

## Obsessive-Compulsive Disorder

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### Part I

A man will not go to public places because he fears he will have intolerable sexual thoughts or falsely accuse someone of committing a crime.

A woman plugs and unplugs electrical appliances 20 times or more, counts her change 10 times whenever she shops, and habitually stares at the addresses on envelopes for several minutes to make sure they are correct.

A man's persistent urge to shout out an obscenity or blasphemy in church can be suppressed only by counting slowly backward from 100 to one.

A man feels a drop in his eye as he looks up while passing a building and cannot dismiss the thought that someone with AIDS has spit out of a window. To reassure himself, he proceeds to knock on the door of every office in the 10-story building.

A man covers everything he touches with a paper towel first. If he happens to touch a bed frame or a bathroom door handle with his hand or part of his clothing, he must wash the contaminated object immediately. He will not let his left hand touch anything at all.

For five years a woman has been washing her hands up to the elbow 30 to 60 times a day until they are raw and scabbed, "to prevent my family from being infected." She constantly calls her minister to ask him whether her thoughts and actions are morally correct.

A young woman has dropped out of college and spends all day at home, often in darkness with her eyes closed, trying to shut out violent and sexual thoughts and images.

For eight years a young man, now a college freshman, has been spending an hour a day washing his hands, showering, and dressing. He hisses, coughs, and tosses his head while eating, shuffles, wipes his feet, and repeatedly looks backward while walking. He has stopped bathing, washing his hair, brushing his teeth, and changing his clothes because the required rituals consume too much time. He stays in his room, eating only a few carefully selected foods and constantly checking to see that furniture and wastebaskets are in exactly the "right" places. To avoid using the bathroom, he has begun to defecate on paper towels, urinate in paper cups, and store the waste in a closet.

We are all taught to be careful and clean, and many of us have repetitive worries or fixed routines that we recognize to be not entirely sensible. In people suffering from obsessive-compulsive disorder (OCD), concerns of this kind are all-consuming and self-destructive. The American Psychiatric Association defines the disorder as a set of recurrent obsessional ideas or compulsive actions that take up more than an hour a day or cause serious distress or impairment. Obsessions are persistent thoughts, images, or impulses experienced as alien intrusions that must be neutralized or suppressed: obscene and blasphemous thoughts, repugnant sexual images, unrealistic doubts about whether something has been done correctly or perfectly, or an urge to arrange objects in highly specific but meaningless ways.

The most common subject matter of obsessions is cleanliness (dirt and germs), followed by aggressive and sexual impulses, health, safety, and symmetry or order. The obsession may take the form of a doubt (something has happened to my child); a fear (something might happen to the child); an image (I see the child drowning), or an impulse (I feel an insistent urge to harm the child). Although obsessional ideas can be bizarre, they are rarely delusional; people with OCD usually know that their obsessions are unreasonable. But sometimes they take on an aura of conviction and become what psychiatrists call overvalued ideas. How highly these ideas are valued depends on circumstances; for example, a patient may recognize his exaggerated fear of germs as senseless when he is in the therapist's office, but not when he has to handle money.

#### Over and over

Compulsive acts serve to restore, for a time, the sense of ease and comfort destroyed by obsessions. People with obsessional thoughts need repetition to reassure themselves. They suppress the thoughts either by overt actions such as checking and cleaning or by countervailing thoughts -- mental rehearsals, silent prayer, counting, or repetition of single words. At first, yielding to the compulsive ritual relieves mounting anxiety or tension. Eventually some patients may no longer be fully conscious of the tension because their rituals have become routine. Most people with OCD perform several compulsive actions simultaneously or successively while the disorder persists. Among patients who are being treated, obsessions are the most troublesome symptom for 30% and compulsions for 20%; the rest say both are equally important. People who do not seek treatment are more likely to have obsessional thoughts without compulsive rituals.

Compulsive behavior is time-consuming in itself, and the lives of people with OCD are further constricted by their efforts to avoid situations that provoke the symptoms. OCD may come to resemble a phobia in which the object of fear is one's own thoughts and impulses. In one recent survey of patients at an OCD clinic, large percentages had lost two years of work to the disorder, and many had been fired because of the symptoms. Seventy-three percent said the disorder interfered with their family lives, and only a third of the men were married.

#### A bigger problem

Obsessive-compulsive disorder was once thought to be rare, apparently because people do not often see mental health professionals about it. They may talk to a doctor, religious counselor, or family member, or they may treat the disorder as a shameful secret, confining their rituals to their homes. Recent community studies show a prevalence higher than anyone had suspected. According to the Epidemiologic Catchment Area (ECA) survey, 1.5% to 2% of Americans have symptoms of OCD in any given year, and 2.5% have had the symptoms at some time in their lives. A recent survey of seven countries revealed similar rates of OCD in the United States, Canada, Puerto Rico, Germany, Korea, and New Zealand. The only exception was Taiwan, which, for reasons that are unclear, has unusually low rates of all psychiatric disorders.

The prevalence of OCD is about the same in both sexes, but the symptoms appear an average of five years earlier in men. OCD usually begins in adolescence but can develop as early as the age of three. The adult and childhood forms of the disorder are similar, although compulsive behavior in children may occur without any obsessional thoughts that the child can articulate. Symptoms may vary by age and sex; washing compulsions, for example, occur mainly in women and children.

OCD runs in families and probably has a genetic basis. Identical twins are much more highly

concordant (matched) for the disorder than fraternal twins. Among parents, children, brothers, and sisters of patients with OCD, the rate of OCD is 10% to 15%, and another 10% to 15% may have some of the symptoms in milder forms. The risk is especially high for genetic relatives of children with OCD.

Several other psychiatric disorders are common in people with OCD. In a recent survey of patients at an OCD clinic, two thirds had suffered from major depression, 26% from panic attacks, and 23% from body dysmorphic disorder --preoccupation with imagined ugliness or disfigurement. In the ECA survey, OCD was associated with phobias and alcoholism. Children with obsessive and compulsive symptoms often have eating disorders or attention deficit disorder as well.

Amid all these symptoms, obsessive-compulsive disorder itself can be hard to discern. In one recent study it took an average of 17 years to make a correct diagnosis. The obsessions of OCD differ from the worries of generalized anxiety disorder, which are felt as realistic (although excessive) rather than resisted as alien intrusions. Depressive brooding and rumination can usually be distinguished from true obsessions in the same way. Obsessional thinking is not regarded as a symptom of OCD if it takes the form of a specific phobia or concern about a single "deformity." People who are excessively concerned about an imaginary physical symptom are judged to be hypochondriacal rather than obsessional unless they have compulsive rituals as well. Obsessive-compulsive disorder should also be distinguished from obsessive-compulsive personality. The symptoms of OCD are not character traits, and people with the disorder are not necessarily conscientious, orderly, morally rigid, fussy about details, indecisive, or perfectionistic in a self-defeating way.

Out of balance

Instead, compulsive rituals may be related to the blinking, touching movements, head-jerking, throat-clearing, grunts, squeals, and obscene gestures of Tourette's disorder (see The Harvard Mental Health Letter, May 1989). These tics resemble deliberate actions less than compulsive rituals, and they are provoked by physical sensations rather than thoughts, images, or emotions. But tics can be exacerbated by stress and suppressed by an exercise of will, and some of them are so elaborate and complex that they could pass for actions -- doing deep knee bends while walking, emitting a string of obscenities, imitating the movements of others or echoing their words. People with Tourette's disorder often have obsessive and compulsive symptoms (especially counting rituals and a preoccupation with symmetry), and the two disorders may run in the same families. There could be a range of symptoms with simple motor tics and cognitive compulsions (counting, repetition of magic words) at the two extremes, complex motor tics and compulsive behavior in the middle.

There is also a group of psychiatric disorders that have some of the same symptoms as OCD and respond to some of the same treatments. Among them are body dysmorphic disorder, hypochondriasis, binge eating, and trichotillomania (pathological hair-pulling). Some researchers call this group the obsessive-compulsive spectrum. A few would extend the label to cover alcoholism, drug dependence, pathological gambling, and certain sexual habits as well. This classification implies that a craving resembles an obsession and addictive behavior resembles a compulsive ritual. Everything from repetitive hand washing to pedophilia is defined as an addiction or disorder of impulse control.

Psychoanalysts made one of the first attempts at a systematic explanation of OCD. According to psychodynamic theory, the disorder arises when unacceptable wishes and impulses are imperfectly repressed (driven out of consciousness). To defend themselves against the knowledge of these

wishes, people with OCD use the psychological mechanisms of isolation and undoing. Isolation separates an idea or image from the feeling associated with it and expels the feeling from awareness. The energy of the repressed emotion gives the idea its compelling obsessional quality. When isolation is about to fail, the secondary defense of undoing produces compulsive acts. The man who is preoccupied with the thought that he may have run over someone, for example, is said to have an unconscious wish to kill that makes him feel almost as guilty as if he had actually done the deed. According to the theory, he can put his mind at ease only by returning to make sure there is no body on the road.

Psychoanalytic theorists associate this pattern of repression and defense with partial regression to an early stage of life at which children are intensely concerned about control over their bodily functions. Regression unconsciously revives the childhood illusion that mere thoughts can cause external events. This magical thinking is said to be what makes obsessions so disturbing and compulsive actions so strangely effective in bringing relief. Here Freud drew an analogy with religious ceremonies that makes the word “ritual” seem particularly appropriate.

## Part II

In Part I we discussed the symptoms of obsessive-compulsive disorder, its relationship to other disorders, and psychoanalytic explanations. In this part we discuss behavioral and neurological explanations and behavioral, drug, and surgical treatments.

Behavioral psychologists reject the psychodynamic concepts of repression and the unconscious, but agree with dynamic therapists about the significance of anxiety. They propose that some people have unusually intense biological responses to stress or have been conditioned (have learned) early in life to regard some thoughts as unclean, immoral, or dangerous. As the thought recurs, it becomes a source of conditioned anxiety, like the object of a phobia. Compulsive rituals reduce the anxiety and re-establish control over the obsessions.

More recently researchers using magnetic resonance imaging (MRI) and positron emission tomography (PET) have discovered abnormal brain structure and activity in patients with obsessive-compulsive disorder (OCD). The abnormality apparently lies mainly in a pathway that links the frontal lobes of the cerebral cortex with the basal ganglia. The frontal lobes are a seat of deliberation and judgment, and the basal ganglia serve as a relay station in the planning and execution of movements. PET scans of patients with OCD taken while their symptoms are active (for example, while a person with a germ obsession holds a dirty towel) indicate heightened activity in the orbitofrontal cortex and the anterior cingulate cortex, regions that lie just behind the forehead. Some MRI images suggest a loss of tissue in the caudate nuclei, areas in the basal ganglia that filter messages coming from the orbitofrontal cortex before passing the more important ones to other parts of the brain. Obsessive and compulsive symptoms can be caused by injuries to the basal ganglia and diseases that cause their degeneration, especially Huntington's disease and Sydenham's chorea. Researchers suspect that in people with OCD the caudate nucleus performs its selecting function poorly. As suggested by the high frontal activity revealed in PET scans, obsessional thinking then persists, often until a compulsive ritual puts an end to it.

Some researchers believe that compulsive rituals resemble complex innate action patterns, such as elaborate courtship dances, that are described by students of animal behavior (see The Harvard Mental Health Letter, January 1989). These patterns have a strong genetic basis, and only an appropriate stimulus is needed to release them. Grooming is one fixed action pattern that has much in

common with compulsive behavior. Certain breeds of dog may develop a habit of licking away fur and skin on their legs. The disorder, which is known as canine acral lick, can be treated with the same drugs used to treat OCD. Trichotillomania (compulsive hair-pulling), severe nail biting, and other disorders said to be part of the OCD spectrum also bear a resemblance to pathological forms of grooming. All this behavior might be evoked by defects in communication between the frontal lobes and the basal ganglia.

Because psychoanalysis and psychoanalytic psychotherapy have proved disappointing as treatments for OCD, the usefulness of psychodynamic explanations is questionable. Nevertheless, psychodynamic principles can be used in supportive therapy to help a patient live more easily with the disorder. Insight-oriented therapy may also be useful for a person trying to cope with the losses of friendship, love, and self-esteem resulting from the symptoms. After other treatments relieve the symptoms, psychodynamic therapy may help the patient find ways to fill time no longer consumed by rituals and obsessional thoughts. Finally, there are some people for whom obsessions and compulsions have incidentally served as a way of avoiding social demands or as weapons in a family power struggle; they too may find supportive or psychodynamic therapy useful.

#### Available treatments

The methods of treatment in most common use today are behavior therapy and drugs. Behavioral treatments for compulsive rituals have been known for a century but were not widely used until the 1960s. Today's favorite technique, exposure and response prevention, is a simple one: repeatedly put patients in contact with the objects or situations that provoke their obsessions and prevent them from performing the usual rituals until they become habituated to the obsessions and dismiss them. Situations are ranked by degree of anxiety or discomfort, and exposure proceeds upward on the scale. As a preparation, patients may be asked to imagine vividly the dreaded consequences of going without the rituals (imaginal exposure). Training in deep breathing, muscle relaxation, and other forms of anxiety management may also help. The usual regimen is 10 to 20 hours of therapy over a period of a month or two, along with practice at home. Family members and others are often enlisted to supervise patients and encourage them to comply. Cognitive therapy may help them to question the importance of their obsessions and the necessity of their rituals. This process sometimes makes it possible to continue exposure and response prevention rather than quit in frustration.

In the treatment for cleaning rituals, the patient is put into contact with a dirty object, prevented from washing, and instructed not to clean up for hours afterward. The therapist usually has to demonstrate or model the action first, holding the dirty towel or touching the floor to show the patient that it can be done safely. The procedures can be elaborate and lengthy. In one case a woman with a washing compulsion was admitted to a hospital and assigned to a room with a sink wired to record her approaches. She was allowed one supervised daily shower and told to record urges to wash her hands. During the first week she washed 60 times a day. She was released from the hospital when the rate fell to 13 times a day. Eventually she was able to reduce it to four times a day, partly by practicing at home with her husband's help.

Compulsions that involve checking, hoarding, and orderly arrangement are more difficult to treat behaviorally, partly because many people perform these rituals only when they are alone. In these cases a therapist or helper may have to accompany the patient to the place where the ritual occurs. For example, the man who retraces his path to be sure he hasn't killed someone while driving is encouraged to carry a passenger past pedestrians on bumpy roads while resisting the urge to turn the car around.

## Cognitive compulsions

As many as 25% of patients with OCD have only obsessional thoughts or only cognitive rituals (silent counting repetition of words, and so on). In these cases behavioral treatment has to be modified because there is no action to be prevented. Nevertheless, a technique analogous to response prevention is available: have the patient think the obsessional thought and avoid reciting the usual tension-relieving magic formula. A related technique is thought stopping. When the obsessional thought encroaches, the patient says "stop" (first aloud, later silently) and snaps a rubber band on the wrist or delivers a mild electrical shock. The opposite approach is saturation -- concentrating so intensely on the obsessional thought that it becomes meaningless and loses its compelling quality. Stimulus control requires the patient to confine obsessional thinking to specific times of the day. Assertiveness training or relaxation training may reduce anger, anxiety, and guilt that lead to obsessional thinking. Patients may also learn how to express feelings more appropriately through instruction, rehearsal, and demonstrations by the therapist.

A rare form of OCD is known as primary obsessional slowness. People with this condition do everything with excessive deliberation and attention to detail; they may take hours to perform ordinary actions like dressing and eating. The behavioral treatment consists of modeling, prompting, and shaping: that is, the therapist demonstrates the action (models), tells the patient to perform it within an agreed time while the therapist counts aloud (prompts), and praises the patient repeatedly for successive approximations to the desired time limit (shapes).

## What works

Studies of behavior therapy for OCD have found a 70% to 80% rate of significant improvement, usually maintained for at least two to three years. Group and individual behavioral treatments are equally effective, and some patients are able to work alone with a self-help manual. Other symptoms are not substituted for compulsive rituals, as some critics have claimed. The main reason for a poor response is inability to comply because of severe depression, serious family problems, personality disorders, or overvalued obsessional ideas that are near delusions. Patients with these problems need encouragement, support from family members and friends, and sometimes anti-anxiety or antidepressant drugs or treatment for alcoholism and personality disorders. Family therapy may be helpful for children with OCD.

In the last 20 years a number of drugs have been shown to be effective in the treatment of OCD. They reduce symptoms, on the average, by one third to one half -- which can make an enormous difference to people whose compulsive rituals have been consuming most of their time. Although not all antidepressants prevent compulsive rituals, all the drugs that prevent compulsive rituals are antidepressants. What they have more specifically in common is a capacity to inhibit the reuptake (reabsorption) of the neurotransmitter serotonin.

The first to be discovered was clomipramine (Anafranil), a tricyclic drug with side effects that include dry mouth, constipation, weight gain, tremors, delayed ejaculation, and low blood pressure. Today most therapists prefer the selective serotonin reuptake inhibitors (SSRIs) fluoxetine (Prozac), fluvoxamine (Luvox), sertraline (Zoloft), and paroxetine (Paxil). Their most noticeable side effects are agitation, insomnia, and sometimes loss of sexual desire or the capacity for orgasm. Seventy percent to 80% of patients with OCD respond to drugs. Although they may go on taking the drugs for years, they usually relapse quickly when they stop unless they have had simultaneous behavior therapy.

Sometimes drug treatment is used to overcome reluctance to undertake behavior therapy, and sometimes the promise of a more lasting solution through behavior therapy overcomes reluctance to take the drug.

Despite the success of SSRIs in relieving symptoms of OCD, these drugs have not yet provided any solid clues about the origin of the condition. The reuptake of serotonin in the brains of people with the disorder seems to be normal. Neurons in the raphe nucleus, the region deep within the brain where serotonin is produced, send long projections to the frontal cortex and basal ganglia. But serotonin also alters responses in other neural circuits, and it influences many aspects of feeling and behavior. SSRIs cause an immediate rise in serotonin levels, but usually take two months or more to affect the symptoms of OCD. By that time a new balance of neurotransmitter activity in several regions of the brain must have been established. To complicate matters, there are several types of nerve receptors for serotonin, and their significance for the understanding and treatment of OCD is still unknown.

A last resort

In rare cases when nothing else is effective and the symptoms are intolerable, doctors and patients may resort to brain surgery. The most common operation is stereotactic cingulotomy, which removes part of the cingulate cortex. Another surgical technique is anterior capsulotomy, which severs some connections between the caudate nuclei and the thalamus, another important relay station of the brain. Surgery provides significant relief for about a third of patients with the most severe forms of OCD. They take weeks or even months to respond, which suggests that the brain needs time to establish new connections and modes of operation. The most serious potential side effects of surgery are seizures (now usually controllable with anticonvulsant drugs) and a deterioration in the capacity for judgment and planning that may manifest itself as a personality change.

A good source of information and referrals is the Obsessive-Compulsive Foundation, Inc., P.O. Box 70, Milford, CT 06460-0070, 203-878-5669.

For Further Reading

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