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BODY DYSMORPHIC DISORDER AND SOCIAL PHOBIA: CROSS-SECTIONAL AND PROSPECTIVE DATA

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Abstract

Much attention has been paid to the relationship between body dysmorphic disorder (BDD) and obsessive-compulsive disorder (OCD). However, to our knowledge, no published study has focused directly on the relationship between BDD and social phobia (SP). This is striking given similar clinical features of the two disorders, data showing elevated comorbidity between them, and Eastern conceptualizations of BDD as a form of SP. In this study, 39.3% of 178 individuals with current BDD had comorbid lifetime SP, and 34.3% had current SP. SP onset was typically before BDD. Individuals with BDD, with and without lifetime SP, were similar on many general characteristics (e.g., age of BDD onset, gender distribution, BDD severity, overall functional disability). However, subjects with BDD+SP were significantly less likely to be employed, were more likely to report lifetime suicidal ideation, and had poorer global social adjustment on one of two measures. Both BDD and SP were associated with elevated social anxiety; subjects with BDD+SP experienced additional social anxiety that appeared independent of BDD symptoms. Examining 1-year prospective data available for 161 subjects, BDD+SP subjects were somewhat less likely to experience remission (partial or full) of their BDD symptoms over 1-year follow-up, although this difference was not statistically significant (hazard ratio = .64, $P = .18$). In summary, these findings, including elevated rates of SP in patients with BDD, highlight a need for additional research on the relationship between BDD and SP.

Keywords

body dysmorphic disorder; dysmorphophobia; social phobia; social anxiety disorder

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INTRODUCTION

Body dysmorphic disorder (BDD) is defined as a distressing or impairing preoccupation with an imagined or slight defect in appearance. Estimates vary, but research studies examining the prevalence of BDD suggest that this disorder is relatively common. For example, studies have shown that between 0.7% and 1.1% of individuals in the community have BDD [Otto et al., 2001]. A better understanding of BDD is important given its association with high levels of distress and markedly poor functioning and quality of life [Phillips, 2000; Phillips and Diaz, 1997].

There has been much debate over the classification of BDD, which is currently classified within the DSM-IV as a somatoform disorder [American Psychiatric Association, 1994]. However, in the United States and Europe, BDD is increasingly conceptualized as an obsessive–compulsive spectrum disorder [see Cohen and Hollander, 1997; Goldsmith et al., 1998]. Both BDD and obsessive–compulsive disorder (OCD) are characterized by preoccupations that are obsessional in nature, are accompanied by repetitive/ritualistic behaviors [Phillips et al., 1998], and may be characterized by a desire to have things “just right” [Phillips et al., 1998]. Supporting the observed similarities, elevated rates of comorbidity between the two disorders have been documented [Gunstad and Phillips, 2003; Hollander et al., 1993]. The similarity of BDD and OCD is also supported by similar descriptive characteristics [e.g., age of onset, gender ratio, employment status; Phillips et al., 1998] and treatment response profiles [Neziroglu and KhemlaniPatel, 2002; Phillips, 2002]. However, there are also data showing differences between BDD and OCD. For example, insight is poorer in BDD than in OCD [Eisen et al., 2004], and patients with BDD are less likely to be married and more likely to endorse suicidal ideation and to have attempted suicide due to their disorder [Phillips et al., 1998]. Patients with BDD also have higher rates of comorbid social phobia (SP) and major depression than patients with OCD [Phillips et al., 1998]. Finally, a recent preliminary study found that, unlike OCD [McDougle et al., 1990], augmentation of serotonin-reuptake inhibitors with a typical neuroleptic might not be efficacious for BDD [Phillips, 2005].

In contrast to OCD, the relationship between BDD and SP has received little empirical investigation. Clinical observations suggest that there may be a link between BDD and SP. For example, in the BDD literature there are frequent discussions of the social avoidance and introversion that is characteristic of these patients [Phillips, 1991]. Indeed, both SP and BDD are characterized by a tendency to feel socially anxious, defective, ashamed, and fearful of embarrassment, rejection, and ridicule [Phillips et al., 1998; Wilhelm et al., 1997]. Given the similarities in presentation, numerous authors have suggested the utility of assessing for the other disorder (BDD or SP) when one appears to be present. Specifically, Veale and colleagues [1996] suggested that patients presenting with SP should be routinely assessed for symptoms of BDD, and Wilhelm and colleagues [1997] made a similar suggestion, adding that the assessment of BDD may be particularly important for individuals with early-onset SP.

In addition to clinical observations, empirical data support a possible relationship between BDD and SP. Individuals with BDD have elevated levels of social anxiety similar in severity to that of patients with generalized SP [Veale et al., 1996], frequently endorse avoidance of social activities because of embarrassment over perceived defects in appearance [Phillips et al., 1993], and have significantly poorer social functioning than patients without BDD [Zimmerman and Mattia, 1998]. In addition, SP and BDD are commonly comorbid. BDD has been found to be the fourth most common comorbid disorder in patients with SP (Hollander and Aronowitz, 1999), and estimates of BDD's point prevalence in patients with SP range from 8% [Zimmerman and Mattia, 1998] to 12% [Wilhelm et al., 1997]. In patients with BDD, the point prevalence of comorbid SP ranges from 16% [Veale et al., 1996] to 69% [Zimmerman and Mattia, 1998], with the largest study to date ($N = 293$) finding a lifetime prevalence of

37% and current prevalence of 31% [Gunstad and Phillips, 2003]. In addition, BDD is associated with elevated rates of avoidant personality disorder, a close relative of generalized SP [Reich, 2001]. For example, Veale and colleagues [1996] found avoidant personality disorder to be the most common Axis II disorder (38%) in a sample of 50 individuals with BDD. Similar results were reported by Phillips and McElroy [2000], who found a prevalence of 43% in 74 subjects with BDD.

Finally, it is important to note that in Eastern cultures, BDD is conceptualized as a form of SP. In Western conceptualizations, based on the DSM, BDD is distinguished from SP and the culture-related syndrome of *taijin kyofusho*. However, the Japanese conceptualization of *taijin kyofusho* is broader in scope, encompassing Western conceptualizations of both SP and BDD [i.e., an inordinate concern with an imagined or exaggerated physical defect; Kleinknecht et al., 1997]. The Japanese diagnostic system distinguishes four subtypes of *taijin kyofusho*, and one of these, *shubokyofu*, is defined as “the phobia of a deformed body” [Suzuki et al., 2003, p. 1358]. This subtype is very similar to BDD as defined in DSM-IV.

Given the suggested relationship between BDD and SP from clinical observations, comorbidity data, and Eastern conceptualizations, it is surprising that the relationship between these two disorders has not been the focus of empirical study. Only a handful of studies have addressed the relationship between BDD and SP, focusing only on comorbidity rates. Therefore, our study has examined the relationship between BDD and SP in a large BDD sample by examining correlates of SP comorbidity. In addition, social anxiety generally (including that associated with BDD) and that independent of BDD were distinguished and examined. Finally, the impact of comorbid SP on the prospectively assessed course of BDD over 1-year follow-up was examined in what is, to our knowledge, the first prospective study of BDD's course.

METHODS

SUBJECTS

Subjects, 178 individuals diagnosed with current (past month) DSM-IV BDD, participated in a prospective naturalistic longitudinal study examining the course of BDD. This article is based on data from the baseline evaluations (conducted between January 2001 and June 2003), and the 1-year follow-up evaluations ($n = 161$). Subjects were deemed eligible based on meeting criteria for current DSM-IV BDD or its delusional variant (delusional disorder, somatic type), capability to be interviewed in person, and being at least 12 years old at the time of study inclusion. Subjects were excluded if there was evidence of an organic mental disorder. They were referred from a variety of sources: mental health professionals (46.0%), advertisements (38.6%), the program website and brochures (10.2%), friends and relatives (3.4%), and nonpsychiatrist physicians (1.7%). All subjects signed statements of informed consent/assent before participation, and all procedures were reviewed and approved by the Butler Hospital Institutional Review Board.

ASSESSMENTS

Assessment measures included both self-report and interviewer-administered scales. All interviewer-administered scales were conducted by experienced clinical interviewers, and each interview was subjected to an extensive clinical and clerical review and editing process conducted by senior project staff (a psychiatrist, a Ph.D. psychologist, and a clinical editor with over 15 years of clinical research experience). During the review process, senior staff read all clinical interviews, questionnaires, forms, and narrative summary reports to assess for completion, consistency of reporting, and validity of diagnoses and other ratings. Any inconsistencies or questions were discussed with the clinical interviewers, and a consensus was reached.

For this article, diagnostic information was derived from the interviewer-administered Structured Clinical Interview for DSM-IV—Nonpatient Version [SCID-I/NP; Spitzer et al., 1992] and the Structured Clinical Interview for DSM-IV Axis II Personality Disorders [SCID-II; First et al., 1997]. Demographics information (age, marital status, educational attainment) and reports of suicidality were assessed with the BDD Form [Phillips, unpublished data], a semistructured interview [cf. Phillips and Diaz, 1997, available from the authors upon request]. The interviewer-administered BDD-Yale–Brown Obsessive–Compulsive Scale (Y-BOCS) [Phillips et al., 1997] was utilized to rate current BDD severity, with higher scores indicative of greater severity. Functional disability during the past month was assessed with two measures: (1) the Longitudinal Interval Follow-Up Evaluation—Range of Impaired Functioning Tool [LIFE-RIFT; Leon et al., 1999], a reliable and valid semistructured measure of functional impairment in the domains of work, household duties, school, recreation, relationships with family, school, satisfaction, and global social adjustment (lower scores indicate better functioning) and (2) the interviewer-rated Global Assessment of Functioning Scale [GAF; Spitzer et al., 1992], with lower scores indicating more severe symptoms and poorer functioning. The LIFE-RIFT also provided information regarding current employment status. Self-reported social adjustment was rated across six domains (Work, Social and Leisure, Extended Family, Primary Relationship, Parental, and Family Unit) using the Social Adjustment Scale [SAS; Weissman and Bothwell, 1976; Weissman et al., 1978], with lower scores indicating better social functioning.¹

Social anxiety was assessed via SCID-I/NP diagnoses and two continuous measures. Overall levels of social anxiety were rated on the Social Phobia Inventory [SPIN; Connor et al., 2000], and social anxiety *independent of BDD* was assessed using the Duke Brief Social Phobia Scale [BSPS; Davidson et al., 1997]. The SPIN is a 17-item self-report questionnaire that assesses fear, avoidance, and physiological arousal associated with social anxiety during the past week. It has strong reliability and validity [Connor et al., 2000]. No special instructions were used for the SPIN in our study; therefore, SPIN scores reflect social anxiety from any source. The BSPS is an 18-item, interviewer-rated measure of fear, avoidance, and physiological arousal related to social anxiety during the past week. The BSPS has been shown to have strong reliability and validity [Davidson et al., 1997]. For our study, interviewers assessed and rated social anxiety independent of BDD. Specifically, interviewers asked subjects to describe the amount of anxiety, avoidance, and so forth, that they experienced when their BDD was in remission or that they would experience if they did not have BDD (e.g., if they were satisfied with the way they looked and did not have any concerns about their appearance). The BSPS showed strong internal consistency in this study ($\alpha = .93$). All baseline assessments were conducted once at the initial intake interview.

The course of BDD was assessed prospectively over a 1-year follow-up period following the baseline assessment using the LIFE, a reliable and valid semistructured interview and rating system for assessing the longitudinal course of mental disorders [Keller et al., 1987; Warshaw et al., 1994]. The follow-up assessment entailed administration of the LIFE 1 year after the baseline assessment, providing weekly ratings using the Psychiatric Status Rating Scale for the preceding year. Psychiatric status ratings (PSRs), disorder-specific ratings of disorder severity, were assigned for each disorder during each week of the follow-up period.

BDD-PSRs were defined as follows: A BDD-PSR of 1 or 2 = none or minimal BDD symptoms, a score of 3 or 4 reflects less than full DSM-IV criteria, and a score of 5–7 reflects full BDD criteria. Definitions for categorizing data regarding the course of BDD symptoms were defined a priori as follows: *Continuous BDD symptoms* were defined as meeting full DSM-IV BDD

¹The SAS was added after initial data collection and was therefore only available for a subset of subjects (50 subjects with SP and 77 subjects without SP).

criteria (PSR of 5–7) over the entire follow-up period; *partial remission* was defined as meeting less than full criteria (PSR of 3 or 4) for at least 8 consecutive weeks; and *full remission* was defined as having minimal or no BDD symptoms (PSR of 1 or 2) for at least 8 consecutive weeks.

STATISTICAL ANALYSES

SPSS 13.0 software was utilized to calculate means, standard deviations, and frequencies for the study variables. Baseline analyses were conducted on the full sample of subjects meeting criteria for a current (past month) diagnosis of BDD ($N = 178$), and prospective analyses were conducted on a subsample of 161 subjects that completed the 1-year follow-up assessment². Between-group differences for subjects meeting criteria for comorbid lifetime SP and those subjects not meeting criteria for comorbid SP were conducted using χ^2 analysis for categorical variables and t -tests for continuous variables. Tests were two-tailed, and the α level was .05. An α correction was not employed given the preliminary nature of the analyses and report of effect sizes throughout. Effect sizes reported represent $r_{effect\ size}$ [r_{es} ; see Rosenthal et al., 2000]. General guidelines for interpreting the size of r_{es} are as follows: .10 = small, .30 = medium, and .50 = large [see Rosenthal and Rosnow, 1991]. The impact of comorbid SP on the prospective course of BDD was examined using Cox [1972] proportional hazards regression. A significant α level of .05 was used, and full and partial remissions were combined given that few subjects experienced full remission. Finally, of note, we elected to compare individuals with and without lifetime SP (in contrast to current SP only) for a number of reasons: Research has shown that of numerous anxiety disorders, SP is associated with the lowest remission rates [Bruce et al., 2005]; individuals who achieve recovery from SP are likely to have a recurrence of the disorder [Bruce et al., 2005]; and individuals with lifetime SP, but not current SP, frequently continue to experience significant residual social anxiety symptoms. In addition, the occurrence of lifetime SP without current SP in our study was rare.

RESULTS

Table 1 shows demographic and clinical features of the sample. The sample was predominantly female, with a mean age in the early 30s. Approximately two-thirds were receiving psychiatric treatment at the time of the intake assessment. Of the 178 individuals meeting criteria for current BDD, 39.3% ($n = 70$) had comorbid lifetime SP and 34.3% ($n = 61$) met criteria for current SP. In comparison, 33.7% ($n = 60$) of the BDD subjects had comorbid lifetime OCD, and 25.8% ($n = 46$) met criteria for current OCD. BDD subjects with and without current SP did not differ significantly in terms of the presence of current OCD [$\chi^2(1, n = 60) = .43, P = .51, r_{effect\ size} = .08$].

The two groups (BDD vs. BDD+lifetime SP) were not found to differ significantly on demographic characteristics (see Table 1). However, subjects with BDD+SP were significantly less likely to be employed. The mean age of BDD onset for the full sample was 16.15 (6.98) and 16.69 (8.21) for subjects with BDD+SP. In contrast, the mean age of SP onset was 11.74 (4.17). In subjects with BDD+SP, the mean age of SP onset was significantly earlier than the mean age of BDD onset [$t(1,69) = 4.76, P < .001, r_{effect\ size} = .38$]. As shown in Table 1, the two groups did not differ significantly on their current BDD severity. However, the BDD+SP group had significantly more Axis I disorders (excluding SP). Subjects with BDD+SP were significantly more likely to meet criteria for avoidant personality disorder than subjects without SP [39.3% vs. 19.8%, respectively, $\chi^2(1, N = 157) = 7.17, P = .007, r_{es} = .21$], but the groups did not differ significantly on the number of Axis II diagnoses excluding avoidant PD.

²Given that follow-up data were not available for the full sample, we compared the subjects with and without follow-up data on their baseline characteristics. No group differences were found on demographic variables or the initial severity of BDD between those who did and did not go on to complete the 1-year follow-up.

As shown in Table 1, subjects with and without comorbid SP were not found to differ on lifetime rates of suicide attempts. However, subjects with BDD+SP were significantly more likely to report lifetime suicidal ideation. Given our finding that subjects with BDD+SP were more likely to meet criteria for a lifetime diagnosis of major depression [82.9% vs. 68.5%; $\chi^2(1, n = 148) = 4.56, P = .09, r_{\text{effect size}} = .16$], we repeated the analyses examining suicidal ideation in the subsamples of subjects with and without a history of major depression. For subjects *without* a history of major depression, BDD subjects with and without lifetime comorbid SP were not found to differ significantly on rates of suicidal ideation [$\chi^2(1, n = 46) = .43, P = .51, r_{\text{effect size}} = .10$, (66.7% and 55.9%, respectively)]. Similarly, for subjects *with* a history of major depression, BDD subjects with and without lifetime comorbid SP were not found to differ significantly on rates of suicidal ideation [$\chi^2(1, n = 132) = 2.39, P = .12, r_{\text{effect size}} = .13$ (89.7% and 79.7%, respectively)].

There was a trend for the BDD+SP group to be rated as having poorer global symptom severity and functioning on the GAF. The two groups did not differ on overall functional disability as determined by the total LIFE-RIFT score, although the BDD+SP subjects had poorer scores on this scale's global social adjustment item. However, the two groups were not found to differ significantly on self-reported social adjustment on the SAS (although the magnitude of the effect was similar to that observed for the LIFE-RIFT global social adjustment item, and the SAS comparison was conducted with a smaller sample). Finally, given that subjects with BDD+SP were less likely to be employed, we compared the two groups on rates of unemployment compensation, disability, and welfare. The groups did not significantly differ on rates of unemployment compensation or disability, but the subjects with BDD+SP were significantly less likely than subjects with BDD alone to receive financial assistance from welfare.

As expected, subjects with BDD+SP reported more social anxiety generally (on the SPIN) than subjects without SP. Furthermore, subjects with BDD+SP were also rated as having significantly more severe social anxiety independent of BDD symptoms (on the BSPS). Finally, generalized social anxiety (SPIN) and social anxiety independent of BDD (BSPS) were only moderately correlated ($r = .53, P < .001$), offering some support for the validity of the distinction.

Over 1 year of prospective follow-up, subjects with current BDD had a .09 probability of fully remitting from BDD and a .21 probability of partially remitting. The presence of comorbid SP at intake did not significantly predict a lower likelihood of BDD remission, although the hazard ratio was in the medium range (hazard ratio = .64, $P = .18$). Chi-square analyses revealed that patients with BDD+SP were not significantly more likely to receive treatment during the follow-up interval than patients with BDD alone [$\chi^2(1, N = 183) = .03, P = .86, r_{\text{effect size}} = .01$], suggesting that differential treatment seeking is not a likely explanation for any differences in course between these two groups³.

DISCUSSION

BDD has been widely conceptualized as an obsessive–compulsive spectrum disorder—in particular, as possibly being a “more psychotic, depressed, and socially phobic relative or variant of OCD” [Phillips et al., 1998, p. 574; Hollander, 1993]. Much effort has been devoted to exploring the intersection of BDD and OCD. However, our study is the first we are aware of that directly examines the relationship between BDD and SP. Our findings from a large sample of individuals with current BDD ($N = 178$) showed that approximately one third (34.3%) also met criteria for a current SP diagnosis. These findings are consistent with previous research documenting elevated rates of SP in individuals with BDD [e.g., Gunstad and Phillips,

³In addition, using data from the full study sample, Phillips et al. [in press] found that BDD patients that received treatment were not significantly more likely to achieve remission than untreated patients.

2003; Veale et al., 1996; Zimmerman and Mattia, 1998], and suggest that comorbid SP may occur more frequently than comorbid OCD. However, it remains unclear whether this finding indicates that BDD is more closely related to SP than to OCD, or if BDD's more frequent comorbidity with SP than with OCD reflects the higher prevalence of SP generally. Regardless, BDD and SP clearly co-occur. In addition to the heightened prevalence of SP in individuals with BDD, we also found that the mean age of onset for SP was significantly younger than the age of onset for BDD. These results are consistent with previous studies of patients with BDD [Brawman-Mintzer et al., 1995; Gunstad and Phillips, 2003], and patients with anxiety disorders [Wilhelm et al., 1997], demonstrating that onset of SP typically precedes the onset of BDD. For example, Wilhelm and colleagues found that the onset of SP preceded the onset of BDD in all cases studied, emerging an average of 12.6 years earlier than BDD. Similarly, Gunstad and Phillips [2003] found that the onset of SP preceded the onset of BDD in 60% of their sample, and began in the same year as BDD in another 18% of the sample. The temporal precedence of SP supports the validity of the diagnosis, suggesting that diagnosticians were not merely observing the social anxiety frequently associated with BDD, and raises questions regarding the shared and unique vulnerabilities for these two disorders.

We found that the two groups (BDD with and without lifetime SP) were similar on many demographic features (gender distribution, probability of being in treatment) and general clinical characteristics (overall functional disability, age of BDD onset). However, comorbid SP was associated with a lower employment rate, the presence of more Axis I diagnoses, and the presence of avoidant personality disorder (although the two groups did not differ in the number of Axis II diagnoses assigned, excluding avoidant personality disorder). Subjects with comorbid lifetime SP were also significantly more likely to report lifetime suicidal ideation than those without comorbid SP. However, follow-up analyses suggested that the differences in rates of suicidal ideation might be at least partially explained by differences in rates of lifetime major depression. Indeed, in a previous report from this sample, a logistic regression analysis indicated that suicidal ideation was significantly predicted by comorbid major depression ($P = .011$) and greater lifetime impairment due to BDD ($P = .008$), but not by comorbid SP [Phillips et al., 2005a]. A hypothesis that warrants investigation is whether SP *may* confer vulnerability to suicidal ideation via an increased likelihood of experiencing major depression. Finally, it is also interesting to note that our results were mixed regarding the impact of lifetime comorbid SP on social functioning. Subjects with BDD+SP were rated as having significantly poorer global social adjustment on the LIFE but did not differ from the BDD group on functional disability as reflected by the total LIFE-RIFT score or self-reported social adjustment on the SAS. This may reflect the severe impairment in social functioning that is characteristic of BDD, even in the absence of comorbid SP. Indeed, SAS scores for BDD subjects with and without SP were markedly impaired, falling over two standard deviations above (more impaired) means for a community sample [Weissman et al., 1978]. Furthermore, 18% of the sample currently received disability compensation. Additional research examining impairment in social functioning in patients with BDD, with and without SP, appears warranted.

Data from our study suggest that patients with BDD may experience elevated social anxiety both independent of their BDD and associated with their BDD. BDD severity scores (BDD-YBOCS scores) were significantly correlated with social anxiety as measured by the SPIN ($r = .37$, $P < .001$). In addition, SPIN scores, representing levels of social anxiety generally, for both groups were elevated above means for nonpatients reported in the literature. The SPIN mean score for the BDD+SP group was approximately three standard deviations above the mean for nonclinical samples, and the mean for the BDD without SP group was approximately two standard deviations above the mean for nonclinical samples [Connor et al., 2000]. In addition, subjects with BDD+SP scored notably higher than subjects without SP on the BSAPS, suggesting the presence of additional social anxiety independent of BDD. Furthermore, the

magnitude of this between group difference was quite large ($r_{effect\ size} = .70$), suggesting that subjects with both diagnoses experienced substantial further social anxiety in addition to that already associated with BDD. Finally, it is important to note that although the current data offer some support for the separability of social anxiety related to BDD and independent of BDD, further evaluation of the ability to differentiate these forms of social anxiety is warranted. We are not aware of previous efforts to disentangle this relationship and acknowledge that these forms of social anxiety may overlap in their clinical presentations and etiology.

Our findings, demonstrating very high comorbidity between BDD and SP, and elevated levels of social anxiety both associated with and “independent of” BDD, suggest that Eastern perspectives of BDD as a form of SP (or an “SP spectrum disorder”) are worthy of increased attention in the West. Clearly, more research is needed to examine the relationship between BDD, SP, OCD, and other possibly related disorders such as eating disorders, including their potential shared features and vulnerabilities. For example, it remains unclear whether BDD is more closely related to SP than to OCD, or whether the increased comorbidity rates between BDD and SP found in our study reflect the higher general prevalence of SP than of OCD. In addition, studies examining BDD and hypothesized related conditions will ultimately benefit from moving beyond demonstrations of overlap toward explaining the overlap. For example, are BDD and SP both characterized by an underlying heightened sensitivity to rejection, an internal focus of attention, and insecure attachment? Predictions based on clinical experience, theoretical conceptualizations, and existing data should be developed and tested. Clearly, additional research is needed to clarify many aspects of BDD's nosological status, and to guide classification of BDD in future revisions of the DSM. Indeed, reclassification of BDD as an anxiety disorder was considered during development of the DSM-IV but ultimately was not enacted due to inadequate data on this issue [Phillips and Hollander, 1996].

The size and diversity of our sample are strengths. However, this study also has limitations. First, information on SP subtypes (generalized vs. nongeneralized SP) was not available. Therefore, it is unclear to what extent each subtype of SP was represented in the current sample. Future studies are needed to distinguish between the two SP subtypes and examine whether they are differentially related to BDD. Another limitation is that our study is limited to primarily investigating the relationship between BDD and comorbid SP; studies are needed that compare individuals with BDD (but not SP) to individuals with SP (but not BDD). In addition, course data were obtained for only 1 year, which limited power to detect smaller effects of SP comorbidity on BDD's course of illness. In addition, given that approximately two-thirds of the subjects were receiving mental health treatment, the generalizability of the results to untreated subjects in the community is unclear. Finally, the large number of analyses conducted in our study, without use of an adjusted α level for statistical significance, calls for replication. Despite these limitations, our findings suggest that additional attention should be devoted to the relationship between BDD and SP.

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TABLE 1
Demographic and clinical variables of individuals with current BDD

Variable	Full sample (<i>N</i> = 178)	BDD without social phobia (<i>n</i> = 108)	BDD+lifetime social phobia (<i>n</i> = 70)	Comparisons between groups with and without comorbid SP
Female	126 (70.8%)	76 (70.4%)	50 (71.4%)	$\chi^2 (1, N = 178) = .02, P = .88, r_{es} = .01$
Age (mean and SD)	32.54 (12.25)	32.04 (11.87)	33.31 (12.85)	$t (1,176) = .68, P = .50, r_{es} = .05$
Race—white	149 (84.7%)	90 (84.1%)	59 (85.5%)	$\chi^2 (1, N = 176) = .06, P = .80, r_{es} = .02$
Marital status—never married	113 (63.5%)	66 (61.1%)	47 (67.1%)	$\chi^2 (1, N = 178) = .67, P = .41, r_{es} = .06$
Education—at least some college	124 (69.7%)	79 (73.1%)	45 (64.3%)	$\chi^2 (1, N = 178) = 1.58, P = .21, r_{es} = .09$
Currently employed	104 (58.4%)	71 (65.7%)	33 (47.1%)	$\chi^2 (1, N = 178) = 6.05, P = .01, r_{es} = .18$
Age of BDD onset	16.15 (6.98)	15.81 (6.06)	16.69 (8.21)	$t (1,176) = .82, P = .41, r_{es} = .06$
Age of SP onset	—	—	11.74 (4.17)	
Currently receiving mental health treatment	118 (66.3%)	70 (64.8%)	48 (68.6%)	$\chi^2 (1, N = 178) = .27, P = .61, r_{es} = .04$
Current BDD severity (BDD-Y-BOCS)	30.21 (6.87)	29.70 (6.90)	31.00 (6.79)	$t (1,176) = 1.23, P = .22, r_{es} = .09$
Number of Axis I diagnoses (excluding SP)	4.02 (1.66)	3.81 (1.61)	4.36 (1.70)	$t (1,176) = 2.18, P = .03, r_{es} = .16$
Number of Axis II diagnoses (excluding Avoidant Personality Disorder)	.60 (1.02)	.53 (.96)	.70 (1.12)	$t (1,155) = 1.04, P = .30, r_{es} = .08$
History of suicide attempt	50 (28.1%)	27 (25.0%)	23 (32.9%)	$\chi^2 (1, N = 178) = 1.29, P = .26, r_{es} = .08$
History of suicidal ideation	138 (77.5%)	78 (72.2%)	60 (85.7%)	$\chi^2 (1, N = 178) = 4.44, P = .04, r_{es} = .16$
LIFE-RIFT overall functional disability	13.84 (3.46)	13.62 (3.37)	14.17 (3.58)	$t (1,175) = 1.04, P = .30, r_{es} = .08$
LIFE global social adjustment	4.05 (.85)	3.94 (.86)	4.23 (.80)	$t (1,176) = 2.29, P = .02, r_{es} = .17$
SAS	2.36 (.52)	2.31 (.52)	2.43 (.52)	$t (1,125) = 1.23, P = .22, r_{es} = .11$
GAF	45.51 (10.87)	46.72 (10.85)	43.63 (10.70)	$t (1,176) = 1.87, P = .06, r_{es} = .14$
Receiving unemployment compensation	8 (4.5%)	5 (4.6%)	3 (4.3%)	$\chi^2 (1, N = 178) = .01, P = .91, r_{es} = .01$
Receiving welfare	6 (3.4%)	6 (5.6%)	0 (0%)	$\chi^2 (1, N = 178) = 4.03, P = .04, r_{es} = .15$
Receiving disability	32 (18.0%)	17 (15.7%)	15 (21.4%)	$\chi^2 (1, N = 178) = .93, P = .33, r_{es} = .07$
SPIN—overall social anxiety	31.92 (15.41)	27.61 (15.37)	38.28 (13.20)	$t (1,149) = 4.42, P < .001, r_{es} = .34$
BSPS—social anxiety independent of BDD	17.14 (13.91)	9.74 (8.25)	28.22 (13.33)	$t (1,173) = 11.34, P < .001, r_{es} = .65$

Note. Results are presented as *n* (%) of subjects or mean (standard deviation). r_{es} = *effect size*.