we also hypothesized that greater symptom severity and the presence of hoarding as principal obsession would be associated with a lower likelihood of remission of OCD. Finally, consistent with previous findings that poor insight in OCD does not predict treatment response,[22] we hypothesized that the presence of poor insight would not be associated with likelihood of remission.

METHOD

Subjects

Three hundred twenty-five adult subjects were enrolled in the BLOCS from 2001–2004, the first comprehensive prospective, observational investigation of the course of OCD in a large clinical sample using state-of-the-art longitudinal research methodology. The detailed sample characteristics at intake are described elsewhere.[23] All subjects met criteria for current or past *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (*DSM-IV*) OCD. Inclusion criteria for adults included being 19 years of age or older, having a primary diagnosis of *DSM-IV* OCD (defined as the disorder subjects considered most problematic overall across their lifetime), and having sought treatment for OCD within the past 5 years. The only exclusion criterion was the presence of cognitive deterioration, such as dementia, which would interfere with accurate data collection. Subjects were recruited from a variety of psychiatric treatment settings, including an outpatient OCD specialty clinic, inpatient units of a private psychiatric hospital, community mental health centers, 2 general outpatient psychiatric clinics, and the private practices of 3 experts in cognitive-behavioral therapy for OCD. The BLOCS was approved by the institutional review boards of Brown University and Butler Hospital (Providence, Rhode Island). All subjects provided written informed consent prior to enrollment in the study.

Once enrolled, subjects completed an in-person intake interview and were contacted annually for an in-person or telephone follow-up interview. This article presents findings on the 214 subjects (66% of the adult sample) who met full criteria for *DSM-IV* OCD at intake and who had at least 1 year of follow-up data. The remaining 34% either were not in episode at intake (12%, n = 38) or had not yet completed their 1-year follow-up assessment (22%, n = 73). To increase power for analyses, we included all 2-year data presently available for analysis (n = 159). Two-year data are not available on all 214 subjects because subjects were enrolled over 3 years and, therefore, currently have varying follow-up durations. There were no significant demographic or clinical differences between patients with 1 versus 2 years of follow-up data with the exception of duration of OCD illness; for those with 2 years of data, the mean duration of illness was 23.1 years (SD = 13.9) compared to a mean of 18.4 years (SD = 12.1) for those with 1 year of data ($t_{212} = 2.24$, $P = .026$).

Assessments

All clinical diagnoses were established by means of the Structured Clinical Interview for *DSM-IV* Axis I Disorders–Patient Edition (SCID-I/P).[24] The Butler Hospital OCD Database, a semistructured rater-administered questionnaire, was used to collect demographic and clinical information. Specific OCD symptoms were assessed using the rater-administered Yale-Brown Obsessive Compulsive Symptom Checklist (YBOCS-SC). The YBOCS-SC comprises 15 separate categories of obsessions and compulsions. However, recent factor analytic studies[25,26] indicate that the original aggressive obsessions category contains 2 distinct components: aggressive obsessions and overresponsibility for harm. On the basis of these findings, we added an additional obsession category, overresponsibility for harm, which includes the following 2 obsessions: fear of harming others if not careful enough and fear of being responsible for something terrible happening. Therefore, 16 total categories (9 obsessions, 7 compulsions) will be reported here. We defined principal symptoms as the single obsession and compulsion patients said they "would most like to get rid of."

Current severity (past week) of obsessions and compulsions was assessed with the Yale-Brown Obsessive Compulsive Scale (YBOCS), a reliable and valid 10-item interview.[27,28] Higher scores on the YBOCS indicate greater severity, with total scores ranging from 0 to 40. Insight regarding OCD-related beliefs was evaluated with the rater-administered Brown Assessment of Beliefs Scale

(BABS).[29] Total BABS scores range from 0 to 24, with higher scores indicating poorer insight. The Global Assessment of Functioning (GAF) was administered to assess overall severity of psychopathology and functional impairment in the worst week of the past month.[30]

Annual follow-up assessments were conducted using the Longitudinal Interval Follow-up Evaluation (LIFE), a semistructured interview.[31] This instrument, which has been used in various longitudinal studies of psychiatric disorders,[32] guides subjects in looking back over the prior year to collect data on symptom severity of Axis I disorders. For each week of follow-up, psychiatric status ratings (PSRs) of symptom severity are assigned for each diagnosis that a subject met criteria for (past or current) at intake. The LIFE employs a change-point method to anchor subject reports of symptom levels to relevant life events such as birthdays, holidays, or family vacations. The reliability and validity of the LIFE are described elsewhere.[32] For OCD, we adopted a 6-point PSR scale, which includes cut points for full *DSM-IV* criteria, partial remission, and full remission (Appendix 1). Subjects met criteria for full remission if they had a PSR of 1 or 2 for at least 8 consecutive weeks. A PSR of 3 for at least 8 consecutive weeks was considered partial remission. Relapse was defined as having a PSR of 4 or greater for at least 2 weeks after a full or partial remission. The LIFE was also used to assess weekly SRI usage as well as number of CBT sessions received for OCD in each follow-up interval. The following definition of CBT was provided to participants who received psychotherapy:

> *CBT for OCD focuses on learning techniques to manage your obsessions and compulsions. Most often it involves facing the situations that you avoid because of the anxiety associated with your obsessions (exposure) without doing your rituals (response prevention). You also learn to change the way you think about intrusive, obsessive thoughts, which will decrease your anxiety and lead to more realistic thinking.*

Interviewer Training

All interviewers had at least a bachelor's degree and underwent a rigorous training program (see Pinto et al for description). Prior to the independent administration of study instruments, newly trained interviewers were required to demonstrate a high degree of interrater reliability with both trainers and other senior raters (intraclass correlation coefficients > 0.85 for YBOCS total score and SCID/LIFE diagnoses). The raters were closely supervised by senior staff members, and diagnostic and impairment data were presented to OCD experts (J.L.E., M.C.M., and S.A.R.) at weekly conferences prior to data entry. In an effort to minimize interviewer drift, interrater reliability ratings were also performed periodically on a random sample of taped interviews. Shrout-Fleiss interrater reliabilities were 0.95 for total YBOCS scores, 0.97 for OCD PSR ratings, and 0.97 for GAF scores.

Data Analysis

SAS version 9.13 (SAS Institute, Cary, North Carolina)[33] was used for data analyses. Descriptive analyses consisted of frequencies, percentages, means, and standard deviations. Course data were examined using standard survival analysis methods, incorporating Kaplan-Meier life tables for probabilities of remission. Cox proportional hazards regression[34] was used to estimate relative hazards for predictors of remission (entered simultaneously) during the 2-year follow-up period. The following clinical course predictors were examined: age at onset of *DSM-IV* OCD; OCD severity (total YBOCS score) at intake; level of insight (BABS score) at intake; age at intake; sex; number of current Axis I disorders at intake; and time-varying treatment, including both SRI status (yes/no for each week in a given follow-up interval) and a 3-level CBT variable corresponding to number of sessions received in the year prior to each follow-up interview (0 = no sessions, 1 = 1–12 sessions, 2 = 13+ sessions). The cut point for the number of sessions for the 3-level CBT variable was based on both the OCD Expert Consensus Treatment Guidelines and the American Psychiatric Association Practice Guideline.[35,36] In exploratory analyses, we examined rates of full or partial remission by principal obsession category (on the YBOCS-SC) at intake. We chose obsessions rather than compulsions because of their greater specificity to domains of symptom content. Compulsions tend to be nonspecific (eg, a checking ritual can relate to a fear of causing harm or a concern about having an illness). Obsession categories with clinically significant remission rates were then tested as predictors of time to remission in a separate Cox regression model, entered simultaneously with the predictors from the first model. To diminish the possibility of type I error, we used a partial α correction of $P < .01$ to determine statistical significance.

RESULTS

Sample Characteristics

The sample was predominantly white (97%) and female (55%). Forty-three percent of the subjects were college-educated, and 41% were married (37% never married). Forty-seven percent of the sample were unemployed at the time of the intake interview, with 17% receiving disability benefits largely due to OCD. Intake clinical characteristics are presented in Table 1. The overall severity of current OCD on the YBOCS was in the moderate range, and insight on the BABS was good. The GAF demonstrated serious impairment in social and occupational functioning. Most participants (90%) endorsed multiple categories of obsessions and compulsions. The most frequently endorsed obsession categories were contamination, overresponsibility for harm, and miscellaneous. The most frequently endorsed compulsions were checking and cleaning compulsions. On average, subjects met current criteria for a mean of 2.2 (SD = 1.2) comorbid Axis I disorders at intake; 42% met criteria for at least 1 personality disorder.

Almost all participants (92%) reported they had been taking an SRI prior to study entry, and more than one-third of participants reported receiving at least 2 SRI trials prior to intake. At the time of the intake interview, 93% of the sample

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Table 1. Clinical Characteristics of 214 Subjects With Obsessive-Compulsive Disorder at Intake

Variable	Mean	SD
Age at intake, y	40.2	12.5
Age at OCD onset, y	18.3	10.0
Duration of OCD, y	21.9	13.6
OCD severity, YBOCS total score	23.1	5.8
Insight, BABS total score	6.9	4.8
GAF score	48.9	9.4

	Present[a]		Principal[a]	
	n	%	n	%
Obsession category				
Aggressive	100	46.7	24	11.3
Overresponsibility for harm[b]	126	58.9	34	16.0
Contamination	136	63.6	42	19.8
Sexual	30	14.0	13	6.1
Hoarding	73	34.1	19	9.0
Religious	67	31.3	14	6.6
Symmetry	113	52.8	27	12.7
Somatic	62	29.0	18	8.5
Miscellaneous	139	65.0	21	9.9
Principal compulsion category[c]				
Cleaning	146	68.2	41	19.3
Checking	157	73.4	50	23.6
Repeating	141	65.9	31	14.6
Counting	61	28.5	5	2.4
Ordering	105	49.1	14	6.6
Hoarding	71	33.2	19	9.0
Miscellaneous	142	66.4	52	24.5
Current comorbidity				
Mood disorder[d]	36	16.8	…	…
Psychotic disorder	3	1.4	…	…
Other anxiety disorder	93	43.5	…	…
Substance use disorder	12	5.6	…	…
Eating disorder	3	1.4	…	…
Somatoform disorder	15	7.0	…	…
Tic disorder	15	7.0	…	…
Personality disorder[e]	88	41.7	…	…

[a]Refers to the YBOCS Symptom Checklist category. Present = present in past month. Principal (n = 212, 2 missing) = the single obsession subject "would most like to get rid of" (mutually exclusive categories).
[b]Includes the following 2 obsessions: fear of harming others if not careful enough, and fear of being responsible for something terrible happening.
[c]Refers to the YBOCS Symptom Checklist category. Present = present in past month. Principal (n = 212, 2 missing) = the single compulsion subject "would most like to get rid of" (mutually exclusive categories).
[d]Major depressive disorder (n = 33, 15.4%).
[e]n = 211 (3 missing).
Abbreviations: BABS = Brown Assessment of Beliefs Scale, GAF = Global Assessment of Functioning, OCD = obsessive-compulsive disorder, YBOCS = Yale-Brown Obsessive Compulsive Scale.
Symbol: … = not applicable.

Table 2. Probability of Full or Partial Remission From Obsessive-Compulsive Disorder Over 2 Years (N = 214)

	Full Remission		Full or Partial Remission	
Week	n	Probability	n	Probability
26	5	0.02	22	0.10
52	7	0.03	36	0.17
78	10	0.05	42	0.21
104	12	0.06	48	0.24

Table 3. Proportional Hazard Regression Testing Clinical Predictors of Full or Partial Remission From Obsessive-Compulsive Disorder Over 2 Years (N = 214)[a]

Predictor	β (SE)	χ^2	P[b]	Hazard Ratio	95% CI
Age at OCD onset, y	.06 (.02)	13.62	**<.001**	1.06	1.03–1.09
OCD severity, YBOCS total score	–.12 (.03)	16.26	**<.001**	0.88	0.83–0.94
Insight, BABS total score	.02 (.04)	0.26	.607	1.02	0.95–1.09
Age at intake, y	–.05 (.01)	9.91	**.002**	0.96	0.93–0.98
Male sex	–.89 (.31)	8.08	**.005**	0.41	0.22–0.76
Axis I comorbidity[c]	–.13 (.16)	0.67	.413	0.88	0.64–1.20
Weekly SRI usage[d,e]	.27 (.38)	0.50	.478	1.31	0.63–2.72
Number of CBT sessions[f]	–.44 (.23)	3.78	.052	0.64	0.41–1.00

[a]Predictors entered simultaneously ($df = 8$, Wald $\chi^2 = 38.18$, $P = < .001$).
[b]Bolded P values denote significance.
[c]Axis I comorbidity = number of current comorbid Axis I disorders at intake.
[d]Weekly SRI usage = SRI status (yes/no) during follow-up interval.
[e]SRIs were clomipramine, fluoxetine, sertraline, fluvoxamine, paroxetine, citalopram, and escitalopram.
[f]Number of CBT sessions = number of sessions received in the year prior to each follow-up interview (0 = no sessions, 1 = 1–12 sessions, 2 = 13+ sessions).
Abbreviations: BABS = Brown Assessment of Beliefs Scale, CBT = cognitive behavioral therapy, OCD = obsessive-compulsive disorder, SRI = serotonin reuptake inhibitor, YBOCS = Yale-Brown Obsessive Compulsive Scale.

were participating in outpatient treatment, 3% were inpatients (including partial hospitalization and residential), and 4% were not in treatment. During the first 2 years of the study, 88% reported SRI treatment. Of those who received SRI treatment, the mean number of weeks taking an SRI was 46.7 (SD = 12.1) in year 1 and 47.2 (SD = 10.4) in year 2. Slightly less than half of subjects (49%) received CBT during the study period. Of those who received CBT, the mean number of sessions was 21.0 (SD = 20.3) in year 1, and 18.5 (SD = 15.2) in year 2.

Longitudinal Course of OCD

Table 2 presents probabilities of full remission and partial remission from OCD across the first 2 years of observation. Over 2 years, the probability of full remission from OCD was 0.06, and the probability of partial remission was 0.24. Of the 48 subjects whose OCD symptoms partially or fully remitted, only 1 relapsed (defined as meeting full OCD criteria for at least 2 consecutive weeks) within the first 2 years. Because of the low frequency of full remissions in this sample, full or partial remission was used as the clinical outcome for predictor analyses.

Predictors of OCD Remission

Earlier age at onset of OCD, greater severity of symptoms at intake, older age at intake, and being male were each associated with a decreased probability of remission over 2 years (Table 3). Each additional year in age at OCD onset resulted in a 5.9% *increase* in the likelihood of patients with OCD experiencing remission. Even stronger, each 1-point increase in YBOCS severity at intake resulted in an 11.7% *reduction* in the likelihood of remission. Insight, number of Axis I disorders, and treatment variables were not found to be associated with probability of full or partial remission.

Table 4 lists rates of remission over 2 years by principal obsession categories endorsed at intake. Among the obsession categories, overresponsibility for harm (42%) and hoarding (5%) yielded rates that were clinically noteworthy because

Table 4. Rate of Full or Partial Remission From Obsessive-Compulsive Disorder Over 2 Years by Principal Obsession Category (N = 212)[a]

Principal Obsession Category[b]	Rate of Full or Partial Remission, %
Overresponsibility for harm (n = 34)	41.8
Somatic (n = 18)	27.8
Miscellaneous (n = 21)	23.8
Sexual (n = 13)	23.1
Religious (n = 14)	21.4
Contamination (n = 42)	19.1
Symmetry (n = 27)	18.5
Aggressive (n = 24)	16.7
Hoarding (n = 19)	5.3

[a]Data for 2 subjects are missing.
[b]Refers to the Yale-Brown Obsessive Compulsive Symptom Checklist category of the single obsession subject "would most like to get rid of" (mutually exclusive categories).

of how much they differed, in opposite directions, from the overall remission rate (24%) in this sample. Because there was only 1 partial remission among those with principal hoarding, the proportional hazards assumption of the Cox regression model was violated, precluding a valid test of the effect of this variable. However, it is notable that only 1 of 19 subjects with principal hoarding obsessions experienced less than full criteria for OCD during the prospective period.

A separate Cox regression was conducted to determine if overresponsibility for harm was predictive of achieving remission, over and above the predictors from the first model. Subjects who identified overresponsibility for harm as their principal obsession category at intake were almost 3 times more likely to experience remission during the follow-up interval, as compared to subjects with other principal obsessions (HR = 2.67; $P = .003$; 95% CI, 1.40–5.09), controlling for age at OCD onset (years), OCD severity (YBOCS total score), age at intake (years), sex, number of current Axis I disorders at intake, weekly SRI usage, and number of CBT sessions for OCD in the year prior to each follow-up interview.

DISCUSSION

Our results indicate that most treatment-seeking patients with OCD continue to experience significant symptoms of the disorder after 2 years of prospective follow-up. Earlier age at onset of OCD, greater severity of symptoms at intake, being older at intake, and being male were all associated with a decreased likelihood of full or partial remission. These results add to prior evidence[14,15] that OCD is a chronic and persistent illness. Our finding of only 6% full remission and 24% partial remission over 2 years is similar to the findings of a recent study of course of body dysmorphic disorder[37] and lower than that found in mood disorders[11,38] and other anxiety disorders.[39]

We found a lower likelihood of both full and partial remission (24%) compared to 3 other prospective, observational studies of course of illness in OCD that report remission rates in the range of 47%–76%.[14,15,18] One possible explanation for the disparity between our findings may be based on differences in the chronicity of the samples; subjects in this study had a longer duration of illness (mean = 21.9 [SD = 13.6] years) and were older at intake (mean = 40.2 [SD = 12.5] years). In fact, chronicity (duration of OCD) has been associated with poorer outcome in other studies.[17] Another possible explanation of the low rates of remission in this study may be based on exposure to treatment. In a recent follow-up study of OCD,[18] three-fourths of the 75 patients treated for OCD and followed for 11–13 years after initial consultation no longer met criteria for OCD at follow-up. The majority of these subjects were treatment-naive at intake, and the median duration of illness was only 3 years at initial consultation. Given the extensive treatment histories and the duration of illness in this sample, it is notable that one-fourth of the subjects still attained partial remission over the course of observation.

According to family studies, earlier age at onset is associated with a higher frequency of OCD in first-degree relatives,[40] suggesting that juvenile-onset OCD may be a subtype of OCD. While several studies have found no relationship between age at onset and outcome,[4,6] our finding that earlier age at OCD onset was associated with a decreased likelihood of remission lends support to the notion of a juvenile-onset OCD subtype and is in keeping with a number of previous studies.[13,17,41] Interestingly, the authors of a recent study that found the opposite, ie, subjects with onset of OCD at an earlier age were significantly *more* likely to remit,[21] thought that their finding might have been due to "idiosyncrasies" in their sample.

There also continue to be inconsistencies in the literature regarding the impact of symptom severity of OCD on course, most likely based on different methodologies used to investigate this issue. Some outcome studies have found that severity *was not* predictive of long-term outcome.[2,4] Our finding that severity is significantly associated with a lower likelihood of remission is consistent with a number of studies,[17,19] including a recent study that, like our study, was naturalistic and used multiple time points to assess course.[21]

Findings regarding the role of sex in the course of OCD have been inconsistent. While neither a cross-sectional study[9] nor a follow-up study[8] found sex to be a significant predictor of outcome, our follow-up study, as well as an earlier cross-sectional study,[42] notes a more chronic course of illness in males. Differences in definitions of outcome across studies may contribute to the inconsistencies in these findings. For example, in the 2 studies that did not find sex to be predictive,[8,9] outcome was defined as episodic versus chronic, whereas, in the current study, outcome was defined as likelihood of achieving remission.

The impact of specific types of obsessions and compulsions on course and outcome has received considerable attention. Hoarding has been shown in a number of recent studies to be associated with poorer response to both SRIs and CBT,[20,43–45] although there have been some inconsistencies in the literature.[46] In the current study, it is notable that only 1 of 19 subjects with primary hoarding experienced a remission. While we were unable to conduct a meaningful Cox regression analysis and, therefore, could not determine statistical significance, the striking paucity of remissions found

in subjects with primary hoarding supports the notion that hoarding may be a distinct subtype of OCD requiring different approaches to treatment compared to other forms of OCD. In contrast to hoarding, we found that overresponsibility for harm was associated with a significantly better prognosis, with the likelihood of remission being almost 3 times greater for those subjects with this as their principal obsession category. Prior to this study, overresponsibility for harm had been combined with other OCD symptoms in the aggressive category, such as fear of acting on unwanted impulses. Our finding suggests the utility of viewing the aggressive obsession category as comprising 2 distinct constructs and lends support to the notion recently raised that overresponsibility for harm is 1 of 5 factors in a multidimensional model of OCD symptoms.[25,26] A recent study of pediatric OCD, examining the relationship between OCD subtypes and CBT treatment outcome, lends additional support to the finding that overresponsibility for harm may be a predictor of better outcome. That study of 92 children and adolescents found that patients with aggressive/checking symptoms showed a trend toward greater treatment response and a greater change in the Clinical Global Impressions–Severity Scale.[47] Future studies are needed to confirm this finding.

Like many prospective, observational studies of illness course, we did not find being in treatment to be a significant predictor of likelihood of remission. A more fine-grained analysis of treatment (eg, dose and duration of SRIs, content of CBT) is beyond the scope of this report and will be addressed in subsequent reports using this dataset. A common finding in naturalistic, longitudinal studies is a treatment bias effect, in which patients with greater severity and duration are more likely to receive psychiatric treatment. In this case, the effects of treatment on likelihood of remission were most likely washed out by the effects of OCD severity and age at onset. Future work is needed to identify mediating effects of treatment on course of OCD.

Even though the demographics, clinical features, and symptom presentation of this sample are consistent with prior studies of OCD phenomenology,[13] indicating a representative clinical sample of OCD, the generalizability of the results is limited by the fact that individuals self-selected to participate in the research study and by the small number of minority participants enrolled. A second limitation is that our subjects were all treatment-seeking, preventing generalization of these findings to non–treatment-seeking individuals in the community. Another limitation is that data on age at onset, symptom severity over the follow-up intervals, and treatments received rely on retrospective patient self-report. Although reliable interview methods were employed, additional data from more objective sources would strengthen these findings.

Strengths of this study include a large sample, use of well-established methodological techniques to collect and analyze longitudinal data, and the lack of exclusion criteria found in many OCD outcome studies. Continuing to study this sample over time will further explicate predictors of course, which will be useful in identifying meaningful endophenotypes of this often persistent disorder. Our findings have important clinical implications. While we clearly found some meaningful predictors of course in this study, it is notable that the rate of full remission is strikingly low. Our findings highlight the importance of developing more effective treatments for this disorder that is so frequently chronic. Our study findings also speak to the heterogeneity of OCD based on certain symptom subtypes appearing to have a different course and suggesting the need for treatments tailored to the symptom subtype. Additionally, the fact that our mean duration of OCD in the adult sample was 21 years does not allow us to directly address the impact of early recognition in this article. We are currently collecting prospective, longitudinal data in this same study with children and adolescents that will allow us to address the role of early recognition and, perhaps more importantly, treatment in determining course.

Drug names: citalopram (Celexa and others), clomipramine (Anafranil and others), escitalopram (Lexapro and others), fluoxetine (Prozac and others), fluvoxamine (Luvox and others), paroxetine (Paxil, Pexeva, and others), sertraline (Zoloft and others).

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration–approved labeling has been presented in this article.

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Appendix 1. Psychiatric Status Ratings (PSRs) of OCD Symptom Severity[a]

FULL CRITERIA OCD
6 Obsessions and compulsions (or avoidance) cause **extreme** distress/anxiety and result in **profound** disruption in functioning in all areas.
5 Obsessions and/or compulsions (or avoidance) cause **severe** distress/anxiety AND **significant** disruption in functioning.
4 Obsessions and/or compulsions (or avoidance) cause at least **moderate** distress/anxiety OR impairment in functioning, but functioning is not severely impaired.
PARTIAL REMISSION
3 Does not meet definite *DSM-IV* criteria for OCD but has obsessions and/or compulsions. Obsessions and/or compulsions take less than 1 hour a day.
FULL REMISSION
2 Has some obsessions and/or compulsions but is not preoccupied, and concerns do not cause any distress or impairment in functioning.
1 No residual symptoms of OCD.
Subjects met criteria for full remission if they had a PSR of 1 or 2 for at least 8 consecutive weeks. A PSR of 3 for at least 8 consecutive weeks was considered partial remission. Relapse was defined as having a PSR of 4 or greater for at least 2 weeks after a full or partial remission.

[a]Adapted from the Longitudinal Interval Follow-up Evaluation (LIFE).[31,32]
Abbreviation: OCD = obsessive-compulsive disorder.

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