

Pharmacotherapy of obsessive–compulsive disorder in a health maintenance organization

LORRIN M. KORAN, JEANNE L. LEVENTHAL, BRUCE FIREMAN, AND ALICE JACOBSON

Inadequate pharmacotherapy of mood disorders has been documented in community care,^{1,2} large group-practice HMOs,^{3,4} psychiatric hospitals,⁵ and psychiatric practices in academic medical centers.⁶ While patients' incomplete recall may produce some underreporting, this cannot be assumed to account for most instances of inadequate treatment. Whether pharmacotherapy for anxiety disorders, such as obsessive–compulsive disorder (OCD), is as inadequate as that for mood disorders has not been studied.

During the past decade, medications that inhibit serotonin reuptake have been found to bring about substantial improvement in 40–60% of patients with OCD.⁷ In most patients, OCD is chronic,^{8,9} and the sparse published data suggest that patients with OCD who discontinue medication are highly likely to experience a return or worsening of symptoms.^{10,11}

We report here data on the adequacy of pharmacotherapy for a large group of patients with OCD in a large, prepaid HMO. For newly di-

Abstract: The adequacy of pharmacotherapy for patients with obsessive–compulsive disorder (OCD) in a large, prepaid HMO was studied.

An analysis was made of the computerized records for December 1, 1994, through April 30, 1998, for members of a Kaiser Permanente plan in northern California who were six years of age or older and had had continuous membership during an index year (May 1, 1995, to April 30, 1996) (1.728 million members). A total of 880 adults and 168 children and adolescents with chart-review-confirmed OCD and a pharmacy benefit were identified. The percentage of patients with an adequate drug trial, defined as ≥ 56 days of continuous treatment with a serotonin-reuptake inhibitor or phenelzine at dosages at or above established minimal effective dosages, was determined.

Forty-three percent of the adults and 28% of the children and adolescents who were newly diagnosed with OCD in the index year had an adequate trial of medication in the year after their first visit for OCD.

By the second six months after the index year, only 75.2% of newly treated adults and 60.9% of newly treated children and adolescents continuing in the health plan filled at least one anti-OCD prescription. During the second follow-up year, these figures fell to 60.4% and 38.9%, respectively. Continuing-care patients filling a prescription in the index year were more likely than newly diagnosed patients to fill prescriptions in the two-year follow-up period, but their treatment still decreased substantially.

Despite the typically chronic course of OCD, many patients with OCD who were enrolled in a large HMO appeared not to receive an adequate trial of pharmacotherapy or ongoing pharmacotherapy.

Index terms: Adolescents; Antidepressants; Compliance; Dosage; Dosage schedules; Health maintenance organizations; Obsessive–compulsive disorder; Pediatrics; Phenelzine; Prescribing; Psychotherapeutic agents; Rational therapy

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agnosed patients, we looked for an adequate drug trial within the 12 months after diagnosis; for patients diagnosed before our 12-month index period who continued in care,

we examined care within the index year. These two patient groups provided a cohort view (newly diagnosed patients) and a period-prevalence view (continuing care patients)

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of pharmacotherapy. We focused on drug treatment because pharmacy records were available in a computerized database, whereas psychotherapy records were not. We examined factors associated with receiving an adequate and an inadequate medication trial. Finally, we assumed a long-term view of medication use by both newly diagnosed and continuing care patients.

Methods

We analyzed the computerized records for December 1, 1994, through April 30, 1998, for members of the Kaiser Permanente (KP) Medical Care Program in northern California age six years or older who had continuous membership during the index year (May 1, 1995, through April 30, 1996); who were served by 1 of 19 KP outpatient facilities in Sacramento, California, or the San Francisco Bay region; and who had a KP pharmacy benefit as of May 1, 1995. There were 1.728 million such members. During the study period, mental health benefits for most members included 45 inpatient days per year, 20 visits per year for psychotherapy, unlimited brief visits with a psychiatrist concerning medication, and unlimited visits for alcohol and substance-abuse treatment. The pharmacy benefit for most members included a copayment, usually \$5 per prescription. Health plan members could refer themselves to a psychiatry clinic without referral from a "gatekeeper." Approximately 20% of members had access to additional insurance covering mental health services provided outside KP.

We identified 2043 members with a psychiatric clinic diagnosis of OCD recorded in KP's computerized "reason-for-visit" data system (Outpatient Summary Clinical Record, or OSCR) during the index year. We reviewed the charts of 1771 (86.7%) of these patients, of whom 1276 (72%) (1081 adults and 195 children and adolescents) became subjects with cases of OCD confirmed by chart re-

view. Of these, 1095 (86%) were "definite" OCD and 181 (14%) had "probable" OCD. Their demographic and clinical characteristics have been described elsewhere.³ The OSCR diagnoses of OCD were disconfirmed in 495 cases (28%). The remaining 272 charts were not reviewed because they were unavailable or because the chart reviewers lacked time.

Patients with chart-review-confirmed OCD had a diagnosis recorded in the chart by the treating clinician or, in the absence of this, a diagnosis confirmed by chart review as definite or probable OCD. Nurses trained by the investigators reviewed charts by using diagnostic checklists similar to the criteria for OCD given in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*.¹² Since the reviewers could not interview the patients, the chart-review checklist did not include the *DSM-IV* criteria regarding resistance to obsessions or insight. Patients with definite OCD exhibited symptoms of either obsessions or compulsions or both, as listed in the Yale-Brown Obsessive-Compulsive Scale symptom checklist,¹³ and there was documentation that the symptoms caused marked distress, occupied at least one hour per day, or significantly interfered with the patient's role functioning, normal routine, or social activities. Patients with probable OCD exhibited symptoms of obsessions or compulsions or both, but there was insufficient documentation to determine the degree of distress, the amount of time occupied, or the level of interference with functioning. The chart reviewers did not count toward an OCD diagnosis symptoms better explained by generalized anxiety disorder, major depression, trichotillomania, an eating disorder, body dysmorphic disorder, hypochondriasis, a paraphilia, or obsessive-compulsive personality disorder.

Patients with newly diagnosed OCD were patients who had no visit coded as OCD in the OSCR database

and no prescription of a serotonin-reuptake inhibitor (SRI) recorded in the KP computerized pharmacy records during the six months preceding the start of the index year (May 1, 1995). Thus, depending on when the first visit for OCD occurred during the index year, new cases had varying lengths of observation time before the start of the new episode of care. We examined data for at least 12 months after the first visit for OCD in the index year and included in each follow-up period only those patients whose KP membership was continuously in force. Continuing care patients were patients who had at least one visit coded for OCD in OSCR during the six months preceding the index year or who had any prescription for an SRI during those six months plus at least one visit for OCD during the index year.

Of the 1276 patients with chart-review-confirmed OCD, 880 adults (age 18 years or older) and 168 children and adolescents (ages 6–17 years) had KP pharmacy benefits on May 1, 1995. The rates of pharmacotherapy reported are based on these 1048 patients. This group did not differ substantially from the 228 OCD patients without pharmacy benefits with respect to the percentage that was male (45% versus 45%), the percentage that consisted of children or adolescents (16% versus 12%), or the percentage that had four or more visits for OCD recorded in OSCR during the study year (29% versus 33%). Thus, the 1048 patients can be viewed as representative of the 1276 patients with chart-review-confirmed OCD.

Data on medication trials are derived from KP's computerized record of all filled prescriptions, regardless of the specialty of the prescribing physician. The system records the date, drug name, dosage, and number of pills dispensed for each prescription. An adequate trial of an anti-OCD medication (an SRI or phenelzine) was at least 56 days (eight weeks) of continuous treat-

ment with at least the lowest medication dose identified as effective in double-blind trials.^{7,14,15} Continuous treatment meant filled prescriptions spanning eight weeks at an adequate dosage; we allowed a gap of up to 14 days between two sequential prescriptions, but gap days were included in determining the completion date for an adequate trial. Adequate medication dosages were clomipramine, ≥ 150 mg/day (≥ 75 mg/day for children and adolescents)¹⁴; fluoxetine, ≥ 20 mg/day¹⁴; fluvoxamine, ≥ 100 mg/day¹⁴; paroxetine, ≥ 40 mg/day (≥ 20 mg/day for children and adolescents)⁷; sertraline, ≥ 50 mg/day¹⁴; and phenelzine, ≥ 45 mg/day.¹⁵ Except for the phenelzine dosage, these dosages have been demonstrated to be effective for OCD in double-blind, placebo-controlled trials; the phenelzine dosage was derived from a double-blind comparison of phenelzine and clomipramine.

For 95 patients (71 adults and 24 children and adolescents), the prescription data in the computer were inconsistent (e.g., the frequency of daily doses did not match the data indicating the total number of days supplied in the prescription). One of the investigators reviewed the data for these patients to judge whether an adequate trial had been prescribed and, if so, the date of its completion.

For newly diagnosed patients, we utilized logistic regression models to examine the relationship between patient and health plan variables and the odds of receiving an adequate medication trial in the year after diagnosis. We hypothesized that the odds would vary by KP facility (since medical care practices usually vary by setting), be lower in the elderly (since they matured before the modern era of psychotropic drugs), and be higher in women (they utilize health care resources at higher rates than men), patients with a diagnosis of comorbid depression (since SRIs treat both conditions), patients with any other comorbid psychiatric condition recorded in OSCR in the index period

(since, we believe, patients with more complex conditions are more likely to receive pharmacotherapy), patients with more visits for OCD per month coded in OSCR in the 15 months after the first visit for OCD (there are more opportunities to prescribe), and patients with more psychiatric visits per month in these 15 months for any other diagnosis (more opportunities to prescribe).

Regression models were run separately for adults and for children and adolescents. The a priori level of significance for these exploratory analyses was set at <0.05 (two tailed).

Analyses of continuing medication use in newly diagnosed and continuing care patients included only patients with continuous membership in KP during each interval examined.

Results

Of the OCD patients in continuing care, 90.1% of adults and 81.9% of children and adolescents had at least one period of adequate pharmacotherapy during the index year (Table 1). Only 8.4% of children and adolescents in continuing care and only 2.8% of adults had no medication prescribed. Of the patients with newly diagnosed OCD, 42.8% of adults and 28.2% of children and adolescents were prescribed adequate medication at least once in the 12 months after their first visit for OCD during the index year. Of these 158 patients, one fourth began their adequate trial within 4 days of their initial visit, one

fourth between 4 and 23 days, one fourth between 24 and 86 days, and one fourth sometime later in the year after the initial visit.

Including the 19 KP facilities in the logistic regression models did not significantly improve their ability to predict which newly diagnosed patients received adequate medication. Therefore, we report the odds ratios from the models that omitted the facility variable. For adults, the odds of receiving adequate medication were significantly higher in patients with more OCD visits per month (odds ratio = 13.44, Wald's $\chi^2 = 28.80$, $p = 0.0001$), patients between 18 and 39 years of age (odds ratio = 3.21, Wald's $\chi^2 = 4.64$, $p = 0.03$) (versus patients 60 or older), patients between 40 and 59 years of age (odds ratio = 3.76, Wald's $\chi^2 = 5.75$, $p = 0.02$) (versus patients 60 or older), and patients with a comorbid depressive disorder (odds ratio = 2.53, Wald's $\chi^2 = 12.234$, $p = 0.0004$). The odds of adequate treatment were not significantly related to sex, number of visits per month for other psychiatric conditions, or presence of a psychiatric comorbidity other than depression. When the variable OCD visits per month was removed from the model, patient age 40–59 years (odds ratio = 2.86, Wald's $\chi^2 = 4.27$, $p = 0.04$) and comorbid depressive condition (odds ratio = 2.07, Wald's $\chi^2 = 9.23$, $p = 0.002$) remained significantly related to the odds of receiving adequate medication.

Table 1.
Adequacy of Pharmacotherapy of Obsessive-Compulsive Disorder (OCD) in Health Maintenance Organization^a

Patient Age and Status	No. (%) Patients		
	No Medication	Inadequate Medication	Adequate Medication
6–17 yr			
Newly diagnosed	42 (49.4)	19 (22.3)	24 (28.2)
Continuing care	7 (8.4)	8 (9.6)	68 (81.9)
≥ 18 yr			
Newly diagnosed	86 (27.5)	93 (29.7)	134 (42.8)
Continuing care	16 (2.8)	40 (7.1)	511 (90.1)

^aAn adequate period or trial of medication was eight weeks or longer at an adequate dosage. For newly diagnosed patients, the time period was 12 months after the first visit for OCD during the study period. For continuing care patients, the time period was the study period (May 1, 1995, through April 30, 1996).

For newly diagnosed children and adolescents, the odds of receiving adequate medication were significantly higher with more OCD visits per month (odds ratio = 12.47, Wald's $\chi^2 = 10.56$, $p = 0.001$) but were not significantly related to sex, number of visits per month for other psychiatric conditions, comorbid depression, or other psychiatric comorbidity. When the variable OCD visits per month was removed from the model, the presence of a comorbidity other than a depressive disorder significantly decreased the odds of receiving adequate medication (odds ratio = 0.34, Wald's $\chi^2 = 4.20$, $p = 0.04$).

A higher percentage of newly diagnosed children and adolescents (49.4%) than newly diagnosed adults (27.5%) had no trial of medication for OCD in the year after diagnosis (Table 1). According to the charts we reviewed (for 82 of 86 adults and all 42 children and adolescents), the primary reasons for the absence of pharmacotherapy were discontinuation of psychiatric care (despite continued KP membership) (18%), treatment with behavioral therapy alone (12%), refusal of medication (11%), and miscellaneous other reasons (24%). No reason could be ascertained for 34% of the charts reviewed.

A higher percentage of newly diagnosed adults (29.7%) than of children and adolescents (22.3%) had only an inadequate trial of medication in the 12 months after diagnosis (Table 1). Most trials were inadequate because of short duration, not inadequate dosage. For patients whose charts were reviewed (75 of 93 adults and 13 of 19 children), the primary reasons associated with inadequate pharmacotherapy were discontinuation of psychiatric care (despite continuing KP membership) (17%), adverse effects (15%), response at a lower dosage (13%), refusal of medication (11%), noncompliance (9%), treatment with behavioral therapy alone (2%), prescription of an inadequate dosage (2%), and miscellaneous other reasons (11%). No rea-

son could be ascertained for 19% of the charts reviewed.

Newly diagnosed patients of all ages tended to discontinue taking medication over time. By the second six months after the end of the index year, only 75.2% of the adult patients and only 60.9% of the children and adolescents who were still members of the health plan filled at least one prescription. The proportions filling prescriptions continued to fall over the next 12 months. Among adults who filled a prescription during a given 6-month period in the two years after the index 12 months, the percentage filling prescriptions that would cover at least three fourths of the medication dosage prescribed ranged from 50% to 60%; the range for children and adolescents was slightly lower (44.4–57.1%). There was a nearly continuous decline over the 24 months after the first visit for OCD in the mean number of days of prescribed medication that newly treated patients obtained.

The continuing care patients had a higher rate of sustained pharmacotherapy over the two-year period after the index year. Throughout this period, a higher percentage of these patients than of newly diagnosed patients continued to fill prescriptions, and the mean number of days' supply of medication obtained was twice as high among the adults and, during the second year, three times as high among the children and adolescents. Nonetheless, 28.6% of adults and 45.8% of children and adolescents in continuing care stopped filling prescriptions in the second follow-up year; of those filling a prescription, 27.0% of adults and 26.8% of children and adolescents failed to fill enough prescriptions in the second follow-up year to cover at least three fourths of their prescribed dosage.

Discussion

In this prepaid health plan, 90.1% of adults and 81.9% of children and adolescents with OCD who were in continuing care during our index

year filled prescriptions equivalent to an adequate therapeutic trial (eight or more weeks at an appropriate dosage) at least once during that period. Among newly diagnosed patients, however, the proportions having an adequate trial within 12 months of their first visit for OCD were much lower: only 42.8% of adults and 28.2% of children and adolescents. Half of these adequate trials for new patients began within about three weeks of the initial visit. The difference between newly diagnosed and continuing care patients in the proportion receiving adequate medication suggests that continuing care patients are a select subgroup who have chosen to continue medication. Their cohort companions may have never started medication; may have discontinued medication because of adverse effects, lack of efficacy, reluctance to take medication over a long period, or marked, sustained improvement in the OCD; or may have left the health plan. Quantification of patients in each of these categories can be determined only by future research. Our chart reviews did not consistently yield sufficient information to characterize the impact of OCD on patients' functioning, either before or after treatment. Thus, we cannot comment on the outcomes of treatment or of stopping treatment.

Our methods may have overestimated or underestimated the proportion of both new and continuing care patients who received adequate pharmacotherapy for OCD. Overestimation could have occurred if some patients whose computerized pharmacy records indicated an adequate medication trial did not actually comply without charted documentation of this noncompliance. Our decision to use as a criterion the lowest medication dosages that controlled trials have demonstrated to be effective may also have favored overestimation. Underestimation could have occurred if some patients filled prescriptions outside the KP system through supplemental insurance, if

their pharmacy benefit terminated after the date we checked the records (May 1, 1995), or if patients responded at dosages lower than those we specified for an adequate trial (and we failed to detect this in our chart review).

For newly diagnosed patients, we found no evidence that the odds of an adequate medication trial were related to the KP facility where the patients were treated. However, the small sample size provided no power to evaluate the differences at any one facility and very limited power to detect whether the facility variable made a substantial difference in the odds of receiving adequate medication. In the models without the facility variable, the odds of adequate medication for adults increased (as we hypothesized) with the number of visits for OCD in the 15 months after diagnosis and, independently, with the presence of a comorbid depressive disorder. Comorbid depression may have motivated adult patients to persist with SRI treatment (perhaps aiming at their depressive rather than OCD symptoms) or may have motivated prescribing psychiatrists to more vigorously pursue medication trials aimed at one or both disorders. Our data do not allow us to distinguish between these possibilities.

Also as we hypothesized, older adults (60 or older) were less likely to receive adequate medication; whether they were less interested in medication, had less severe symptoms, or were less compliant remains unknown. Contrary to our hypothesis, the odds of adequate medication were not related to sex, the presence of psychiatric conditions other than depression, or the number of visits per month for these conditions. Thus, men and women may be equally interested in receiving drugs for OCD, and comorbid psychiatric conditions other than mood disorders may have little influence on psychiatrists' propensity to prescribe anti-OCD medication. Although we did not analyze the specialties of pre-

scribing physicians, no visits coded for OCD were found in our review of reasons for visits to nonpsychiatric physicians.

We did not investigate whether the likelihood of patients receiving adequate pharmacotherapy varied with the specific medication prescribed or with the provider's characteristics (e.g., age and sex). Since many patients in this HMO see more than one provider over the lengths of time we studied, an analysis of provider characteristics was not feasible.

Newly diagnosed children with a comorbid psychiatric condition other than depression were less likely to receive adequate medication. Since such children's most common comorbid diagnoses are attention-deficit disorder (33%), Tourette's disorder (18%), and oppositional defiance disorder (17%), these comorbidities may affect compliance or may dissuade parents or clinicians from adding yet another medication to a child's regimen. These possibilities deserve further study.

Should the proportion of newly diagnosed adult patients prescribed adequate medication be considered high or low? Compared with the proportion of newly diagnosed mood-disorder patients prescribed an adequate antidepressant trial in various settings, the proportions we observed can be regarded as average or high. In a study of prepaid and fee-for-service psychiatric practices, only 34% of all depressed patients and only 49% of the outpatients in the highest quartile of depression severity were receiving antidepressant treatment.⁴ Among depressed persons in the U.S. National Comorbidity Survey, only 7.3% received appropriate management in the 12 months preceding the survey.¹⁶ In an HMO study, only 37% of depressed patients in a primary care clinic that was supplemented by psychiatric consultation experienced an adequate antidepressant trial in the year after diagnosis.³ Among patients with dysthymia, only 41% had received an adequate antidepressant

trial before entering the index research studies.^{17,18} Of course, the higher rates of pharmacotherapy in the KP patients may reflect the fact that they were receiving treatment in psychiatric specialty rather than primary care settings.

The proportion of children and adolescents with newly diagnosed OCD who received an adequate trial of medication appears to have been low. Understandably, physicians and parents are more reluctant to use medications in these age groups,¹⁹ perhaps in part because of the smaller pharmacotherapy database available. Still, several selective SRIs and clomipramine have been approved by FDA and endorsed by an expert panel²⁰ as safe and effective for the treatment of OCD in children.

Our chart reviews provide some indication of the major reasons why some patients failed to receive adequate medication, but limited, non-standardized charting and the absence of interviews with the patients themselves necessitate viewing our results with caution. Despite the methodological limitations, these data and studies of depressed patients²¹ suggest that investigators should explore whether aggressive follow-up of patients who fail to return for treatment, attention to strategies for managing adverse effects,⁷ and implementation of compliance-enhancement strategies²² can increase the likelihood of OCD patients receiving adequate medication. For example, an intensive intervention in an HMO primary care clinic achieved superior results, with 75% of the patients receiving an adequate antidepressant dosage at ≥ 90 days of follow-up.²¹ When the intensive interventions were discontinued, the improved medical practice faded away.²³

Our chart reviews may have underestimated the proportion of patients who refused medication. Sixty percent of adults and two thirds of children and adolescents with a comorbid psychiatric disorder who were not prescribed an SRI were not

prescribed any other psychotropic drug. Many of these patients may well have resisted taking any medication. In other cases, of course, the patients' treating clinician (a psychiatrist or a psychologist) may have elected to use psychotherapy alone. Despite being a reasonable alternative for patients who refuse medication or who repeatedly encounter unacceptable adverse effects,^{7,20} behavioral therapy appears to have been used for only about 10% of patients receiving no medication.

Over a two-year follow-up period, newly treated patients and to a somewhat lesser degree continuing care patients tended to discontinue taking medication even though OCD is, for the vast majority of individuals who seek care, a chronic condition.⁸ Some discontinuation, of course, may have been due to lack of drug effectiveness; only 40–60% of OCD patients will respond to a given trial,^{7,24} and some patients will relapse despite continuing their medication.^{11,25} However, additional SRI trials or trials of augmentation strategies should be pursued with such patients.^{7,20,26,27}

The relative importance of the reasons why KP patients discontinued their anti-OCD medication is unknown. The fall-off in pharmacotherapy we observed applies only to individuals who maintained their KP membership during a given follow-up period. One fourth of the newly diagnosed children and adolescents and 17% of the adults were no longer members of KP within 18–24 months after their diagnosis. Their treatment status after their membership in KP lapsed is unknown.

Failure to continue psychotropic medication is not unique to OCD patients, and noncompliance with long-term pharmacotherapy is a problem throughout medicine.²⁸ In one study, the median length of lithium use in patients with bipolar disorder who were treated in an HMO was only 65 days.²⁹ In a second HMO study, 44% of patients prescribed antidepressants for depression had

stopped taking them by the end of the third month,²³ whereas recommended treatment calls for continuing medication for four to nine months after symptomatic recovery.³⁰

A number of strategies for enhancing long-term compliance with psychotropic pharmacotherapy have been studied, including insurance coverage for prescription drugs, use of pharmacy information for monitoring compliance, active follow-up of lapses in therapy, and a psychiatry or primary care collaborative care model.^{2,21,23,31–33} Randomized trials of such interventions indicate that they have limited, although appreciable, effect but must be continued to preserve the gains achieved.³⁴ Future research should investigate the application of both apparently effective and innovative methods with OCD patients and their treating clinicians. Both patient-related and physician-related sources of inadequate treatment deserve study.³⁵

Like many patients with mood disorders reported in other studies, a substantial minority of patients with OCD diagnosed in this prepaid health plan were not enjoying the benefits of available, effective pharmacotherapies, either in the short term or the long term. Few of these patients were receiving effective behavioral therapy instead. Whether OCD patients with other forms of health insurance receive adequate pharmacotherapy and behavioral therapy more or less often than those we observed requires study. Our results and studies of depressed patients²¹ suggest that follow-up of patients who fail to return for scheduled visits, implementation of strategies for managing adverse effects, greater attention to elderly adults, and a special focus on children with OCD and comorbid conditions other than depression may bring the benefits of pharmacotherapy to a greater proportion of patients with OCD. However, why many adults and children with OCD fail to receive adequate pharmacotherapy (and behavioral

therapy) deserves further study, as do methods for increasing longer-term compliance with pharmacotherapy for chronic psychiatric conditions.

Conclusion

Despite the typically chronic course of OCD, many patients with OCD who were enrolled in a large HMO appeared not to receive an adequate trial of pharmacotherapy or ongoing pharmacotherapy.

^aFireman B, Koran LM, Leventhal J et al. The prevalence of clinically recognized obsessive-compulsive disorder in a large, pre-paid health plan. Unpublished manuscript.

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