GLOBAL EDITION

Abnormal Psychology

EIGHTH EDITION

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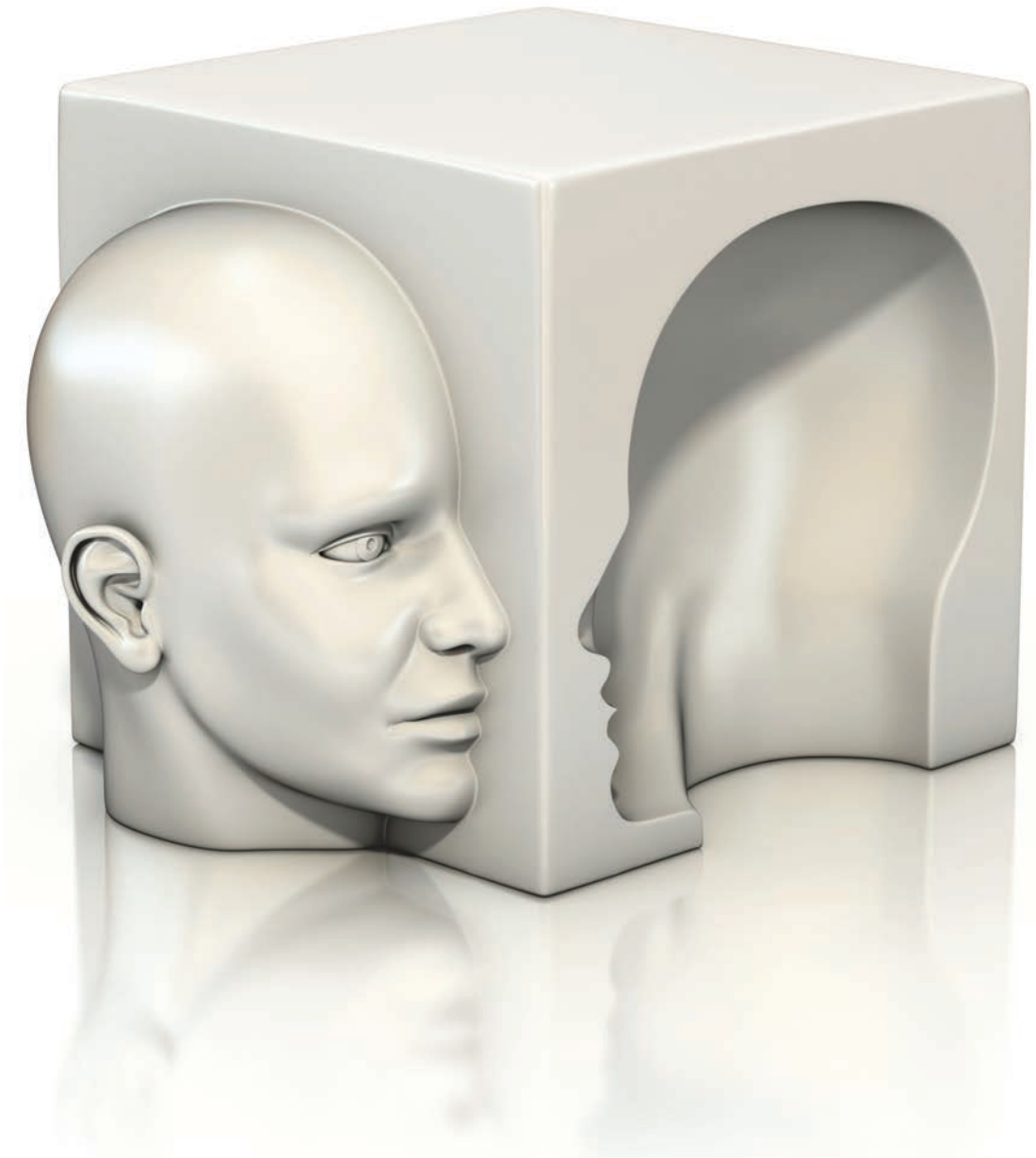

ALWAYS LEARNING

PEARSON

abnormal psychology

eighth edition

Global Edition

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RESEARCH methods

Statistical Significance: When Differences Matter

Let's say that an outcome study reveals a statistical difference in the effectiveness of one form of treatment versus another form (or no treatment at all). Does this automatically mean that the difference is clinically significant? The answer is no. We can explain this point by using a hypothetical example. Imagine that you want to know whether exposure and response prevention are effective in the treatment of OCD. You could conduct a study, using an experimental design, in which 50 patients with OCD are randomly assigned to receive exposure and response prevention and another 50 patients—the control group—are not. The latter group might receive a placebo pill or nondirective supportive psychotherapy for purposes of comparison. Measures of obsessions and compulsions are collected before and after treatment for patients in both groups. Your hypothesis is that exposure treatment will lead to more improvement than will placebo or nondirective therapy. In contrast, the null hypothesis (see Research Methods in Chapter 1) holds that the two forms of treatment are not truly different. To conclude that exposure and response prevention are effective, you must reject the null hypothesis.

After collecting your data, you can use statistical tests to help you decide whether you can reject the null hypothesis. These tests assign a probability to that result, indicating how often we would find that result if there are not really differences between the two treatments. Psychologists have adopted the .05 level, meaning that if a difference occurs only by chance, you would find this difference less than five times out of every 100 times you repeated this experiment. Differences that exceed the .05 level, therefore, are assumed to reflect real differences between the variables rather than mere chance. Such results are said to be *statistically significant*.

Statistical significance should not be equated with clinical importance (Jacobson & Truax, 1991; Lambert, Hansen, & Bauer, 2008). It is possible for an investigator to find statistically significant differences between groups (and therefore reject the null hypothesis) on the basis of relatively trivial changes in the patients' adjustment. Consider the hypothetical example outlined above and suppose that you measured outcome in terms of a questionnaire for obsessions and compulsions whose scores could range from 0 (no symptoms) to 100 (highest score possible). Let's also assume that the average person without OCD gets a score of 50 on this questionnaire and that a score of 70 or higher is typically considered to indicate the presence of problems that are associated with a disruption of the person's social and occupational functioning. Both groups have a mean rating of 90 on the scale prior to treatment. At the end of treatment, the mean rating for the exposure group has dropped to 75, and the mean for the control group is now 85. If you have included enough subjects, and depending on the amount of variation among scores within each group, this difference might reach statistical significance. But is it clinically important? Probably not. The average patient in the exposure group still has a score above the cutoff for identifying meaningful levels of psychopathology and 25 points above the average for adults in the general population.

Clinical importance is sometimes measured in terms of the proportion of people in the treatment group whose outcome scores fall below a certain threshold of severity or within the range of scores that are produced by people without the disorder in question. In the case of OCD, people treated with exposure and response prevention do show levels of change that are considered clinically important as well as statistically significant (Abramowitz, 1998).

Clinical investigators should also consider the *kind* of changes that they expect to find as well as the *amount* of change. In addition to looking at changes in particular symptoms, such as a reduction in the frequency of compulsive behaviors, some clinical investigators also ask questions about the patient's quality of life (Gladis et al., 1999). These include an interest in the person's overall satisfaction as well as his or her ability to perform various social roles, at work, at school, or with friends and family. Therapists obviously hope that their patients will experience improvements in their overall quality of life and level of social adjustment when they are able to achieve a reduction in the severity of symptoms of mental disorders.

Benzodiazepines have been shown to be effective in the treatment of generalized anxiety disorders and social anxiety disorder (Ballenger, 2001; Benitez et al., 2008). Drug effects are most consistently evident early in treatment. The long-term effects of benzodiazepines (beyond six months of treatment) are not well established (Mahe & Balogh, 2000). They are not typically beneficial for patients with specific phobias. Certain high-potency benzodiazepines are also useful for treating panic disorder (Spiegel & Bruce, 1997). Alprazolam (Xanax) is considered by some psychiatrists to be the drug of choice for patients with this condition because it produces clinical improvement more quickly than antidepressants.

Many patients with panic disorder and agoraphobia relapse if they discontinue taking medication (Marks et al., 1993). Exposure may be a preferable form of treatment for patients with a diagnosis of panic disorder with agoraphobia because of high relapse rates that have been observed after alprazolam is withdrawn.

Common side effects of benzodiazepines include sedation accompanied by mild psychomotor and cognitive impairments. These drugs can, for example, increase the risk of automobile accidents, because they interfere with motor skills. They can also lead to problems in attention and memory, especially among elderly patients.

The most serious adverse effect of benzodiazepines is their potential for addiction. Approximately 40 percent of people who use benzodiazepines for six months or more will exhibit symptoms of withdrawal if the medication is discontinued (Michelini et al., 1996). Withdrawal reactions include the reappearance of anxiety, somatic complaints, concentration problems, and sleep difficulties. They are most severe among patients who abruptly discontinue the use of benzodiazepines that are cleared quickly from the system, such as alprazolam.

Another class of antianxiety medication, known as the azapirones, includes drugs that work on entirely different neural pathways than the benzodiazepines (Cadieux, 1996). Rather than inhibiting the activity of GABA neurons, azapirones act on serotonin transmission. The azapirone that is used most frequently in clinical use is known as buspirone (BuSpar). Placebo-controlled outcome studies indicate that buspirone is effective in the treatment of generalized anxiety disorder (Davidson et al., 1999). Some clinicians believe that buspirone is preferable to the benzodiazepines because it does not cause drowsiness and does not interact with the effects of alcohol. The disadvantage is that patients do not experience relief from severe anxiety symptoms as quickly with buspirone as they do with benzodiazepines.

ANTIDEPRESSANT MEDICATIONS The selective serotonin reuptake inhibitors (SSRIs), discussed in Chapter 5, have become the preferred form of medication for treating almost all forms of anxiety disorder. These include drugs such as fluoxetine (Prozac), fluvoxamine (Luvox), sertraline (Zoloft), and paroxetine (Paxil). Reviews of controlled outcome studies indicate that they are at least as effective as other, more traditional forms of antidepressants in reducing symptoms of various anxiety disorders (Anderson, 2006; Roy-Byrne & Cowley, 2002). They also have fewer unpleasant side effects, they are safer to use, and withdrawal reactions are less prominent when they are discontinued. Therefore, the SSRIs are now considered the first-line medication for treating panic disorder and social anxiety.

Imipramine (Tofranil), a tricyclic antidepressant medication, has been used for more than 40 years in the treatment of patients with panic disorder. A large number of double-blind, placebo-controlled studies indicate that it produces beneficial results (Jefferson, 1997; Mavissakalian & Ryan, 1998). Psychiatrists often prefer imipramine to antianxiety drugs for the treatment of panic disorder because patients are less likely to become dependent on the drug than they are to high-potency benzodiazepines like alprazolam.

The tricyclic antidepressants are used less frequently than the SSRIs because they produce several unpleasant side effects, including weight gain, dry mouth, and overstimulation (sometimes referred to as an "amphetamine-like" response). Some of the side effects (like feeling jittery, nervous, lightheaded, and having trouble sleeping) are upsetting to patients because they resemble symptoms of anxiety. Side effects often lead patients to discontinue treatment prematurely.

In actual practice, anxiety disorders are often treated with a combination of psychological and biological procedures. The selection of specific treatment components depends on the specific group of symptoms that the person exhibits. The potential benefits and costs of combined treatment with medication and psychological procedures should be studied more carefully. Current evidence suggests that patients who receive both medication and psychotherapy may do better in the short run, but patients who receive only cognitive behavior therapy may do better in the long run because of difficulties that can be encountered when medication is discontinued (Otto et al., 2005).

Obsessive-Compulsive and Related Disorders

Obsessive-compulsive disorder (OCD) is one of the most debilitating disorders in the world, including all kinds of medical disorder (see Figure 1.2 on page 33). OCD was listed as a form of anxiety disorder in previous editions of the diagnostic manual (see Thinking Critically about DSM-5 on page 169). Now it is listed separately. *DSM-5* devotes a separate chapter to obsessive-compulsive and related disorders. All of these disorders are defined by the presence of unwanted intrusive thoughts and/or habitual behaviors. In the following pages, we will discuss OCD, hoarding disorder, trichotillomania, and excoriation (skin-picking) disorder. Body dysmorphic disorder is discussed in Chapter 7.

"Spin your partner round and round, then spin your partner round again, spin her round six more times, now touch the light switch near the door."

Symptoms of OCD

Obsessions are repetitive, unwanted, intrusive cognitive events that may take the form of thoughts or images or urges. They intrude suddenly into consciousness and lead to an increase in subjective anxiety. Obsessive thinking can be distinguished from worry in two primary ways: (1) Obsessions are usually experienced by the person as being nonsensical, whereas worries are often triggered by problems in everyday living; and (2) the content of obsessions most often involves themes that are perceived as being socially unacceptable or horrific, such as sex, violence, and disease/contamination, whereas the content of worries tends to center around more acceptable, commonplace concerns, such as money and work (de Silva & Rachman, 2004). **Watch** the **Video** *Dave: Obsessive Compulsive Disorder (OCD)* on **MyPsychLab**

Compulsions are repetitive behaviors or mental acts that are used to reduce anxiety. Examples include checking many times to be sure that a door is locked or repeating a silent prayer over and over again. These actions are typically considered by the person who performs them to be senseless or irrational. The person attempts to resist performing the compulsion but cannot. The following case study illustrates many of the most common features of obsessions and compulsions.

→ Ed's Obsessive-Compulsive Disorder

Ed, a 38-year-old lawyer, lived with his wife, Phyllis. Most aspects of Ed's life were going well, except for the anxiety-provoking thoughts that lurked beneath his relatively easygoing exterior. One focus of Ed's anxiety was handwriting. He became so tense that his eyes hurt whenever he was forced to write. Feeling exhausted and overwhelmed, Ed avoided writing whenever possible. The problem seemed utterly ridiculous to him, but he couldn't rid himself of his obsessive thoughts.

Sinister meanings had somehow become linked in Ed's imagination to the way in which letters and numbers were formed. The worst letters were *P* and *T* (the first letters in "Phyllis" and in "Tim," his younger brother's name). "Improperly" formed letters reminded Ed of violent acts, especially decapitation and strangulation. If the parts of a letter, such as the two lines in the letter *T*, were not connected, an image of a head that was not attached to its body might pop into his mind.

Closed loops reminded him of suffocation, like a person whose throat had been clamped shut. These images were associated with people whose names began with the malformed letter. As a result of these concerns, Ed's handwriting had become extremely awkward and difficult to read.

These writing problems made it very difficult for Ed to complete his work, especially when he was under time pressure. In one particularly upsetting incident, Ed was responsible for completing an important official form that had to be mailed that day. He came to a section in which he needed to write a capital *P* and became concerned that he hadn't done it properly. The loop seemed to be closed, which meant that Phyllis might be strangled! He tore up the first copy and filled it out again. When it was finally done to his satisfaction, Ed sealed the form in an envelope and put it in the box for outgoing mail. After returning to his desk, he was suddenly overwhelmed by the feeling that he had indeed made a mistake with that *P*. If he allowed the form to be mailed, the evil image would be associated forever with his wife. Consumed by fear, Ed rushed back to the mailbox, tore up the envelope, and started a new form. Twenty minutes later, he had the form filled out and back in the mailbox. Then the cycle repeated itself. Each time, Ed became more distraught and frustrated, until he eventually felt that he was going to lose his mind.

In addition to his problems with writing, Ed was also afraid of axes. He would not touch an ax, or even get close to one. Any situation in which he could possibly encounter an ax made him extremely uncomfortable. He refused to shop in hardware stores because they sell axes, and he would not visit museums because their exhibits often contain artifacts such as medieval armor. His fear of axes was quite specific. Ed wasn't afraid of knives, guns, or swords.

One frightening experience seemed to trigger the pervasive anxiety that had plagued Ed for 20 years. When he was 17 years old, some friends persuaded Ed to try smoking marijuana. They told him that it would make him feel high—relaxed, sociable, and perhaps a bit giddy. Unfortunately, Ed didn't react to the drug in the same way that the others had. The physical effects seemed to be the same, but his psychological reaction was entirely different. After sharing two joints with his friends, Ed began to feel lightheaded. Then things around him began to seem unreal, as though he were watching himself and his friends in a movie. The intensity of these feelings escalated rapidly, and panic took over. Frightening thoughts raced through his head. Was he losing his mind? When would it stop? This experience lasted about two hours.

The marijuana incident had an immediate and lasting impact. Ed became preoccupied with a fear of accidentally ingesting any kind of mind-altering drug, especially LSD. Every spot on his skin

Obsessive thoughts about germs and contamination can trigger frequent ritualistic hand washing that can take hours out of the day and lead to serious skin problems

or clothing seemed as though it might be a microscopic quantity of this hallucinogen. He felt compelled to clean his hands and clothes repeatedly to avoid contamination. Intellectually, Ed knew that these concerns were silly. How could a tiny spot on his hand be LSD? It didn't make any sense, but he couldn't keep the thought out of his mind.

The most horrifying aspect of the drug experience was the sensation of being totally out of control of his actions and emotions. The fear of returning to that state haunted Ed. He struggled to resist urges that he had never noticed before, such as the temptation to shout obscenities aloud in church. He also began to worry that he might hurt his younger brother. He resisted these urges with all his might. He never acted on them, but they pervaded his consciousness and absorbed his mental energy.

The thoughts were so persistent and unshakable that Ed began to wonder if he might, in fact, be a pathological killer. Could he be as deranged and evil as Richard Speck, who had brutally murdered eight nurses in a Chicago apartment building in 1966? Ed spent many hours reading articles about Speck and other mass murderers. The number 8 came to have special meaning to him because of the number of Speck's victims. Over time, Ed's fears and worries became focused on numbers and letters. The violent images and impulses became a less prominent part of his everyday life, but the writing difficulties escalated proportionately.

Ed's thoughts about violence and death illustrate the anxiety-provoking nature of obsessions. It is not just the intrusive quality of the thought, but also the unwanted nature of the thought that makes it an obsession. Some scientists and artists, for example, have reported experiencing intrusive thoughts or inspirational ideas that appear in an unexpected, involuntary way, but these thoughts are not unwanted. Obsessions are unwelcome, anxiety-provoking thoughts. They are also nonsensical; they may seem silly or "crazy." In spite of the recognition that these thoughts do not make sense, the person with full-blown obsessions is unable to ignore or dismiss them.

Examples of typical obsessive thoughts include the following: "Did I kill the old lady?" "Christ was a bastard!" "Am I a sexual pervert?" Examples of obsessive urges include "I might expose my genitals in public," "I am about to shout obscenities in public," "I feel I might strangle a child." Obsessional images might include mutilated corpses, decomposing fetuses, or a family member being involved in a serious car accident. Although obsessive urges are accompanied by a compelling sense of reality, obsessive people seldom act upon these urges.

Most normal people report having had some intrusive, unacceptable thoughts or urges that are similar in many ways to those experienced by patients being treated for obsessive-compulsive disorder (Rachman & de Silva, 1978; Salkovskis & Harrison, 1984). These include urges to hurt other people, urges to do something dangerous, and thoughts of accidents or disease. In contrast to these normal experiences, obsessions described by clinical patients occur more frequently, last longer, and are associated with higher levels of discomfort. Clinical obsessions are also resisted more strongly, and patients report more difficulty dismissing their unwanted thoughts and urges. Someone who experiences clinical obsessions is also prone to interpret them as meaning that he is a terrible person, someone who might actually act on the urge to harm another person. Research evidence suggests that intrusive thoughts are relatively common, and clinical obsessions differ from them in degree rather than in nature.

Ed's constricted style of forming letters and his habitual pattern of going back to check and correct his writing illustrate the way in which compulsions are used to reduce anxiety. If he did not engage in these ritualistic behaviors, he would become extremely uncomfortable. His concern about someone being strangled or decapitated if the letters were not properly formed was not delusional, because he readily acknowledged that this was a "silly" idea. Nevertheless, he couldn't shake the obsessive idea that some dreadful event would occur if he was not excruciatingly careful about his writing. He felt as though he had to act, even though he knew that his obsessive thought was irrational. This paradox is extremely frustrating to obsessive-compulsive patients, and it is one of the most common and interesting aspects of the disorder.

Compulsions reduce anxiety, but they do not produce pleasure. Thus, some behaviors, such as gambling and drug use, that people describe as being "compulsive" are not considered true compulsions according to this definition.

Although some clinicians have argued that compulsive rituals are associated with a complete loss of voluntary control, it is more accurate to view the problem in terms of *diminished* control. For example, Ed could occasionally manage to resist the urge to write in his compulsive style; the behavior was not totally automatic. But whenever he did not engage in this ritualistic behavior, his subjective level of distress increased dramatically, and within a short period of time he returned to the compulsive writing style.

Two common forms of compulsive behavior are checking and cleaning. The case of Michael, presented in Chapter 4, provides an example of a person with compulsive cleaning rituals. Compulsive cleaning is often associated with an irrational fear of contamination, and in that respect it bears a strong resemblance to certain phobias. There are passive as well as active features of compulsive cleaning. Compulsive cleaners, like Michael, go out of their way to avoid contact with dirt, germs, and other sources of contamination. Then, when they believe that they have come into contact with a source of contamination, they engage in ritualistic cleaning behavior, such as washing their hands, taking showers, cleaning kitchen counters, and so on. These rituals typically involve a large number of repetitions. Some people may wash their hands 50 times a day, taking several minutes to scrub their hands up to the elbow with industrial-strength cleanser. Others take showers that last two or three hours in which they wash each part of their body in a fixed order, needing to repeat the scrubbing motion an exact number of times.

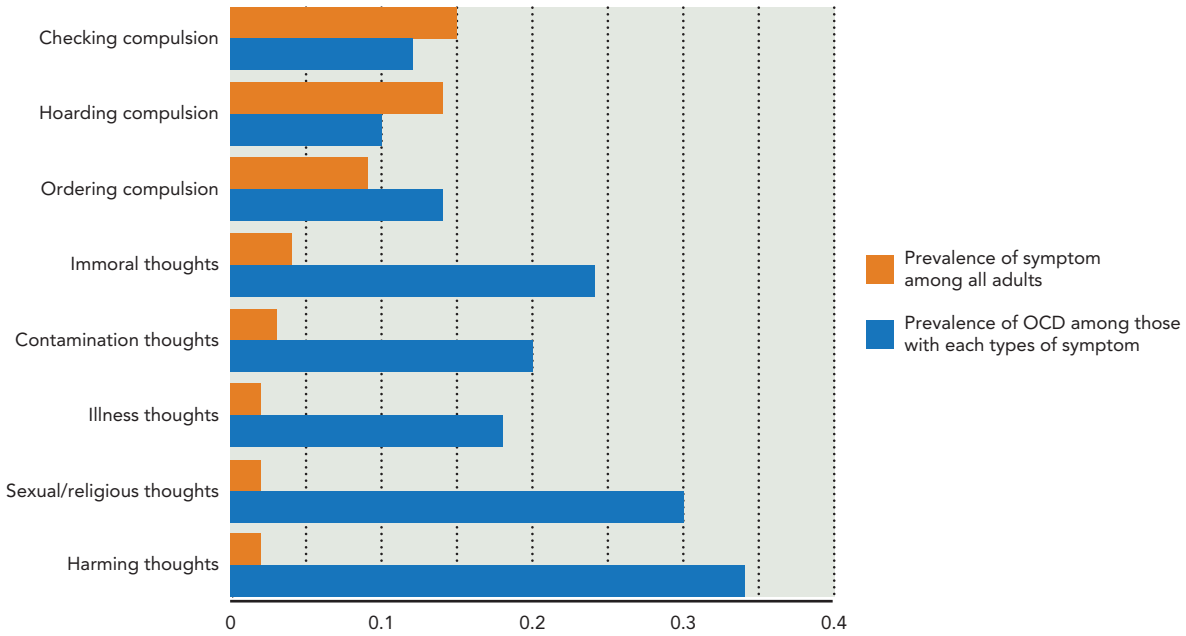

FIGURE 6.3

Lifetime prevalence of specific types of obsessions and compulsions, and prevalence of OCD diagnosis given presence of specific symptoms.
Source: A. M. Ruscio, D. J. Stein, W. T. Chiu, and R. C. Kessler, 2010, "The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey Replication." *Molecular Psychiatry, 15*, 53–63.

Compulsive checking frequently represents an attempt to ensure the person's safety or the safety and health of a friend or family member. The person checks things, such as the stove or the lock on a door, over and over in an attempt to prevent the occurrence of an imagined unpleasant or disastrous event (e.g., an accident, a burglary, or an assault).

The most common forms of obsessions include immoral thoughts, thoughts about being contaminated or being exposed to illness, unwanted sexual and religious thoughts, and thoughts about harming other people. Data regarding these symptoms are presented in Figure 6.3. Participants in the large epidemiological survey known as the NCS-R were asked to indicate whether they had experienced certain kinds of obsessions ("unpleasant thought, images or impulses") and compulsions ("repeated behaviors or mental acts that you felt compelled to do"). In order to be counted as present, the symptoms had to be present most days for at least a period of two weeks. Almost 30 percent of the people reported having experienced either obsessions or compulsions at some point during their lives, but most of these people did not qualify for a diagnosis of OCD.

Diagnosis of OCD and Related Disorders

DSM-5 defines OCD in terms of the presence of either obsessions or compulsions. Most people who meet the criteria for this disorder actually exhibit both of these symptoms. The person must attempt to ignore, suppress, or neutralize the unwanted thoughts or impulses, and they must be time-consuming (take more than one hour per day) or cause significant subjective distress or social impairment. The diagnostic manual specifies further that these thoughts must not be simply excessive worries about real problems. Intrusive thoughts about overdue bills, for example, would not qualify as obsessions. Finally, *DSM-5* provides for a specification of the person's level of insight regarding beliefs that are associated with OCD symptoms. The condition can be described as being present: (1) with good or fair insight (i.e., understands that the beliefs are either definitely or probably not true); (2) with poor insight (the person thinks that OCD beliefs are probably true); or (3) with absent insight/delusional beliefs (the person is completely convinced that the OCD beliefs are true).

The line of demarcation between compulsive rituals and normal behavior is often difficult to define. How many times should a person wash her hands in a day? How long should a shower last? Is it reasonable to check more than one time to be sure that the door is locked or the alarm clock is set? *DSM-5* has established an arbitrary threshold that holds that rituals become compulsive if they cause marked distress, take more than an hour per day to perform, or interfere with normal occupational and social functioning.

Additional OCD-related disorders are listed in Table 6.1. Hoarding disorder was added to *DSM-5* as a new form of mental disorder. In the previous version of the diagnostic manual, hoarding had been listed as one potential symptom of obsessive-compulsive personality disorder ("Unable to discard worn-out or worthless objects even when they have no sentimental value." See Chapter 9). It has also been considered a subtype of OCD, presumably because the person's fear of losing important belongings might be viewed as an obsessive thought (increasing anxiety). Distress associated with allowing other people to touch or move these belongings also bears some resemblance to concerns about symmetry and ordering

TABLE 6.1
Obsessive-Compulsive Related Disorders in *DSM-5*

All must be associated with subjective distress or social impairment in order for the person to qualify for a diagnosis.	
Body Dysmorphic Disorder	Preoccupation with perceived defects in personal appearance. The person believes that these flaws are unsightly or abnormal. The perceived defects are not noticeable, or appear to be completely insignificant, to other people.
Hoarding Disorder	Persistent difficulties in getting rid of possessions, regardless of their real value. The reluctance to discard property is due to perceived need to save the items, and it results in accumulation of possessions that obstruct active areas of the person's home.
Trichotillomania (Hair-Pulling Disorder)	Recurrent pulling out one's own hair, in spite of many attempts to decrease or stop this behavior. The hair may be pulled from any area of the body, with the most common sites being scalp, eyebrows, and eyelids.
Excoriation (Skin-Picking) Disorder	Persistent picking at one's own skin, most often on the person's face, arms, and hands. This picking leads to skin lesions and is not the result of another medical condition, and it is resistant to the person's frequent attempts to stop the skin picking or decrease its frequency.

compulsions (Frost, Steketee, & Tolin, 2012). Research studies concerned with hoarding as a distinct form of psychopathology began to appear in the mid 1990s, and interest in this problem has subsequently exploded. In fact, there are at least two popular reality TV programs that are devoted exclusively to the description of people who suffer from clinically significant hoarding.

The core element of hoarding disorder, as it is defined in *DSM-5,* is unrelenting trouble associated with getting rid of personal belongings. In order to meet the criteria for this disorder, the person must feel a strong need to save these possessions. Throwing the items away leads to a sharp increase in strong negative emotions. As a result, living areas in the person's home become completely cluttered to the point that they are unusable.

The impairment associated with hoarding is obvious and can become extremely disruptive to the person's life. Congestion caused by accumulating possessions can lead to major safety risks and health hazards. Fire is one obvious danger. In rare, extreme cases, people have been crushed by piles of heavy belongings that crashed after being stacked to the ceiling.

The symptoms of hoarding are, in many important ways, quite different from symptoms of OCD (Frost, Steketee, & Tolin, 2012; Pertusa et al., 2010).

People with hoarding disorder save things that most other people would consider worthless. The accumulated clutter interferes with use of living and work spaces and can become quite dangerous.