CHAPTER 1

Diagnosis, Phenomenology, and Comorbidity

Obsessive–compulsive disorder (OCD) has held a special place in the annals of clinical psychology and psychiatry as one of the most puzzling, yet debilitating, of the emotional disorders. On the one hand, individuals with OCD are tormented by repetitive thoughts, images, or impulses about dreaded possibilities that they realize are exaggerated and highly improbable, and yet, on the other hand, they feel helpless to stop carrying out stereotypic rituals that reduce their distress or magically prevent a dreaded outcome.

The paradox of OCD can be seen in Louise, a 37-year-old mother with a fear of physical contamination. Her contamination fear began after an upsetting incident at a summer camp when she was 14 years old. An outbreak of lice occurred that required delousing to prevent a further spread of the infestation. Upon returning from camp, Louise became fearful of dirt and contamination at home and school and in public places. She started washing her hands repeatedly, took lengthy showers, and avoided touching anything that looked dirty. Now, decades later, Louise continues to be obsessed with cleanliness. Her obsessive fear has changed frequently with the passage of time. In the last 5 years, she has become obsessed with the fear of contracting cancer. She knows she can't "catch cancer," and yet whenever she comes in contact with something others have touched, she feels intensely anxious. The obsessive thought is "What if a person with cancer touched this object?" As well, the thought "That looks dirty" elicits fear because in her mind, dirt is associated with an increased risk of cancer. Louise is anxious most of the day due to dozens of thoughts about dirt and disease, despite tremendous effort to avoid potential contaminants and to keep her personal environment spotlessly clean.

Whenever she feels anxious, Louise cleans. She scrubs her hands to the point where they become cracked and bleed. She uses strong disinfectants throughout the house, and carries antibacterial wipes wherever she goes. Certain everyday activities like using the toilet, handling garbage, dealing with dirty laundry, preparing meals, and touching water faucets and doorknobs trigger her OCD. Despite her taking medication and having tried conventional forms of counseling, the contamination fears have continued unabated. Finally, the stress of the OCD was more than she could bear. Her family was losing patience with her excessive cleaning, and her husband was talking about a period of separation. In addition, Louise felt that she was losing a grip on her own mental health, having just been diagnosed with clinical depression. Feeling there was no way out, Louise began having suicidal thoughts, convinced her family would be better off without her.

Many individuals struggling with OCD have similar experiences to Louise's. OCD can ruin lives; tear families apart; and make highly intelligent, conscientious, and resourceful individuals victims to a bewildering onslaught of irrational thoughts and irresistible urges. OCD is associated with an array of negative emotions such as guilt, shame, and embarrassment, but the most common adverse emotions are fear and anxiety.

Anxiety and its core emotion, fear, are universal human experiences that play a central role in adaptation and survival. The primary function of fear is to signal a threat or impending danger (Barlow, 2002). The feeling of anxiousness associated with making a speech before a large audience or waiting for a job interview is understandable, given the potential for social disapproval and outright humiliation. But what if the fear concerns one's own thoughts? And what if the thoughts are about actions or circumstances that are highly improbable, if not impossible? In response to this intense anxiety, individuals learn that certain rituals or habitual ways of responding appear to bring temporary relief from their distress, even though the response may not be logically connected to the fear. The reduction in anxiety, then, strengthens the connection between the obsessional fear and the "neutralizing response," or compulsion, setting in motion a vicious cycle that we label *OCD*.

Until publication of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association [APA], 2013), OCD was considered an anxiety disorder. In DSM-5 it now appears in a separate diagnostic category called "obsessive–compulsive and related disorders." Here OCD is the prototypic disorder, along with other "spectrum conditions" like body dysmorphic disorder, hoarding disorder, trichotillomania, and excoriation disorder (i.e., skin picking). Considerable debate surrounded this reclassification, which is summarized in the following section. Despite this diagnostic change, the hallmark of the disorder remains the same: the presence of repetitive obsessions or compulsions that are severe enough to be time-consuming or to cause significant distress or

interference in daily living (APA, 2013). Understanding and treating OCD can be one of the greatest challenges facing mental health practitioners, given the idiosyncratic, highly persistent, and irrational nature of the obsessional fear.

When confronted with a severe case of OCD, a clinician might assume that obsessive phenomena have no counterpart in normal human functioning. However, obsessions and compulsions can be found in most individuals to varying degrees. Who hasn't had an unwanted intrusive thought, image, or impulse that pops into the mind for no apparent reason? Examples include the urge to jump in front of an approaching train even though you are not suicidal, the thought of blurting out a rude or embarrassing comment to someone you have just met, or an annoying tune that keeps running through your head. And what about the superstitious, repetitive behaviors we perform to relieve anxiety? For example, consider the baseball player who taps the plate a certain number of times before the first pitch, or the routines a person may have when sitting down to take an exam.

Obsessions and compulsions can occur as normal as well as abnormal phenomena. When does an obsession or compulsion become pathological? And how can we effectively treat these conditions when they cause significant personal distress and interference in daily functioning? These are the two overarching questions that guide this book. I approach these issues with research on the cognitive basis of OCD. The emerging theory and research have given cognitive-behavioral therapists a greater understanding and effective treatments for obsessions, compulsions and their various subtypes.

DIAGNOSIS OF OCD

The essential features of OCD are the repeated occurrence of personally distressing or functionally impairing obsessions and/or compulsions (APA, 2013). *Obsessions* are unwanted, unacceptable, and repetitive intrusive thoughts, images, or urges that are resisted, difficult to control, and generally produce distress even though the person may recognize, to varying degrees, that the thoughts are excessive or senseless (Rachman, 1985). Thought content often focuses on troubling, repugnant, or even nonsensical themes about dirt and contamination; aggression; doubt; unacceptable sexual acts; religion; or orderliness, symmetry, and precision.

Compulsions are repetitive behaviors or mental acts associated with a subjective urgency whose aim is to prevent a dreaded outcome or reduce distress normally caused by an obsession (APA, 2013). A compulsion is generally accompanied by an especially strong urge to carry out the ritual, resulting in a diminished sense of voluntary control over the ritual (Rachman & Hodgson, 1980). Subjective resistance is often present, but

the person eventually gives in to the overpowering urge to perform the ritual. Washing, checking, repeating specific behaviors or phrases, ordering (rearranging objects to restore balance or symmetry), and mental rituals (i.e., repeating certain superstitious words, phrases, or prayers) are the most common compulsions. Compulsive rituals are excessive, even senseless responses to the obsession, and tend to follow a strict self-imposed set of rules (APA, 2013).

DSM-5 Diagnosis of OCD

Since the publication of DSM-III (APA, 1980), OCD has been classified an anxiety disorder. Behavioral and cognitive-behavioral theory, research, and treatment accepted this classification, given the prominence of threat-based obsessions, anxiety reduction responses (i.e., compulsions), and avoidance behavior that also characterizes other types of anxiety disorders. Behavioral researchers emphasized that OCD has a symptom profile similar to generalized anxiety disorder (GAD), specific phobias, and hypochondriasis, which suggests the possibility of a common diathesis (e.g., Brown, 1998; de Silva, 1986).

Despite its controversial reclassification, DSM-5 offered only minor changes to the actual diagnostic criteria for OCD (see Abramowitz & Jacoby, 2014; Van Ameringen, Patterson, & Simpson, 2014). The term *impulse* was changed to *urge,* and *inappropriate* became *unwanted* in the definition of obsessions. Moreover, the DSM-IV criterion that obsessions and/or compulsions must at some point be recognized as excessive or senseless was dropped. This decision recognized that a range of insight into the excessiveness of obsessions and compulsions can be present, with over half of OCD sample participants expressing some belief in the reasonableness of their obsessional fears, and 4% certain that their obsessional fears are realistic (Foa et al., 1995).

DSM-5 also expanded the "poor insight" specifier to indicate that a person could have (1) "good or fair insight" into the unrealistic nature of his or her obsessions and compulsions, (2) "poor insight" signifying belief that the obsessional concerns are most likely realistic, or (3) "absent insight/delusional beliefs" when there is strong conviction in the veracity of the obsessional concern (APA, 2013). Again, the expansion of the insight specifier is an improvement because lack of insight is associated with poorer treatment response. Abramowitz and Jacoby (2014) noted that recognition that obsessional concerns can be delusional reduces the chance that individuals with severe OCD will be misdiagnosed with schizophrenia. Finally, a new specifier, "tic-related," was added to indicate whether the individual presently or in the past had a tic disorder. The justification for this specifier is that individuals with OCD and a history of tic disorder differ from those without a history in terms of symptoms, comorbidity, course, and family history (APA, 2013).

The decision to remove OCD from the anxiety disorders was controversial (see the DSM-5 Working Group recommendation; APA, 2012). Several review articles for and against the DSM-5 classification were published (see Abramowitz & Jacoby, 2014; Phillips et al., 2010; Stein et al., 2010; Storch, Abramowitz, & Goodman, 2008; Van Ameringen et al., 2014). Arguments in favor of reclassification included:

1. Evidence that OCD shares significant symptom similarity with body dysmorphic disorder (BDD) and hoarding disorder (HD), and some symptom similarity with trichotillomania (TTM) and excoriation (skin-picking) disorder.
2. OCD and the spectrum-related disorders have a common core symptom of repetitive behavior or compulsiveness that varies on a continuum with impulsivity (Hollander, 1996).
3. OCD and the spectrum disorders share similar clinical features such as age of onset, course, and family history, as well as high comorbidity rates within the diagnostic grouping.
4. The disorders share a common neural circuitry, with hyperactivation in the frontal–striatal region, in contrast to the anxiety disorders in which amygdala activation is prominent.
5. OCD and the spectrum disorders have a similar treatment response, especially to the selective serotonin reuptake inhibitors (SSRIs).

The main reason for grouping the spectrum disorders together with OCD was their supposed shared neurophysiological pathogenesis (see Phillips et al., 2010, for supportive argument). At the very least, the classification is predicated on the view that OCD has more in common with the spectrum disorders than it does with other anxiety disorders.

Several arguments were raised against separating OCD from the anxiety disorders (see Abramowitz & Jacoby, 2014; Stein et al., 2010; Storch et al., 2008).

1. The new focus on "compulsivity" as the core feature in OCD is a misconception because it ignores the functional nature of compulsions, which is the relief of obsessional anxiety. In addition, the DSM-5 approach fails to appreciate the role of cognition in the pathogenesis of OCD (Storch et al., 2008).
2. The new grouping assumes that impulsivity and compulsivity lie on the same continuum, and yet there is little empirical evidence to justify this assertion.
3. The presence of repetitive behavior can be seen in a variety of disorders and may be less pronounced in repugnant or "pure" obsessions. Therefore, this symptom characteristic lacks sufficient sensitivity or specificity to be a defining feature of a diagnostic grouping.
4. OCD does not have a more similar clinical course or higher comor-

bidity rates with the spectrum disorders compared to other anxiety disorders. In fact, OCD has a higher comorbid rate with some of the anxiety disorders than with the obsessive–compulsive spectrum disorders, except for BDD.

5. The empirical evidence for a distinct neural circuitry that is common within OCD and the spectrum disorders but distinct from other anxiety disorders is inconsistent and unreliable.
6. Treatment response in OCD and the spectrum disorders differs, again with the exception of BDD. For example, exposure and response prevention (ERP) is effective for OCD but not the other spectrum disorders, like TMM or excoriation disorder.

Given the compelling objections raised with the DSM-5 reclassification, this book continues with the assertion that OCD is an anxiety disorder. The basic DSM-5 diagnostic criteria for OCD can still be accepted without agreeing to its diagnostic segregation.

EPIDEMIOLOGY AND DEMOGRAPHY

Prevalence

Lifetime prevalence estimates for OCD vary across epidemiological studies because of methodological differences. The Epidemiologic Catchment Area (ECA) study reported a lifetime prevalence of 2.5% based on DSM-III criteria (Karno, Golding, Sorenson, & Burnam, 1988). Later the National Comorbidity Study Replication (NCS-R) found similar rates, with lifetime and 12-month prevalences estimated at 2.3% and 1.2%, respectively (Ruscio, Stein, Chiu, & Kessler, 2010). The German National Health Interview and Examination Survey found a 12-month prevalence rate of 0.7% (Adam, Meinlschmidt, Gloster, & Lieb, 2012). Two other epidemiological studies also reported a 0.7% 12-month prevalence rate (Andrews, Henderson, & Hall, 2001; Kringlen, Torgersen, & Cramer, 2001). Although there is some variation across studies, it is reasonable to conclude that the lifetime prevalence for OCD lies between 1 and 2% of the general population.

A much larger number of people experience subthreshold OCD, or isolated obsessive and compulsive symptoms. In the NCS-R, 28.2% of respondents reported experiencing obsessions or compulsions at some point in their life (Ruscio et al., 2010). In the German study, 4.5% reported a 12-month prevalence of subthreshold OCD, and 8.3% reported obsessive–compulsive symptoms (Adam et al., 2012). Although less severe and impairing than diagnosable OCD, these milder obsessive–compulsive states are significant in their own right. Presence of obsessive–compulsive symptoms confers greater risk for full-blown diagnosable OCD and is associated with higher rates of other mental disorders, greater functional impairment, and more health care utilization (Adam et al., 2012; Fryman et al., 2014; Ruscio et

al., 2010). If OCD is considered along with these subclinical states, obsessions and compulsions are responsible for a greater mental health burden than might be assumed from prevalence of the disorder.

Gender, Age, and Onset

Most studies report a slightly higher incidence of OCD in women. In their review, Rasmussen and Eisen (1992) noted that 53% of their OCD sample was female, a gender difference confirmed in some epidemiological studies (Andrews et al., 2001; Karno & Golding, 1991; Kringlen et al., 2001; Ruscio et al., 2010) but not others (e.g., Adams et al., 2012). Men typically have an earlier age of onset and therefore begin treatment at a younger age (e.g., Lensi et al., 1996; Rasmussen & Eisen, 1992). However, it is unclear whether gender has any impact on the course of the disorder. There is some evidence of gender differences in symptom expression, with women displaying more washing and cleaning rituals and men reporting more sexual obsessions (Lensi et al., 1996; Rachman & Hodgson, 1980; Steketee, Grayson, & Foa, 1985).

Young adults between 18 and 24 years are at highest risk for developing OCD (Karno et al., 1988). The mean age of onset was 19½ years in the NCS-R (Ruscio et al., 2010). Sixty-five percent develop the disorder before age 25, with less than 5% reporting an initial onset after 40 years of age (Rachman & Hodgson, 1980; Rasmussen & Eisen, 1992). A substantial number of adults report onset in childhood or adolescence, and children and adolescents with severe OCD will continue to experience symptoms for many years (Rettew, Swedo, Leonard, Lenane, & Rapoport, 1992; Thomsen, 1995). Clearly, OCD is a disorder of the young, with evidence that rates may even decline with age (Karno & Golding, 1991; Ruscio et al., 2010). In the NCS-R, few new onsets were evident after the early 30s, with the average length of the disorder being 8¾ years (Ruscio et al., 2010).

It is hard to argue for a typical modal onset of the disorder. A substantial number of individuals experience a gradual onset of the disorder, whereas for others onset is acute, often in response to certain life experiences (Black, 1974; Lensi et al., 1996; Rachman & Hodgson, 1980). Half to two-thirds of persons with OCD report a significant life event prior to the onset of illness, such as the loss of a loved one, severe medical illness, or major financial problems (Lensi et al., 1996; Lo, 1967). A recent study using a semistructured interview to establish diagnosis and presence of a stressful life event found that 60.8% of an OCD sample reported the occurrence of a life event within the 12 months before illness onset (Rosso, Albert, Asinari, Bogetto, & Maina, 2012).

This relationship is also confirmed when single major life events are considered. For example, a significant number of women with OCD report initial onset during pregnancy (Neziroglu, Anemone, & Yaryura-Tobias, 1992). Abramowitz, Schwartz, and Moore (2003) concluded that a subset

of women with OCD experience an onset or worsening of symptoms during pregnancy or the puerperium, but it is unclear whether this might be related to postpartum depression.

A recent systematic literature review concluded that there is no convincing evidence of an association between onset of OCD and environmental risk factors (Brander, Pérez-Vigil, Larrson, & Mataix-Cols, 2016). Potential risk factors were identified such as birth complications, reproductive cycle, and stressful life events, but the retrospective nature of most life event measures and the inconsistencies across studies preclude any firm conclusions about the environmental precipitates of OCD. Although life circumstances such as pregnancy may increase vulnerability to obsessive–compulsive symptoms, it is also important to remember that many individuals cannot identify an environmental trigger for their illness (Rasmussen & Tsuang, 1986).

Ethnicity, Marital Status, and Family Involvement

In the cross-national collaborative study (Weissman et al., 1994), prevalence, age of onset, and comorbidity were quite consistent across seven national sites (United States, Canada, Puerto Rico, Germany, Taiwan, Korea, and New Zealand). More recently the 12-month prevalence for OCD in Taiwan was 0.07% and in Singapore 1.1% (Huang et al., 2014; Subramanian, Abdin, Vaingankar, & Chong, 2012). These rates are substantially lower than the 0.7% 12-month prevalence in the NCS-R. In their review of epidemiological studies, Fontenelle, Mendlowicz, and Versiani (2006) concluded there are substantial differences in OCD rates across countries. Methodological variation across studies probably accounts for much of the difference, but intrinsic characteristics of the populations cannot be ruled out.

Differences in OCD prevalence can also be examined across racial/ethnic groups within countries. African Americans may have a lower lifetime prevalence of OCD (Karno et al., 1988), although the more recent National Survey of American Life found no difference in OCD prevalence rates in African American and African Caribbean populations compared to the European American population (Himle et al., 2008). In sum, it is not clear whether OCD is more prevalent in some racial/ethnic groups than in others. Methodological inconsistencies make it difficult to draw comparisons across studies. At the very least, we can conclude that OCD may vary across racial/ethnic groups, with the biggest differences associated with the symptom subtype most prevalent in a given group (Fontenelle, Mendlowicz, Marques, & Versiani, 2004).

Individuals with OCD are less likely to be married, tend to marry at an older age, and have a low fertility rate (Rachman, 1985). Rates of separation or divorce, marital dysfunction, and sexual dissatisfaction are common in people with OCD, but the rates do not appear greater when

compared with other anxiety disorders or depression (Black, 1974; Coryell, 1981; Fontenelle & Hasler, 2008; Freund & Steketee, 1989; Karno et al., 1988; Rasmussen & Eisen, 1992).

Considerable stress is placed on family members living with an individual with severe OCD. Family members may be directly drawn into the illness either by trying to stop the symptoms or by cooperating with an individual's ritualistic behavior. Family members and relatives frequently make accommodations for the person's rituals, which in turn increase family stress and dysfunction (Calvocoressi et al., 1995). A higher rate of critical and rejecting comments may have a limited negative impact on symptom severity, and the level of depression and anxiety in family members influences how they respond to an individual's obsessions and compulsions (Amir, Freshman, & Foa, 2000). A meta-analysis concluded that greater obsessive–compulsive symptom severity was associated with more family accommodation, and that this relationship was not influenced by the presence of a comorbid disorder, gender, or age (Wu, McGuire, Martino, et al., 2016). Clearly, family members are caught in a dilemma. Regardless of whether they refuse to be drawn into ritualistic behavior or whether they accommodate to the rituals, they end up experiencing the distress of living with OCD. No doubt the relationship between symptom severity and family accommodation is bidirectional, causing a vicious cycle in which family members increase their efforts to deal with an escalation in clinical presentation.

Quality of Life and Suicidality

At one time, it was thought that individuals with OCD were more intelligent and attained a higher level of education than individuals with other psychiatric disorders (e.g., Black, 1974). Later research indicated that educational attainment in OCD is similar to that in other disorders but lower than in nonclinical groups (Andrews et al., 2001; Karno & Golding, 1991; Kringlen et al., 2001). Any evidence of higher scores on standardized intelligence tests is only slight and nonsignificant when compared with matched nonclinical controls (Rasmussen & Eisen, 1992).

OCD has a significant negative impact on social and occupational functioning. In a systematic review and meta-analysis of quality-of-life (QOL) research, individuals with OCD had significantly lower QOL scores in work, social, emotional, and family domains than healthy controls (Coluccia et al., 2016). However, when common indices of employment are used, it is unclear whether OCD is associated with worse employment outcomes compared to other psychiatric disorders. Generally, employment status and level of income did not differ when OCD was compared with other anxiety disorders (Antony, Downie, & Swinson, 1998; Karno et al., 1988), although contrary findings have been reported, with higher rates of

unemployment and lower income in OCD relative to other emotional disorders (Steketee, Grayson, & Foa, 1987; Torres et al., 2006).

It is now recognized that elevated suicidality is a significant problem in OCD. Two large community studies found that 36–63% of individuals with an OCD diagnosis reported suicidal thoughts at some point during their life, and 11–26% reported lifetime suicide attempts (Torres, et al., 2006; Torres, Ramos-Cerqueria, Fontenelle, do Rosário, & Miguel, 2011). The presence of sexual/religious obsessions and comorbid major depression may increase suicidal risk. A meta-analysis based on 48 studies found a significant association between suicidality and OCD (Angelakis, Gooding, Tarrier, & Panagioti, 2015). Severity of obsessions as well as comorbid anxious and depressive symptoms predicted increased suicidality. A prospective study using the Danish population register revealed that OCD was associated with increased mortality rates even after controlling for depression, anxiety, and substance use disorders (Meier et al., 2016). Clearly, then, OCD poses considerable risk for those who suffer from this condition.

It is evident that OCD has a substantial detrimental impact on QOL and occupational attainment. Whether this negative impact is greater than the effects seen in other psychiatric disorders remains unclear. However, severe forms of the disorder can have devastating effects on individuals, who are often unable to carry out their usual work or social activities shortly after disorder onset (Pollitt, 1957). As well, clinicians must be concerned about increased suicidal risk in severe OCD that is comorbid for depression, substance use, and impulse-control disorders (Torres et al., 2011).

COURSE AND OUTCOME

Treatment Seeking

Most individuals with OCD delay seeking treatment for several years, and there can be considerable variability in treatment delay, from 2 to 7 years (Lensi et al., 1996; Rasmussen & Tsuang, 1986). In the Singapore Mental Health Study, the median treatment delay was 9 years, with 89.8% of those with a lifetime diagnosis of OCD never seeking treatment for their condition (Subramanian et al., 2012). However, severity of the disorder and presence of comorbidity may influence whether treatment is sought. In the NCS-R, 93% of individuals with severe OCD received treatment in the preceding year compared to 25.6% of the moderately severe cases (Ruscio et al., 2010). The German epidemiological study found treatment-seeking rates of 68.2% for those with diagnosable OCD, 36.3% for subthreshold OCD, and 36.6% for those with obsessive–compulsive symptoms (Adam et al., 2012). Moreover, 55.6% of individuals with comorbid OCD sought treatment compared to 13.9% of "pure" OCD cases (Torres et al., 2006).

Even when treatment utilization is high, less than one-third of individuals with severe OCD receive treatment specifically for OCD (Ruscio et al., 2010).

There are several conclusions that can be drawn from this research. First, individuals with OCD often do not seek treatment for years. Second, those with milder symptoms are less likely to seek treatment. And third, individuals with OCD and another comorbid condition, like major depression, are more likely to seek health care services. However, only a minority of individuals, even those with severe OCD, obtain specialized treatment for the disorder (Pollard, Henderson, Frank, & Margolis, 1989; Ruscio et al., 2010). This low level of treatment seeking is reminiscent of the dissemination problem that is evident in the treatment of psychological disorders more broadly (i.e., McHugh & Barlow, 2010). For those with OCD, the limited access to evidence-based treatment may be compounded by failure to even recognize that disorder-specific treatment is needed for obsessional states.

Natural Course and Outcome

Research on the natural course of any disorder is fraught with methodological challenges because follow-up periods spanning decades are required and any treatment during this time period will bias the natural trajectory of the disorder. Despite these hurdles, a few observations can be made about the natural course of OCD. In a longitudinal study that is remarkable because the follow-up period spans several decades (M = 47 years), Skoog and Skoog (1999) found that OCD tends to take a chronic course, with symptoms waxing and waning over the lifetime. Half of their OCD sample (n = 122) continued to experience clinically significant symptoms, and another one-third had subclinical features (although 83% showed improvement in the 40-year period). Complete recovery occurred in only 20% of the sample. These results are entirely consistent with other research showing that OCD episodes tend to be lengthy and that spontaneous remission of symptoms is low (Demal, Lenz, Mayrhofer, Zapotoczky, & Zitterl, 1993; Foa & Kozak, 1996; Karno & Golding, 1991). More recently a 5-year follow-up of treatment-seeking individuals with OCD revealed that only 17% achieved full remission and 59% of those who experienced partial or full remission relapsed (Eisen et al., 2013).

There have been attempts to characterize the typical course of OCD symptoms. Most individuals with OCD experience a chronic, continuous course with the disorder, although a minority (10%) shows deterioration over time. Others experience an intermittent course with obsessive–compulsive symptoms waxing and waning, possibly in response to stressful life experiences (Demal et al., 1993; Lensi et al., 1996; Rasmussen & Tsuang, 1986).

Although it is difficult to be definitive about the natural course of OCD, we can state that most individuals with the disorder experience a somewhat early but insidious onset in adolescence or early adulthood, with a mix of obsessive and compulsive symptoms that build during periods of stress and possibly subside during intervals of relative stability. This pattern of waxing and waning symptoms can continue over several years until symptom severity reaches a point where the person finally seeks treatment.

COMORBIDITY

Diagnostic comorbidity refers "to the co-occurrence of two or more current or lifetime mental disorders in the same individual" (Brown, Campbell, Lehman, Grisham, & Mancill, 2001, p. 585). Comorbidity is important because the presence of a coexisting disorder is usually associated with greater symptom severity, lower treatment response, and poorer prognosis (Bronisch & Hecht, 1990; Brown & Barlow, 1992). OCD has a high rate of diagnostic comorbidity, with half to three-quarters of individuals having at least one additional current disorder (Antony et al., 1998; Brown et al., 2001; Karno & Golding, 1991; see Yaryura-Tobias et al., 2000, for lower comorbidity rates). When lifetime comorbidity is considered, fewer than 15% of cases have a sole diagnosis of OCD (Brown et al., 2001; Crino & Andrews, 1996). In the NCS-R, 90% of individuals with lifetime OCD met diagnostic criteria for another lifetime disorder (Ruscio et al., 2010), and in the British National Psychiatric Morbidity Survey of 2000, 62% of individuals with OCD had one or more current comorbid disorder (Torres et al., 2006). The comorbidity rate was substantially higher than the rates seen in the "other neurotic disorders."

Comorbidity of OCD with other disorders is asymmetrical. Whereas additional diagnoses of depression or other anxiety disorders have a high rate of occurrence in OCD, obsessional disorder, as a co-occurring condition with major depression or other anxiety disorders, is less common, even when lifetime rates are considered (Antony et al., 1998; Brown et al., 2001; Crino & Andrews, 1996). Moreover, the temporal order of lifetime comorbidity may differ between disorders. Brown and colleagues (2001) found that comorbid anxiety disorders tended to temporally precede index cases of OCD, whereas comorbid depression tended to occur after the onset of an obsessional disorder. In the NCS-R, when OCD and anxiety disorders were comorbid, anxiety tended to occur first, whereas it was equally split on whether OCD or major depression occurred first (Ruscio et al., 2010). Once an obsessional episode is active, individuals are at elevated risk for anxiety, mood disorders, eating disturbance, and tic disorders for the duration of the episode (Yaryura-Tobias et al., 2000).

Depression

For decades, clinical researchers have recognized a close relationship between OCD and depression (e.g., Lewis, 1936; Rosenberg, 1968; Stengel, 1945). The co-occurrence of major depressive episode in persons with OCD is high, ranging from 30 to 50% (Bellodi, Sciuto, Diaferia, Ronchi, & Smeraldi, 1992; Brown, Moras, Zinbarg, & Barlow, 1993; Karno & Golding, 1991; Lensi et al., 1996). Lifetime prevalence rates are even higher (65–80%) (Brown et al., 2001; Crino & Andrews, 1996; Rasmussen & Eisen, 1992). More recent epidemiological studies confirm these early findings, with 25–50% of individuals with OCD having a current or lifetime comorbid depressive disorder (Huang et al., 2014; Ruscio et al., 2010; Subramanian et al., 2012; Torres et al., 2006). In most of the research depression is the most common comorbid condition, followed by GAD and substance use disorders. The NCS-R reported a slightly different comorbid pattern based on lifetime prevalence. Any anxiety disorder was most common (76%), followed by any mood disorder (63%), impulse-control disorder (56%), and any substance use disorder (39%) (Ruscio et al., 2010).

Although there is some inconsistency in whether major depression or OCD emerges first in comorbid conditions, the more usual pattern is that OCD leads to the development of a secondary depressive disorder (Demal et al., 1993; Rasmussen & Eisen, 1992; Rickelt et al., 2016; Subramanian et al., 2012; Welner, Reich, Robins, Fishman, & van Doren, 1976). In these studies, the progression from obsessive–compulsive symptoms to depression occurred three times more often than the reverse pattern. Likewise, Rickelt and colleagues (2016) found that 74% of their OCD sample had a secondary major depressive disorder. Although obsessive–compulsive symptoms and disorder can be found in diagnosable depressive disorders, it is less frequent than the incidence of depressive disorders in OCD samples (Kendell & Discipio, 1970; Lewis, 1936).

When depressive disorder is comorbid in OCD, it is associated with greater symptom severity, poorer QOL, and increased functional impairment. Comorbid major depression was associated with greater obsessive–compulsive symptom severity at 1-year follow-up in the Netherlands Obsessive Compulsive Disorder Association study (Rickelt et al., 2016). As well, Huppert and colleagues found that comorbid depression accounted for much of the variance in the poor QOL and impaired functioning found in individuals with OCD (Huppert, Simpson, Nissenson, Liebowitz, & Foa, 2009).

Depression may have a greater negative effect on obsessions than compulsions (Ricciardi & McNally, 1995). McNally, Mair, Mugno, and Riemann (2017) performed a Bayesian network analysis on obsessive–compulsive and depressive symptoms in 408 treatment-seeking individuals with OCD. They found that degree of interference caused by obsessions

and compulsions, as well as the level of distress associated with obsessions, were responsible for depression comorbidity. Furthermore, depressive symptoms such as guilt, anhedonia, and suicidality occurred when sad mood was activated by distress associated with obsessions. These findings suggest that treating obsessional distress first may help prevent escalation of sad mood and the subsequent development of depression (McNally et al., 2017). Other research has indicated that individuals with OCD and comorbid major depression have a greater propensity to misinterpret the significance of unwanted intrusive thoughts (Abramowitz, Storch, Keeley, & Cordell, 2007). Thus, dysfunctional cognitive processing could be another mediator between obsessive–compulsive symptom severity and depression.

Individuals with OCD and comorbid major depression can achieve clinically significant treatment gains, although the posttreatment symptom level is significantly greater than for those without concurrent depression (e.g., Abramowitz & Foa, 2000). In their meta-analysis of CBT for OCD, Olatunji, Davis, Powers, and Smits (2013) found that depressive symptom severity was not associated with a decrease in treatment effect sizes. Other reviewers also have concluded that the presence of comorbid major depression has no significant association with treatment outcome (Knopp, Knowles, Bee, Lovell, & Bower, 2013). However, it may be that level of depression severity determines its impact on treatment. Abramowitz (2004) concluded that severe depression does reduce treatment response and so recommended that cognitive therapy be introduced to address pertinent issues in severely depressed cases of OCD. Despite some inconsistencies across reviews, the most parsimonious conclusion is that severe levels of depressive symptoms will negatively affect treatment response, whereas mild to moderate depression may not substantially influence outcome (Abramowitz, Franklin, Street, Kozak, & Foa, 2000; Keeley, Storch, Merlo, & Geffken, 2008).

Anxiety Disorders

The relationship between OCD and the anxiety disorders has been hotly debated with the DSM-5 reclassification of the disorder. Early studies found that social anxiety disorder had the highest comorbidity rate with OCD (35–41%), with specific phobias (17–21%) having the next highest rate of co-occurrence. Results are more mixed concerning panic disorder, with some studies showing moderately high comorbidity rates (29%), whereas others report relatively low rates of co-occurrence (12%); it is still unclear whether GAD co-occurs rarely (7%) or, at the very least, somewhat less frequently (12–22%) (see Antony et al., 1998; Brown et al., 1993, 2001; Crino & Andrews, 1996).

More recent epidemiological studies have reported more inconsistency in the comorbidity rates for anxiety. In the NCS-R (Ruscio et al., 2010), lifetime prevalence was highest for social anxiety (43.5%), followed by

specific phobia (42.7%), separation anxiety disorder (37.1%), panic disorder (20%), and GAD (8.3%). However, in the British epidemiological study, which was based on ICD-10 diagnoses, GAD had a comorbid rate of 31.4%, panic disorder/agoraphobia 22.1%, social anxiety disorder 17.3%, and specific phobia 15.1% (Torres et al., 2006). The German epidemiological study was more consistent with the NCS-R findings, except that GAD had a higher rate (21.1%) and panic attacks were present in 34% of the OCD sample (Adam et al., 2012). A Swiss population-based study reported lifetime comorbidities of 50% for GAD, 40% for social anxiety, 20% for simple phobia, and 16.7% for panic disorder (Fineberg et al., 2013). Torres and colleagues (2016) found that social anxiety disorder (34.6%), GAD (34.3%), and specific phobia (31.4%) were the most common comorbid conditions after major depression (56.4%) in a large Brazilian OCD clinical study. Separation anxiety disorder can also be seen in OCD, with a lifetime prevalence of 27.2% as well as heightened personal dysfunction and poorer treatment response (Franz et al., 2015).

It is noteworthy that comorbidity rates increase with greater obsessive–compulsive severity, and the co-occurrence of anxiety with OCD is associated with greater distress and psychosocial impairment (Fineberg et al., 2013; Hofmeijer-Sevink et al., 2013). Obsessions and compulsions often co-occur with other anxiety symptoms, so that the more anxiety exhibited by an individual, the greater the negative impact on functioning (Welkowitz, Struening, Pittman, Guardino, & Welkowitz, 2000). Increased severity of comorbid anxious symptoms is also a significant predictor of suicidality in OCD (Angelakis et al., 2015).

Although other anxiety disorders are frequently found in persons with OCD, obsessions and compulsions are rarely evident when other anxiety disorders are the principal diagnosis. Brown and colleagues (1993), for example, found that OCD rarely occurred (2%) when GAD was the principal diagnosis. This asymmetry was also evident at the symptom level, with 41% of the OCD sample reporting worry but only 15% of those with primary GAD had obsessions. This trend was confirmed in a recent study of 57 individuals with GAD and 58 with panic disorder (Camuri et al., 2014). Only 7% of the GAD sample had co-occurring OCD, and the rate was even lower in panic disorder (1.7%).

Anxious symptoms and disorders are common in OCD, and when present they are associated with greater personal distress, symptom severity, and impaired psychosocial functioning. Although the findings are not entirely consistent, GAD, social anxiety, specific phobias, and to a lesser extent, panic and separation anxiety disorders may be present. From a conceptual perspective, the comorbidity data are consistent with those who consider OCD an anxiety disorder. Clearly, individualized case formulations and treatment goal setting may require a broader perspective that takes into consideration the presence of other anxiety disorders and symptoms.

Obsessive–Compulsive Spectrum Disorders

Two key questions in the relationship between the obsessive–compulsive spectrum disorders (OCSD) and OCD concern their comorbidity rates and whether they have a shared phenotype or clinical presentation. In DSM-5 the primary OCSDs are BDD, TTM, excoriation (skin-picking) disorder (SPD), and HD (APA, 2013). Recently the ICD-11 Working Group on Obsessive–Compulsive and Related Disorders proposed an expanded diagnostic grouping in which hypochondriasis and olfactory reference disorder would be added to DSM-5 OCSDs (Stein et al., 2016). The argument is similar to that previously advanced by the DSM-5 working group (APA, 2012).

For OCD, the OCSD comorbidity rate is much lower than one might expect for disorders within the same diagnostic category, and less than the prevalence of anxiety disorders and symptoms. In OCD samples the lifetime prevalence of comorbid BDD ranges from 8.7 to 15%, for TTM from 5.3 to 11%, for SPD from 17 to 31%, and for HD or compulsive buying from 7 to 11% (Bienvenu et al., 2012; Costa et al., 2012; Lochner et al., 2014; Torres et al., 2016). Concurrent rate for HD is around 10% (Chakraborty et al., 2012). However, the comorbidity rate of obsessive–compulsive symptoms and disorder is much lower in those with a principal OCSD diagnosis. In TTM approximately 5% of individuals have comorbid OCD (Lochner et al., 2012) and in HD, only a small percentage of individuals have OCD symptoms (Hall, Tolin, Frost, & Steketee, 2013). The rate of OCD is higher (31–35%) in individuals with early-onset BDD (Bjornsson et al., 2013). Except for BDD, the comorbidity rates for certain anxiety disorders, like social anxiety, specific phobias, and GAD, are substantially higher than the rates for OCSDs. Thus, the pattern of comorbidity evident in OCD does not support the contention that obsessional disorders have a closer association with the OCSDs than with the anxiety disorders.

Advocates for a distinct OCD and related disorders classification argue that these conditions have a common core symptom presentation (APA, 2012; Stein et al., 2016). In their review, Phillips and colleagues (2010) concluded that OCD and BDD have the closest symptom similarity, TTM some symptom overlap, but less symptom similarity with HD. A direct clinical comparison of an SPD sample with an OCD group revealed few symptom similarities and no overlap in prevalence among first-degree relatives (Grant, Odlaug, & Kim, 2010). A multimodal modeling analysis of OCD and OCSD self-report symptom measures based on 6,310 individual twins from the U.K. Adult Twin Registry revealed a nonspecific genetic vulnerability factor in which OCD loaded with BDD and HD, and to a lesser extent, with TTM and SPD (Monzani, Rijsdijk, Harris, & Mataix-Cols, 2014). A second disorder-specific genetic vulnerability factor emerged that included only TTM and SPD, whereas OCD, BDD, and HD also evidenced disorder-specific influences. The researchers concluded that

environmental risk factors tend to be disorder-specific. Finally, a recent logistic regression analysis of obsessive–compulsive symptom dimensions and the OCSDs revealed that the aggression and hoarding subscales of the dimensional Yale–Brown Obsessive–Compulsive Scale (YBOCS) were related to SPD, whereas the sexual/religious dimension was related to BDD (Torres et al., 2016). It is possible, then, that specific obsessive–compulsive symptoms are related to OCSDs.

As noted, the introduction of a distinct OCD and related disorders classification category in DSM-5 continues to be a controversial decision. The relationship between OCD and the OCSDs is not at all clear. In terms of prevalence and symptom similarity, OCD appears to have the closest association with BDD. Hoarding symptoms and disorder are much less prevalent in OCD than originally thought (Hall et al., 2013), and may have a higher correlation with obsessive–compulsive personality disorder (OCPD) traits (Samuels et al., 2008). TTM and SPD may have minimal association with OCD. For the minority of individuals with OCD and hoarding or BDD symptoms, the co-occurrence of OCSD pathology predicts greater symptom severity, impaired functioning, and poorer treatment response (Costa et al., 2012; Knopp et al., 2013). Given their negative impact, practitioners are well advised to assess for OCSD pathology in their clients with OCD.

Tic Disorders

Relatively high rates of tics or tic disorders, including Tourette syndrome, have been found in individuals, especially children and adolescents, with OCD (Goldsmith, Shapira, Phillips, & McElroy, 1998; March & Mulle, 1998). In a sample of 239 adults with OCD, 19% had a lifetime history of motor and/or phonic tics (Holzer et al., 1994). Thirty to 40% of adults with Tourette syndrome experience obsessive and compulsive symptoms (Leckman, 1993). In fact, one of the largest clinical studies based on a sample of 1,374 individuals with Tourette syndrome found a lifetime prevalence of 50% for OCD (Hirschtritt et al., 2015). Other studies have confirmed an elevated co-occurrence of tic disorders in OCD, with lifetime prevalence rates ranging from 12.5% for Tourette syndrome alone to 28% for any tic disorder (Lochner et al., 2014; Torres et al., 2016). DSM-5 now includes a "tic-related" specifier to identify individuals with OCD and a comorbid tic disorder. There is considerable evidence that OCD with a lifetime history of chronic tic disorder, especially in children and adolescents, has a different symptom presentation, family history, and possibly a poorer response to SSRI treatment (Leckman et al., 2010). Clinicians treating children and adolescents with OCD should be particularly cognizant that tic-related symptoms could influence the clinical presentation and course of the disorder.

Psychosis

Researchers have been particularly interested in the lifetime co-occurrence of OCD with psychosis because of its etiological implications. Early psychiatric writing proposed a relationship between obsessional thinking and the thought disturbance seen in schizophrenia (for discussion, see Lewis, 1936; Stengel, 1945). However, only a minority of individuals with OCD (15–20%) show any symptoms of psychosis, and these are usually in the form of poor insight or lack of resistance to the obsession (Insel & Akiskal, 1986). A small number of individuals with OCD have obsessional ideation that meets the criteria for delusion, but the number of individuals with OCD who progress to schizophrenia is no greater than the number of those with other anxiety disorders (Rachman & Hodgson, 1980; Stein & Hollander, 1993). Torres and colleagues (2006) found that only 2.6% of their OCD sample met ICD-10 criteria for schizophrenia, whereas Adam and colleagues (2012) found that 39% of their sample reported possible psychotic symptoms.

Substance Use Disorders

Substance use disorders (SUDs), especially alcohol use disorder, are found in OCD samples. In the NCS-R, 38.6% of those with OCD had a lifetime comorbid SUD, with alcohol (24%) higher than drug (14%) dependence (Ruscio et al., 2010). However, large clinical studies have reported lower comorbidity rates for SUDs. A large Dutch clinical study found that only 13.6% of the OCD sample had a lifetime prevalence of any SUD (Hofmeijer-Sevink et al., 2013). In the Singapore Mental Health Study 5.1% of the OCD sample had lifetime alcohol abuse and 2.1% lifetime prevalence for alcohol dependence (Subramanian et al., 2012). Likewise, Fineberg and colleagues (2013) reported a low prevalence of comorbid lifetime diagnoses of drug and alcohol misuse in their OCD sample. A Danish epidemiological study found that comorbidity for SUDs was actually lower than for other psychiatric conditions (Toftdahl, Nordentoft, & Hjorthøj, 2016).

Other studies have found SUD comorbidity rates that are similar to the NCS-R. In the British National Psychiatric Morbidity Survey of 2000, 34% of individuals with OCD had a comorbid drinking problem (Torres et al., 2006). A Dutch epidemiological study found that 54.6% of men and 23.5% of women with OCD had a lifetime prevalence of an SUD (Blom et al., 2011). The OCD group had significantly higher risk for an SUD than those without a psychiatric disorder, and men with OCD had a higher risk of SUD than those with other psychiatric conditions. However, OCD may have a stronger effect in heightening risk for a comorbid SUD in women.

The heightened risk of SUDs in OCD is not surprising given their similar phenomenology. Compulsivity, a core feature of OCD that is now

emphasized in DSM-5, involves a sense of urgency and diminished voluntary control in which a repetitive, self-defeating behavioral or mental ritual is performed to reduce anxiety or distress, prevent a dreaded outcome, and/or undo or put right an unwanted state (APA, 2013; Denys, 2011; Rachman & Hodgson, 1980). For this reason OCD has been viewed as a "behavioral addiction," with compulsivity a clinical feature that also has been implicated in alcohol and drug addictions more generally (i.e., Koob & Le Moal, 2005). A common neurocircuitry has been implicated in the compulsivity of OCD and addictions, a circuitry that is characterized by impaired reward and punishment processing in the ventral striatum, reduced self-regulation due to attenuation in the ventromedial prefrontal region, and imbalances between the ventral and dorsal frontal–striatal areas (Figee et al., 2015).

The relationship between OCD and the SUDs exhibits considerable variability. For example, elevated substance abuse in OCD is primarily related to alcohol rather than drugs, as mentioned (e.g., Ruscio et al., 2010; Torres et al., 2006). Men with OCD have significantly higher rates of comorbid SUDs than women with OCD, although the effect of obsessionality on SUD is much greater in women (Blom et al., 2011). There is also evidence that the heightened prevalence of SUDs can be attributed to individuals with less severe obsessive–compulsive symptoms. As the obsessive–compulsive symptom severity increases, past and current alcohol or drug abuse becomes less likely (Cuzen, Stein, Lochner, & Fineberg, 2014).

Despite inconsistencies across studies and the many unanswered questions about the relationship between OCD and SUDs, it is important that clinicians ask questions about past and current alcohol and drug use when assessing individuals for OCD. Presence of alcohol or drug abuse in any psychiatric condition is associated with adverse outcomes and more difficult response to treatment (i.e., Drake, Mueser, Brunette, & McHugo, 2004; Toftdahl et al., 2016).

OCPD and the Personality Disorders

A final comorbidity issue that deserves mention is the relationship between OCD and the personality disorders, especially OCPD, which is an enduring tendency to be excessively concerned with organization, perfectionism, and control while eschewing flexibility and openness to experience (see also DSM-5; APA, 2013).

The concept of OCPD is rooted in Freud's notion of the anal personality, characterized by a tendency to be parsimonious, obstinate, and orderly (Freud, 1908/1959). Originally, the obsessional personality or anal character was considered the premorbid personality for OCD, and some early studies suggested a strong link between the presence of OCD symptoms and obsessional personality traits (Ingram, 1961b; Kline, 1968; Sandler & Hazari, 1960).

Empirical studies conducted in the 1970s and 1980s challenged the conventional psychoanalytic view that posited an etiological link between OCPD and OCD. Findings at that time indicated that obsessional personality characteristics were quite distinct from obsessive–compulsive symptoms, and most individuals with OCD did not have a premorbid obsessional personality (for reviews, see Pollak, 1979; Rachman & Hodgson, 1980). Despite a high personality disorder comorbidity rate, the most common personality disorders in OCD were the dependent and avoidant types, with OCPD being less prevalent than one might expect (see the review by Summerfeldt, Huta, & Swinson, 1998). Thus, behavioral researchers such as Rachman and Hodgson (1980) concluded that OCPD was less relevant to OCD than originally proposed by the psychoanalytic school.

More recently, several OCD researchers have reexamined whether OCPD might be an important factor in OCD. Contrary to earlier studies, OCPD emerged as the most prevalent personality disorder in several OCD samples. For example, a study of 72 individuals with OCD found that 32.4% had comorbid OCPD, followed by avoidant (11.3%) and narcissistic (6.9%) personality disorders (Samuels et al., 2000). Another study of 420 outpatients with OCD reported that 9% had comorbid OCPD, 7.6% dependent personality disorder, 5.6% borderline personality disorder, and 4.6% avoidant personality disorder (Denys, Tenney, van Megen, de Geus, & Westenberg, 2004). And in a meta-analysis of personality disorder research in the anxiety disorders, OCPD had the highest prevalence in the OCD samples, followed by avoidant and dependent personality disorders (Friborg, Martinussen, Kaiser, Øvergård, & Rosenvinge, 2013). These findings have been replicated in the most recent comorbidity studies (e.g., Bulli, Melli, Cavalletti, Stopani, & Carraresi, 2016; Melca, Yücel, Mendlowicz, de Oliveira-Souza, & Fontenelle, 2015).

When based on more rigorous diagnostic interviews, the comorbid prevalence rate for OCPD may be even higher than expected. Gordon, Salkovskis, Oldfield, and Carter (2013) found that 45% of their OCD sample met DSM-IV criteria for OCPD compared to a 14.7% comorbidity rate in the panic disorder group. In addition, those with comorbid OCPD had higher alcohol consumption, greater symptom severity, and more depressive symptoms.

OCPD may exhibit a stronger association with certain obsessive–compulsive symptoms, such as doubting and checking, than others like washing (Gibbs & Oltmanns, 1995; Tallis, Rosen, & Shafran, 1996). Studies that dismantled OCPD found that comorbidity may be due primarily to hoarding, perfectionism, and preoccupation with details rather than other DSM-IV criteria such as rigidity, inflexible morality, excessive devotion to work, etc. (Eisen et al., 2006; see also Gordon et al., 2013, for similar findings). Moreover, Coles and associates concluded that individuals with OCD and OCPD represent a specific subtype of OCD with earlier age of onset, higher rates comorbid anxiety and avoidant personality disorders,

greater frequency of certain obsessive–compulsive symptoms, and more impaired functioning (Coles, Pinto, Mancebo, Rasmussen, & Eisen, 2008). As expected, the presence of comorbid personality disorders is associated with poorer treatment outcome in OCD (Keeley et al., 2008; Thiel et al., 2013).

Although the empirical research does not support the view that OCPD is a personality determinant of OCD, its importance may have been understated in earlier behavioral research. Rasmussen and Eisen's (1992) conclusions about OCPD remain pertinent: (1) OCPD occurs in many people who never develop a psychiatric disorder, (2) the personality constellation often occurs in non-OCD psychiatric conditions, and (3) 55–75% of individuals with OCD do not have OCPD. However, the presence of OCPD in those with OCD may constitute a distinct subgroup that experiences greater clinical severity and impaired functioning, as well as poorer treatment response. Therefore, clinicians treating patients with OCD should routinely assess for OCPD traits and modify their treatment protocols to deal with perfectionism, meticulousness, and other compulsive traits that might have a negative impact on the course of the disorder and its treatment.

SYMPTOM SUBTYPES

OCD is a heterogeneous disorder with a varied symptom presentation. Although considered a unified diagnostic construct, individuals with OCD can have completely distinct symptom presentations—a problem that challenges the validity and clinical utility of the diagnosis (Bloch, Landeros-Weisenberger, Rosario, Pittenger, & Leckman, 2008). This issue raises the possibility that diagnostic clarity and treatment effectiveness might be improved if OCD could be broken into more homogeneous subtypes. Given this possibility, specific CBT protocols have been developed for contamination/washing (Rachman, 2006), doubt/checking (Rachman, 2002), and repugnant obsessions (Rachman, 2003). The subtype approach has a long history in OCD, beginning with early clinical studies on differences in compulsive behavior, then progressing to multivariate analyses of symptom checklists, and most recently, the search for underlying psychological processes that might differentiate various types of OCD (Calamari, 2005).

Early Research

Research on subtyping began with systematic clinical observation and experimentation on differences in compulsions. Rachman and Hodgson (1980) compared the clinical presentation of compulsive cleaning and checking. Cleaning compulsions had a stronger phobic component involving escape (i.e., reduction of fear associated with a perceived contaminant), whereas checking was more often associated with doubting and indecision

accompanied by active avoidance behavior (i.e., checking prevents some future negative outcome). Checking rituals took longer to complete, had a slow onset, evoked more internal resistance, and were more often accompanied by feelings of anger or tension than were cleaning compulsions. In addition, individuals with compulsive checking had more difficulty obtaining the required certainty or assurance that the possible negative future event had been averted. Steketee and colleagues (1985) also found significant differences in symptoms and fear structure in individuals with cleaning versus checking compulsions.

Some individuals with OCD have obsessional ruminations without overt compulsions (Akhtar, Wig, Varma, Pershad, & Verma, 1975; Ingram, 1961a; Rachman, 1985; Rasmussen & Tsuang, 1986; Welner et al., 1976). The prevalence of this OCD subtype might be as high as 20% (Freeston & Ladouceur, 1997a), although Foa, Steketee, and Ozarow (1985) speculated that most individuals with "pure obsessions" exhibit mental compulsions. This was borne out in the DSM-IV field trial in which only 2.1% of the OCD sample had obsessions without compulsions (Foa et al., 1995). Because overt and covert (mental) compulsions/neutralization exhibits the same role and function in OCD, it is still not clear whether obsessional rumination should be considered distinct from other OCD subtypes.

Rasmussen and Eisen (1992, 1998) conducted one of the largest clinical studies on symptom subtyping based on more than 1,000 Americans with OCD. The most common obsessions were fear of contamination (50%) and pathological doubt (42%), whereas washing/cleaning (50%) and checking (61%) were the most common compulsions. Religious/blasphemous (10%) obsessions and hoarding (18%) were less common.

This early research on OCD subtyping had a profound impact on how practitioners dealt with obsessive–compulsive symptom heterogeneity. Most experts in OCD research and treatment believe that the disorder comprises five symptom dimensions: contamination/cleaning, symmetry/order/repeating/counting, hoarding, harm (aggression) obsessions and checking, and sexual/religious obsessions (Mataix-Cols, Pertusa, & Leckman, 2007). However, there are several problems with this approach. First, it assumes that individuals with OCD have one primary obsessive or compulsive symptom, when in reality most individuals have multiple obsessions and compulsions (e.g., Akhtar et al., 1975) that transcend subtype categories. Second, most individuals with OCD show substantial change in their obsessive–compulsive symptoms over time (Skoog & Skoog, 1999). The cross-sectional nature of most subtype research ignores the changing nature of obsessive–compulsive symptoms. And third, the early subtype research failed to show that these categories met key criteria for establishing distinct and valid psychiatric subtypes (Rowsell & Francis, 2015). Given these difficulties, researchers turned to multivariate analysis of symptom checklists in a search for coherent and reliable symptom patterns.

Multivariate Symptom Dimensions

The dimensional perspective does not assume that individuals can be categorized into specific symptom subtypes. Instead, distinct symptom dimensions are identified on which individuals differ to varying degrees. These dimensions are usually identified through factor or cluster analysis of obsessive–compulsive symptom measures. In recent years most of this research has relied on multivariate structural analysis of the obsessions and compulsions symptom checklist of the Yale–Brown Obsessive–Compulsive Scale (YBOCS; Goodman et al., 1989a, 1989b)

Four symptom dimensions often emerged in early structural analyses of the YBOCS Symptom Checklist. These symptom dimensions were labeled (1) aggressive, sexual, religious, somatic obsessions and checking compulsions; (2) symmetry, exactness obsessions and counting, and ordering compulsions; (3) dirt, contamination obsessions, and cleaning compulsions; and (4) hoarding (Baer, 1994; Leckman et al., 1997; Summerfeldt, Richter, Antony, & Swinson, 1999). A review of 12 YBOCS factor-analytic studies confirmed that four symptom dimensions accounted for most of the symptom variance in OCD: symmetry/ordering, hoarding, contamination/cleaning, and obsessions/checking (Mataix-Cols, do Rosario-Campos, & Leckman, 2005). Furthermore, the symptom domains showed some evidence of temporal stability, as well as distinct patterns of comorbidity, neural correlates, and treatment response. A later meta-analysis performed on 21 YOBCS factor-analytic studies essentially replicated this solution (Bloch et al., 2008). The authors concluded that these four dimensions account for most of the obsessive–compulsive symptom heterogeneity, although there is some uncertainty about where to place somatic and miscellaneous obsessions and checking compulsions.

There have been numerous reports of failure to replicate the four-factor symptom structure (e.g., Summerfeldt et al., 1999). Calamari, Wiegartz, and Janeck (1999) performed a cluster analysis on the YBOCS Symptom Checklist and identified five patient subgroups: harming, hoarding, contamination, certainty, and obsessions. However, an attempted replication failed to support the five-cluster solution, with a seven-group taxonomy proving more interpretable (Calamari et al., 2004). The authors noted that some clusters, such as contamination and harming, were more stable, whereas others, such as obsessions, symmetry, and certainty, were less consistent. In their taxonomic analysis of OCD symptoms and cognitions, Haslam, Williams, Kyrios, McKay, and Taylor (2005) found that only an obsessional subtype with beliefs about the importance and control of thoughts met criteria as a distinct taxon, whereas inflated responsibility, perfectionism, checking, and contamination subtypes were more dimensional in nature.

Although numerous methodological problems are apparent in the subtype research, there is sufficient empirical evidence to indicate that reliable

and valid symptom subtypes have been identified, with potential clinical utility for OCD research and treatment. In their review McKay and colleagues (2004) concluded that four symptom subtypes have consistently emerged as the primary dimensions of OCD: contamination/washing, checking, hoarding, and symmetry/ordering. Sookman, Abramowitz, Calamari, Wilhelm, and McKay (2005) recommended that specialized CBT protocols be developed for specific symptom subtypes to enhance treatment effectiveness. Radomsky and Taylor (2005) questioned whether symptom subtyping might be improved by considering the functions of symptoms as well as associated psychological processes, such as the cognitive aspects of OCD. Others have argued that subtyping might be more successful if researchers took a dimensional rather than categorical approach (e.g., Clark, 2005; Mataix-Cols et al., 2005).

The empirical and clinical utility of symptom-based subtyping has been bolstered by an expanding research base. More recently, confirmatory factor analysis using the Dimensional Obsessive–Compulsive Scale (DOCS; Abramowitz et al., 2010) discovered that the symptom heterogeneity of OCD is best captured by a general obsessive–compulsive symptom factor that coexists with four specific symptom-based dimensions: contamination, responsibility for harm, unacceptable obsessional thoughts, and order/symmetry (Olatunji, Ebesutani, & Abramowitz, 2017). In the original psychometric study of the DOCS, Abramowitz and colleagues (2010) used exploratory and confirmatory factor analyses on OCD, anxiety disorder, and nonclinical samples to support the four-dimensional structure of the DOCS. The four symptom dimensions were replicable across samples, had acceptable levels of convergent and discriminant validity, and were sensitive to treatment effects. Distinct genetic correlates have been found for washing, unacceptable or forbidden obsessions, checking, and order/symmetry (López-Solà et al., 2016).

Symptom-based OCD subtypes may have a differential response to treatment. Most research has found that certain symptom dimensions, such as hoarding and, to a lesser extent, unacceptable obsessions without overt compulsions, have a poorer response to treatment (Keeley et al., 2008; Mataix-Cols et al., 2005; Sookman et al., 2005), although others have found no difference in treatment response across symptom dimensions (Chase, Wetterneck, Bartsch, Leonard, & Riemann, 2015). Except for hoarding, which is now a distinct disorder in DSM-5, Knopp and colleagues (2013) concluded in their treatment review that the association between obsessive–compulsive symptom dimensions and treatment outcome is unreliable.

In one of the most recent critical reviews of OCD subtyping, Rowsell and Francis (2015) concluded that most of the symptom-based subtypes lacked validity. Although no subtype met all six guidelines proposed by Robins and Guze (1970) for establishing validity, the authors concluded that the autonomous versus reactive classification of obsessions offered by

Lee and Kwon (2003) was the most valid, meeting five out of six criteria. This bifurcated classification is not exclusively based on symptoms because cognitive phenomena are also included in defining their dimensions.

Alternative Subtyping

As noted previously, some have argued that compulsivity is the core symptom feature in OCD. Gillan and Sahakian (2015) proposed the *habit hypothesis* of OCD, in which compulsions are the core feature of the disorder and obsessions a mere byproduct. In this conceptualization, compulsions reflect a neurobiologically based disruption in goal-directed behavior and automatic habits that is manifest as excessive habit learning. Rodgers and colleagues created two subtypes based on the notion of compulsivity: a pure compulsive and a mixed obsessive–compulsive group (Rodgers et al., 2015). The subtypes were derived from three representative Swiss community samples, with the pure compulsions group consisting of individuals with compulsions but no obsessions and the mixed group with obsessive thoughts with or without compulsions. Within those diagnosed with OCD, the mixed subtype tended to be significantly more prevalent, although 26–49% fell into the compulsion-only group. Moreover, the mixed subtype had more childhood adversity, familial burden, and higher comorbidity with other disorders.

Subtyping based on presence or absence of compulsions is reminiscent of earlier behavioral distinctions (e.g., washers vs. checkers). In clinical samples, pure compulsions may be a rare clinical presentation. In the DSM-IV field trial, less than 1% of individuals with OCD had predominantly compulsions, as based on obsession and compulsion severity scores on the YBOCS (Foa et al., 1995). However, when differentiation was based on what bothered individuals most, 50% said both obsessions and compulsions, 20% reported mainly compulsions, and 30% indicated mainly obsessions. A retrospective study of 1,086 individuals who received inpatient or outpatient treatment for OCD found that 94.4% endorsed both obsessions and compulsions on the YBOCS (Leonard & Riemann, 2012)

Clearly, parsing out those with compulsions only may not be helpful, given its low prevalence in OCD samples. As well, it may be that "pure compulsions" represents an earlier stage in the development of OCD (Rodgers et al., 2015), or these individuals may lack insight into their OCD symptoms (Leonard & Riemann, 2012). Other researchers have suggested that OCD subtyping might benefit from a consideration of the cognitive features of the disorder (Radomsky & Taylor, 2005). Most of this research has been based on the six maladaptive OCD-related beliefs (i.e., inflated responsibility, overestimated threat, importance of thought, control of thoughts, perfectionism, and intolerance of uncertainty) proposed by the Obsessive Compulsive Cognitions Working Group (OCCWG, 1997, 2001).

However, initial attempts at identifying reliable and valid OCD subtypes based on dysfunctional beliefs have not been encouraging. In their taxonomic analysis, Haslam and colleagues (2005) concluded that inflated responsibility, overestimated threat, and perfectionism were more dimensional in nature, and only the importance of thought beliefs and obsessional symptoms emerged as taxons that were potential candidates for subtyping. Some researchers have advanced a simple bifurcated categorization into high and low obsessive–compulsive belief groups (Taylor et al., 2006), although there was failure to replicate this two-cluster classification in another study (Calamari et al., 2006). Although findings have been mixed, there is reason to conclude that responsibility and threat beliefs are associated with contamination/washing; importance and control of thoughts with harm obsessions; and perfectionism and certainty beliefs with order, symmetry, and precision (Julien, O'Connor, Aardema, & Todorov, 2006; Tolin, Brady, & Hannan, 2008).

Other attempts to derive a subtype classification of OCD based on neuropsychological differences, patterns of comorbidity, or course of the disorder have failed to offer reliable and valid differentiation of OCD (for reviews, see McKay et al., 2004; Rowsell & Francis, 2015). Despite inconsistencies in the OCD subtype research, the symptom heterogeneity of OCD is undeniable, and so the search for a valid subtype classification for OCD continues. In light of these considerations, the last four chapters of the book present treatment protocols for the four symptom subtypes showing the most reliable empirical support: contamination/washing, doubt/checking, harm/sex/religion obsessions, and symmetry/order.

CONCLUSION

OCD is a complicated disorder that strikes individuals during their youth and then persists, often for a lifetime, with an intermittent worsening of symptoms that can have severe and fairly generalized negative effects on daily living and personal attainment. Although individuals are often aware of the irrationality of their fears and the futility of their rituals, they seem powerless to overcome their obsessionality. There are several treatment implications that can be drawn from the phenomenology of OCD.

- Although DSM-5 considers OCD diagnostically distinct from the anxiety disorders, obsessional states have a shared symptom presentation, high comorbidity, common psychological processes, and similar treatment response to other anxiety conditions. Therefore, the cognitive-behavioral perspective continues to consider OCD a variant of the anxiety disorders.
- Chronicity and possible reluctance to seek treatment can be

expected, especially if obsessive–compulsive symptom severity is in the mild to moderate range.

- Therapists should explore the negative impact of OCD on QOL, family relations, occupational attainment, and emotional functioning to strengthen the client's readiness motivation for treatment.
- During treatment, suicide potential must be continually monitored, especially in cases of severe OCD and/or comorbid depression and anxiety disorders.
- Assessment should include the impact of major life events on obsessive–compulsive symptom severity. As well, therapists should be mindful that symptom improvement could be due to reduction in life stress rather than to genuine treatment response.
- Because depressive symptoms are common, a thorough evaluation of depression must be included when assessing OCD. If depression is severe, treatment protocols may require modification to deal with heightened negativity, low motivation, and hopelessness.
- Clinicians can expect that many individuals with OCD will also have social anxiety, phobias, separation anxiety, pathological worry (i.e., GAD), and/or panic attacks. Therefore, assessment must be broadly based to ensure that comorbid anxiety is not overlooked in the case conceptualization.
- When treating adolescents and young adults with OCD, clinicians should be cognizant of a possible comorbid history of BDD and tic disorder. As well, a progression from obsessive–compulsive symptoms to psychosis is rare but still possible.
- Clinicians should ask about past and current use of alcohol, especially for individuals with mild to moderate obsessive–compulsive symptoms.
- Personality features should be considered when treating OCD, with a particular focus on OCPD traits such as perfectionism, preoccupation with detail, excessive concern with control, and rigidity. Some refinement in treatment may be needed to take into account personality features that have a negative impact on treatment effectiveness.
- Clinicians should identify the primary obsession and compulsion in each client in order to determine which CBT symptom protocol would be most appropriate for a particular client.

The foundation of any theory, research, or treatment of OCD begins with a solid understanding of obsessions and compulsions. However, distinguishing this phenomenology from other pathological experiences can be difficult because of the multiplicity of common features. The next two chapters address this challenge, offering an overview of the latest research into the nature of obsessions, compulsions, and their correlates.