

Epidemiology of Obsessive-Compulsive Disorder: A World View

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The worldwide prevalence of obsessive-compulsive disorder (OCD) is approximately 2% of the general population. Symptoms of OCD include fear of contamination by dirt or germs; constant checking; repetitive, intrusive thoughts of a somatic, aggressive, or sexual nature; extreme slowness; and an inordinate concern with orderliness and symmetry. Differential diagnosis is sometimes complicated by the overlap between OCD and obsessive-compulsive personality disorder (OCPD). The most common complication of OCD is depression. However, while both serotonergic and nonserotonergic antidepressants are effective in treating patients with depression, only serotonergic medications are effective in treating OCD patients. Because OCD patients often attempt to conceal their symptoms, it is incumbent on clinicians to screen for OCD in every mental status examination, since appropriate treatment can often result in improved quality of life. (*J Clin Psychiatry* 1997;58[suppl 12]:7-10)

Obsessive-compulsive disorder (OCD) is a widely prevalent condition that was documented as early as the 15th century. A description of what would today be viewed as a compulsive symptom appeared in 1486 in the *Malleus Maleficarum*,¹ the infamous late Middle Ages treatise on psychopathology and witchcraft:

A certain Bohemian . . . brought his only son, a secular priest, to Rome to be delivered because he was possessed . . . when he passed any church, and genuflected in honor of the Glorious Virgin, the devil made him thrust his tongue far out of his mouth . . . when [he] tr[ie]d to engage in prayer, [the devil] attack[ed] him more violently.^{1(p1506)}

The phenomenon described here provides an early intimation of the overlap between compulsive and tic disorders, a subject of current interest.² In another early description of the disorder, William Shakespeare recounts what might be viewed as a classic description of a compulsive washer, Lady Macbeth: "It is an accustomed action with her, to seem thus washing her hands. I have known her continue with this a quarter of an hour." (*Macbeth*, Act V, Scene 1).

A more recent example of a public figure with OCD is the legendary Howard Hughes. From childhood, Hughes was obsessed with avoiding germs. He devised a system of

"insulations" of paper towels and tissues for protection and demanded that everything be brought to him wrapped in these materials. He also insisted that doors and windows be sealed to prevent germs from entering his home. Ultimately, Hughes was overwhelmed by these efforts and ended his life in filth and neglect.

While Lady Macbeth and Howard Hughes were the products of different cultural backgrounds and different times, in both cases the obsession with contamination was present. To the present day, the most prevalent obsession is concerned with dirt, although the specific fear changes with the changing times—leprosy, cholera, tuberculosis, syphilis, and, most recently, AIDS.

A different type of obsessive-compulsive symptom emerges from contemporary reports about the 18th century literary figure Dr. Samuel Johnson. Johnson's biographer, Boswell,³ reports that he made "extraordinary gestures or antics with his hands when passing over the threshold of a door," that he refused to step on cracks between paving stones, and that he touched every post he passed on a walk, going back if he happened to miss one. For Johnson, such symptoms led to a great deal of suffering. Despite the recognition of his genius, Boswell notes that these and other unusual habits led to a certain isolation from society.³

These examples illustrate that OCD is associated with much pain and distress, due in large part to the egodystonic nature of the disorder. Patients know very well that their obsessions and compulsions do not make sense, and most make some attempt to resist them at some point during the course of their illness. However, the urge to carry them out is often overwhelming. This discrepancy between the knowledge that such obsessions and compulsions are irrational and the overwhelming urge to perform

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them contributes to the immense suffering associated with the disorder.

OCD SYMPTOM CLUSTERS

The types of obsessions and compulsions involved in OCD are limited and stereotypical and can generally be classified into several major symptom clusters.⁴ The most common obsession is concerned with contamination by dirt and/or germs; the accompanying compulsion is washing. Such patients may spend several hours daily washing their hands, showering, or cleaning. They typically try to avoid sources of "contamination," such as doorknobs, electrical switches, and newspapers. Paradoxically, some of these patients are actually quite slovenly. While they recognize that nothing will happen if they resist washing, they may refuse to touch even their own bodies, knowing that if they do, they will not be at ease unless they perform extensive washing rituals.

"Checkers" are obsessed with doubt, usually tinged with guilt, and are frequently concerned that if they do not check carefully enough they will harm others. Yet, instead of resolving uncertainty, their checking often contributes only to even greater doubt, which leads to further checking. Often these patients will enlist the help of family and friends to ensure that they have checked enough or correctly. By some inscrutable means, the checker ultimately resolves a particular doubt, only to have it replaced by a new one. Resistance, which in this case is the attempt to refrain from checking, leads to difficulty in concentrating and to exhaustion from the endless intrusion of nagging uncertainties.

Common examples of such doubts are a fear of causing a fire, leading to checking the stove (even to the extent that the patient cannot leave home), or a fear of hurting someone while driving, leading to repetitive driving back over the same spot after hitting a bump in the road. Some checkers may not even be sure why they are checking, but are inexorably led by the urge to do so. Checkers may also engage in other related compulsive behaviors. Sometimes, uncertain that the checking is sufficient, patients may develop "undoing" rituals such as counting to a certain number in their head, repeating actions a specific number of times, or avoiding particular numbers. Hoarding behavior can be seen as a corollary to checking behavior. Patients may refuse to throw out junk mail, old newspapers, or used tissues, for example, because they fear throwing away something important in the process.

Another symptom cluster is that of pure obsessions. The purely obsessional patient experiences repetitive, intrusive thoughts that are usually somatic, aggressive, or sexual and are always reprehensible to the thinker. In the absence of what appears to be discrete compulsion, these obsessions may be associated with impulses or fearful images. When the obsession is an aggressive impulse, it is most often directed at the one person most valuable to the patient. The

obsession may also be a fear of acting on other impulses (e.g., killing somebody, robbing a bank, stealing) or a fear of being held responsible for something terrible (e.g., fire, plague). Often, there are subtle rituals around these obsessive thoughts. For example, a mother who is afraid she will stab her daughter might struggle with this impulse by avoiding sharp objects, then by avoiding touching her daughter, and, ultimately, by leaving the house altogether. Although such avoidance behavior may not appear as an actual repetitive behavior or compulsion, it does share properties of compulsion in that it is an intentional attempt to neutralize an obsession. Patients may seek treatment claiming they have phobia, when actually their avoidance is motivated by obsessions. Close examination of the patient history will often reveal the presence of other obsessions or compulsions as well.

Sexual obsessions include forbidden sexual thoughts, images, or impulses that may involve children, animals, incest, homosexuality, etc. Obsessional thoughts may also be of a religious rather than of a sexual or violent nature. Such thoughts can lead to repetitive silent prayer or confession or result in more obvious rituals, such as repeated bowing or trips to church. Such behavior represents a particular problem to both clinicians and clergy as they attempt to draw the line between devotion and disorder.

Obsessional slowness involves the obsession to have objects or events in a certain order or position, to do and undo certain motor actions in an exact way, or to have things perfectly symmetrical or "just right." Such patients require an inordinate amount of time to complete even the simplest of tasks. Getting dressed may take a couple of hours. Unlike most obsessive-compulsive patients, these patients do not resist their symptoms. Instead, they seem to be consumed with completing their routine precisely. Although this subtype of OCD is rare, aspects of slowness often appear along with other obsessions and compulsions and may be the major source of interference in daily functioning.

Many, if not most, OCD patients have a combination of symptoms, although one symptom type—whether washing, checking, pure obsessions, or obsessional slowness—may predominate. In addition to the lack of pure subtypes is the phenomenon of symptom shifting. At different points in the course of their illness, patients report that different OCD symptoms are predominant. Thus, a patient who may have had predominantly washing rituals in childhood may have checking rituals as an adult. The most important reason for noting this symptom shift is not in terms of treatment but in terms of increasing the level of confidence in making the OCD diagnosis.

DIFFERENTIAL DIAGNOSIS

A number of issues may be raised regarding the differential diagnosis of OCD. First, there may be some similarities in the diagnosis of OCD, an Axis I disorder in DSM-IV,

and of obsessive-compulsive personality disorder (OCPD), an Axis II disorder in DSM-IV. Both disorders reveal a preoccupation with aggression and control. Both use the defenses of reaction formation, undoing, intellectualization, denial, and isolation of affect. The psychoanalytic formulation suggests that OCD develops when these defenses fail to contain the obsessional character's anxiety. In this view, OCD is often considered to be on a continuum with OCPD pathology. Epidemiologic evidence, however, reveals that a concurrent diagnosis of OCPD is neither necessary nor sufficient for the development of OCD on Axis I in most OCD patients. Diagnostic confusion can be lessened if one remembers that OCD symptoms are ego-dystonic, while compulsive character traits are ego-syntonic and rarely provoke resistance.

While the DSM-IV classifies OCD as an anxiety disorder, the European classification, the ICD-10, does not. Indeed, there are some important differences between OCD and other anxiety disorders. These include age at onset (younger in OCD patients than in those with panic disorder), sex distribution (equal distribution of males and females among OCD patients compared with greater prevalence of females for other anxiety disorders), responses to anxiogenic and anxiolytic compounds, and selective responsiveness of serotonergic medications.⁴

Another important diagnostic issue concerns depression, the most common complication of OCD. By recognizing this relationship, DSM-IV no longer excludes a diagnosis of OCD if depression is present. Instead, it stipulates that the obsession may not be related in content to the guilt-ridden ruminations of major depression. However, a precise definition of the relationship between OCD and depression remains elusive. At the clinical level, the illnesses often seem inseparable—one worsening or improving in synchronicity with the other. However, in other clinical cases, OCD symptoms may remain in remission while depression recurs. Researchers have reported some similarities in the biological markers for depression and OCD, but the differences outweigh the similarities.^{5,6}

The most striking difference is that only those medications that have serotonergic properties—clomipramine, fluoxetine, fluvoxamine, paroxetine, sertraline, and citalopram—have consistent efficacy in decreasing OCD symptoms. On the other hand, both serotonergic and nonserotonergic antidepressants are effective in treating depression.

Coexisting Axis I diagnoses in primary OCD are major depressive disorder (67%), simple phobia (22%), social phobia (18%), and eating disorder (17%).⁷ Major depressive disorder, the most prevalent coexisting Axis I diagnosis with primary OCD, can clearly develop as a secondary disorder among individuals who find themselves wasting long hours each day washing, checking, or obsessing, preventing them from leading fully productive lives. In addition, simple phobia, social phobia, eating disorders, alcohol abuse or dependence, panic disorder, and Tourette's

Table 1. Coexisting Axis I Diagnoses in Primary OCD*

| Diagnosis | Lifetime % (N = 100) |
|-----------------------------|----------------------|
| Major depressive disorder | 67 |
| Simple phobia | 22 |
| Separation anxiety disorder | 2 |
| Social phobia | 18 |
| Eating disorder | 17 |
| Alcohol abuse (dependence) | 14 |
| Panic disorder | 12 |
| Tourette's syndrome | 7 |

*Data from reference 8.

syndrome are relatively common with OCD (Table 1).⁸

PREVALENCE

In the last decade, the prevalence of OCD symptoms in the general population has been found to be remarkably high. Until 1984, the most quoted figure was 0.05%.⁹ However, since 1984 at least three studies carried out in North America found the prevalence of OCD in the general population to be greater than 2%. Robins et al.¹⁰ found a prevalence of 2.5%; Bland et al.,¹¹ 3%; and Karno et al.,¹² 2.5%. These findings place OCD before schizophrenia in terms of prevalence.

The Cross National Collaborative Study, carried out by Weissman et al.¹³ in 1994 over four different continents, examined the demographics and prevalence of OCD across the globe and found them remarkably consistent. This study was based on seven epidemiologic surveys, each of which used the Diagnostic Interview Schedule (DIS) to arrive at the psychiatric diagnoses. The study found that, like OCD lifetime prevalence, the age at first onset of OCD and the prevalence of OCD in females versus males were notably consistent across the reporting sites (Table 2). The mean age of OCD onset was the mid-to-late 20s; the youngest average age was 21.9 years in Canada, and the oldest, 35.5 years in Puerto Rico. Except in Germany, women had a higher lifetime prevalence of OCD than men. The female-to-male ratio in Germany was 0.8, but in the other countries the ratios ranged from 1.2 to 3.8. (Sex ratios are generally equal in past studies.) Women in New Zealand had the highest prevalence rate among all females—3.4 per 100—and men in Germany had the highest rate among all males—2.5 per 100.

OCD lifetime prevalence was approximately 2% in the United States, Canada, and Puerto Rico. The findings were the same in Europe and New Zealand. In Korea, OCD prevalence was 1.9%, and in Taiwan, 0.7%. Therefore, with the exception of Taiwan, where the prevalence of all psychiatric disorders is relatively low, OCD lifetime prevalence worldwide is approximately 2%. The estimated total number of patients who suffer from the disorder worldwide appears to be at least 50 million, making OCD a global problem. Across all sites, persons with OCD were

Table 2. Demographics: Cross National Sites*

| Site | Mean Age at Onset (y) | Female/Male Ratio |
|---------------|-----------------------|-------------------|
| United States | 26 | 1.6 |
| Canada | 22 | 1.3 |
| Puerto Rico | 36 | 1.2 |
| Germany | 31 | 0.8 |
| Taiwan | 35 | 1.8 |
| Korea | 30 | 1.2 |
| New Zealand | 27 | 3.8 |

*Data from reference 13.

likely to have major depression or any other anxiety disorder as a comorbid condition.

CULTURAL INFLUENCE

Information from the Cross National Collaborative Study and others indicates that there is little cultural or economic influence on OCD prevalence, which is equally prevalent in developed and developing countries. Various studies carried out in the United States, India, England, Japan, Denmark, and Israel of people with OCD reveal the content of obsessions to be relatively similar across geographic locations.¹⁴⁻¹⁶ The most common obsession across these six countries, regardless of cultural background, appears to be dirt or contamination, followed by harm or aggression, somatic issues, religious issues, and, finally, sexual obsessions (Table 3).¹⁴⁻¹⁶ While cultural, religious, and historical background can influence the specific content, the core themes (e.g., contamination) remain the same.

If OCD is indeed the second most prevalent psychiatric disorder, the question that arises is why we do not diagnose OCD more often. The answer to this question lies in the ego-dystonic nature of the disorder. Patients will often attempt to disguise their symptoms because of the shame or embarrassment associated with the disorder and will not reveal their obsessive-compulsive symptoms unless they are asked about them directly.

To identify a person with OCD, five specific questions should be asked as part of every mental status examination:

1. Do you wash or clean a lot?
2. Do you check things a lot?
3. Is there any thought that keeps bothering you that you would like to get rid of but can't?
4. Do your daily activities take a long time to finish?
5. Are you concerned about orderliness or symmetry?

If these five simple questions are not asked, it is likely that we will not diagnose OCD patients.

The importance of diagnosing OCD lies in the fact that, with appropriate treatment composed of behavioral and/or pharmacologic support, many patients will show substantial improvement in their obsessive-compulsive symptoms

Table 3. Content of Obsessions in Different Countries*

| Obsession | Percent of Sample | | | | | |
|--------------------|-------------------------|-----------------|-------------------------|----------------|------------------|-----------------|
| | United States (N = 425) | India (N = 410) | United Kingdom (N = 86) | Japan (N = 61) | Denmark (N = 61) | Israel (N = 34) |
| Dirt/Contamination | 38 | 32 | 47 | 39 | 34 | 50 |
| Harm/Aggression | 24 | 20 | 27 | 12 | 23 | 20 |
| Somatic | 7 | 14 | | 13 | 18 | 3 |
| Religious | 6 | 5 | 5 | | 8 | 9 |
| Sexual | 6 | 6 | 10 | 5 | 6 | 6 |

*Data from references 14-16.

and a significant decrease in their suffering. While this does not hold true for all OCD patients, for many, such treatments can lead to improvement in their quality of life.

Drug names: clomipramine (Anafranil), fluoxetine (Prozac), fluvoxamine (Luvox), paroxetine (Paxil), sertraline (Zoloft).

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