Chapter 9

Social Anxiety Disorder and Its Relation to Clinical Syndromes in Adulthood

Amy Wenzel and Shari Jager-Hyman
Department of Psychiatry, University of Pennsylvania, Philadelphia, PA

Social anxiety disorder typically begins early in life and follows a chronic course, often resulting in comorbid presentations at some time in the lives of people who suffer from it. In many cases, comorbidity is associated with greater functional impairment and lower quality of life (e.g., Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996). Research conducted over the past 30 years has indicated that there is substantial overlap between social anxiety disorder and other anxiety and depressive disorders, and to a lesser extent between social anxiety disorder and other conditions, such as alcohol and drug use disorders. This pattern of results emerges regardless of whether community or clinical samples are studied, of whether lifetime or current prevalence rates are calculated, and of whether DSM-III, DSM-III-R, or DSM-IV criteria are used to assign diagnoses.

In this chapter, we first summarize results from older research that established the high rate of comorbidity between social anxiety disorder and several disorders, including other anxiety disorders, mood disorders, and alcohol and substance use disorders, according to DSM-III and DSM-III-R criteria. Next, we summarize the epidemiological research for the same instances of comorbidity that has been conducted on the basis of DSM-IV. Subsequently, we highlight contemporary information on the comorbidity between social anxiety disorder and other conditions that have received less systematic attention in the empirical research, such as eating disorders, body dysmorphic disorder, bipolar disorder, psychosis, and suicidality. We then compare comorbidity rates from cross-cultural and individual differences standpoints. Finally, we discuss implications of the newest diagnostic system, DSM-5, for social anxiety disorder comorbidity.

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COMORBIDITY IN STUDIES USING DSM-III AND DSM-III-R CRITERIA

Table 9.1 provides a summary of major studies that were designed to identify rates of comorbidity in people with social anxiety disorder diagnosed according to DSM-III or DSM-III-R criteria. Three studies included in this table document lifetime DSM-III social anxiety disorder and Axis I comorbidity in large-scale epidemiological studies examining psychiatric disorders; that is, these studies identified people who met diagnostic criteria for social anxiety disorder at any point in their lives and determined whether they met diagnostic criteria for other disorders at any point in their lives. We regard these studies as using community samples because participants were recruited to be representative of the general population from which they were drawn. These investigations included an analysis of the Epidemiologic Catchment Area (ECA) study data drawn from four sites (Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992), an analysis of ECA data from the Duke University site (Davidson, Hughes, George, & Blazer, 1993), and the Zurich Study (Degonda & Angst, 1993). In most cases, there was a wide range of comorbidity estimates across studies; for example, rates of comorbid agoraphobia ranged from 4.5% at the Duke University ECA site (Davidson et al., 1993) to 44.9% at the remaining four ECA sites (Schneier et al., 1992). It is unclear why the rates between the Davidson et al. (1993) and Schneier et al. (1992) reports are so discrepant, as both used the same interview to achieve diagnoses (i.e., Diagnostic Interview Schedule; Robins, Helzer, Croughen, & Ratcliff, 1981) and trained lay interviewers to administer this instrument. However, it is notable that there was potential unreliability in the diagnoses of social anxiety disorder, as Schneier et al. (1992) achieved a kappa coefficient of only .40.

One large community epidemiological study in Table 9.1 was designed to identify rates of Axis I comorbidity in DSM-III-R lifetime social anxiety disorder—the National Comorbidity Survey (NCS; Magee et al., 1996). It could be hypothesized that rates of comorbidity would be expected to increase in people diagnosed with DSM-III-R social anxiety disorder as compared to people diagnosed with DSM-III social anxiety disorder, as DSM-III-R diagnostic criteria were broadened from fear and avoidance of specific performance situations (e.g., public speaking, eating in public) to allow for a generalized type of social anxiety disorder (McNeil, 2001). It is reasonable to speculate that a generalized form of social anxiety disorder, consisting of fear and avoidance of a number of social and performance situations, would represent a more severe disorder, and hence be associated with higher rates of comorbidity. However, results from Magee et al. (1996) did not support this prediction—the majority of the lifetime rates of comorbidity fell in between the low and high ends of rates of lifetime comorbidity diagnosed according to DSM-III criteria. Like the community epidemiological studies examining DSM-III diagnosed disorders, Magee et al. (1996) found that only a minority had never been diagnosed with a comorbid disorder at any time in their lives.

TABLE 9.1 Comorbidity in Social Anxiety Disorder Diagnosed According to DSM-III or DSM-III-R Criteria

Comorbid Disorder	Community Sample; DSM-III Criteria; Lifetime Prev (3 Studies)	Community Sample; DSM-III-R Criteria; Lifetime Prev (1 Study)	Clinical Sample; DSM-III-R Criteria; Lifetime Prev (3 Studies)	Clinical Sample; DSM-III Criteria; Current Prev (2 Studies)	Clinical Sample; DSM-III-R Criteria; Current Prev (4 Studies)
Anxiety Disorders	----	56.9 (1)	----	----	----
Agoraphobia	4.5 – 44.9 (2)	23.3 (1)	7.0 – 10.0 (2)	0.0 – 2.0 (2)	3.0 – 14.7 (2)
GAD	26.9 (1)	13.3 (1)	25.0 – 35.0 (3)	4.0 – 5.3 (2)	8.0 – 34.0 (4)
OCD	11.1 – 18.6 (2)	----	5.0 – 18.0 (3)	4.0 – 10.5 (2)	1.4 – 16.0 (3)
Panic Disorder	4.7 – 26.9 (3)	10.9 (1)	0.0 – 49.1 (3)	0.0 – 2.0 (2)	2.8 – 9.0 (2)
PD with AG	----	----	25.0 – 42.0 (2)	----	17.0 – 36.0 (2)
PTSD	5.4 (1)	15.8 (1)	5.0 – 12.0 (2)	----	11.0 (1)
Simple Phobia	37.5 – 60.8 (3)	37.6 (1)	15.0 – 21.0 (3)	5.3 – 23.0 (2)	11.1 – 25.0 (3)
Mood Disorders	----	41.4 (1)	----	----	----
MDD	14.6 – 42.3 (3)	37.2 (1)	70.2 (1)	2.0 – 5.3 (2)	2.8 - 48.8 (3)
Dysthymic Disorder	11.5 – 12.5 (2)	14.6 (1)	31.6 (1)	15.8 – 23.0 (2)	5.6 – 21.0 (2)
Mania or Hypomania	1.5 – 11.5 (3)	5.1 (1)	3.5 (1)	----	----
Substance Use Disorder	----	39.6 (1)	----	----	----
Alcohol Abuse	15.4 – 18.8 (3)	10.9 (1)	28.1 (1)	5.3 (1)	----
Alcohol Dependence	----	23.9 (1)	----	----	----
Drug Abuse	13.0 (1)	5.3 (1)	15.8 (1)	----	----
Drug Dependence	----	14.8 (1)	----	----	----
No Comorbid Diagnosis	0.6 – 31.0 (2)	19.0 (1)	3.5 – 55.0 (3)	53.0 – 58.0 (2)	23.0 – 57.0 (3)

Note: *Values in columns represent the ranges of percentages of the people with social anxiety disorder who were diagnosed with the comorbid disorder specified. Values in parentheses are the number of studies that examined the particular disorder. Abbreviations are as follows: Prev = prevalence; GAD = generalized anxiety disorder; OCD = obsessive compulsive disorder; PD = panic disorder; AG = agoraphobia; PTSD = posttraumatic stress disorder; MDD = major depressive disorder; ---- = disorder was not assessed in the study.*

Three additional studies in Table 9.1 examined lifetime rates of Axis I comorbidity in DSM-III-R diagnosed social anxiety disorder, but these studies used clinical samples rather than community samples (Goisman, Goldenberg, Vasile, & Keller, 1995; Schwalberg, Barlow, Alger, & Howard, 1992; Van Ameringen, Mancini, Styani, & Donison, 1991). Clinical samples comprise people who are presenting for treatment at a clinic, either for social anxiety disorder or for another psychiatric disorder. It would be expected that rates of comorbidity would be higher in these samples, as their psychiatric symptoms are severe enough to bring them in for treatment. This prediction was confirmed for a few specific disorders; for example, the rates of comorbid generalized anxiety disorder (GAD), comorbid panic disorder, comorbid major depressive disorder, comorbid dysthymic disorder, comorbid alcohol abuse, and comorbid drug abuse were higher in at least one of the studies using a clinical sample than in Magee et al. (1996). Curiously, rates of comorbid agoraphobia and comorbid simple phobia were substantially lower than the rates calculated by Magee et al. (1996).

Lifetime comorbidity rates provide information about the degree to which psychiatric disorders cluster together, but they do not necessarily capture a person's clinical presentation at any one moment. Current rates of comorbidity, in contrast, illustrate the degree to which psychiatric disorders are present at the same time, or are at least present within a discrete window that can last anywhere between four weeks and twelve months (Wittchen & Fehm, 2003). Regardless of whether community or clinical samples are considered, these rates are generally lower than rates of lifetime comorbidity because the co-occurrence of the two psychiatric disorders must take place at one particular point in time. Two studies included in Table 9.1 examined rates of current comorbidity in a clinical sample of people who were diagnosed with DSM-III social anxiety disorder (Barlow, DiNardo, Vermilyea, Vermilyea, & Blanchard, 1986; DiNardo & Barlow, 1990), and four studies in this table examined rates of current comorbidity in clinical samples of people who were diagnosed with DSM-III-R social anxiety disorder (Goisman et al., 1995; Lecrubier & Weiller, 1996; Sanderson, DiNardo, Rapee, & Barlow, 1990; Turner, Beidel, Borden, Stanley, & Jacob, 1991). The most common current psychiatric disorders were panic disorder with agoraphobia, simple phobia, and dysthymic disorder.

In all, results from studies examining comorbidity in people with DSM-III and DSM-III-R social anxiety disorder indicate that comorbidity is common. However, it is difficult to draw more specific conclusions beyond this general observation. Other than simple phobia, there were wide ranges in the estimates of other comorbid anxiety and mood disorders. In some cases, these wide ranges were observed in epidemiological studies that used identical methodologies (e.g., Davidson et al., 1993, and Schenier et al., 1992). These discrepancies raise questions about the validity and the robustness of strategies that researchers have used to document comorbidity. Differences in operational definitions of particular disorders also may have accounted for discrepancies in the

rates of comorbidity between studies. For example, Goisman et al. (1995) and Schwalberg et al. (1992) included categories of uncomplicated panic disorder, agoraphobia without panic disorder, and panic disorder with agoraphobia. In contrast, all other studies except DiNardo and Barlow (1990) and Sanderson et al. (1990) presented rates for panic disorder and agoraphobia, but not for panic disorder with agoraphobia. Because operational definitions of particular Axis I disorders were not specified in the methodologies of these studies, it cannot be discerned whether individuals with these disorders in most of the studies were uncomplicated cases or were diagnosed with panic disorder with agoraphobia. These caveats point to the fact that readers must have a detailed understanding of the designs of studies that examine comorbidity among psychiatric disorders and take into account methodological nuances in drawing conclusions.

COMORBIDITY IN STUDIES USING DSM-IV CRITERIA

Two main methodological differences stand out among most studies that examine Axis I comorbidity according to DSM-IV criteria and most studies that examine Axis I comorbidity according to DSM-III or III-R criteria. First, nearly all of the studies examining the prevalence and comorbidity of DSM-IV disorders use the Composite International Diagnostic Interview (CIDI; Kessler & Ustun, 2004) that was developed by the World Health Organization and that corresponds to DSM-IV criteria. In contrast, only two of the studies examining the prevalence and comorbidity of DSM-III-R disorders used the previous version of this instrument that corresponded to DSM-III-R criteria (i.e., Lecrubier & Weiller, 1997; Magee et al., 1996). One advantage of the CIDI is that it assesses social anxiety across a broad range of social and performance situations, which decreases the likelihood that clinically significant cases of social anxiety disorder are overlooked (Wittchen & Fehm, 2003). In addition, scholars have noted that there is less variability in the prevalence and comorbidity rates yielded by the CIDI (e.g., Chartier, Walker, & Stein, 2003), which could remedy the confusing pattern of results noted in the previous section. Although some research has found that the CIDI yields only a fair concordance with diagnoses achieved by another standard clinical interview, the Structured Clinical Interview for DSM-IV Disorders (First, Spitzer, Gibbon, & Williams, 2002; Haro et al., 2006), researchers generally regard prevalence rates obtained by the CIDI as reliable but conservative.

A second methodological difference between studies examining comorbidity according to DSM-II or DSM-IIIR and studies using DSM-IV criteria is that more recent studies report odds ratios in addition to simple percentages. Odds ratios indicate whether events occur with equal likelihood in two groups; an odds ratio of 1.0, for example, indicates that an event is equally likely to occur in both groups. For the purpose of this chapter, odds ratios tell us whether comorbidity is more likely to occur in people who are diagnosed with social anxiety disorder as compared to people who are not diagnosed with

social anxiety disorder. Moreover, confidence intervals supplied along with odds ratios in individual studies give us information regarding the degree to which odds are truly different than 1.0—if the upper and lower ranges of the confidence interval do not include 1.0, then it is safe to conclude that there is an effect. Advantages of considering odds ratios in the study of comorbidity include (1) that the reader can determine with greater precision whether rates of comorbidity in people with social anxiety are indeed elevated relative to people without social anxiety disorder, and (2) that confounding factors that could influence rates of comorbidity can be controlled, such as demographic variables.

Lifetime Comorbidity Rates

Table 9.2 summarizes rates of lifetime DSM-IV Axis I comorbidity in social anxiety disorder from five studies. Wittchen, Stein, and Kessler (1999) calculated rates of DSM-IV lifetime comorbidity in the 3,021 young adults between the ages of 14 and 24 who participated in Germany's Early Developmental Stages of Psychopathology Study. Although this chapter targets comorbidity in adults, the Wittchen et al. study is included here because most adult epidemiological studies recruit participants who are 18 years and older; thus, the age range of Wittchen et al.'s sample overlapped substantially with samples in other studies described in this chapter. Diagnoses were made using a computerized version of the CIDI. Grant et al. (2005) calculated rates of DSM-IV lifetime comorbidity in 43,093 adults aged 18 and older who participated in the National Epidemiologic Survey on Alcohol and Related Conditions. Diagnoses were made according to the National Institute on Alcohol Abuse and Alcoholism's Alcohol Use and Associated Disabilities Interview Schedule—DSM-IV Edition (Grant, Dawson, & Hasin, 2001), which was administered by lay interviewers. The authors contrasted their instrument with the CIDI, noting that it ensures that diagnoses of social anxiety disorder are not better accounted for anxiety that is substance-induced or better accounted for by a medical condition. Mohammadi, Ghanoizadeh, Mohammadi, and Mesgarour (2006) examined DSM-IV lifetime comorbidity rates in 25,180 Iranian people aged 18 and older using the Schedule for Affective Disorders and Schizophrenia (Endicott & Spitzer, 1978) translated to Farsi. Finally, Ruscio et al. (2008) calculated rates of DSM-IV lifetime comorbidity using data from the National Comorbidity Survey Replication (NCS-R; Kessler & Merikangas, 2004), in which the CIDI was administered by lay interviewers to 9,282 adults aged 18 and older. Their odds ratios controlled for sociodemographic variables such as age, gender, and race/ethnicity.

The remaining study (Brown, Campbell, Lehman, Grisham, & Mancill, 2001) included in Table 9.2 calculated lifetime comorbidity rates in a clinical sample of 1,127 patients seeking treatment at their anxiety disorders clinic. Diagnoses were assigned according to the Anxiety Disorders Interview

TABLE 9.2 Lifetime Comorbidity in Social Anxiety Disorder Diagnosed According to DSM-IV Criteria

Comorbid Disorder	Wittchen, Stein, & Kessler (1999); Community Sample	Grant et al. (2005); Community Sample	Mohammadi et al. (2006); Community Sample	Ruscio et al. (2008); Community Sample	Brown et al. (2001); Clinical Sample
Anxiety Disorders	49.9 (3.71)*	54.1 (7.4)*	----	63.9 (5.9)*	67.0 (no OR)
Agoraphobia	8.8 (5.45)*	----	----	6.8 (11.9)*	----
GAD	2.3 (2.42)*	23.3 (8.4)*	7.7 (9.41)*	24.1 (5.2)*	28.0 (1.26)*
OCD	2.3 (3.95)*	----	17.4 (12.40)*	----	16.0 (0.92)
Panic Disorder	6.2 (4.68)*	22.0 (5.7)*	12.1 (10.97)*	15.2 (4.9)*	30.0 (0.55)*
PD with AG	----	----	----	----	27.0 (0.55)*
PTSD	5.9 (6.23)*	----	4.8 (14.12)*	19.0 (3.9)*	8.0 (1.12)
Specific Phobia	43.6 (3.67)* (includes phobia NOS)	38.1 (6.6)*	66.7 (295.17)*	36.5 (5.4)*	21.0 (0.78)*
Mood Disorders	----	56.3 (5.5)*	----	51.8 (4.8)*	72.0 (no OR)
MDD	25.5 (2.69)*	34.1 (3.3)*	15.0 (5.76)*	47.2 (4.6)*	60.0 (1.18)*
Dysthymic Disorder	10.9 (5.03)*	11.5 (3.9)*	----	14.8 (6.2)*	20.0 (1.92)*
Mania or Hypomania	----	19.5 (3.9-6.1)*	4.8 (7.70 – 6.40)*	13.8 (4.6)*	----
Substance Use Disorder	41.3 (1.64)*		----	29.0 (2.8)*	----
Alcohol Abuse	19.4 (1.14)	20.9 (1.2)*	----	26.2 (2.8)*	17.0 (1.26)
Alcohol Dependence		22.3 (2.7)*	----		
Drug Abuse	7.5 (1.67)	12.5 (1.6)*	----	18.5 (3.0)*	11.0 (1.13)
Drug Dependence		9.8 (4.2)*	----		

Note: *All values in columns are percentages of the people with social anxiety disorder who were diagnosed with the comorbid disorder specified. Values in parentheses are odds ratios. An * next to the odds ration signifies that the 95% confidence interval did not include 1.0. Abbreviations are as follows: GAD = generalized anxiety disorder; OCD = obsessive compulsive disorder; PD = panic disorder; AG = agoraphobia; PTSD = posttraumatic stress disorder; MDD = major depressive disorder; NOS = not otherwise specified; OR = odds ratio; ---- = disorder was not assessed in the study. Cells that combine alcohol abuse and dependence and drug abuse and dependence give percentages and odds ratios that combine the diagnoses. Two studies (i.e., Grant et al., 2005; Mohammadi et al., 2006) provided separate rates of bipolar I and bipolar II disorder; in these cases, the percentages were combined, and the odds ratios for bipolar I and bipolar II disorders, respectively, are provided in parentheses.*

Schedule for DSM-IV—Lifetime Version (DiNardo, Brown, & Barlow, 1994). Brown et al. (2001) reported two types of lifetime comorbidity—comorbidity in patients who had a principal diagnosis of various anxiety disorders, and comorbidity in patients who had an anxiety disorder regardless of whether it was designated as principal. Values representing the latter designation are summarized in Table 9.2 in order to be comparable to other epidemiological studies, most of which identify comorbidity regardless of the severity of either disorder.

The values depicting the odds of having comorbid lifetime social anxiety disorder and other lifetime psychiatric disorders in community epidemiological studies indicate that the presence of social anxiety disorder increases the odds of having almost every other anxiety or mood disorder. Between 80% and 90% of people who were diagnosed with lifetime social anxiety disorder in these samples had at least one other lifetime Axis I diagnosis (Grant et al., 2005; Ruscio et al., 2008). Specifically, between one-half and two-thirds of those with lifetime social anxiety disorder had at least one other lifetime anxiety disorder, and over half of those with lifetime social anxiety disorder had a lifetime mood disorder. There was a substantial range in the comorbidity rates of specific anxiety and mood disorders; for example, rates of comorbid lifetime GAD ranged from 2.3% to 24.1%. In general, rates of lifetime comorbidity ranged from approximately 5% to 20% for agoraphobia, obsessive compulsive disorder (OCD; then considered an anxiety disorder rather than an obsessive compulsive and related disorder), panic disorder, and posttraumatic stress disorder (PTSD; then considered an anxiety disorder rather than a trauma- and stress-related disorder); comorbidity rates extended to an upper limit of 25% for GAD; and comorbidity rates for specific phobia reached as high as 67%. Between 25% and 50% of people with lifetime social anxiety disorder endorsed lifetime major depressive disorder; approximately 10–15% of people with lifetime social anxiety disorder endorsed lifetime dysthymic disorder; and between 5% and 20% of people with lifetime social anxiety disorder endorsed bipolar I or bipolar II disorder. According to these community epidemiological studies, the odds of having a comorbid alcohol or substance use disorder were lower than most odds of having a comorbid anxiety or mood disorder, although the percentages indicated that up to 20–25% of people with social anxiety disorder will be diagnosed with one of these disorders.

Contrary to expectation, rates of lifetime comorbidity were higher in Brown et al.'s (2001) clinical sample than in the community samples in only some instances. A higher percentage of this clinical sample was diagnosed with at least one other lifetime anxiety disorder or at least one lifetime mood disorder than the community samples. In addition, this clinical sample had higher rates of lifetime comorbidity with GAD, major depressive disorder, and dysthymic disorder than the community samples. Brown et al. reported higher rates of OCD and PTSD than some of the community studies, but lower rates than at least one other community study. Although their rate of 4.0% for diagnoses of lifetime

panic disorder is much lower than the rates obtained in the community studies, it must be recognized that they included a separate category for panic disorder with agoraphobia. It is likely that cases of panic disorder only *and* panic disorder with agoraphobia were included in the rates of panic disorder reported in community studies. Moreover, Brown et al. reported lower rates of alcohol abuse than all of the community studies, although the odds ratio was similar to two of the community studies.

It is interesting to note in Brown et al.'s (2001) study that social anxiety disorder was one of two anxiety disorders associated with the *lowest* rates of comorbidity with other anxiety and mood disorders—72% for lifetime comorbid diagnoses, and 46% for current comorbid diagnoses. Many of the odds ratios reflecting the likelihood of specific comorbid diagnoses are lower than 1.0 (see Tables 9.2 & 9.3). However, before concluding that social anxiety disorder is associated with a lowered risk of comorbidity in treatment-seeking samples, it is important to consider the reference group, which consists of other people with any anxiety or mood disorder who are seeking treatment at a specialty clinic. Thus, a more accurate conclusion from this study is that social anxiety disorder is associated with a lowered risk of comorbidity relative to other anxiety and mood disorders, but not necessarily relative to people representative of the general population who are not diagnosed with social anxiety disorder. Nevertheless, the finding that 72% of their patients with social anxiety disorder had at least one comorbid disorder is striking, given that higher rates were obtained in the community epidemiological studies (e.g., 80–90%; Grant et al., 2005; Ruscio et al., 2008). It is possible that higher rates were obtained in the community studies because they assessed some disorders not included in Table 9.2 and not assessed by Brown et al. (2001), such as impulse-control disorders.

All of the comorbidity rates presented in Table 9.2 are for social anxiety disorder in general and do not differentiate between the generalized and non-generalized subtype. Generalized social anxiety disorder describes people who report three or more social and evaluative fears, whereas non-generalized social anxiety disorder describes people who have one or two predominant fears, usually those that involve public speaking or some sort of other public performance (Wittchen & Fehm, 2003). Wittchen et al. (1999) broke down comorbidity rates as a function of subtype. Results indicated that the non-generalized subtype increased the odds of major depressive disorder, panic disorder, and specific phobia. In contrast, the generalized subtype increased the odds of these disorders to an even greater degree, and it also increased the odds of dysthymic disorder, agoraphobia, GAD, OCD, and PTSD. Although they did not break down social anxiety disorder into generalized and non-generalized subtypes, Ruscio et al. (2008) found a lifetime comorbidity rate of 62.9% for people with social anxiety disorder who reported 1–4 social fears, 75.2% for those who reported 5–7 social fears, 81.5% for those who reported 8–10 social fears, and 90.2% for those who reported 11 or more social fears. This pattern of results supports

the notion that the generalized subtype is a more severe pathology than the nongeneralized subtype, at least when severity is defined by the presence of comorbid psychiatric disorders.

Current Comorbidity Rates

Table 9.3 summarizes rates of current DSM-IV Axis I comorbidity in social anxiety disorder from five studies, three of which were conducted with community samples. Lampe, Slade, Issakisis, and Andrews (2003) examined rates of comorbidity in 10,641 people aged 18 and older who participated in the Australian National Survey of Mental Health and Well-Being. Diagnoses were assigned through a computerized version of the CIDI when participants met criteria for a particular disorder in the previous 12 months. Grant et al. (2005) calculated 12-month comorbidity rates in the National Epidemiologic Survey on Alcohol and Related Conditions using the Alcohol Use and Associated Disabilities Interview Schedule – DSM-IV Edition, which was described in the previous section. Fehm, Beesdo, Jacobi, and Fiedler (2008) examined rates of comorbidity in 4,174 people aged 18–65 who participated in the German National Health Interview and Examination Survey. Diagnoses were assigned through a computerized version of the Munich Composite Diagnostic Interview (M-CIDI), which is a modified version of the CIDI that accounts for a wider range of DSM-IV diagnoses than previous versions of the CIDI. Participants were regarded as having current diagnoses of psychiatric disorders if they met diagnostic criteria during the previous 12 months.

Two additional studies in Table 9.3 reported rates of current Axis I comorbidity in clinical samples. Brown et al. (2001) used the Anxiety Disorders Interview Schedule for DSM-IV to assess current psychiatric disorders in their sample of patients seeking treatment at their anxiety disorders clinic, which were assigned when participants met diagnostic criteria for the disorders at the time of the assessment. Kashdan, Frueh, Knapp, Herbert, and Magruder (2006) examined comorbidity in 733 veterans who were seen in four Veterans' Affairs primary care clinics, with 26 of these veterans being diagnosed at the time of the assessment. Comorbid psychiatric disorders were assigned during a telephone interview conducted by master's level clinicians, who used the Clinician-Administered PTSD Scale (Blake et al., 1990) to assess PTSD and the Mini International Neuropsychiatric Interview (Sheehan et al., 1997) to assess all other Axis I conditions.

Results from the three studies that used community samples indicate that between 50% and 70% of people with a current diagnosis of social anxiety disorder were diagnosed with another current anxiety disorder, and that between 30% and 60% were diagnosed with a current mood disorder. These rates are not appreciably different from the lifetime comorbidity rates described in the previous section. The range of comorbidity rates of specific anxiety and mood disorders was somewhat smaller than the ranges of lifetime comorbidity rates;

TABLE 9.3 Current Comorbidity in Social Anxiety Disorder Diagnosed According to DSM-IV Criteria

Comorbid Disorder	Lampe et al. (2003); Community Sample	Grant et al. (2005); Community Sample	Fehm et al. (2008); Community Sample	Brown et al. (2001); Clinical Sample	Kashdan et al. (2006); Clinical Sample
Anxiety Disorders	53.4 (6.3)*	48.8 (9.1)*	71.2 (22.2)*	59.0 (no OR)	----
Agoraphobia	17.4 (7.8)*	----	17.0 (20.7)*	----	34.6 (9.28)*
GAD	33.9 (3.0)*	17.3 (10.6)*	22.2 (35.4)*	27.0 (1.23)	50.0 (8.39)*
OCD	7.7 (1.3)	----	11.5 (41.5)*	13.0 (0.90)	34.6 (74.01)*
Panic Disorder	20.6 (4.9)*	15.3 (8.5)*	25.6 (26.4)*	26.0 (0.50)*	34.6 (7.94)*
PD with AG	(incorporated into above value)	----	----	23.0 (0.50)*	----
PTSD	14.6 (1.4)	----	----	5.0 (1.18)	73.1 (no OR)
Specific Phobia	----	37.3 (7.9)*	29.5 (6.6)*	16.0 (0.64)*	----
Mood Disorders	43.5 (2.9)*	38.3 (6.0)*	65.3 (19.7)*	48.0	----
MDD	40.5 (2.4)*	19.9 (4.1)*	50.5 (15.9)*	32.0 (1.29)*	69.2 (13.13)*
Dysthymic Disorder	12.0 (1.5)	6.6 (4.9)*	38.1 (20.2)*	17.0 (2.18)*	61.5 (12.48)*
Mania or Hypomania	----	16.2 (7.2-3.1)*	5.7 (12.6)*	----	----
Substance Use Disorder	22.1 (1.3)	----	----	----	----
Alcohol Abuse	16.7 (1.5)	4.4 (1.0)	----	----	3.8 (2.31)
Alcohol Dependence		8.6 (2.3)*	10.3 (3.9)*	----	15.4 (8.35)*
Drug Abuse	8.7 (0.9)	2.6 (1.7)*	----	----	----
Drug Dependence		2.9 (4.6)*	----	----	----

Note: *All values in columns are percentages of the people with social anxiety disorder who were diagnosed with the comorbid disorder specified. Values in parentheses are odds ratios. An * next to the odds ration signifies that the 95% confidence interval did not include 1.0. Abbreviations are as follows: GAD = generalized anxiety disorder; OCD = obsessive compulsive disorder; PD = panic disorder; AG = agoraphobia; PTSD = posttraumatic stress disorder; MDD = major depressive disorder; OR = odds ratio; ---- = disorder was not assessed in the study. One study (i.e., Grant et al., 2005) provided separate rates of bipolar I and bipolar II disorder; in this cases, the percentages were combined, and the odds ratios for bipolar I and bipolar II disorders, respectively, are provided in parentheses.*

for example, rates of comorbid current GAD ranged from 17.3% to 33.9%. In general, rates of current comorbidity ranged from approximately 5% to 20% for agoraphobia, OCD, and panic disorder; comorbidity rates extended to 25–30% for panic disorder and GAD; and one community study suggested that the rate of current comorbid specific phobia was as high as 37%. Between 38% and 65% of people with current social anxiety disorder endorsed current major depressive disorder; between 6% and 38% of people with current social anxiety disorder endorsed current dysthymic disorder; and 5–16% of people with current social anxiety disorder endorsed bipolar I or bipolar II disorder. As with lifetime comorbidity rates, the odds of having a current comorbid alcohol or substance use disorder were lower than most odds of having a comorbid anxiety or mood disorder, although Lampe et al.'s (2003) study suggests that over 20% of people with current social anxiety disorder are diagnosed with some form of current alcohol or drug use disorder.

The two studies that calculated current rates of comorbidity in clinical samples yielded discrepant results. The current comorbidity rates reported by Brown et al. (2001) were similar to, and at times lower than, current comorbidity rates reported by studies that used community samples. In contrast, Kashdan et al. (2006) identified high rates of comorbidity in their sample of veterans diagnosed with social anxiety disorder who were seeking treatment at Veterans' Affairs primary care clinics. For example, over 70% of the veterans diagnosed with social anxiety disorder also carried diagnoses of PTSD. The only diagnosis that was not elevated in this sample was alcohol abuse. It is likely that the high rate of comorbidity can be accounted for by the unique nature of the veteran sample, as less than a third of the respondents in the sample were employed, and nearly half of them had been in a war zone at some point in their lives.

Like the studies summarized in Table 9.2, all of the comorbidity rates in Table 9.3 pertain to diagnoses of social anxiety disorder in general, which includes both the generalized and non-generalized subtypes. No epidemiological studies have broken down current comorbidity rates as a function of subtype. However, Fehm et al. (2008) identified rates of comorbidity among people who met full criteria for social anxiety disorder, people who were subthreshold for social anxiety disorder (i.e., those who met Criterion A for a diagnosis of social anxiety disorder but were missing one criterion), and those who were symptomatic for social anxiety disorder (i.e., those who reported social fears, but who were missing two or more criteria). They identified a dose-response relation between the severity of social anxiety disorder and the amount of comorbidity, such that the odds of being diagnosed with all of the other disorders considered were substantially elevated in people with social anxiety disorder, whereas the odds were much lower (but in most cases, still elevated) in those who were only symptomatic. This study was the first to demonstrate that subthreshold levels of social anxiety are associated with significant life interference and distress, in the form of comorbid psychiatric disorders.

COMORBIDITY BETWEEN SOCIAL ANXIETY DISORDER AND OTHER CONDITIONS

Eating Disorders

Over the past two decades, much scholarly attention has been given to the overlap between eating disorders and anxiety disorders, especially social anxiety disorder (e.g., Bulik, Sullivan, Fear, & Joyce, 1997). In their review of this topic, Swinbourne and Touyz (2007) concluded that social anxiety disorder and OCD are the two most comorbid anxiety disorders in people who are diagnosed with eating disorders. Rates of DSM-IV social anxiety disorder in people who are diagnosed with DSM-IV eating disorders in general range from 18% (Iwasaki, Matsunaga, Kiriike, Tanaka, & Matsui, 2000) to 42% (Swinbourne, Hunt, Abbott, Russell, St Clare, & Touyz, 2012). DSM-IV comorbidity rates are even higher when specific eating disorder subgroups are considered; for example, rates of comorbid social anxiety disorder up to 88% and 68% have been detected in patients with anorexia and bulimia, respectively (Hinrichsen, Wright, Waller, & Meyer, 2003). In particular, social appearance anxiety and fear of negative evaluation are two components of social anxiety disorder found to be most associated with eating disorder symptoms (Levinson & Rodebaugh, 2012). Some scholars have proposed that social anxiety disorder might constitute one pathway to the development of eating disorders because it is temporally primary in the majority of cases (Buckner, Silgado, & Lewinsohn, 2010; Swinbourne & Touyz, 2007). In addition, social anxiety disorder has been identified as a negative prognostic factor for engagement in treatment and treatment outcomes among individuals with eating disorders (Goodwin & Fitzgibbon, 2002).

Body Dysmorphic Disorder

Empirical research has examined the overlap between social anxiety disorder and body dysmorphic disorder (BDD) with the rationale that both share core features such as fear of embarrassment and rejection and avoidance of social situations (Coles et al., 2006). Rates of lifetime comorbidity between the two disorders according to DSM-III-R criteria range from 12% (Hollander, Cohen, & Simeon, 1993; Perugi et al., 1997) to 69% (Zimmerman & Mattia, 1998). Gunstad and Phillips (2003) calculated a 31% rate of current comorbidity between the two disorders, with social anxiety disorder being diagnosed according to DSM-III-R criteria, and BDD being diagnosed according to DSM-IV criteria. In the most extensive study to examine comorbidity between the two disorders using DSM-IV criteria, Coles et al. (2006) reported in a sample of 178 people with BDD that 39.3% met criteria for lifetime social anxiety disorder and that 34.3% met criteria for current social anxiety disorder. Those with comorbid diagnoses were less likely to be employed and more likely to report suicide ideation and poor adjustment than those with BDD alone. BDD is also observed in between 8% (Zimmerman & Mattia, 1998) and 12% (Wilhelm, Otto, Zucker, &

Pollack, 1997) of people with primary diagnoses of social anxiety disorder, with social anxiety disorder being temporally primary in nearly all cases.

Findings from cross-cultural studies suggest that BDD may be conceptualized as a subtype of social anxiety disorder in some Eastern cultures (Fang & Hofmann, 2010). For example, a subtype of the Japanese conceptualization of social anxiety disorder, called *shubo-kyofu,* is focused on appearance-related anxiety. However, shubo-kyofu involves concern about offending or embarrassing *others* based on one's physical appearance rather than embarrassing *oneself*. Choy et al. (2008) found that 75% of patients with social anxiety disorder in the United States and Korea endorsed at least one of the five symptoms of shubo-kyofu (i.e., offending others due to improper facial expressions, body odor, inappropriate staring, intestinal gas, and physical appearance). In particular, approximately 38% of United States participants endorsed fears related to offending others on the basis of their physical appearance, suggesting that this subtype of social anxiety may not be as culture-bound as previously thought and may overlap with the DSM conceptualization of both social anxiety disorder and body dysmorphic disorder (Fang & Hofmann, 2010).

Bipolar Disorder

Although the main focus of research on comorbid anxiety disorders in bipolar disorder has been on its comorbidity with panic disorder and OCD, a few reports in the past decade have examined the overlap between bipolar spectrum disorders and social anxiety disorder. Empirical research on this topic suggests that the lifetime comorbidity rate of social anxiety disorder and bipolar I disorder ranges from 4.2% (Rihmer, Szádóczky, Füredi, Kiss, & Papp, 2001) to 20% (Tamam & Ozpoyraz, 2002). Rihmer et al. (2001) found that the rate of comorbid social anxiety disorder and bipolar II disorder was almost triple the rate of comorbid social anxiety disorder and bipolar I disorder. One study (Pini et al., 2006) calculated a current (i.e., past month) comorbidity rate between social anxiety disorder and bipolar I disorder of 10.1%. Patients with comorbid social anxiety disorder and bipolar disorder report more severe psychiatric symptoms than patients with bipolar disorder alone (Pini et al., 2006; Tamam & Ozpoyraz, 2002) and are more likely to exhibit psychotic symptoms (Azorin et al., 2007). Despite the common co-occurrence of bipolar disorder and social anxiety disorder, the conditions do not appear to share a genetic link. Specifically, a recent study examining the familial aggregation of anxiety disorders in families with bipolar disorder found that first degree relatives of individuals with bipolar disorder were not more likely to meet criteria for social anxiety disorder than first-degree relatives of individuals without bipolar disorder (Goes et al., 2011).

The lifetime comorbidity rates indicate that the co-occurrence between social anxiety disorder and bipolar disorder is higher than would be expected by chance alone, but they say little about the clinical presentations of people

who have carried both diagnoses at some point in their lifetime. Some scholars speculate that comorbid anxiety disorders, including social anxiety disorder, are most likely to be present in mixed or dysphoric manic disorders (Freeman, Freeman, & McElroy, 2002), and there is some evidence that bipolar symptoms develop in the context of antidepressant treatment for social anxiety disorder (Perugi et al., 1999).

Psychosis

Recent attention has also been given to the comorbidity between psychotic disorders and anxiety disorders, with the reasoning that comorbid anxiety has the potential to exacerbate the course of illness and hinder recovery. Empirical research demonstrates that DSM-IV social anxiety disorder is especially comorbid with schizophrenia, with rates ranging from 11% (Mazeh et al., 2009) to 39.1% (Ciapparelli et al., 2007). In fact, empirical research indicates that social anxiety disorder is the single anxiety disorder associated with the highest rate of comorbidity in psychotic individuals (Braga, Mendlowicz, Marrocos, & Figueira, 2005). Ciapparelli et al.'s (2007) work also demonstrated that rates of social anxiety disorder are significantly higher in patients with schizophrenia than in patients who had psychotic episodes but who were assigned other diagnoses. Research shows that symptoms of social anxiety correlate positively with an index of global severity of psychotic symptoms (Ciapparelli et al., 2007), lower quality of life, lower social adjustment (Pallanti, Quercioli, & Hollander, 2004), and greater limitations in the domains of work and social life (Braga et al., 2005) in psychotic patients. In addition, research demonstrates that patients with comorbid schizophrenia and social anxiety disorder have higher rates of substance abuse and lifetime suicide attempts than patients with schizophrenia but no social anxiety disorder (Braga et al., 2005). Although some studies (e.g., Mazeh et al., 2009) report a link between social anxiety and positive symptoms of schizophrenia in particular, other studies (e.g., Michail & Birchwood, 2009) failed to find a difference in levels of positive symptoms in individuals diagnosed with schizophrenia with and without social anxiety disorder.

Suicidality

Although variables relevant to suicide (i.e., suicide ideation, suicide attempts) do not constitute a psychiatric diagnosis, they are often considered in investigations of comorbidity because they represent serious mental health problems. In both the NCS (Kessler et al., 1994) and the NCS-R (Kessler & Merikangas, 2004), lifetime history of suicide ideation was assessed via the question, "Have you ever seriously thought about committing suicide?", and lifetime history of suicide attempt was assessed via the question, "Have you ever attempted suicide?" In the NCS, lifetime suicide ideation and suicide attempt were not elevated in people who were diagnosed with lifetime DSM-III-R social

anxiety disorder (Sareen, Houlahan, Cox, & Asmundson, 2005). In contrast, in the NCS-R, lifetime DSM-IV social anxiety disorder was associated with elevations in both of these variables, even while controlling for other anxiety disorders (Cougle, Keough, Riccardi, & Sachs-Ericsson, 2008). Specifically, almost 35% of the respondents with social anxiety disorder endorsed a history of suicide ideation, and over 14% admitted that they had made a suicide attempt. An important difference between the two studies is that Sareen, Houlahan, et al. (2005) included a covariate that accounted for the presence of three or more diagnoses, which could have reduced the statistical significance of the anxiety disorders under consideration (Cougle et al., 2008).

The third study that examined suicidality associated with anxiety disorders used data from the Netherlands Mental Health and Incidence Survey (Bijl, van Zessen, & Ravelli, 1998), in which 7,076 adults aged 18–65 were administered a computerized version of the CIDI in order to achieve DSM-III-R diagnoses (Sareen, Cox, et al., 2005). A lifetime history of suicide ideation was assessed via the question, "Have you ever felt so low that you thought about committing suicide?", and a lifetime history of suicide attempt was assessed via the question, "Have you ever attempted suicide?" Social anxiety disorder was associated with a lifetime history of suicide ideation, even after adjusting for demographic variables and an array of other psychiatric diagnoses. Exactly 25% of the sample endorsing suicide ideation met criteria for lifetime social anxiety disorder. In contrast, over 27% of the sample endorsing a history of suicide attempt was diagnosed with social anxiety disorder, relative to approximately 7% of those who did not endorse a history of suicide attempt. However, odds ratios for suicide attempt were not appreciably different than 1.0 when demographic and other psychiatric disorders were included in multivariate analyses. In addition, a diagnosis of social anxiety disorder increased the odds of new cases of suicide ideation during the three-year follow-up period after controlling for demographic variables and psychiatric diagnoses.

A fourth study examined the co-occurrence of suicide attempt and anxiety disorders in 34,653 adults who participated in the second wave of the National Epidemiologic Survey on Alcohol and Related Conditions between 2004 and 2005 (Nepon, Belik, Bolton, & Sareen, 2010). DSM-IV Axis I disorders, including social anxiety disorder, and Axis II disorders were assessed via the Alcohol Use Disorders and Associated Disabilities Interview. To assess for lifetime suicide attempt, all participants were asked: "In your entire life, did you ever attempt suicide?" Social anxiety disorder was significantly associated with lifetime suicide attempt when adjusting for sociodemographic factors, mood disorders, substance use disorders, schizophrenia or psychotic illness or episode (adjusted OR = 2.12, CI = 1.75–2.50). However, social anxiety disorder was no longer uniquely associated with lifetime suicide attempt after additional adjustment for each personality disorder (adjusted OR = 1.22, CI = 0.96–1.53), and after controlling for each anxiety disorder in addition to the aforementioned covariates (adjusted OR = 1.08, CI = 0.85–1.38). Collectively, results from these

studies suggest that there are higher rates of a lifetime history of suicide ideation in people diagnosed with social anxiety disorder, relative to people who do not carry this diagnosis, but that a history of suicide attempt is likely explained by the presence of comorbid psychiatric diagnoses.

CROSS-CULTURAL EXPRESSIONS OF COMORBIDITY AND INDIVIDUAL DIFFERENCES IN COMORBIDITY

Nearly all of the studies described in this chapter were conducted in either the United States or Western Europe. In this section, we highlight results from the few studies that were conducted in non-Western countries. There is reason to believe that patterns of comorbidity might be different in non-Western countries than in Western countries. For example, the prevalence of social anxiety disorder itself is much lower in some Asian countries than in Western countries (Wittchen & Fehm, 2003). If this pattern holds true for other disorders, then the likelihood of overlap would be especially low in these countries. In this section, we also discuss ethnic and gender differences in social anxiety comorbidity.

Two studies described the comorbidity between social anxiety disorder and other psychiatric disorders in African countries. Bella and Omigbodun (2009) interviewed 413 Nigerian college students with the CIDI and determined that a current diagnosis of social anxiety was associated with a lifetime history of depression and depression during the past 12 months, but not with current alcohol use or abuse. Kadri, Agoub, El Gnaoui, Berrada, and Moussaoui (2007) interviewed 800 adults aged 15 years or older with the Mini International Neuropsychiatric Interview in Moroccan Arabic language and found current (i.e., one month) rates of comorbidity that ranged from 13.8% between social anxiety disorder and panic disorder and between social anxiety disorder and PTSD to 34.5% between social anxiety disorder and OCD and 41.4% between social anxiety disorder and agoraphobia. The rates of comorbidity in the two latter instances were much higher than current rates of comorbidity found by researchers in Western countries.

As mentioned previously, rates of lifetime comorbidity between social anxiety disorder and various psychiatric disorders in Iranian adults were reported by Mohammadi et al. (2006). Although many of the comorbidity percentages are similar to those found in studies conducted in Western countries, the odds ratios were much higher. This is likely due to the fact that psychiatric disorders were generally diagnosed much less frequently in this Iranian study than in the other studies; for example, the lifetime prevalence of social anxiety disorder was only 0.83% in this sample—a far cry from the 12.2% detected by Ruscio et al. (2008) in the NCS-R, conducted in the United States. In fact, the authors remarked that their results were likely to be underestimates of psychiatric disorders in their country, as they speculated that respondents might not have been comfortable disclosing emotional distress to interviewers and that emotional distress is often expressed as somatization in their culture.

Clearly, much more epidemiological research must be conducted to identify prevalence and comorbidity rates of psychiatric disorders in non-Western countries. Researchers are encouraged to take into account not only the particular country under consideration, but also the ethnic and religious composition of the participants. Such research has the potential to provide clues into the sociocultural mechanisms that affect the expression and course of psychiatric disorders such as social anxiety disorder.

Within the United States, rates of comorbidity of social anxiety disorder and other psychiatric disorders appear to vary across ethnic groups (Polo, Alegría, Chih-Chen, & Blanco, 2011), although research in this area is sparse. Using data from the National Latino and Asian American Study and the NCS-R, Polo et al. (2011) compared comorbidity in four groups of individuals with social anxiety disorder: (1) non-Latino white Americans; (2) Latinos born in the United States; (3) Latino immigrants who arrived before the age of 21 (early immigrant Latinos); and (4) Latino immigrants who arrived after the age of 21 (late immigrant Latinos). Relative to non-Latino white participants with social anxiety disorder, late immigrant Latinos were significantly less likely to receive a diagnosis of drug abuse (OR = 0.05; 95% CI = 0.01-0.28), drug dependence (OR = 0.04; 95% CI = 0.01-0.34), and conduct disorder (OR = 0.1; 95% CI = 0.01-0.79). In contrast, late immigrant Latinos with social anxiety disorder were more likely than non-Latino whites to be diagnosed with agoraphobia (OR = 6.79; 95% CI = 3.03-15.24). Thus, rates of comorbidity not only differ between ethnic groups, but also differ within ethnicities on the basis of factors such as age of immigration. Further research is needed to gain a more complete understanding of the relationship between ethnicity and social anxiety comorbidity.

Rates of comorbidity also vary with regard to gender. For example, data from the National Epidemiologic Survey on Alcohol and Related Conditions (Xu et al., 2012) demonstrated that men with social anxiety disorder were more likely to be diagnosed with a comorbid externalizing disorder than women with social anxiety disorder, whereas women with social anxiety disorder were more likely than men with social anxiety disorder to be diagnosed with a comorbid internalizing disorder. These differences are consistent with the gender distribution of these disorders in the general population. However, although men in the general population are more likely than women to be diagnosed with alcohol abuse, the gender discrepancy in the prevalence of alcohol abuse among individuals with social anxiety disorder is less pronounced.

COMMENT AND FUTURE DIRECTIONS

Comorbidity is more the rule than the exception in social anxiety disorder, particularly in the DSM-IV generalized subtype. Up to 90% of people who have social anxiety disorder at some point in their lifetime will meet criteria for another Axis I disorder at some point in their lifetime. Although such a statistic has caused some to question whether social anxiety disorder is a unique type

of psychopathology, rather than a prodromal expression of another disorder, it should be noted that many studies find rates of comorbidity that are even higher in other anxiety and mood disorders (e.g., Grant et al., 2005). When social anxiety disorder is accompanied by another Axis I disorder, symptom severity and functional impairment tend to increase (Acarturk, de Graaf, van Straten, ten Have, & Cuijpers, 2008).

Research on samples of respondents who are diagnosed according to DSM-IV criteria support results from older studies, which suggest that rates of comorbidity between social anxiety disorder and other anxiety disorders and depressive disorders can reach as high as 50%, perhaps even higher. Although rates of comorbidity between social anxiety disorder and substance use disorders are lower (i.e., 20–25%), people with social anxiety disorder are still at elevated risk to develop problems with substance use, perhaps because they use substances to self-medicate (Carrigan & Randall, 2003). However, research conducted in the past 15 years suggests that comorbidity in social anxiety disorder is not limited to overlap with other anxiety disorders, depressive disorders, and substance use disorders. Accumulating evidence suggests that there are elevated rates of social anxiety disorder in people who are diagnosed with eating disorders, body dysmorphic disorder, bipolar disorder, and psychosis. Moreover, people with social anxiety disorder are at increased risk to experience suicide ideation. Clearly, social anxiety disorder is a debilitating disorder in many instances, and it will be important for future research to identify the particular clinical presentations of social anxiety disorder that are associated with the greatest amount of functional impairment and subjective distress.

A new edition of our diagnostic system is now in place (i.e., DSM-5; American Psychiatric Association [APA], 2013a), and scholars undoubtedly will be vying for funding for epidemiological research that will yield the prevalence and comorbidity of psychiatric disorders, as defined by the revised criteria. Several changes have been made to the diagnostic criteria of social anxiety disorder in DSM-5. Specifically, it is no longer a requirement for individuals over 18 to recognize their fear or anxiety as excessive or unreasonable. This change was made in response to the evidence that individuals with social anxiety disorder often overestimate the danger in social situations (APA, 2013b). Instead, anxiety must appear to be out of proportion relative to the actual danger or threat. In addition, intended to minimize the overdiagnosis of transient anxiety, the duration criteria of six months or more is now required for adults as well as children. Most importantly, the "generalized" specifier has been replaced with a "performance only" specifier designed to capture a distinct subset of individuals with social anxiety disorder who fear only performance situations. The deletion of the generalized specifier was in response to evidence that it was difficult to operationalize "fears include most social situations" (APA, 2013b). As prior research has indicated that rates of comorbidity differ for individuals diagnosed with the generalized and non-generalized subtypes of social anxiety disorder, the elimination of the generalized subtype may have important implications for

rates of comorbidity in individuals with social anxiety. Specifically, previous research has shown that individuals diagnosed with the generalized subtype of social anxiety disorder using the DSM-IV criteria were approximately three times more likely to have a co-occurring anxiety disorder, and two times more likely to have comorbid mood disorders, than individuals with the non-generalized subtype of social anxiety disorder (Wittchen, Stein, & Kessler, 1999). We look forward to future research that identifies the degree to which this new subtyping scheme identifies similar or different subgroups of socially anxious individuals than the subtyping scheme used in the DSM-IV, and if it yields different subgroups, the effect on rates of comorbidity.

Changes to criteria of psychiatric disorders commonly diagnosed in individuals with social anxiety disorder may also result in changes in rates of comorbidity. For example, recognition of fears as excessive or unreasonable is no longer a requirement for specific phobias, which may result in an increase in the number of people diagnosed with specific phobias, and in turn, an increase in the prevalence of comorbid social anxiety disorder and specific phobias. Similarly, changes in the criteria of eating disorders may potentially influence rates of comorbidity of eating disorders and social anxiety disorder. In particular, the requirement of two binges per week in order to obtain a diagnosis of bulimia nervosa has been changed to one binge per week, and amenorrhea is no longer necessary for a diagnosis of anorexia nervosa. In addition, binge-eating disorder, in which an individual binges in the absence of compensatory behaviors, has been added to DSM-5. It is possible that these adjustments may result in an increase in the prevalence of eating disorders, and potentially, the comorbidity of eating disorders and social anxiety disorders.

Future research is crucial in order to have accurate knowledge of the degree to which various disorders and their comorbid clinical presentations are found in community and clinical samples. There is no doubt that epidemiological research documenting comorbidity among DSM-5 disorders is on the horizon. However, such research is descriptive in nature and tells us little about the reasons why certain disorders co-occur. Although it will be important to continue to establish rates of comorbidity in some understudied groups (e.g., people from non-Western countries), researchers are encouraged to move beyond the mere documentation of comorbidity and begin to identify empirically the path by which comorbidity between social anxiety disorder and other psychiatric disorders emerges, the mechanism by which social anxiety disorder puts people at risk for other psychiatric disorders, and the manner in which comorbidity affects patients' clinical course and response to treatment. Moreover, studies examining the psychopathology and treatment of social anxiety disorder often exclude people with comorbid conditions from their samples. This practice runs the risk of yielding research findings that have limited relevance, at best, to the typical person who struggles with social anxiety disorder. It is hoped that scholars will recognize that comorbidity is a central feature of social anxiety disorder and recruit representative samples to enhance the external validity of research on this topic.

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