# Axis I Comorbidity in Body Dysmorphic Disorder

John Gunstad and Katharine A. Phillips

**Although research on body dysmorphic disorder (BDD) has increased in recent years, this disorder's comorbidity has received little empirical attention. Further work in this area is needed, as it appears that most patients with BDD have at least one comorbid disorder. This study examined axis I comorbidity and clinical correlates of comorbidity in 293 patients with DSM-IV BDD, 175 of whom participated in a phenomenology study and 118 of whom participated in treatment studies of BDD. Subjects were evaluated with the Structured Clinical Interview for DSM-III-R (SCID-P) and a semistructured instrument to obtain information on clinical correlates. Comorbidity was common, with a mean of more than two lifetime comorbid axis I disorders in both the phenomenology and treatment groups. In both groups, the most common lifetime comorbid axis I disorders were major depression, social phobia, obsessive compulsive disorder (OCD), and substance use disorders. Social phobia usually began before onset of BDD, whereas depression and substance use disorders typically developed after onset of BDD. A greater number of comorbid disorders was associated with greater functional impairment and morbidity in a number of domains. Thus, axis I comorbidity is common in BDD patients and associated with significant functional impairment.**



BODY DYSMORPHIC DISORDER (BDD), also known as dysmorphophobia, is a somatoform disorder characterized by a preoccupation with an imagined or slight defect in appearance that causes significant distress or functional impairment. BDD is relatively common,[1,2] frequently results in impairment in psychosocial functioning,[3] and is associated with high levels of perceived stress[4] and suicide attempts.[3,5] Patients with BDD report notably poor mental health-related quality of life.[6] Outpatients with BDD have more severe depression and lower Global Assessment of Functioning scores than outpatients without BDD.[7]

Although BDD has been increasingly researched in recent years, its comorbidity has received little attention. Further examination of this issue is needed, as studies suggest that a majority, and perhaps nearly all, BDD patients have at least one comorbid condition.[8-10] In one study, BDD patients were more likely than other psychiatric outpatients to have three or more comorbid axis I disorders.[7]

Mood and anxiety disorders frequently coexist with BDD (Table 1). In the largest published study of BDD that reported lifetime axis I comorbidity rates (N = 188), 88% of subjects met criteria for a mood disorder and 60% for an anxiety disorder on the Structured Clinical Interview for DSM-III-R (SCID-P).[8] The most common lifetime axis I disorders were major depression (82%), social phobia (38%), substance use disorders (36%), and obsessive compulsive disorder (OCD; 30%). As shown in Table 1, other studies, using various assessment methods, have also generally found that these disorders are often comorbid with BDD. Veale et al., however, found low rates of these disorders[5] for reasons that are unclear. Axis II disorders also appear relatively common in patients with BDD; reported rates range from 57% to 100%, with avoidant personality disorder most common.[5,11-13]

To the best of our knowledge, there are no reports of other aspects of axis I comorbidity in individuals with BDD. No previous study, for example, has examined the number and pattern of comorbid disorders, age of onset of BDD versus that of comorbid conditions, or clinical correlates of comorbidity. In addition, no study has reported the percentage of BDD patients without any comorbid conditions or differences in comorbidity rates between BDD patients who do and do not participate in treatment studies. In this study, we extend our previous work[3,8,14] by assessing axis I comorbidity rates in a larger sample (N = 293) and examining these previously unstudied aspects of comorbidity. Due to differences in recruitment procedures, we anticipated that participants in treatment studies would have lower rates of bipolar disorder and substance use disorders than phenomenology study participants. We also hypothesized that subjects with multiple comorbid disorders would have greater functional impairment and a higher number of suicide attempts and psychiatric hospitalizations than subjects with fewer or no

*From Butler Hospital and the Department of Psychiatry and Human Behavior, Brown Medical School, Providence, RI.*

*Address reprint requests to Katharine A. Phillips, M.D., Butler Hospital, 345 Blackstone Blvd, Providence, RI 02906.*



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**Table 1. Lifetime Axis I Comorbidity Rates (%) in Published Studies of Body Dysmorphic Disorder**

| Study | N | Assessment Instrument and Criteria | Major Depression | OCD | Social Phobia | Substance Use Disorder |
|---|---|---|---|---|---|---|
| Hollander et al. (1993)[9] | 50 | Clinical interview; DSM-III-R | 68 | 78 | 12 | 22 |
| Veale et al. (1996)[5] | 50 | SCID-P; DSM-III-R | 8 | 6 | 16 | 2 |
| Phillips & Diaz (1997)[8]* | 188 | SCID-P; DSM-III-R | 82 | 30 | 38 | 36 |
| Perugi et al. (1997)[10] | 58 | "Semistructured clinical interview"; DSM-III-R | 41 | 41 | 12 | —† |
| Zimmerman & Mattia (1998)[7] | 16 | SCID-P; DSM-IV | 69 | 38 | 69 | 6 |

*Reports on an expanded sample for which comorbidity rates were previously reported.[3,14]
†Rates of substance use disorders were not reported.

comorbid disorders. This hypothesis was based on studies of other psychiatric populations indicating that greater axis I comorbidity is associated with increased suicide attempts and lethality of the attempt,[15,16] as well as greater impairment in functioning.[17-19]

## METHOD

Subjects were referred from a variety of sources to a BDD research program for evaluation or treatment of BDD. All participants met DSM-IV criteria for BDD or its delusional variant (a type of delusional disorder, somatic type), which may be double-coded with BDD according to DSM-IV. There were 293 participants: 175 participated in a phenomenology study of BDD's clinical features,[3] 31 in an open-label study of fluvoxamine for BDD,[20] and 87 in placebo-controlled pharmacotherapy studies of BDD.[21] One hundred sixty-one (54.9%) subjects were females; the mean age was 31.3 ± 11.1 years. Written informed consent was obtained from all subjects.

The second author administered the SCID-P for DSM-III-R[22,23] to all subjects to assess axis I disorders (a study of axis II disorders from this sample has previously been reported[11]). Not otherwise specified (NOS) diagnoses were not made because of their subjective nature. Because BDD is not included in the SCID for DSM-III-R, BDD was assessed using a reliable SCID-like semistructured interview based on DSM-IV criteria.[24] Diagnoses of Tourette's syndrome and trichotillomania were based on SCID-like semistructured modules developed to assess DSM-III-R criteria for these disorders. Diagnoses of delusional disorder or psychotic disorder NOS that were entirely attributable to delusional beliefs about appearance were not considered to constitute comorbid disorders.

Participants were also interviewed with a semistructured instrument (Phillips KA, unpublished) to obtain information on variables such as suicide attempts, psychiatric hospitalizations, and demographic characteristics (marital status, current employment status, economic independence, educational attainment, and residential independence [i.e., living independently]). Subjects younger than 19 were excluded from analyses of marital status, employment, economic independence, and residential independence.

Comorbidity and clinical correlate data were analyzed separately for treatment study and phenomenology study participants. This was done because the treatment studies excluded patients with a current substance use disorder, current or lifetime bipolar disorder, current clinically significant suicidality, or current inpatient status. In addition, a placebo-controlled treatment study (n = 74) excluded individuals for whom 13 weeks of placebo treatment was considered excessively risky.[21] Compared to subjects in the treatment studies, those in the phenomenology study were more likely to be male (53% *v* 33%; $\chi^2 = 15.2$, $df = 1$, $P = .001$) and unmarried (86% *v* 71%; $\chi^2 = 9.4$, $df = 1$, $P = .002$). Subjects in the phenomenology group also had greater economic dependence (76% *v* 52%; $\chi^2 = 14.3$, $df = 1$, $P = .001$), greater residential dependence (50% *v* 26%; $\chi^2 = 14.5$, $df = 1$, $P = .001$), and a higher lifetime rate of psychiatric hospitalization (54% *v* 22%; $\chi^2 = 26.1$, $df = 1$, $P = .001$) and suicidal ideation (85% *v* 73%; $\chi^2 = 5.3$, $df = 1$, $P = .02$).

Between-group differences were tested using chi-square analysis for categorical variables and two-tailed *t* tests for continuous variables. Within-group effects for number of comorbid conditions were also tested using chi-square analyses. All missing data were excluded on a pairwise basis for analyses. Given the descriptive and exploratory nature of the analyses, we have reported all tests with significance values greater than 95% ($P < .05$). However, because of the number of significance tests conducted, caution should be used when interpreting significant results, as some of them, particularly those of only modest significance, may represent chance associations.

## RESULTS

Lifetime comorbidity was common (Table 2). Among both phenomenology and treatment study participants, major depression was most frequent, followed by social phobia, OCD, and substance use disorders. Comorbidity rates were generally similar in the phenomenology and treatment groups. The lower rates of bipolar disorder and substance use disorders in the treatment group were expected because of the treatment studies' exclusion criteria.

Phenomenology study participants had 2.4 ±