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Does Comorbid Social Anxiety Disorder Impact the Clinical Presentation of Principal Major Depressive Disorder?

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Abstract

Background—Although previous research has examined comorbidity in principal Social Anxiety Disorder (SAD), few studies have examined the disorders for which those with comorbid SAD seek treatment. Further, studies have shown that depressive disorders often are associated with SAD, but few have examined the clinical characteristics of patients with this particular comorbidity.

Method—The current study examined the prevalence of various principal Axis I disorders in 577 individuals diagnosed with comorbid SAD.

Results—Consistent with previous research, Major Depressive Disorder (MDD) was the most frequent principal diagnosis in patients with comorbid SAD. Those with principal MDD and comorbid SAD (MDD-SAD) were compared to those with MDD without SAD (MDD) on demographic and clinical characteristics. Patients with MDD-SAD versus those with MDD were more severe in terms of social functioning, duration of depressive episode, suicidal ideation, time out of work, presence of current alcohol abuse/dependence, and age of onset of MDD. Social functioning, duration of episode, suicidal ideation, and age of onset of MDD remained significant even after controlling for additional comorbid disorders.

Conclusions—Findings suggest the need for future research to determine how treatments could be adapted for this commonly occurring comorbidity.

Keywords

Major Depressive Disorder; Social Anxiety Disorder; comorbidity; severity; psychosocial functioning

Social Anxiety Disorder (SAD) is an excessive fear of social or performance situations in which embarrassment or humiliation may occur (American Psychiatric Association, 2000). It is typically characterized by avoidance of these situations, and often is associated with marked impairment in several areas, including work, social life, and family life (Herbert & Dalrymple, in press; Schneier et al., 1994). Epidemiological studies indicate that SAD is the fourth most common psychiatric disorder following major depression, alcohol dependence, and specific phobia, with a lifetime prevalence rate of 12.1% (Kessler et al., 2005a).

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Although several studies have been conducted on principal SAD, SAD as a comorbid disorder is the rule rather than the exception in routine clinical practice (Weiller et al., 1996). For example, a recent study conducted in an outpatient psychiatry setting demonstrated that of those individuals meeting criteria for SAD, only 4% had SAD as the principal diagnosis (Zimmerman et al., 2006). Further, most individuals desire treatment for their comorbid SAD in addition to treatment for their principal condition (Zimmerman & Chelminski, 2003). Principal SAD often is associated with other Axis I disorders such as depression, other anxiety disorders, and substance use (Brown & Barlow, 1992; Kessler et al., 1994). However, few studies have examined for which disorders those with comorbid SAD seek treatment.

One study examining comorbidity among principal and secondary disorders in a clinical sample found that SAD was among the most common additional diagnoses (Brown et al., 2001). In addition, results showed that those with Major Depressive Disorder (MDD) and dysthymia had the highest rates of comorbid SAD. However, this study possessed several limitations, including: 1) diagnoses were based on the *Anxiety Disorders Interview Schedule for DSM-IV: Lifetime Version* (ADIS-IV-L; Di Nardo et al., 1994), which does not assess broadly for Axis I disorders compared to other structured diagnostic interviews; 2) participants in this study were presenting for treatment at a specialty anxiety and mood disorders clinic, thereby decreasing generalizability of results; 3) individuals with severe emotional conditions (e.g., suicidality) and substance dependence were excluded from the study, also decreasing generalizability of the results; and 4) inferential statistical comparisons of clinical characteristics between specific comorbid diagnoses were not conducted.

Only a few studies have examined the clinical characteristics of individuals with comorbid MDD and SAD (e.g., Kessler et al., 1999; Nelson et al., 2000; Stein et al., 2001). These studies have found that the presence of comorbid SAD is associated with an earlier onset of MDD, more depressive episodes, longer duration of episodes, increased suicidality, and alcohol dependence. Potential limitations of these studies include the use of retrospective diagnoses at baseline, combination of MDD with dysthymia and other mood disorders (Stein et al., 2001), or samples with limited generalizability, such as adolescent female twins (Nelson et al., 2000). In addition, Kessler et al. (1999) examined the effects of primary SAD on comorbid MDD, and results may not generalize to those with principal MDD and comorbid SAD.

One aim of the current study, as part of the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project, was to examine for which disorders those with comorbid SAD seek treatment in a large sample of patients at a general psychiatric outpatient practice. Based on results from Brown et al. (2001), it was expected that MDD would be the most common principal diagnosis among individuals with comorbid SAD. A second aim of the current study was to extend findings from Brown et al. by examining the clinical characteristics of patients with principal MDD and comorbid SAD (MDD-SAD), as few studies have examined this comorbidity in detail (e.g., Stein et al., 2001). Further, recent research has shown that SAD is the most common comorbid anxiety disorder in patients with MDD, with rates ranging from 15 to 33% (Belzer & Schneier, 2004; Zimmerman & Chelminski, 2003). Therefore, because comorbid SAD is the rule rather than exception in routine clinical practice, it is important to understand for which conditions these patients seek treatment and the effect of comorbid SAD on clinical presentation, to determine how treatments best can be adapted for these patients.

Method

Participants

Participants included 2,300 psychiatric patients presenting for treatment at the outpatient practice of the Rhode Island Hospital Department of Psychiatry. The sample consisted of 1,392

females (60.5%) and 908 (39.5%) males, ranging in age from 18 to 85 ($M = 38.2$, $SD = 12.8$). The majority of the sample was Caucasian ($n=2,015$; 87.6%), followed by African American ($n=100$; 4.3%), Portuguese ($n=77$; 3.3%), Hispanic ($n=57$; 2.5%), other or mixed ethnicities ($n=33$; 1.4%), and Asian ($n=18$; 0.8%). Many participants were married ($n=941$; 40.9%), followed by never married ($n=716$; 31.1%), divorced ($n=347$; 15.1%), separated ($n=132$; 5.7%), living as if married ($n=122$; 5.3%), and widowed ($n=42$; 1.8%). Half of the sample ($n=1243$; 54.0%) had high school degrees or equivalency, while 537 (23.3%) received a college degree, 288 (12.5%) had a graduate degree/some graduate education, and 232 (10.1%) did not graduate from high school. The most frequent current Axis I *DSM-IV* diagnoses were non-psychotic MDD ($n=947$; 41.2%), Generalized Anxiety Disorder (GAD; $n=393$; 17.7%), Panic Disorder with Agoraphobia (PDA; $n=303$; 13.2%), Post-Traumatic Stress Disorder (PTSD; $n=284$; 12.3%), Specific Phobia (SP; $n=220$; 9.6%), dysthymia ($n=170$; 7.4%), Obsessive-Compulsive Disorder (OCD; $n=165$; 7.2%), and Alcohol Abuse ($n=165$; 7.2%).

Measures

Individuals presenting for treatment were asked to participate in a diagnostic evaluation prior to meeting with their treating clinician, using the Structured Clinical Interview for *DSM-IV* (SCID; First et al., 1997). Diagnosticians were clinical psychologists or research assistants with bachelor's degrees in social or biological sciences. Information on the training of diagnosticians has been presented elsewhere (Zimmerman & Mattia, 1999). Inter-rater reliability was collected over the course of the entire project. From the 48 joint-interview reliability evaluations, the reliability of SCID-based diagnoses of mood and anxiety disorders was excellent (MDD $\kappa=0.95$; dysthymia $\kappa=0.88$; Panic Disorder $\kappa=1.0$; SAD $\kappa=0.84$; OCD $\kappa=1.0$; SP $\kappa=0.91$; GAD $\kappa=0.93$; and PTSD $\kappa=0.91$).

Analyses

First, we determined the prevalence of comorbid SAD and corresponding principal disorders. Second, we examined the clinical characteristics of patients with MDD-SAD (i.e., patients seeking treatment primarily for MDD but also meeting current diagnostic criteria for comorbid SAD) versus MDD. Patients with comorbid dysthymia were excluded from these analyses, although other additional comorbidity was allowed in both groups. The two groups (MDD and MDD-SAD) were compared on variables such as demographics, current Global Assessment of Functioning (GAF) score, Clinical Global Impression score (CGI; NIMH, 1985), age of onset of MDD, duration of current depressive episode (in weeks), number of depressive episodes, suicidal ideation, number of suicide attempts, number of hospitalizations, time out of work, current and past social functioning, and presence of alcohol and substance abuse/dependence. Suicidal ideation and current and past social functioning were rated by diagnosticians on 7-point Likert scales using items from the Schedule for Affective Disorders and Schizophrenia (SADS; Spitzer & Endicott, 1977). Time out of work was rated by interviewers on a 10-point Likert scale from the SADS, ranging from 0 (not expected to work) to 9 (worked none or practically none due to psychopathology). Patients that were not expected to work (e.g., students, those on disability for medical reasons) were excluded from this analysis, thus resulting in a range from 1 (virtually no time out of work) to 9 (worked none).

Results

Over one-quarter of patients received a current diagnosis of SAD ($n=639$; 27.8%). The majority of these patients had SAD in addition to another Axis I diagnosis ($n=577$; 90.3%). Four hundred forty (76.3%) of the 577 patients with comorbid SAD desired treatment for it, while 103 (17.9%) were not interested in treatment and 34 (5.9%) were unsure of wanting treatment for comorbid SAD.

As shown in Table 1, the most frequent principal Axis I diagnosis in those with comorbid SAD ($n=577$) was non-psychotic (single episode or recurrent) MDD ($n=241$; 41.8%). PDA ($n=32$; 5.5%) and PTSD ($n=31$; 5.4%) were the next most frequent, followed by GAD ($n=25$; 4.3%), Bipolar II Disorder ($n=24$; 4.2%), single episode or recurrent MDD with psychotic features ($n=22$; 3.8%), Bipolar I Disorder ($n=21$; 3.6%), and Depressive Disorder NOS ($n=20$; 3.5%).

Patients with MDD-SAD ($n=207$) were compared to those with MDD ($n=456$) on various demographic characteristics. Patients with comorbid dysthymia were excluded from these analyses. There were no significant differences between groups for gender, marital status, education, or race. However, those with MDD-SAD were significantly younger than those with MDD. Regarding clinical characteristics, patients with MDD-SAD had poorer past and current social functioning, significantly lower current GAF scores, and a greater number of additional Axis I diagnoses compared to those with MDD. In addition, those with MDD-SAD reported an earlier age of onset of MDD, more time out of work due to psychopathology, and greater suicidal ideation than those with MDD. Those with MDD-SAD also demonstrated greater severity in terms of duration of current depressive episode and number of prior psychiatric hospitalizations. A greater percentage of those with MDD-SAD had a current diagnosis of alcohol abuse or dependence compared to those with MDD, but there was no significant difference between groups on presence of substance abuse or dependence. The two groups did not differ on CGI score, number of depressive episodes, or number of suicide attempts (see Table 2).

Because the two groups differed in number of additional diagnoses, differences in clinical characteristics may be due to additional comorbidity rather than comorbid SAD specifically. Therefore, follow-up analyses were conducted comparing those with “pure” MDD-SAD versus “pure” MDD (no other comorbidity in either group). Patients with pure MDD-SAD were significantly younger than those with pure MDD but no other significant differences were found on demographic variables. Regarding clinical characteristics, those with pure MDD-SAD had lower current GAF scores, poorer past and current social functioning, longer duration of current depressive episode, an earlier age of onset of MDD, and greater suicidal ideation. No significant differences were found on CGI score, time out of work, and number of hospitalizations, depressive episodes, or suicide attempts (see Table 2).

Discussion

Most patients with SAD who seek psychiatric treatment primarily seek treatment for other disorders, the most common being MDD. This is consistent with Brown et al. (2001), who also found MDD to be the most frequent principal disorder in comorbid SAD. Because patients in the current study were presenting for treatment to a routine clinical practice, there were no diagnostic exclusion criteria, unlike the Brown et al. (2001) study. Therefore, the findings from the Brown et al. study were replicated and extended because we were able to examine a wide range of diagnoses. Results also were consistent with previous studies that have found rates of comorbid MDD and SAD ranging from 15-33% (Belzer & Schneier, 2004; Zimmerman & Chelminski, 2003).

The current study also extended findings from Brown et al. (2001) by examining the clinical characteristics of patients with MDD-SAD. Results showed that these patients were more severe on several variables related to social functioning, work functioning, MDD symptoms (e.g., suicidal ideation), and comorbid alcohol abuse/dependence, compared to patients with MDD. As both groups included additional comorbidity, these results may be a reflection of greater illness severity rather than presence of comorbid SAD specifically. Therefore, further analyses were conducted to examine the potential impact of additional comorbidity. When other additional disorders were excluded from both groups, results showed that those with

“pure” MDD-SAD were still significantly more severe than those with MDD on several variables related to MDD symptoms, social functioning, and overall functioning.

These results are consistent with those found in other studies (e.g., Nelson et al., 2000; Stein et al., 2001), showing that presence of SAD in those with MDD is associated with an earlier onset of MDD, greater suicidality, and longer duration of depressive episodes. However, these other studies also have found that comorbid SAD is associated with more depressive episodes, a finding that was not obtained in the current study. Although initial results from the current study showed differences between these two groups on number of hospitalizations and time out of work, these differences did not remain when controlling for additional comorbidity. This suggests that perhaps these variables are related to greater general severity rather than comorbid SAD per se. Although Stein et al. (2001) controlled for additional anxiety disorders when examining onset of depression, it is unclear whether additional comorbidity was controlled for in their analyses examining the clinical characteristics of those with depression and SAD. It also is unclear whether Nelson et al. (2000) accounted for this additional comorbidity. Such additional comorbidity could have accounted for significant findings in these other studies, as patients with one anxiety disorder are significantly more likely to have an additional anxiety disorder (Brown & Barlow, 1992). Therefore, future studies should compare those with principal MDD and comorbid SAD to those with principal MDD and other comorbid disorders to further investigate whether results are specific to comorbid SAD.

Although the focus of the current study was the effect of comorbid SAD on MDD, it is informative to also note the rate of principal bipolar disorders in patients with comorbid SAD. Results from the current study show that 8.3% of patients with SAD were seeking treatment for a bipolar spectrum disorder. This rate is similar to that of other clinical and epidemiological studies, which have found rates of bipolar I and/or bipolar II ranging from 3.5 to 9.1% in patients with SAD (e.g., Perugi et al., 2001; Van Ameringen et al., 1991). From the perspective of bipolar disorders, the NCS study showed that nearly half (47%) of people with bipolar disorder met lifetime criteria for SAD (Kessler et al., 1999). A recent study from our research group also showed similar rates of bipolar and SAD comorbidity (Zimmerman et al., 2006). Emerging evidence has suggested the negative impact of comorbid SAD on the course and treatment of bipolar disorder (e.g., Boylan et al., 2004). Although beyond the scope of the current study, future studies should continue to examine the effect of comorbid SAD on bipolar disorders, as well as MDD.

Potential limitations exist that should be considered when interpreting the results of the current study. Those in the MDD-SAD group had a greater number of comorbid diagnoses than those in the MDD group. This could have accounted for greater severity on study variables, as greater comorbidity is generally associated with greater severity (Kessler et al., 2005b). However, we attempted to account for this by conducting further analyses limited to those with only “pure” MDD-SAD versus MDD alone, and this comparison also resulted in some significant differences between groups. Results from the current study were similar to those obtained from other studies examining clinical characteristics of those with comorbid MDD and SAD (e.g., Stein et al., 2001). Nonetheless, future research should continue to examine patients with this comorbidity compared to those with principal MDD and other comorbid disorders (e.g., other anxiety disorders) to determine whether differences are related to comorbid SAD specifically.

Another potential study limitation is that the principal MDD/comorbid SAD distinction was based on patients' reason for seeking treatment, rather than severity or impairment per se. This distinction may represent patients' awareness of available treatments for each disorder. For example, patients with chronic SAD often perceive these symptoms as part of their “personality,” and therefore time to initially seek treatment for SAD lags behind that of other anxiety disorders (Wagner et al., 2006). Further, the greater availability of information about

MDD versus SAD in the media may influence patients' awareness of available treatments for these disorders, perhaps at least partially accounting for the fact that many patients with SAD initially seek treatment for MDD (Weiller et al., 1996). It also is important to note that only 4% of patients with SAD in our sample seek treatment primarily for it (Zimmerman et al., 2006).

Finally, previous research has shown that SAD often has a significantly earlier age of onset than MDD, suggesting that the presence of SAD may increase one's risk for developing MDD (e.g., Brown et al., 2001; Stein et al., 2001). Therefore, another potential limitation of the current study is that results were not examined separately by earlier versus later age of onset of SAD. Future research should examine this issue, as an earlier age of onset of SAD may be related to greater severity of depressive symptoms, thereby indicating the importance of early detection and treatment of SAD (Dalrymple et al., in press).

Despite study limitations, results were similar to those obtained from the few other studies examining clinical characteristics of those with MDD-SAD, and suggest the need for further research in this area. The evidence to date suggests that patients with MDD-SAD demonstrate greater severity of MDD symptoms and impairment compared to those without this comorbidity. Future research should examine whether this greater severity is due to comorbid SAD specifically or the presence of any comorbid disorder more generally. Given that MDD is the most common principal disorder in those with comorbid SAD, that SAD is the most common comorbid anxiety disorder with MDD, and that over three-quarters of patients desire treatment for their comorbid SAD in addition to treatment for MDD, existing treatments for MDD may need to be modified to better address symptoms of comorbid SAD. Some previous research has shown that the presence of SAD negatively affects treatment outcome in MDD, both in Cognitive-Behavior Therapy (DeRubeis et al., 2005) and pharmacologic treatment (Mulder et al., 2006). Research conducted on the clinical characteristics of those with MDD-SAD may be helpful for guiding the adaptation of treatments for this comorbid population.

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Table 1
Frequencies and Percentages of Principal Diagnoses in Patients with
Comorbid Social Anxiety Disorder

Principal Disorder	Frequency	Percentage
Mood Disorders		
MDDNP – S/R	241	41.8
MDDP – S/R	22	3.8
DDNOS	20	3.5
Dysthymia	10	1.7
Bipolar I	21	3.6
Bipolar II	24	4.2
Bipolar NOS	3	0.5
Cyclothymia	1	0.2
Anxiety Disorders		
PDA	32	5.5
PTSD	31	5.4
GAD	25	4.3
OCD	9	1.6
AWOPD	8	1.4
GAD – No hierarchy	3	0.5
PD	2	0.3
SP	1	0.2
ANX NOS	4	0.7
Substance Use Disorders		
ETOH A/D	3	0.5
Drug A/D	5	0.9
Somatiform Disorders	13	2.3
Other Disorders		
ADHD	10	1.7
Adjustment	10	1.7
Impulse Control	6	1.0
Psychotic Disorder	2	0.3
Bulimia	1	0.2

Note. MDDNP – S/R = Major Depressive Disorder, non-psychotic (single episode or recurrent); MDDP – S/R = Major Depressive Disorder, with psychotic features (single episode or recurrent); DDNOS = Depressive Disorder Not Otherwise Specified; PDA = Panic Disorder with Agoraphobia; PTSD = Post-Traumatic Stress Disorder; GAD = Generalized Anxiety Disorder; OCD = Obsessive-Compulsive Disorder; AWOPD = Agoraphobia without Panic Disorder; GAD – No hierarchy = GAD ignoring the *DSM-IV* hierarchy rule with mood disorders; PD = Panic Disorder; SP = Specific Phobia; ANX NOS = Anxiety Disorder Not Otherwise Specified; ETOH A/D = Alcohol Abuse or Dependence; Drug A/D = Drug Abuse or Dependence; ADHD = Attention Deficit/Hyperactivity Disorder.

Table 2
Clinical and Psychosocial Characteristics of Depressed Psychiatric Outpatients with or without Current Comorbid Social Anxiety Disorder

Variables	Comorbidity Allowed			"Pure" Diagnoses		
	MDD + SAD <i>M(SD)</i>	MDD <i>M(SD)</i>	<i>t</i>	MDD + SAD <i>M(SD)</i>	MDD <i>M(SD)</i>	<i>t</i>
Age	37.3 (11.6)	41.3 (12.5)	-3.89**	37.3 (11.6)	43.5 (13.1)	-3.44**
CGI	3.2 (0.6)	3.1 (0.6)	1.67	3.0 (0.6)	3.0 (0.6)	0.62
GAF	48.7 (8.0)	51.9 (7.3)	-5.05**	50.7 (7.3)	54.3 (7.4)	-3.42**
Past Social	3.3 (1.1)	2.8 (1.0)	6.87**	3.2 (1.1)	2.6 (0.9)	4.59**
Current Social	3.6 (1.3)	3.0 (1.1)	5.34**	3.4 (1.2)	2.8 (1.1)	3.87**
Out of Work	2.8 (1.8)	2.2 (1.5)	3.73**	2.2 (1.6)	2.0 (1.5)	0.71
Hospital	0.6 (1.0)	0.4 (0.9)	2.10*	0.4 (0.8)	0.4 (1.0)	0.36
Duration	264.2 (452.2)	188.0 (414.4)	2.06*	291.9 (511.4)	106.9 (308.2)	2.82**
Episodes	6.4 (16.3)	5.3 (15.3)	0.84	3.7 (6.7)	4.5 (16.3)	-0.40
MDD onset	21.6 (11.6)	29.6 (14.6)	-7.57**	22.3 (11.7)	32.5 (14.6)	-5.70**
Suicidality	1.7 (1.3)	1.2 (1.3)	4.72**	1.4 (1.3)	1.0 (1.2)	2.56*
Attempts	0.6 (1.6)	0.4 (1.3)	1.79	0.3 (0.7)	0.2 (0.9)	0.19
Additional Diagnoses	1.9 (1.4)	1.1 (1.2)	6.38**	--	--	--

Note. Comorbidity Allowed = analyses including other comorbidity in both groups; "Pure" Diagnoses = no additional comorbidity included in either group; MDD = Major Depressive Disorder; SAD = Social Anxiety Disorder; CGI = Clinical Global Impressions Scale; GAF = Global Assessment of Functioning Scale; Past Social = past social functioning; Current Social = current social functioning; Out of Work = time out of work due to psychopathology; Hospital = number of hospitalizations; Duration = duration (in weeks) of current depressive episode; Episodes = total number of depressive episodes; MDD onset = age of onset of MDD; Suicidality = thoughts of death or suicide; Attempts = number of suicide attempts.

* $p < .05$;

** $p < .01$