

# Obsessive-Compulsive Disorder: Diagnosis and Treatment in the Primary Care Setting

Monique Gedenk, MD, and Peggy Nepps, PsyD

**Background:** Obsessive-compulsive disorder is a common anxiety disorder found in 1 to 2 percent of the population. Obsessions are recurrent and persistent thoughts that cause marked anxiety or distress. Compulsions are repetitive behaviors or mental acts done to prevent or reduce anxiety. Patients might underreport symptoms or complain of coexisting depression or anxiety instead. The primary care physician is often the first to encounter this disorder in patients.

**Methods:** The authors cared for and observed a patient with obsessive-compulsive disorder at a family practice office and used her case to illustrate a literature review gathered by means of a MEDLINE search.

**Results and Conclusions:** A combination of patient education, selective serotonin reuptake inhibitors, and behavioral techniques allow the family physician to maximize patient recovery and play a major role in the diagnosis and treatment of obsessive-compulsive disorder. (J Am Board Fam Pract 1997;10:349-56.)

Obsessive-compulsive disorder is a common anxiety disorder that can be chronic and disabling. Considering that psychiatric disorders occur in at least 20 percent of medical outpatients<sup>1,2</sup> and that most patients with psychiatric disorders are cared for by primary care rather than mental health providers,<sup>3,4</sup> it is important that family physicians are familiar with the diagnosis and treatment of obsessive-compulsive disorder. There have been many new developments, especially pharmacologic, in the treatment of obsessive-compulsive disorder that have occurred during the past decade.

Obsessive-compulsive disorder is characterized by recurrent obsessions or compulsions that, at some point during the course of the disorder, the person has recognized as excessive or unreasonable. These obsessions or compulsions cause marked distress, are time-consuming, or interfere with the person's life. They are not due to another psychiatric illness or to the direct physiologic effects of a substance (drugs of abuse, medications) or a general medical condition.<sup>5</sup> Table 1 lists the American Psychiatric Association's crite-

ria for obsessive-compulsive disorder from the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (DSM-IV).

Recognition and treatment of obsessive-compulsive disorder in primary care are important for many reasons. Although symptoms are ego dystonic, patients often hesitate to reveal them or to self-refer to a mental health professional, leading to what has been called a hidden epidemic. A family physician might be the only health professional who has regular contact with a patient who has obsessive-compulsive disorder. The obsessive-compulsive disorder patient might also come to the family physician complaining of nonspecific anxiety symptoms, hoping the family physician can provide relief without the patient having to reveal his or her obsessions and compulsions. Finally, managed care might increasingly require that the family physician assess and in some cases treat obsessive-compulsive disorder.

## Methods

MEDLINE was searched using the key words "obsessive-compulsive," "obsessions," and "compulsions," from 1990 to the present. Articles from 1990 to 1996 that addressed the assessment or treatment of obsessive-compulsive disorders were selected from their abstracts. Additional articles pertaining to epidemiology or etiologic theories were accessed from cross-reference of the citations in the initial set of articles. Relevant articles pub-

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From the Department of Family and Community Medicine, Lancaster General Hospital, Lancaster, Pa. Address reprint requests to Peggy Nepps, PsyD, Department of Family and Community Medicine, Lancaster General Hospital, Lancaster, PA 17604.

**Table 1. Diagnostic Criteria for Obsessive-Compulsive Disorder According to DSM-IV.**

- A. Either obsessions or compulsions:  
 Obsessions as defined by (1), (2), (3), and (4):  
 (1) recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate and that cause marked anxiety or distress  
 (2) the thoughts, impulses, or images are not simply excessive worries about real-life problems  
 (3) the person attempts to ignore or suppress such thoughts, impulses, or images, or to neutralize them with some other thought or action  
 (4) the person recognizes that the obsessional thoughts, impulses, or images are a product of his or her own mind (not imposed from without as in thought insertion)  
 Compulsions as defined by (1) and (2):  
 (1) repetitive behaviors (eg, hand washing, ordering, checking) or mental acts (eg, praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly  
 (2) the behaviors or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; however, these behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent or are clearly excessive
- B. At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable. Note: This does not apply to children.
- C. The obsessions or compulsions cause marked distress, are time consuming (take more than 1 hour a day), or significantly interfere with the person's normal routine, occupational (or academic) functioning, or usual social activities or relationships.
- D. If another Axis I disorder is present, the content of the obsessions or compulsions is not restricted to it (eg, preoccupation with food in the presence of an Eating Disorder; hair pulling in the presence of Trichotillomania; concern with appearance in the presence of Body Dysmorphic Disorder; preoccupation with drugs in the presence of a Substance Use Disorder; preoccupation with having a serious illness in the presence of Hypochondriasis; preoccupation with sexual urges or fantasies in the presence of a Paraphilia; or guilty ruminations in the presence of Major Depressive Disorder).
- E. The disturbance is not due to the direct physiological effects of a substance (eg, a drug of abuse, a medication) or a general medical condition.
- Specify if:  
 With Poor Insight: If, for most of the time during the current episode, the person does not recognize that the obsessions and compulsions are excessive or unreasonable

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lished before 1989 were likewise accessed by means of cross-referencing with more current literature. Review of the case of a patient with obsessive-compulsive disorder who had been under the care of the authors and observed by them in a family practice office provides illustrative examples for this review.

### Epidemiology

Obsessive-compulsive disorder was once thought to be a rare disease. More recent studies have shown that 1 to 2 percent of the population is afflicted with obsessive-compulsive disorder at any given time. The lifetime prevalence rate is 2.5 percent and the 6-month prevalence rate is 1.6 percent.<sup>6</sup> The mean age of onset for obsessive-compulsive disorder is 19.8 years. Adult men have a slightly earlier age of onset (17.5 years) compared with women (20.8 years).<sup>7</sup> Sixty-five percent of patients develop their disorder before 25 years of age. Less than 15 percent develop the disorder after 35 years of age.<sup>6</sup> The sex ratio is approximately 1:1. Obsessive-compulsive disorder

has a familial tendency; 21 to 25 percent of family members of probands with obsessive-compulsive disorder also have this condition. There is a 63 percent concordance rate in monozygotic twins for obsessive-compulsive symptoms.<sup>7</sup> Studies done in other cultures (Europe, Taiwan, Africa) have found prevalence rates similar to those in the United States. Studies have not shown any marked differences in intelligence quotients between obsessive-compulsive disorder patients and a matched normal comparison group.<sup>5</sup>

The exact cause of obsessive-compulsive disorder has yet to be determined. Drugs that are potent inhibitors of synaptic uptake of serotonin (clomipramine, fluoxetine, fluvoxamine, paroxetine, sertraline) are effective in the treatment of obsessive-compulsive disorder. The dosages required for the treatment of obsessive-compulsive disorder are typically much higher than those used for the same medications when treating depression (Table 2).

Several neurologic disorders have been associated with the symptoms of obsessive-compulsive

**Table 2. Medications Used for Obsessive-Compulsive Disorder.**

Trade Name	Generic Name	Daily Dosage	Side Effects
Anafranil	Clomipramine	250-300 mg	Anticholinergic and weight gain
Luvox	Fluvoxamine	100-300 mg	Sexual dysfunction
Paxil	Paroxetine	40-50 mg	Headache, nausea, sexual dysfunction
Prozac	Fluoxetine	60-80 mg	Headache, nausea, sexual dysfunction
Zoloft	Sertraline	150-200 mg	Headache, nausea, sexual dysfunction

disorder, including the sequelae to the von Economo's influenza epidemic of 1919 (many developed a parkinsonian syndrome, a few of which showed classic obsessive-compulsive disorder), Sydenham chorea, and Tourette syndrome. More recently, results of positron-emission tomography in obsessive-compulsive disorder patients show areas of abnormally high activity in the orbital region of the frontal cortex, the caudate, and the cingulate cortex, all of which are interconnected. There has been relative success with psychosurgery in the treatment of obsessive-compulsive disorder in patients who have failed pharmacotherapy and behavioral therapy.<sup>8</sup> All these observations help support a neurobiologic basis for obsessive-compulsive disorder, but how these factors interrelate is still unclear.

The management of obsessive-compulsive disorder usually consists of patient education, drug therapy, and behavioral therapy. Only the selective serotonin reuptake inhibitors (SSRIs) and clomipramine are consistent in controlling obsessive-compulsive symptoms.<sup>7</sup> To maximize recovery, patients must undergo behavioral therapy along with drug therapy.

The following case illustrates how obsessive-compulsive disorder can be diagnosed and treated by a primary care provider.

### Case Illustration

A 33-year-old woman complained to her family physician of a several-day history of nervousness, shortness of breath, chest tightness, vomiting, diarrhea, and multiple crying episodes. She thought she was "going crazy." The patient was very reluctant to visit a physician for fear of being hospitalized. She also reported the current psychosocial stressor that her grandfather was dying. Her anxiety symptoms were not unprovoked, but the only specific trigger the patient revealed was a fear of food contamination. She always had her husband or their dog taste her food before she ate it. If they did not become ill, she would eat.

The patient's family history was notable for anxiety disorders on both maternal and paternal sides. Her physical examination was remarkable in that she was a thin woman who was crying, pacing the floor, and trembling. She refused to place the oral thermometer in her mouth due to fear of its contamination. Her hands were dry.

Initially, alprazolam was prescribed for anxiety. On the patient's follow-up visit additional history was obtained. Her fear of food contamination was causing her much distress. If her husband or dog was not present to taste her food, she would not eat. She had lost a total of 20 pounds. She acknowledged that her fear of food contamination was irrational. Additionally, the patient feared contamination from medication, new clothes or shoes, hand lotion, and deodorant. She revealed that she rarely took the alprazolam because she was afraid that someone might have tampered with the medication. The patient's condition was diagnosed as obsessive-compulsive disorder.

The patient was given a prescription for clomipramine 25 mg daily at bedtime, and the alprazolam was discontinued. Behavioral therapy was started concurrently using exposure and response prevention. Exposure consists of asking the patient to interact with stimuli that result in the obsession or ritualistic behavior. Response prevention consists of delaying, diminishing, or discontinuing anxiety-reducing rituals. The first homework assignment for the patient was to take the clomipramine capsules on a daily basis. The patient was being exposed to her fear of medication contamination, and her usual response of avoidance was being prevented. At the end of the first week, the patient noticed decreased anxiety when taking the capsules. At the 1-week follow-up visit, the dosage of clomipramine was increased to 50 mg daily.

Family members need to help patients by not participating in the compulsive behavior and by supporting treatment compliance. In this case, the patient's husband was asked not to taste her

**Table 3. Differential Diagnosis of Obsessive-Compulsive Disorder.**


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Body dysmorphic disorder
Depression
Eating disorders
Epilepsy
Hypochondriasis
Obsessive-compulsive personality disorder
Panic disorder
Phobias
Postencephalitic Parkinson disease
Schizophrenia
Sydenham chorea
Toxic lesions of the basal ganglia
Trichotillomania

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food. At the end of 3 weeks of treatment, the patient had approximately a 50 percent reduction in symptoms, and she was able to eat food on her own. The patient noticed an initial increase in anxiety when she was not able to perform the ritual but, with time, the anxiety began to diminish. Continued pharmacotherapy and behavioral therapy resulted in an even greater reduction of symptoms during the next few months.

One year after initiation of treatment, the patient remained symptom free, although she gained 75 pounds. The weight gain was thought to be due to a combination of the medication and her ability to eat food without the fear of its contamination. The dose of clomipramine was then reduced to 25 mg. She remained on this lowered dosage for 3 months, after which the clomipramine was discontinued.

Behavioral therapy continued to be stressed. Six weeks after stopping the clomipramine, the patient developed obsessive-compulsive symptoms again. Clomipramine therapy was restarted. She currently remains symptom free on 50 mg/d of clomipramine.

### Diagnosis

Obsessive-compulsive disorder is a common problem that will undoubtedly afflict a number of patients in a family medicine practice. Prompt recognition and treatment, especially when it combines pharmacologic and behavioral interventions, as in this case, can lead to rapid resolution of symptoms. There are, however, a number of impediments to diagnosis and treatment.<sup>9</sup> Obsessive-compulsive symptoms are routinely underreported by patients, making this disorder a hidden epidemic affecting as many as 4 million

Americans.<sup>10</sup> Patients with obsessive-compulsive disorder might conceal their symptoms for fear of being thought crazy. Additionally they often have co-existing symptoms of depression, anxiety, or panic,<sup>11</sup> and they might be more comfortable describing these symptoms to the physician, who, in turn, might not press further in diagnosis.

Routine inquiry during the review of systems regarding recurrent, intrusive thoughts or repetitive rituals can increase detection. Likewise, any complaint of anxiety or panic should be carefully investigated using a similar inquiry to rule out obsessive-compulsive disorder. Prime-MD,<sup>12</sup> for instance, is an instrument that can be used to alert the physician to an anxiety disorder, but it does not include specific questions regarding recurrent intrusive thoughts or repetitive rituals and hence cannot discriminate obsessive-compulsive disorder as a specific diagnosis. The Prime-MD might be used, however, to pick up on anxiety or depression symptoms associated with obsessive-compulsive disorder and initiate further discussion and diagnosis.

The differential diagnosis of obsessive-compulsive disorder can be challenging (Table 3). Obsessive-compulsive personality disorder is characterized by chronic perfectionism and inflexibility, but unlike obsessive-compulsive disorder, creates no obsessions, rituals, or internal conflict. Depression can express itself through ruminations, but these are generally mood-congruent, ie, negative appraisals of the patient's self or life situation rather than the typical obsessive-compulsive disorder patient's obsessions regarding contamination, symmetry, blasphemy, and so on.

A schizophrenic's delusions can at times be confused with obsessive-compulsive disorder, but the patient with obsessive-compulsive disorder is more likely to admit some awareness of the irrationality of the obsessions and compulsions. The schizophrenic is also distinguished by disorganized thinking and poor social functioning. If a schizophrenic has rituals, they are usually not purposeful and are in response to an external force perceived by the patient. Some patients might, however, have obsessive-compulsive disorder with psychotic features, representing a brief reactive psychosis with loss of insight. Psychotic features in obsessive-compulsive disorder could predict a poor long-term outcome without specific aggressive treatment.<sup>13-15</sup>

Phobias contrast with obsessive-compulsive disorder in that the feared object provokes an unreasonable amount of anxiety leading to avoidance rather than to the ritualized responses of obsessive-compulsive disorder. Panic disorder can be distinguished by remembering that while obsessive-compulsive disorder patients experience panic when confronted with a compulsion stimulus (especially if their ritual is prevented), the panic never occurs without that trigger, as it does in panic disorder. Other diseases with symptoms similar to obsessive-compulsive disorder include epilepsy, Sydenham chorea, postencephalitic Parkinson disease, and toxic lesions of the basal ganglia.<sup>15</sup>

Some diagnoses that must be considered in the differential diagnosis can coexist with obsessive-compulsive disorder. One third of obsessive-compulsive disorder patients have a major depression at the time their condition is first evaluated.<sup>16</sup> In most studies more than 50 percent of patients with obsessive-compulsive disorder also meet criteria for one or more personality disorders, especially dependent, histrionic, and obsessive-compulsive personality disorders. Obsessive-compulsive personality disorder occurs in 4 to 25 percent of patients with obsessive-compulsive disorder. A concurrent schizotypal personality disorder might be a predictor for treatment failure.<sup>17</sup>

There has been recent interest in the concept of a spectrum of obsessive-compulsive-related disorders,<sup>18</sup> which would include such disorders as trichotillomania, body dysmorphic disorder, hypochondriasis, anorexia nervosa, bulimia, and anxiety disorders other than obsessive-compulsive disorder.<sup>19</sup> Despite the ways these disorders are classified in DSM-IV, there is some phenomenologic similarity as well as evidence of overlap in pathogenic mechanisms.<sup>19</sup>

### Treatment

After a diagnosis of obsessive-compulsive disorder is established, a combination of pharmacotherapy and behavioral therapy should be initiated. In terms of medication, only clomipramine and the SSRIs have consistently controlled obsessive-compulsive symptoms. The dosages (Table 2) are typically higher than those prescribed for depression, although in unusual cases, as described here, lower dosages can be effective. In contrast to medication use with depression, it

might take up to 10 weeks before a response is evident.<sup>20</sup> Nonresponders should have their drug dosages raised to the highest tolerated level. Side effects, also listed in Table 2, might be a consideration, as in the case illustration in which a 75-pound weight gain occurred with clomipramine.

Clomipramine may be prescribed at dosages of 25 mg/d and then gradually increased as tolerated up to 100 mg/d during the first 2 weeks of treatment. The usual dosage is 250 to 300 mg/d, although in this case, an unusually positive response to a lower dosage was seen. In one meta-analysis of the efficacy of serotonin-transport-inhibiting drugs in obsessive-compulsive disorder, clomipramine was found to be more effective than fluoxetine, fluvoxamine, or sertraline.<sup>21</sup>

The dosage range for treatment of obsessive-compulsive disorder with fluoxetine is usually 60 to 80 mg/d.<sup>7</sup> Fluoxetine has fewer side effects than clomipramine. Fluvoxamine has also been approved by the Food and Drug Administration (FDA) to treat obsessive-compulsive disorder. The recommended dosage range is 100 to 300 mg/d.<sup>22</sup> The antidepressants paroxetine and sertraline were approved by the FDA in 1996 for the treatment of obsessive-compulsive disorder. Paroxetine, when taken for 12 months, has shown effectiveness in maintaining a therapeutic response and preventing relapse.<sup>23</sup>

Obsessive-compulsive disorder patients have a 30 to 60 percent symptom reduction with medication.<sup>24</sup> Although many patients have only a partial recovery or relapse when medication is discontinued, augmentation of SSRIs with lithium,<sup>25</sup> trazodone,<sup>26</sup> fenfluramine,<sup>27</sup> and buspirone<sup>28</sup> has been used successfully by psychiatrists in some cases. As a last resort for patients with an unremitting course despite several adequate trials of drugs and behavioral therapies, psychosurgery can provide some relief in 25 to 30 percent of cases.<sup>29,30</sup> Obsessive-compulsive disorder patients who fail to respond to treatment or who have incomplete recovery should be referred by the family physician to a psychopharmacologist for consultation and management. Medication appeared effective in the above case not only for its antiobsessive properties but also for sufficiently reducing the patient's anxiety so that she was able to participate fully in the behavioral treatment. To maximize recovery, patients must undergo behavioral treatment along with drug treatment.

Patients who respond to medication often fear that their symptoms will return if they discontinue the drug. How long to treat with medication is unknown. In one double-blind, placebo-controlled study, 89 percent of obsessive-compulsive disorder patients had substantial recurrence of their symptoms when medication was discontinued, although there was no concomitant behavioral treatment, and a rapid 1-week taper of clomipramine was used. Many providers will keep patients on medication for a full year, often at reduced doses for maintenance following acute treatment. The medication should be tapered very gradually. It is important to continue behavioral therapy while patients are doing well.<sup>24</sup> Others might need maintenance medication indefinitely.

Common reasons for treatment failure in obsessive-compulsive disorder patients include incorrect diagnosis (eg, obsessive-compulsive personality disorder), inadequate treatment (trial of medication was not long enough or dosage was too low, no concurrent behavioral therapy), and poor compliance.<sup>24</sup>

The core behavioral interventions—exposure and response prevention—enabled the above patient to confront fearful stimuli, become habituated to them, and eventually abandon her rituals. When obsessive-compulsive disorder patients are exposed to evoking stimuli, they perform rituals that rapidly diminish anxiety and discomfort. The rituals are thereby reinforced, leading to the chronic course of obsessive-compulsive disorder. If patients can refrain from performing rituals in response to the evoking stimuli, anxiety gradually diminishes. With response prevention patients must initially endure high levels of discomfort and a continuing urge to decrease their anxiety by performing rituals. With time patients become less anxious, and their obsessions and compulsions decrease in frequency and intensity.<sup>31</sup>

One way to design a behavioral treatment program is to make an inventory of the patient's rituals and avoidance patterns. The physician can compile a list of things that the patient fears (eg, food contamination) and of rituals (eg, having the dog taste food). These can then be arranged hierarchically according to difficulty, and confronting them can be assigned (usually with the easiest first) to the patient as homework. It might be necessary to re-educate patients about normal behavior (eg, how often and when hands should be

washed) and to provide coping strategies for dealing with exposure and response prevention homework assignments. Cognitive self-talk interventions can be particularly useful coping strategies. In the case reported here, the patient was helped to develop a list of three questions she would ask herself while attempting exposure: "Did I think this was a problem before? Did anyone ever tell me to worry about this? Did I ever read that this was dangerous?"

Many primary care physicians will lack the time, training, or inclination to oversee the behavioral management of obsessive-compulsive disorder. In these cases, referral to a mental health professional who is competent and experienced in these interventions is the appropriate treatment. It is important to avoid referral for more generic psychotherapy or to refer to clinicians who operate exclusively from a psychodynamic or psychoanalytic background. Simple relaxation, hypnosis, and biofeedback are also unlikely to be effective. If the family physician is to continue the psychopharmacologic treatment, close coordination with the behavior therapist is ideal.

In cases of extremely avoidant obsessive-compulsive disorder patients, it might be helpful initially to expose the patients in their imagination. The same hierarchical design is utilized as in actual exposure, but the patient is first helped to relax, then asked to imagine the exposure and its attendant anxiety. The patient is then encouraged to cope with the exposure and to relax again.

Involving the family, in the above case the husband, is an important part of the treatment approach. Mehta<sup>32</sup> found that obsessive-compulsive disorder patients treated behaviorally with a family member involved in the treatment showed greater improvement in anxiety, obsessive symptoms, and social adjustment to household and occupational responsibilities than did patients treated alone. The family must agree not to assist in the patient's rituals (eg, the case example patient's husband had to stop tasting her food) and should also be encouraged to provide the patient with support and reinforcement for progress. A multifamily group approach has also been utilized by Van Noppen et al<sup>33</sup> as a successful adjunct to obsessive-compulsive disorder care. This form of family therapy combines education with behavioral contracting and attempts to mobilize family strengths to form an effective alliance among pa-

tient, family, and therapist. In many communities self-help groups exist for obsessive-compulsive disorder, often sponsored by the local mental health association. As in other self-help groups, obsessive-compulsive disorder group members share their experiences, educate one another, provide mutual support, and reduce the individual's sense of being alone with this disorder.<sup>34</sup>

The successful treatment of obsessive-compulsive disorder also requires a strong therapeutic alliance between physician and patient. The physician must explain to the patient the rationale behind behavioral therapy. In prescribing exposure and response prevention, the physician is encouraging the patient to do exactly what is most frightening, and for the patient to do so requires a high degree of trust and confidence. The patient and physician should work together in developing an initial treatment plan. Throughout the course of treatment the physician should be supportive, consistent, and provide guidance but should not be forceful.

The success rate in patients who undergo behavioral therapy with exposure and response prevention ranges from 50 to 90 percent.<sup>31</sup> In some studies improvement persisted at follow-up examinations of up to 6 years.<sup>31</sup> Twenty-five percent of patients either refuse behavior therapy or drop out early in the course of treatment. Patients who fail to improve are often those who have comorbid conditions or are using large amounts of central nervous system depressants (alcohol, barbiturates, benzodiazepines).

Obsessive-compulsive disorder is found in all family practices. Diagnosis is not difficult if one is aware of its prevalence and the different ways it is expressed. Effective behavioral, pharmacologic, and family strategies are available for the treatment of this disorder.

## References

1. Barrett JE, Barrett JA, Oxman TE, Gerber PD. The prevalence of psychiatric disorders in a primary care practice. *Arch Gen Psychiatry* 1988;45:1100-6.
2. Kessler LG, Burns BJ, Shapiro S, Tishler GL, George LK, Hough RL, et al. Psychiatric diagnoses of medical service users: evidence from the Epidemiologic Catchment Area Program. *Am J Public Health* 1987;77:18-24.
3. Regier DA, Goldberg ID, Taube CA. The de facto US mental health service system: a public health perspective. *Arch Gen Psychiatry* 1978;35:685-93.
4. Schurman RA, Kramer PD, Mitchell JB. The hidden mental health network. Treatment of mental illness by nonpsychiatrist physicians. *Arch Gen Psychiatry* 1985;42:89-94.
5. Diagnostic and statistical manual of mental disorders, DSM-IV. 4th edition. Washington, DC: American Psychiatric Press, 1994.
6. Rasmussen SA, Eisen JL. The epidemiology and clinical features of obsessive-compulsive disorder. *Psychiatr Clin North Am* 1992;15:743-58.
7. Black JL. Obsessive-compulsive disorder: a clinical update. *Mayo Clin Proc* 1992;67:266-75.
8. Insel TR, Winslow JT. Neurobiology of obsessive-compulsive disorder. *Psychiatr Clin North Am* 1992;15:813-23.
9. Nymberg JH, Van Noppen B. Obsessive-compulsive disorder: a concealed diagnosis. *Am Fam Physician* 1994;49:1129-37, 1142-4.
10. Jenike MA. Obsessive-compulsive and related disorders: a hidden epidemic. *N Engl J Med* 1989;321:539-41.
11. Rasmussen SA, Eisen JL. Clinical features and phenomenology of obsessive-compulsive disorder. *Psychiatr Ann* 1989;19:67-73.
12. Spitzer RL, Williams JB, Kroenke K, Linzer M, deGruy FV 3rd, Hahn SR, et al. Utility of a new procedure for diagnosing mental disorders in primary care: the PRIME-MD 1000 study. *JAMA* 1994;272:1749-56.
13. Insel TR, Akiskal HS. Obsessive-compulsive disorder with psychotic features: a phenomenologic analysis. *Am J Psychiatry* 1986;143:1527-33.
14. Fenton WS, McGlashan TH. Long-term outcome of obsessive-compulsive disorder with psychotic features. *Journal Nerv Ment Dis* 1990;178:760-1.
15. Zetin M, Kramer MA. Obsessive-compulsive disorder. *Hosp Community Psychiatry* 1992;43:689-99.
16. Goodman WK. Obsessive-compulsive disorder: integrating theory and practice. *J Clin Psychiatry* 1992;53(4, Suppl):3-9.
17. Baer L, Jenike MA. Personality disorders in obsessive-compulsive disorder. *Psychiatr Clin North Am* 1992;15:803-12.
18. Jenike MA. Illnesses related to obsessive-compulsive disorder. In Jenike MA, Baer LB, Minichiello WE, editors. *Obsessive-compulsive disorder: theory and management*. 2nd ed. Chicago: Year Book Medical, 1990.
19. Stein DJ, Hollander E. The spectrum of obsessive-compulsive-related disorders. In Hollander E, editor. *Obsessive-compulsive-related disorders*. Washington, DC: American Psychiatric Press, 1993.
20. Jenike MA. Management of patients with treatment-resistant obsessive-compulsive disorder. In Pato MT, Zohar J, editors. *Current treatments of obsessive-compulsive disorder*. Washington, DC: American Psychiatric Press, 1991.

21. Greist JH, Jefferson JW, Kobak KA, Katzelnick DJ, Serlin RC. Efficacy and tolerability of serotonin transport inhibitors in obsessive-compulsive disorder: a meta-analysis. *Arch Gen Psychiatry* 1995; 52:53-60.
22. Luvox (fluvoxamine maleate). Product monograph. Marietta Georgia: Solvay Pharmaceuticals, 1995.
23. Steiner M, Bushnell WD, Gergel IP, Wheadon DE. Long-term treatment and prevention of relapse of OCD with paroxetine. Presented at the 148th Annual American Psychiatric Association Meeting, Miami, Florida, May 20-25, 1995.
24. Jenike MA. Pharmacologic treatment of obsessive-compulsive disorders. *Psychiatr Clin North Am* 1992;15:895-919.
25. Janicak PG, Davis JM, Preskorn SH, Ayd FJ. Principles and practice of psychopharmacology. Philadelphia: Williams & Wilkins, 1993.
26. Hermesh H, Aizenberg D, Munitz H. Trazodone treatment in clomipramine-resistant obsessive-compulsive disorder. *Clin Neuropharmacol* 1990;13: 322-8.
27. Hollander E, DeCaria CM, Schneier FR, Schneier HA, Liebowitz MR, Klein DF. Fenfluramine augmentation of serotonin reuptake blockade antiobsessional treatment. *J Clin Psychiatry* 1990;51:119-23.
28. Pato MT, Pigott TA, Hill JL, Grover GN, Bernstein S, Murphy DL. Controlled comparison of buspirone and clomipramine in obsessive-compulsive disorder. *Am J Psychiatry* 1991;48:127-9.
29. Birley JLT. Modified frontal leucotomy: a review of 106 cases. *Br J Psychiatry* 1964;110:211-21.
30. Sykes M, Tredgold R. Restricted orbital undercutting. A study of its effects on 350 patients over the ten years 1951-1960. *Br J Psychiatry* 1964;110: 609-40.
31. Dar R, Greist JH. Behavior therapy for obsessive-compulsive disorder. *Psychiatr Clin North Am* 1992;15:885-95.
32. Mehta M. A comparative study of family-based and patient-based behavioral management in obsessive-compulsive disorder. *Br J Psychiatry* 1990;157: 133-5.
33. Van Noppen BL, Rasmussen SA, Eisen J, McCartney L. A multifamily group approach as an adjunct to treatment of obsessive-compulsive disorder. In Pato MT, Zohar J, editors. *Current treatments of obsessive-compulsive disorder*. Washington, DC: American Psychiatric Press, 1991.
34. Kaplan HI, Sadock BJ. *Synopsis of psychiatry: behavioral sciences, clinical psychiatry*. 6th ed. Philadelphia: Williams & Wilkins, 1991.