

A 40-Year Follow-up of Patients With Obsessive-compulsive Disorder

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Background: The long-term course of obsessive-compulsive disorder is insufficiently known. We studied the course of this disorder in patients who were followed up for 40 years.

Methods: Patients admitted with a diagnosis of obsessive-compulsive disorder to the Department of Psychiatry, Sahlgrenska University Hospital, Göteborg, Sweden, between 1947 and 1953 were examined by an experienced psychiatrist using a semistructured interview between 1954 and 1956 (n=251). The diagnosis was made according to the criteria of Schneider. A reexamination was performed by the same psychiatrist between 1989 and 1993 (n=122). In another 22 patients, the necessary information was obtained from close informants and medical records. The response rate in surviving patients was 82%. The mean length of follow-up from onset was 47 years.

Results: Improvement was observed in 83%, including

recovery in 48% (complete recovery, 20%; recovery with subclinical symptoms, 28%). Among those who recovered, 38% had done so already in the 1950s. Forty-eight percent had obsessive-compulsive disorder for more than 30 years. Early age of onset, having both obsessive and compulsive symptoms, low social functioning at baseline, and a chronic course at the examination between 1954 and 1956 were correlated with a worse outcome. Magical obsessions and compulsive rituals were correlated with a worse course. Qualitative symptom changes within the obsessive-compulsive disorder occurred in 58% of the patients.

Conclusion: After several decades, most individuals with obsessive-compulsive disorder improve, although most patients continue to have clinical or subclinical symptoms.

Arch Gen Psychiatry. 1999;56:121-127

SEVERAL STUDIES have examined the prognosis of obsessive-compulsive disorder,¹⁻²⁰ but long-term studies are few, and most were published several decades ago. Studies with a mean follow-up of more than 10 years are rare^{4-6,12,14,20,21} and are based mainly on retrospective information. The results from these studies are difficult to compare owing to differences in study populations, diagnostic criteria, inclusion criteria, criteria for improvement and deterioration, and uncertainty of information regarding lobotomized patients. The length of follow-up varies, even within individual studies. With this in mind, improvement rates vary between 32% and 74%. However, some authors^{13,21} report that most patients improve within 5 years of diagnosis. Thus, comprehensive large-scale and long-term prospective studies on the course and natural history of obsessive-compulsive disorder are still lacking.

We studied 144 patients who were admitted with obsessive-compulsive disorder to the Department of Psychiatry, Sahlgrenska University Hospital,

Göteborg, Sweden, between 1947 and 1953 and had been examined by one of us (G.S.) between 1954 and 1956.^{22,23} At that time it was clear that the data obtained could be compared prospectively with follow-up data gathered decades later using the same interviewer. This goal was achieved between 1989 and 1993.

RESULTS

DESCRIPTION OF THE SAMPLE

Mean (SD) age at the initial examination was 36.0 (8.2) years (range, 19-52 years), and at the follow-up examination, 71.0 (7.9) years (range, 53-87 years). The mean follow-up time from onset of the obsessive-compulsive disorder to the second examination was 47.2 (8.2) years (range, 37-74 years). These values were similar for men and women.

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SUBJECTS, MATERIALS, AND METHODS

SAMPLE

Between 1947 and 1953, 5732 patients were admitted as inpatients to the Department of Psychiatry, Sahlgrenska University Hospital. According to a review of medical records, 285 of these patients had obsessive-compulsive disorder. These patients were selected for a comprehensive psychiatric follow-up examination. At the time of the first examination (between 1954 and 1956), 5 had died, 11 refused participation, 17 could not be traced, and 1 was excluded because of lobotomization. Thus, 251 patients (88% (158 women and 93 men) were studied.^{22,23}

A second follow-up examination was sought more than 3 decades later (between 1989 and 1993). This study is based on those who survived at least 30 years after the first examination. Of the original sample, 75 had died (including 6 suicides), and 32 were lost because of other causes. One hundred twenty-two patients (88 women and 34 men) were reexamined (96 by a comprehensive telephone interview, 23 by personal examination in the subject's home, and 3 by letter). For another 22 patients (15 women and 7 men), the needed information was obtained from close informants and medical records. The study thus comprises 144 (103 women and 41 men) (82%) of 176 surviving patients.

Informed consent was obtained from all subjects and/or their relatives, and the study was approved by the Ethics Committee for Medical Research at Göteborg University, Göteborg, Sweden.

EXAMINATIONS

The first and second examinations were performed by the same psychiatrist (G. S.). The first examination was performed in

the patient's home or at the outpatient clinic at the Department of Psychiatry, Sahlgrenska University Hospital. The interviews were semistructured and comprised 107 items,²² including heredity, previous life circumstances, personality, and history of somatic disorders and psychiatric symptoms.

Specific obsessive-compulsive symptoms included obsessive doubt, rumination, perfectionism, impulsion obsessions (ie, intrusive, but never realized, impulses to perform dangerous or embarrassing behavior toward other people or oneself), obsessive hypochondriasis and phobias, obsessions of suicide and homicide, obsessions of guilt, obsessions of anticipation, magical obsessions (ie, irrational ideas that certain thoughts, objects, or behaviors are of threatening significance), aichmophobic obsessions (ie, fearful thoughts of sharp or pointed objects) and compulsions including checking, washing, morbid questioning, and rituals (ie, rigid, systematized compulsions that always must be performed in exactly the same way). The questionnaire also included questions about time and type of onset, course, circumstances related to the onset, circumstances influencing the symptoms favorably or unfavorably, and earlier subclinical obsessive-compulsive traits.

Other psychiatric symptoms (reported and observed) included mood, anxiety, psychotic symptoms, and abuse of alcohol and other drugs.

The second examination included 22 items that were based on the questionnaire from the first examination and that focused on the present state and on changes since the first examination. The participant was first asked to give a spontaneous recall of the previous contact, interim life events, health problems, and medical or psychological contacts, including hospitalizations. The patient was asked about improvements, deteriorations, type of course, and recovery from obsessive-compulsive symptoms. Questions about psychiatric and specific obsessive-compulsive symptoms were the same as in the previous examination.

CHANGE IN CLINICAL SEVERITY

Changes in clinical severity of the obsessive-compulsive disorder between admission to the Sahlgrenska University Hospital and the first and second examinations are summarized in **Table 1**. In 1989 to 1993, 83% of all patients had improved and 48% showed clinical recovery, but only 20% showed complete recovery. In those who had recovered ($n = 69$), the improvement was slow and gradual in 45 (65%), fast in 6 (9%), and difficult to evaluate in 18 (26%). Among those who were recovered at the second examination, 26 (38%) had already recovered at the first examination.

Among those who did not have clinical symptoms at the first examination ($n = 41$), 15 (37%) had symptoms of obsessive-compulsive disorder at the second examination. Among those who had clinical symptoms at the first examination ($n = 103$), 60 (58%) still had clinical symptoms at the second examination (difference between the groups: Fisher exact test, $P = .03$). Eight (19%) of those who did not have symptoms at the first examination had lasting relapses within 20 years and 7 (17%) had relapses after more than 20 years. Seven of those who did not have clinical symptoms at

the first and second examinations had short relapses between the examinations. Thus, 19 (46%) had no relapses after a follow-up of more than 3 decades.

OBSESSIVE-COMPULSIVE SYMPTOMS

From hospitalization to the first examination, a combination of obsessive and compulsive symptoms was noted in 85 patients (59%) and obsessive symptoms alone in 59 patients (41%). Among those who had a combination of obsessive and compulsive symptoms at the first examination, 50 patients (59%) still had clinical symptoms at the second examination, compared with 24 (41%) of those with obsessions only (Fisher exact test, $P = .05$).

Table 2 gives the most common specific obsessive-compulsive symptoms from onset to the first examination in relation to recovery by the second examination. Magical obsessions and compulsive rituals were related to a worse outcome.

A monosymptomatic picture occurred in 17 (12%) of 144 patients at hospitalization between 1947 and 1953. Most of these symptoms had a hypochondric flavor, such as obsessions about death or vital functions

DEFINITIONS

The diagnosis of obsessive-compulsive disorder was based on the criteria of Schneider,²⁴ which were widely used in the 1950s. According to these criteria, obsessions and compulsions are "contents of consciousness that manifest themselves with the experience of obsession or compulsion and cannot be forced aside, although in conditions of relative calm they are admitted as absurd or as dominating without ground." These criteria, which were used also in the reexaminations, are broader than those of the DSM-IV.²⁵ However, a retrospective analysis showed that 124 (86%) of the 144 patients also fulfilled the criteria of the DSM-IV.

Subclinical symptoms were defined as obsessive-compulsive symptoms that were obvious to the patient and observers, but did not cause distress or interfere with normal activities. Clinical symptoms caused obvious distress and interfered with normal activities.

Recovery was defined as absence of clinically relevant symptoms for the last 5 years or more. Complete recovery was defined as absence of both clinically relevant symptoms and subclinical symptoms for the last 5 years or more. For clinical improvement or deterioration, the patient or the informant was required to describe a long-term change that lasted at least 5 years.

Social function was measured with the Global Assessment of Functioning (GAF) Scale,²⁶ without consideration to severity of the symptoms.

Onset was defined as the time at which clinically relevant obsessive-compulsive symptoms first occurred, as determined by information from the patient and from medical records.

Duration was defined as the time between onset of clinically significant obsessive-compulsive symptoms and total recovery, recovery with subclinical symptoms or,

in patients with continuing symptoms, time of the last examination.

Courses were divided into 3 types: a chronic course (at least 5 years of the same degree of continuous obsessive-compulsive symptoms), an intermittent course (≥ 2 episodes with symptom-free intervals), and an episodic course (1 episode lasting < 5 years). In individuals who had complete recovery or subclinical symptoms, type of course was defined as the course before recovery. The courses were rated separately for the period from onset to the first examination and for the follow-up period to the second examination.

STATISTICAL METHODS

We used a nonparametric test that was not based on ranks, the Pitman test,²⁷⁻²⁹ which tests correlations between 2 variables with ordered values that are not normally distributed (the counterpart among tests based on rank is the Spearman test). In the Pitman test, the calculation of the *P* value when we have observations $(x_1, y_1) \dots (x_k, y_k)$ is first done by calculating $c = \sum x_i y_i$, and then by calculating the number of permutations of the y_i 's, giving rise to a more or equally extreme value such as *c*. Finally, the *P* value is determined by the use of the Edgeworth expansion using 4 moments of the test variable.²⁸ The Pitman test was used to test trend in a contingency table when both variables were integer-valued with an ordered structure. The Fisher permutation test is a special case of the Pitman test,³⁰ when 1 of the 2 variables is a 0-1 variable. The Fisher exact test was applied when comparing frequencies in different groups when both variables were 0-1 variables. Assessments of change were performed using the Fisher test for pairwise comparisons,²⁷ which is the nonrank counterpart of the Wilcoxon test for pairwise comparisons. A 2-tailed level of significance was used, and the α level of significance was $P < .05$.

(eg, respiration). All monosymptomatic patients showed improvement by the time of the second examination, and 10 had recovered completely. Only 2 of the monosymptomatic patients became polysymptomatic during the course.

Qualitative changes of symptoms within the obsessive-compulsive disorder occurred in 84 (58%) of the patients. Illustrative examples follow.

Patient 1

A woman was followed up from adolescence to her 40s. Her symptoms began with fear of blushing, then aggressive impulsions, compulsive counting, claustrophobia, and finally obsessions that others were slandering her.

Patient 2

A man was followed up from puberty to his 50s. In puberty, he had vague suspiciousness, which changed to obsessions of guilt. In his late 20s, he had obsessive doubt with severe checking behavior, then equally severe agoraphobia. In his 50s, he had improved considerably, but retained vague anxiety and avoidant tendencies.

AGE AT ONSET IN RELATION TO PROGNOSIS

Forty-one patients (29%) had onset of obsessive-compulsive disorder before age 20 years, 58 (40%) between age 20 and 29 years, 39 (27%) between age 30 and 39 years, and 6 (4%) at age 40 years or later. These proportions were similar to those reported for the total group examined between 1954 and 1956.²³ Onset before age 20 years was found in 18 (44%) of the men ($n = 41$) and in 23 (22%) of the women ($n = 103$; sex difference: Fisher exact test, $P = .02$). **Table 3** gives age at onset in relation to prognosis. Early onset was associated with less recovery (test for trend in contingency table, $P = .01$).

DURATION

The duration of the obsessive-compulsive disorder from onset is shown in the **Figure**. As shown, 30 years after onset, 48% still had clinically relevant obsessive-compulsive disorder. Among 122 who were followed up for more than 40 years from onset, 44% still had an obsessive-compulsive disorder. Forty-nine were followed up for more than 50 years from onset, and 37% still had an obsessive-compulsive disorder.

Table 1. Changes in Clinical Severity of Obsessive-compulsive Disorder Between Hospitalization in 1947-1953 and Examinations in 1954-1956 and 1989-1993

Change in Severity in Relation to Hospitalization, 1947-1953	No. (%)	
	1954-1956 (n = 144)	1989-1993 (n = 144)
Improvement	94 (65)	120 (83)
With recovery	41 (28)	69 (48)
With complete recovery	16 (11)	29 (20)
With subclinical symptoms	25 (17)	40 (28)
With clinical symptoms	53 (37)	51 (35)
Unchanged with clinical symptoms	38 (26)	13 (9)
Deterioration	12 (8)	11 (8)
Total group with clinical symptoms	103 (72)	75 (52)

Table 2. Frequency of Some Obsessive-compulsive Symptoms From Onset to the First Examination in 1954-1956 in Relation to Recovery in 1989-1993

Symptoms From Onset Until 1954-1956 (n = 144)*	No. (%) Recovered From Obsessive-compulsive Disorder 1989-1993 (n = 69)	P†
Obsessions		
Rumination (n = 85)	40 (47)	.94
Impulsions (n = 69)	30 (44)	.39
Doubt (n = 64)	27 (42)	.29
Aggressiveness (n = 60)	25 (42)	.27
Aichmophobic (n = 55)	21 (38)	.10
Hypochondric (n = 29)	13 (45)	.87
Brooding on meaningless questions (n = 34)	13 (38)	.27
Guilt (n = 14)	3 (21)	.07
Magical (n = 22)	5 (23)	.02
Compulsions		
Checking (n = 43)	21 (49)	.97
Perfectionism (n = 29)	12 (41)	.56
Cleaning (n = 21)	7 (33)	.22
Repetitions (n = 20)	6 (30)	.14
Counting (n = 19)	9 (48)	.84
Rituals (n = 15)	3 (20)	.04
Washing (n = 14)	4 (29)	.21

*A patient may have more than 1 symptom.
†P indicates recovery compared with all other patients by the Fisher exact test.

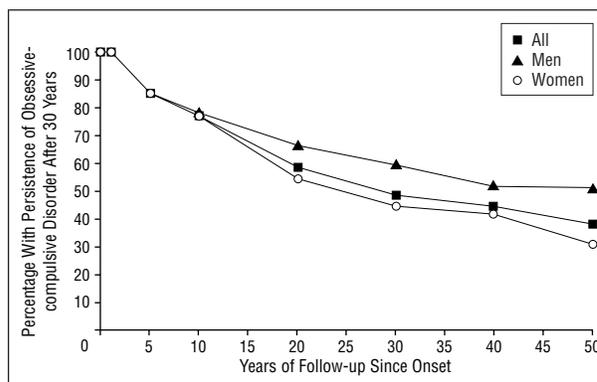
CHANGE IN SOCIAL FUNCTIONING MEASURED WITH THE GAF SCALE

The mean (SD) GAF score increased from 64.8 (10.6) at the time of the first examination to 71.7 (15.2) at the time of the second examination (Fisher test for pairwise comparisons, $P < .001$), with no sex difference ($P = .74$). **Table 4** gives social functioning, rated with the GAF scale, at the time of first examination in relation to GAF score at the time of the second examination. From the first examination to the second examination, 63 (44%) of the patients improved by 10 or more GAF points and 16 (11%) deteriorated by 10 or more points. Among those who had clinically relevant symptoms at the time of both examinations (n = 60), 20 patients improved by 10 or more

Table 3. Age at Onset in Relation to Prognosis*

Age at Onset, y	Status at the Examination in 1989-1993, No. (%)		
	Recovery	Improved With Clinical Symptoms	Unchanged/Deteriorated
All patients			
<20 (n = 41)	15 (37)	12 (29)	14 (34)
20-29 (n = 57)	29 (51)	21 (37)	7 (12)
30-39 (n = 40)	22 (55)	16 (40)	2 (5)
≥40 (n = 6)	3 (50)	2 (33)	1 (17)
Men			
<20 (n = 18)	5 (28)	5 (28)	8 (44)
20-29 (n = 13)	5 (38)	6 (43)	2 (15)
30-39 (n = 8)	7 (88)	1 (13)	0 (0)
≥40 (n = 2)	2 (100)	0 (0)	0 (0)
Women			
<20 (n = 23)	10 (44)	7 (30)	6 (26)
20-29 (n = 44)	24 (55)	15 (34)	5 (11)
30-39 (n = 32)	15 (47)	15 (47)	2 (6)
≥40 (n = 4)	1 (25)	2 (50)	1 (25)

*Age at onset in relation to recovery: test for trend in contingency tables with the Pitman test. All patients, $P = .01$. Men, $P < .001$. Women, $P = .39$.



Years of follow-up since onset and the proportion of patients with remaining obsessive-compulsive disorder. Fisher exact test, $P = .154$. Number of patients with follow-up data: 30 years follow-up, 144 (41 men, 103 women); 40 years, follow-up, 122 (35 men, 87 women); 50 years, follow-up, 49 (16 men, 33 women). Proportions of individuals with remaining obsessive-compulsive disorder symptoms after 30 years, men vs women: Fisher exact test, $P = .15$.

GAF points and 10 deteriorated by 10 or more points. The proportion with a GAF score of 75 points or more increased from 19% (n = 28) at the time of the first examination to 48% (n = 69) at the time of the second examination. A high GAF score at the first examination was related to a higher frequency of recovery at follow-up (Fisher permutation test, $P = .002$).

CHANGE IN CLINICAL SEVERITY OF OBSESSIVE-COMPULSIVE SYMPTOMS IN RELATION TO CHANGE IN SOCIAL FUNCTIONING

There was a significant relationship between change in social functioning and change in clinical severity of obsessive-compulsive symptoms from the first to the second examination (test for trend in contingency tables,

Table 4. GAF Scores in 1954-1956 in Relation to GAF Scores and Recovery in 1989-1993*

GAF Scores at the Examination in 1954-1956		GAF Scores at the Examination in 1989-1993, No. of Patients						Recovery in 1989-1993, No. (%)
Score	No. of Patients	≥75	65-74	55-64	45-54	≤44	Undetermined	
≥75	28	27	0	0	1	0	0	18 (64)
65-74	39	15	16	8	0	0	0	19 (48)
55-64	66	25	7	21	12		1	30 (45)
45-54	11	2	1	3	2	3	0	2 (18)
Total	144	69	24	32	15	3	1	69 (48)

*All data are presented as number of patients unless otherwise indicated. GAF indicates Global Assessment of Functioning. Global Assessment of Functioning scores in 1954 to 1956 in relation to recovery in 1989 to 1993, Fisher permutation test, $P = .002$. Global Assessment of Functioning scores to the right of the gray tinted boxed diagonal indicate a worsening over time. Global Assessment of Functioning scores to the left indicate improvement.

Table 5. Change in Clinical Symptoms in Relation to Change in Social Functioning Between the Examinations in 1954-1956 and in 1989-1993*

Change in Clinical Symptoms From 1954-1956 to 1989-1993	Change in Social Functioning From 1954-1956 to 1989-1993		
	Improved (n = 63)	Unchanged (n = 65)	Worse (n = 16)
Improved (n = 63)	35 (56)	24 (37)	4 (25)
Unchanged (n = 60)	26 (41)	29 (45)	5 (31)
Worse (n = 21)	2 (3)	12 (18)	7 (44)

*All data are presented as number (percentage). Relation between change in social functioning and change in clinical severity of obsessive-compulsive symptoms: test for trend in contingency tables with the Pitman test, $P < .001$.

$P < .001$), as summarized in **Table 5**. Change in social functioning was consistent in direction with change in clinical severity in 71 (49%) of the patients. Clinical improvement with unchanged or deteriorated social functioning occurred in 28 patients (19%) and improved social functioning with an unchanged or deteriorated clinical state was found in 28 (19%).

TYPE OF COURSE

Table 6 summarizes the type of course from onset to the time of the first examination in relation to the type of course during the follow-up period and frequency of recovery by the second examination. An intermittent course was most common from onset to the first examination (56% of all patients), while a chronic course was most common in the time up to the second examination (44% of all patients). Those with an episodic course from onset to the first examination had a better prognosis than those with a chronic course during that period. Forty percent of those with an intermittent course changed to a chronic course, while 62% of those with a chronic course continued their chronic course. Among those with a chronic course, 64% had a fluctuating picture with exacerbations and occasional slight temporary improvements.

TREATMENT

Six patients underwent psychosurgery (4 lobotomizations, 1 capsulotomy, and 1 combined lobotomization and capsulotomy) during the follow-up period. The procedure seemed to induce a lasting positive effect on the obsessive-compulsive disorder for 2 patients, but both also showed reduced intellectual, emotional, and cognitive functions.

Late in the follow-up period, 17 patients were treated with clomipramine. In 14 of these patients, treatment was instituted more than 30 years after onset of the obsessive-compulsive disorder. An improvement was reported in 10 patients, 6 of whom recovered.

Exclusion of patients on whom we had information from medical records only ($n = 12$), patients who did not fulfill the *DSM-IV* criteria for obsessive-compulsive disorder ($n = 20$), and subjects who had subsequently undergone psychosurgery ($n = 6$) did not change the results.

COMMENT

To our knowledge, this is the longest prospective study on the course of obsessive-compulsive disorder, covering a natural history of almost 5 decades. During most of this period, there were no effective and lasting therapies for obsessive-compulsive disorder. Now that effective treatments have been introduced, the study would be difficult to replicate. An added distinction is that the patients were examined by the same psychiatrist in the first and second examinations

Duration of the disorder was lengthy for most patients, with half still experiencing clinically relevant symptoms and another third with subclinical symptoms at follow-up. Among those followed up for half a century since onset, 37% still had an obsessive-compulsive disorder. Although most patients had shown some improvements in both clinical symptoms and social functioning, complete recovery occurred in only about one fifth. The proportion with complete recovery in our study is, despite longer follow-up, in line with other studies. The proportion with improvement, however, is higher than in most

Table 6. Type of Course From Onset to 1954-1956 in Relation to Type of Course During the Follow-up Period and Frequency of Recovery in 1989-1993*

Type of Course From Onset to 1954-1956	Type of Course From 1954-1956 to 1989-1993				Recovery in 1989-1993	
	Episodic	Intermittent	Chronic	Other†		
All	144 (100)	15 (10)	45 (31)	63 (44)	21 (15)	...
Episodic	24 (17)	6 (25)	6 (25)	7 (29)	5 (21)	17 (71)
Intermittent	80 (56)	4 (5)	32 (40)	32 (40)	12 (15)	37 (46)
Chronic	39 (27)	5 (13)	7 (18)	24 (62)	3 (8)	14 (36)
Other	1 (0.7)	1 (100)	0 (0)

*All data are presented as number (percentage). Type of course in 1954 to 1956 in relation to recovery in 1989 to 1993: Fisher permutation test, $P = .006$. Ellipses indicate not applicable.

†Other includes 19 patients without obsessive-compulsive disorder from 1954 to 1956 to 1989 to 1993 and 2 unspecified cases.

other studies. It is difficult, however, to make relevant comparisons, owing to differences in methods and time of follow-up. Most improvements occurred early in the course, as has also been noted in other studies.^{13,21} Among those who recovered early, almost half had no relapses after more than 3 decades of follow-up, while one fifth had late relapses after being free from symptoms for more than 20 years. Thus, early recovery, while correlated with a good prognosis, does not exclude the possibility of a very late relapse.

Most subjects showed an improvement in social functioning, as measured by the GAF scale. High GAF score at baseline was also correlated with a better prognosis. In most patients, changes in clinical symptoms and social ability were correlated, but, as has been noted in other studies,^{12,13,15} social functioning may be good despite persistent severe clinical symptoms. In agreement with our study, Berrios and Chiu²⁰ reported that remaining symptoms tend to interfere less with social functioning during the course of an obsessive-compulsive disorder. It may be that the patients learn to cope with their symptoms during the course of the disorder.³¹

The finding that compulsive symptoms were correlated with worse prognosis than obsessions alone is also in agreement with other reports.^{3,10,17,18,21,31,32} We found that some symptoms, such as rituals and magical obsessions, were associated with an unfavorable outcome. These symptoms are less understandable, more bizarre and stereotypical than other symptoms, and, accordingly, perhaps more resistant to intellectual, emotional, and therapeutic coping.

We found that almost two thirds of the patients showed obvious changes in the content of their obsessive-compulsive symptoms during almost 5 decades of follow-up. The high proportion of patients who changed symptoms during the course suggests that obsessive-compulsive disorder is more variable than what is found in studies that cover only a few years. In contrast, few of those with an early monosymptomatic picture became polysymptomatic.

Several investigators^{15,33-36} report that the chronic type of obsessive-compulsive disorder is more common than the intermittent course. In our study, an intermittent course was most common early in the course, while the chronic type became most common later. This partly reflects the better prognosis of those with the intermittent

type, but also that several patients with an intermittent course changed to a chronic course. The better prognosis in those with an early intermittent course compared with those with an early chronic course is in agreement with most other studies.^{5,7,15,37-39}

Onset of obsessive-compulsive disorder before age 20 years was related to a poorer outcome, especially in men. Several authors report findings similar to ours,^{10,40,41} while others found no correlation between prognosis and age of onset.^{7,12,14}

Effective pharmacological treatments for obsessive-compulsive disorder were not introduced until the end of the study period. Despite the fact that they had been ill for several decades, 17 patients were treated with clomipramine in the 1970s and 1980s. The finding of a favorable outcome in 10 suggests that it is important to try treatment in patients with chronic obsessive-compulsive disorder, even after several decades of illness.

Some limitations of our study must be noted. First, the study is based on psychiatric inpatients. Our sample is thus probably not representative of all individuals with obsessive-compulsive disorder. Instead, it is likely that it represents a group with more severe disorders or with other factors that led to hospitalization. Inpatients with obsessive-compulsive disorder previously have been reported to have a poorer prognosis than outpatients.^{21,41} Second, the investigation was performed over many years, and the participants may have had difficulties recalling details of events that occurred between examinations. Third, in studies with long follow-up periods, attrition is a problem. Subjects who died or were lost to follow-up might possibly have differed from those who were reexamined. The response rate (82%) among those who survived until the reexamination period was, however, high. Therefore, the sample examined would probably give a fair picture of patients with severe obsessive-compulsive disorder surviving 4 decades from onset. Fourth, definitions of mental disorders changed considerably in the time between the first and second examinations. Although 85% of the patients in our study also fulfilled the criteria of *DSM-IV*, the questions used in the first examination were not designed to diagnose obsessive-compulsive disorder according to the *DSM-IV* system. Some of those who in retrospect seemed not to meet *DSM-IV* criteria for obsessive-compulsive disorder may in fact have fulfilled these criteria. We therefore chose

to retain the original criteria in this study. We take some note of the fact that the prognosis was similar in those fulfilling DSM-IV criteria and the whole sample. Fifth, the examination procedures were based on practices of the 1950s, although new and possibly better instruments are now available. However, we chose to follow the golden rule for longitudinal studies, ie, to keep to the original schedule.

Accepted for publication November 3, 1998.

The study was supported by grants P-11337 (Dr I. Skoog) and 09112 (Dr G. Skoog) from the Swedish Medical Research Council and a grant from Stiftelsen Söderström-Königska Sjukhemmet (Dr G. Skoog).

We thank John C. Bretnier, MD, MPH, Department of Mental Hygiene, Johns Hopkins University, Baltimore, Md, for suggestions regarding the manuscript, and Anders Odén, PhD, Department of Mathematics, Göteborg University, Göteborg, Sweden, for statistical consultations.

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