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Prevalence and clinical characteristics of body dysmorphic disorder in an adult inpatient setting†

Michelle Conroy, M.D.^a, William Menard, B.A.^b, Kathryn Fleming-Ives, M.D.^a, Poonam Modha, M.D.^a, Hilary Cerullo, D.O.^a, and Katharine A. Phillips, M.D.^{a,b,*}

^aDepartment of Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI 02906, USA

^bBody Dysmorphic Disorder and Body Image Program, Butler Hospital, Providence, RI 02906, USA

Abstract

Objective—Body dysmorphic disorder (BDD), a distressing or impairing preoccupation with an imagined or slight defect in appearance, is an often-severe, understudied disorder. We determined BDD's prevalence and clinical features on a general adult psychiatric inpatient unit. To our knowledge, only one previous prevalence study has been done in this setting.

Method—One hundred patients completed 3 self-report measures: the Body Dysmorphic Disorder Questionnaire (BDD-Q), Beck Anxiety Inventory (BAI) and Center for Epidemiologic Studies Depression Scale (CES-D). Those who screened positive for BDD were interviewed to confirm *DSM-IV* BDD and its clinical features. Charts were reviewed for demographic and clinical information.

Results—BDD was diagnosed in 16.0% (95% CI=8.7–23.3%) ($n=16$) of patients. A high proportion of those with BDD reported that BDD symptoms contributed to suicidality. Patients revealed BDD symptoms to a mean of only 15.1%±33.7% lifetime mental health clinicians; only one (6.3%) reported symptoms to his current inpatient psychiatrist. Most did not disclose their symptoms due to embarrassment. Those with BDD were younger ($P=.008$) and had higher CES-D scores ($P=.008$). The two groups did not significantly differ on BAI score, demographic characteristics or discharge diagnoses.

Conclusions—BDD is relatively common but underdiagnosed in psychiatric inpatients and is associated with more severe depressive symptoms.

Keywords

Body dysmorphic disorder; Prevalence; Inpatients; Somatoform disorders

1. Introduction

Body dysmorphic disorder (BDD), a distressing or impairing preoccupation with an imagined or slight defect in appearance (e.g., a “deformed” nose or facial “scarring”), causes marked impairment in functioning and is associated with very poor quality of life [1-3]. For example, two studies found that individuals with BDD had SF-36 scores indicating poorer mental health-related quality of life than normative scores for the US population, Type 2 diabetes, a recent

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* Corresponding author. Butler Hospital, Providence, RI 02906, USA. Tel.: +1 401 455 6490; fax: +1 401 455 6539. E-mail address: katharine_phillips@brown.edu (K.A. Phillips).

myocardial infarction, or clinical depression [4,5]. Comorbidity is common, with the most frequent lifetime comorbid disorders being major depression, substance abuse or dependence, social phobia and obsessive compulsive disorder (OCD) [3].

To our knowledge, four studies have assessed BDD's prevalence in community settings [6-9]. A population-based survey in Germany ($n=2552$) reported a current prevalence of 1.7% (95% CI=1.2–2.1%) [6]. A higher proportion of those with BDD reported suicidal ideation and suicide attempts due to appearance concerns [6]. An epidemiologic survey of somatoform disorders in Florence, Italy, ($n=673$) reported a 1-year BDD prevalence of 0.7% [7]. A US study ($n=976$) reported a point prevalence of 0.7% in a community sample of women ages 36–44 years [8]. Another US study in a community setting ($n=796$) reported a lifetime prevalence of 1.1% [9]. Smaller studies have examined BDD's prevalence in outpatient psychiatric samples, with a wide range of reported rates [3]. For example, the reported prevalence ranges from 8% to 37% in patients with OCD [10-12], 11% to 13% in patients with social phobia [11,12], 26% in patients with trichotillomania [13] and 14% to 42% in patients with atypical major depression [14-16]. Studies in nonclinical student samples have reported a prevalence from 2.3% to 13% [3,17-20]. Taken together, these findings suggest that BDD is relatively common.

To our knowledge, only two studies have examined BDD's prevalence in a psychiatric inpatient setting [21,22], even though studies suggest that a high proportion of individuals with BDD have been psychiatrically hospitalized [23]. One previous inpatient study, conducted in a university hospital in the Midwest, found that 13.1% (95% CI=6.9–19.3%) ($n=16$) of 122 inpatients had BDD [21]. None had been diagnosed with BDD by their physician during hospitalization, even though most patients considered their BDD symptoms their “biggest” or a “major” problem. All subjects said they would not reveal BDD symptoms spontaneously to their treatment provider due to shame. Inpatients with BDD had significantly lower GAF scores and twice the rate of suicide attempts as patients without BDD. The other previous inpatient study, conducted on an inpatient adolescent psychiatric unit, found that 4.8% (95% CI=3.3–10.1%) of 208 patients had definite BDD, and an additional 1.9% (95% CI=0.1–3.7%) had probable BDD [22]. Compared to those without BDD, adolescent inpatients with BDD had significantly higher scores on standard measures of anxiety, depression and suicidality.

In the present study, we assessed BDD's prevalence and clinical correlates in consecutively admitted inpatients on a general adult psychiatric unit in a teaching hospital. We hypothesized that patients with BDD would have more severe depressive and anxiety symptoms than those without BDD. This hypothesis was based on previous findings of a high prevalence of comorbid major depressive disorder [10,24,25] and high levels of depression and anxiety in individuals with BDD [22,26,27]. To our knowledge, this is the first study to use standard measures of depression and anxiety, and to assess certain other clinical features, in adult inpatients with BDD.

2. Methods

One hundred forty-two consecutively admitted patients on a general psychiatric inpatient unit at a private nonprofit teaching hospital were considered for study participation. With the knowledge of the patient's treating psychiatrist, a member of the research team approached each patient and asked if he/she would be interested in hearing about the opportunity to participate in a research study. Subjects considered unlikely to be able to provide informed consent or meaningful data were not approached and were excluded from participation. This procedure excluded patients with current psychosis ($n=8$), delirium/dementia ($n=5$), mental retardation ($n=1$), violent behavior in the hospital ($n=1$) and those who did not speak English or could not read at least at an eighth-grade level ($n=5$). Patients under age 18 years ($n=1$) were

also excluded. Patients with acute mania, acute psychosis and delirium were reconsidered daily for eligibility for study participation in consultation with their inpatient psychiatrist.

Thirteen (9.2%) of the 142 patients declined to participate. Five did not want to participate in research, two had paranoia and six declined to give a reason. Eight (5.6%) were excluded because their inpatient stay was too brief (<24 h in most cases). The remaining 100 patients (67.0% female; mean age=39.5±12.7) provided written informed consent for study participation. The hospital institutional review board approved the study.

The 100 participants completed the Body Dysmorphic Disorder Questionnaire (BDD-Q), a brief self-report screening measure for *DSM-IV* BDD [3]. The BDD-Q asks individuals if they worry about the appearance of some body areas which they consider especially unattractive. Those who respond affirmatively are asked whether they think about their appearance concerns a lot and wish they could think about them less, how much time they spend thinking about their appearance each day, the degree of distress or emotional pain caused by the perceived defects, and resulting functional impairment. The BDD-Q's sensitivity has previously been demonstrated to be 100% in psychiatric inpatient, psychiatric partial hospital and dermatology outpatient settings, with a specificity of 89–93% [21,28,29]. Subjects also completed two additional self-report measures: the Center for Epidemiologic Studies Depression Scale (CES-D) and the Beck Anxiety Inventory (BAI). The CES-D is a reliable, valid and widely used 20-item self-report measure which assesses depressive symptom severity during the past week [30]. Scores range from 0 to 60, with a score of 16 or higher identifying subjects with a depressive illness [30]. The BAI is a reliable, valid and widely used 21-item self-report measure of anxiety during the past week, with a focus on somatic symptoms [30]. Scores range from 0 to 63, with higher scores reflecting greater anxiety.

Subjects who appeared to meet full criteria or sub-threshold criteria for *DSM-IV* BDD on the BDD-Q ($n=50$) were further evaluated in a semi-structured clinical interview conducted by one of two highly trained clinical interviewers with expertise in assessing BDD. These interviewers determined whether *DSM-IV* criteria for current or lifetime BDD were met using the reliable Structured Clinical Interview for *DSM-IV* (SCID-I/P, version 2.0) [31]. The *DSM-IV* diagnostic criteria for BDD are as follows: (A) Preoccupation with an imagined defect in appearance; if a slight physical anomaly is present, the person's concern is markedly excessive. (B) The preoccupation causes clinically significant distress or impairment in social, occupational or other important areas of functioning. (C) The preoccupation is not better accounted for by another mental disorder (e.g., dissatisfaction with body shape and size in anorexia nervosa) [32]. The research team reviewed interview material from all interviewed subjects, and a consensus was reached regarding the presence or absence of *DSM-IV* BDD. A defect rating scale was used to ascertain that any perceived appearance defects were nonexistent or slight, as required by the *DSM-IV* BDD criteria (1=no defect present; 2=minimal, slight defect present; 3=defect present, clearly noticeable at conversational distance; 4=moderately severe defect present; 5=severe defect present). This scale has high inter-rater reliability [29].

To ensure that patients with an eating disorder were not misdiagnosed as having BDD (as required by *DSM-IV* Criterion C for BDD), the following procedure was used. If a subject's appearance concerns focused only on body weight or a concern that body areas were too fat, we administered the eating disorder section of the Structured Clinical Interview for *DSM-IV* Axis I Disorders, Patient Edition [31]. If the subject's body image concerns were better accounted for by anorexia nervosa, bulimia nervosa or eating disorder NOS, BDD was not diagnosed. With the use of this procedure, one subject was excluded from the diagnosis of BDD. For subjects excessively concerned with their weight, we obtained self-reported height and weight. Because the *DSM-IV* BDD criteria specify that the appearance defect must be

“imagined” or “slight,” subjects who had only weight concerns and who were overweight or obese, based on a body mass index (BMI) of 25 or higher, were not diagnosed with BDD.

A brief version of the BDD Data Form, a semi-structured measure used in previous studies (e.g., Refs. [2,23,33]), obtained information on BDD’s clinical features, including age of onset, body areas of concern (data were obtained on up to three main areas of concern for each subject) and disclosure of BDD symptoms to previous or current providers. A question was added to determine the reasons for not disclosing BDD symptoms to providers. The relationship between BDD symptoms and the current psychiatric hospitalization as well as lifetime suicidal ideation, suicide attempts and substance use (in the subject’s view) was ascertained (1=BDD was the only/main reason for the behavior, 2=BDD was a major reason for the behavior, 3=BDD was somewhat of a reason for the behavior, 4=BDD was a minor reason for the behavior and 5=BDD had nothing to do with the behavior). Clinical records of all subjects were reviewed to obtain information on age, gender, race, marital status and primary discharge diagnosis.

The proportion (and 95% confidence interval) of subjects who met *DSM-IV* criteria for current or lifetime BDD was calculated. Means, standard deviations and frequencies were computed. Between-group comparisons used χ^2 analysis for categorical variables and one-way analysis of variance (ANOVA) for continuous variables. All tests were two tailed; the alpha level was .05. Effect sizes estimates were determined for χ^2 analyses with Cramer’s V and for ANOVA with eta (.10=small, .30=medium, .50=large for both effect size measures).

3. Results

Of the 100 subjects, 16.0% (95% CI=8.7–23.3%) were diagnosed with lifetime (past or current) BDD, 69.0% ($n=11$) of whom had current BDD and 31.0% ($n=5$) had past BDD. The 100 study participants did not differ significantly in terms of age or gender from the patients who did not participate in the study. Of those with BDD, 68.8% were female, and the mean age was 31.9 ± 11.0 years. Patients with BDD reported excessive concern with a broad array of body areas, and most individuals had multiple concerns (Table 1). Those with BDD revealed their body image concerns to a mean of only $15.1 \pm 33.7\%$ of all mental health clinicians who treated them over their lifetime, and only one revealed their BDD symptoms to their current inpatient psychiatrist. The most common reason for not disclosing appearance concerns to treatment providers was embarrassment (31.3%, $n=5$) (Table 1).

Among all patients with BDD, one quarter reported that BDD was a major reason or somewhat of a reason for their current hospitalization; among those with current BDD, this was the case for 33.8% (Table 1). All subjects with BDD reported a history of suicidal ideation; 50% ($n=8$) reported that BDD symptoms contributed at least somewhat to their suicidal thoughts. Of those with BDD, 93.8% ($n=15$) reported a history of suicide attempts, 33.4% ($n=5$) of whom reported that their BDD symptoms contributed at least somewhat to a prior attempt. Of the 75% ($n=12$) of BDD subjects who reported substance use, 41.6% ($n=5$) reported that their substance use was at least somewhat related to their BDD symptoms.

The 16 subjects with BDD were younger ($P=.008$) than those without BDD, but did not significantly differ in terms of gender, race or marital status (Table 2). Consistent with our hypothesis, subjects with BDD had significantly higher ($P=.008$) CES-D scores; the effect size was close to medium. Subjects with BDD had somewhat, although nonsignificantly, higher BAI scores, with a small to medium effect size. Primary discharge diagnoses for those with and without BDD did not significantly differ. The most common discharge diagnoses in both the BDD and non-BDD groups were a unipolar mood disorder (68.8% vs. 52.4%, respectively) and bipolar disorder (18.8% and 21.4%, respectively). Additional discharge diagnoses among the 100 subjects were a psychotic disorder (15.0%), anxiety disorder (3.0%), substance use

disorder (2.0%), eating disorder (2.0%), adjustment disorder (1.0%) and borderline personality disorder (1.0%).

4. Discussion

Our finding that 16.0% (95% CI=8.7–23.3%) of general adult psychiatric inpatients had current or lifetime BDD is similar to that reported in the only prior study in a largely adult inpatient setting, which found a prevalence of 13.1% [21]. While a previous adolescent inpatient study found a lower BDD prevalence (4.8% had definite BDD and an additional 1.9% had probable BDD) [22], this may reflect the fact that not all adolescents had passed through the period of risk for developing BDD. Of note, in the present study, only one of 16 patients revealed their BDD symptoms to their current inpatient psychiatrist, which is similar to the finding of Grant et al. [21] that BDD was not diagnosed in any of 16 BDD patients during their current inpatient stay. We additionally found that patients had revealed their BDD symptoms to only a small proportion of previous mental health providers. The most common reasons — embarrassment, fear of being negatively judged and fear that the symptoms would not be understood — are consistent with clinical observations that BDD may be trivialized or mistaken for vanity [3]. Similarly, all BDD patients in the study of Grant et al. [21] said they would not initiate a discussion about their appearance concerns with their mental health provider due to feelings of shame. These findings highlight the importance of screening specifically for BDD [3].

Our finding that BDD patients had more severe depressive symptoms is similar to that of the adolescent inpatient study of Dyl et al. [22], in which adolescents with BDD had more severe depressive symptoms on the Reynolds Adolescent Depression Scale [34] than adolescents without BDD. In a study in a partial hospital setting, BDD patients had significantly higher scores on the Hamilton Depression Rating Scale than those with OCD [26]. The reason for more severe depressive symptoms in the BDD group is unclear. Our finding that discharge diagnoses did not significantly differ between subjects with BDD and those without BDD suggests that this difference was not accounted for by comorbidity, although we did not systematically assess all comorbid disorders in this study. The relationship between BDD and depressive symptoms is complex, with depressive symptoms in patients with BDD appearing to often (although not always) be largely secondary to BDD [3,35].

Both groups had anxiety scores in the moderate to severe range (score of 19–29), with scores for BDD patients (29.4 ± 14.7) somewhat, although not significantly, higher than for non-BDD patients (23.5 ± 13.2). In the previously noted adolescent inpatient study, BDD patients had significantly higher anxiety on the Multidimensional Anxiety Scale for Children–Short Version (MASC-10) [36] than those without BDD [22]. One BDD-OCD comparison study found that BDD patients had higher state anxiety on the Hamilton Anxiety Scale than OCD patients [26], whereas another BDD-OCD comparison study found higher state anxiety in OCD on one of two anxiety measures [27]. BDD patients appear to have high levels of social anxiety [37,38], which, however, is not a focus of the BAI, which evaluates primarily physiological anxiety symptoms. Additional studies that examine anxiety, including social anxiety, are needed in BDD.

A substantial proportion of BDD patients reported that their BDD symptoms were a major reason or somewhat of a reason for their suicidal ideation (50.0%) or suicide attempts (31.3%). This finding is consistent with studies of out-patients ascertained for BDD, in which 45–70% reported a history of suicidal ideation attributed primarily to BDD [39,40], and 16% (of 100 subjects) attributed at least one suicide attempt primarily to BDD [40]. A limitation of the present study is that we did not obtain suicidality data in patients without BDD and thus cannot compare suicidality in patients with and without BDD. In the study of Grant et al. [21], however, inpatients with BDD had approximately twice as many suicide attempts as those without BDD,

and Dyl et al. [22] found that mean scores on the Suicide Probability Scale [41] were significantly higher for adolescent inpatients with BDD than those without BDD. Although suicidality in BDD has only been minimally studied, suicidal ideation and attempts appear common in these individuals, and the rate of completed suicide appears markedly high [42, 43]. This important topic needs further study, using standard suicidality measures, in a variety of settings.

This study raises several interesting diagnostic issues. Like many other disorders in *DSM-IV*, patients must experience clinically significant distress or functional impairment to meet diagnostic criteria for BDD. Whereas this judgment can be easily made in more severe cases, it can be more difficult in milder cases [3]. How this criterion is operationalized affects prevalence results and requires further study in BDD and other disorders. Another issue is that BDD's diagnostic criteria require that the perceived defect be "imagined" or only slight. In our clinical experience, this judgment is often easily made [3], and a study in a dermatology setting found high inter-rater agreement for ratings of physical "deformities" [29]. For patients with minor appearance "defects" (e.g., acne), however, a subjective aesthetic judgment may be required. In our study, several patients were concerned only with their weight (none of whom met *DSM-IV* criteria for anorexia nervosa or bulimia nervosa). In these cases, we attempted to avoid subjectivity by using the BMI, considering individuals with a BMI of 25 or higher to not meet criteria for BDD. This somewhat conservative cut point excluded several subjects with weight concerns who otherwise would have met criteria for BDD because they were only "slightly" overweight. For example, one of these participants reported thinking about her weight for 8–10 h a day with significant associated distress, but was not diagnosed with BDD due to her BMI. In addition, BMI does not account for body structure or frame, which may make an individual who is technically overweight appear of "normal" weight or only "slightly" overweight. For both of these reasons, BDD may have been underdiagnosed in this study.

Study limitations include nonparticipation of 13 of 121 eligible subjects and exclusion of eight patients due to the brevity of their hospitalization (although they did not significantly differ in age or gender from the rest of the sample). Another limitation is that we did not systematically assess all comorbid disorders with a measure such as the Structured Clinical Interview for *DSM-IV* Axis I disorders. Our statistical analyses may involve Type II error, although effect sizes are provided to estimate the magnitude of group differences. Several variables reflect current status (e.g., depressive symptoms), whereas some subjects had past but not current BDD. Another limitation is that BMI was based on self-reported height and weight. Finally, this study was conducted at a private nonprofit teaching hospital in the northeastern United States on a unit where a majority of patients had a primary diagnosis of a mood disorder; the generalizability of the results to other settings, hospitals or geographic regions is unknown. Additional, larger prevalence studies are needed in other samples and settings.

In summary, BDD appears relatively common but underrecognized in psychiatric inpatients. Inpatients with BDD had more severe depressive symptoms, and a high proportion reported that BDD symptoms contributed to suicidality. However, these patients often feel embarrassed by their symptoms and usually do not disclose them to providers. Therefore, it is important to screen psychiatric inpatients for BDD.

References

1. Phillips KA. Body dysmorphic disorder: the distress of imagined ugliness. *Am J Psychiatry* 1991;148:1138–49. [PubMed: 1882990]
2. Phillips KA, McElroy SL, Keck PE Jr, Pope HG, Hudson JI. Body dysmorphic disorder: 30 cases of imagined ugliness. *Am J Psychiatry* 1993;150:302–8. [PubMed: 8422082]

3. Phillips, KA. The broken mirror: understanding and treating body dysmorphic disorder. New York: Oxford University Press; 1996. revised and expanded edition, 2005
4. Phillips KA. Quality of life for patients with body dysmorphic disorder. *J Nerv Ment Dis* 2000;188:170–5. [PubMed: 10749282]
5. Phillips KA, Menard W, Fay C, Pagano M. Psychosocial functioning and quality of life in body dysmorphic disorder. *Compr Psychiatry* 2005;46:254–60. [PubMed: 16175755]
6. Rief W, Buhlmann U, Wilhelm S, Borkenhagen A, Brahler E. The prevalence of body dysmorphic disorder: a population based survey. *Psychol Med* 2006;36:877–85. [PubMed: 16515733]
7. Faravelli C, Salvatori S, Galassi F, Aiazzi L, Drei C, Cabras P. Epidemiology of somatoform disorders: a community survey in Florence. *Soc Psychiatry Psychiatr Epidemiol* 1997;32:24–9. [PubMed: 9029984]
8. Otto MW, Wilhelm S, Cohen LS, Harlow BL. Prevalence of body dysmorphic disorder in a community sample of women. *Am J Psychiatry* 2001;158:2061–3. [PubMed: 11729026]
9. Bienvenu OJ, Samuels JF, Riddle MA, et al. The relationship of obsessive-compulsive disorder to possible spectrum disorders: results from a family study. *Biol Psychiatry* 2000;48:287–93. [PubMed: 10960159]
10. Hollander E, Cohen LS, Simeon D. Body dysmorphic disorder. *Psych Ann* 1993;23:359–64.
11. Brawman-Mintzer O, Lydiard RB, Phillips KA, et al. Body dysmorphic disorder in patients with anxiety disorders and major depression: a comorbidity study. *Am J Psychiatry* 1995;152:1665–7. [PubMed: 7485632]
12. Wilhelm S, Otto MW, Zucker BG, Pollack MH. Prevalence of body dysmorphic disorder in patients with anxiety disorders. *J Anxiety Disord* 1997;11:499–502. [PubMed: 9407269]
13. Soriano JL, O'Sullivan RL, Baer L, Phillips KA, McNally RJ, Jenike MA. Trichotillomania and self-esteem: a survey of 62 female hair pullers. *J Clin Psychiatry* 1996;57:77–82. [PubMed: 8591973]
14. Phillips KA, Nierenberg AA, Brendel G, Fava M. Prevalence and clinical features of body dysmorphic disorder in atypical major depression. *J Nerv Ment Dis* 1996;184:125–9. [PubMed: 8596110]
15. Nierenberg AA, Phillips KA, Petersen TJ, et al. Body dysmorphic disorder in outpatients with major depression. *J Affect Disord* 2002;69:141–8. [PubMed: 12103460]
16. Perugi G, Akiskal HS, Lattanzi L, et al. The high prevalence of “soft” bipolar (II) features in atypical depression. *Compr Psychiatry* 1998;39:63–71. [PubMed: 9515190]
17. Mayville S, Katz RC, Gipson MT, Cabral K. Assessing the prevalence of body dysmorphic disorder in an ethnically diverse group of adolescents. *J Child Fam Stud* 1999;8:357–62.
18. Cansever A, Uzun O, Donmez E, Ozsahin A. The prevalence and clinical features of body dysmorphic disorder in college students: a study in a Turkish sample. *Comprehen Psychiatry* 2003;44:60–4.
19. Bohne A, Wilhelm S, Keuthen NJ, Florin I, Baer L, Jenike MA. Prevalence of body dysmorphic disorder in a German college student sample. *Psychiatry Res* 2002;109:101–4. [PubMed: 11850057]
20. Biby EL. The relationship between body dysmorphic disorder and depression, self-esteem, somatization, and obsessive-compulsive disorder. *J Clin Psychol* 1998;54:489–99. [PubMed: 9623753]
21. Grant JE, Kim SW, Crow SJ. Prevalence and clinical features of body dysmorphic disorder in adolescent and adult psychiatric inpatients. *J Clin Psychiatry* 2001;62:517–22. [PubMed: 11488361]
22. Dyl J, Kittler J, Phillips KA, Hunt JI. Body dysmorphic disorder and other clinically significant body image concerns in adolescent psychiatric inpatients: prevalence and clinical characteristics. *Child Psychiat Hum Dev* 2006;36:369–82.
23. Phillips KA, Diaz S. Gender differences in body dysmorphic disorder. *J Nerv Ment Dis* 1997;185:570–7. [PubMed: 9307619]
24. Phillips KA, Didie ER, Menard W. Clinical features and correlates of major depressive disorder in individuals with body dysmorphic disorder. *J Affect Disord* 2007;97:129–35. [PubMed: 16893571]
25. Gunstad J, Phillips KA. Axis I comorbidity in body dysmorphic disorder. *Comprehen Psychiatry* 2003;44:270–6.
26. Saxena S, Winograd A, Dunkin JJ, et al. A retrospective review of clinical characteristics and treatment response in body dysmorphic disorder versus obsessive compulsive disorder. *J Clin Psychiatry* 2001;62:67–72. [PubMed: 11235937]

27. McKay D, Neziroglu F, Yaryura-Tobias JA. Comparison of clinical characteristics in obsessive-compulsive disorder and body dysmorphic disorder. *J Anxiety Disord* 1997;11:447–54. [PubMed: 9276787]
28. Phillips, KA.; Atala, KD.; Pope, HG. Diagnostic instruments for body dysmorphic disorder. New Research Program and Abstracts, American Psychiatric Association 148th Annual Meeting; Miami: APA. 1995. p. 157
29. Phillips KA, Dufresne RG, Wilkel CS, Vittorio CC. Rate of body dysmorphic disorder in dermatology patients. *J Am Acad Dermatol* 2000;42:436–41. [PubMed: 10688713]
30. American Psychiatric Association Taskforce for the Handbook of Psychiatric Measures. Handbook of Psychiatric Measures. Washington (DC): American Psychiatric Association; 2000.
31. First, MB.; Gibbon, M.; Spitzer, RL. Structured Clinical Interview for DSM-IV Axis I Disorders, Patient Edition (SCID-I/P, Version 2.0). New York: Biometrics Research; 1996.
32. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington (DC): American Psychiatric Association; 2000.
33. Phillips KA, Menard W, Fay C, Weisberg R. Demographic characteristics, phenomenology, comorbidity, and family history in 200 individuals with body dysmorphic disorder. *Psychosomatics* 2005;46:317–32. [PubMed: 16000674]
34. Reynolds, WM. Reynolds adolescent depression scale manual. Odessa: Psychological Assessment Resources; 1987.
35. Phillips KA, Stout RL. Associations in the longitudinal course of body dysmorphic disorder with major depression, obsessive compulsive disorder, and social phobia. *J Psychiatr Res* 2006;40:360–9. [PubMed: 16309706]
36. March, JS. Multidimensional anxiety scale for children short version (MASC-10). New York: Multi-Health Systems; 1997.
37. Coles ME, Phillips KA, Menard W, et al. Body dysmorphic disorder and social phobia: cross-sectional and prospective data. *Depress Anxiety* 2006;23:26–33. [PubMed: 16278832]
38. Pinto A, Phillips KA. Social anxiety in body dysmorphic disorder. *Body Image: An International Journal of Research* 2005;2:401–5.
39. Perugi G, Giannotti D, Frare F, et al. Prevalence, phenomenology, and comorbidity of body dysmorphic disorder (dysmorphophobia) in a clinical population. *Int J Clin Pract* 1997;1:77–82.
40. Phillips KA, McElroy SL, Keck PE Jr, Pope HG Jr, Hudson JI. A comparison of delusional and nondelusional body dysmorphic disorder in 100 cases. *Psychopharmacol Bull* 1994;30:179–86. [PubMed: 7831453]
41. Cull, JG.; Gill, WS. Manual for the suicide probability scale. Los Angeles: Western Psychological Services; 1982.
42. Phillips KA, Menard W. Suicidality in body dysmorphic disorder: a prospective study. *Am J Psychiatry* 2006;163:1280–2. [PubMed: 16816236]
43. Phillips KA, Coles M, Menard W, Yen S, Fay C, Weisberg RB. Suicidal ideation and suicide attempts in body dysmorphic disorder. *J Clin Psychiatry* 2005;66:717–25. [PubMed: 15960564]

Table 1

Clinical characteristics of 16 subjects with BDD on a general inpatient psychiatric unit

Variable^a	
Age of BDD onset	15.8±6.4
Body areas of concern ^b	
Stomach	37.5 (6)
Breasts/pectoral muscles	25.0 (4)
Face (overall)	18.8 (3)
Hair	18.8 (3)
Nose	18.8 (3)
Skin (acne/scars)	18.8 (3)
Thighs	18.8 (3)
Buttocks	12.5 (2)
Legs	12.5 (2)
Arm/wrist	6.3 (1)
Back	6.3 (1)
Eyebrows	6.3 (1)
Feet	6.3 (1)
Teeth	6.3 (1)
Weight	6.3 (1)
Mean % of mental health care providers BDD was revealed to	15.1±33.7
Reason for not disclosing BDD symptoms to health care provider ^c	
Too embarrassed	31.3 (5)
Afraid of being judged negatively	25.0 (4)
Felt provider wouldn't understand	25.0 (4)
Didn't know there was treatment for body image concerns	18.8 (3)
Provider didn't ask about appearance concerns	18.8 (3)
Didn't feel body image concerns were a big problem	18.8 (3)
Didn't want to know body image concerns were a real problem	18.8 (3)
Other reason	18.8 (3)
Didn't think other people had this problem	6.3 (1)
Extent current hospitalization was related to BDD ^d	
Major reason	8.3 (1)
Somewhat of a reason	25.0 (3)
Minor reason	16.7 (2)
Not a reason	50.0 (6)
Suicidal ideation (lifetime)	100.0 (16)
Extent suicidal ideation related to BDD (lifetime)	
Major reason	12.5 (2)
Somewhat of a reason	37.5 (6)
Minor reason	12.5 (2)
Not a reason	37.5 (6)
Suicide attempt (lifetime)	93.8 (15)
Extent suicide attempt(s) related to BDD (lifetime)	
Major reason	6.7 (1)
Somewhat of a reason	26.7 (4)
Minor reason	6.7 (1)
Not a reason	60.0 (9)
Substance use (lifetime)	75.0 (12)
Extent substance use related to BDD (lifetime)	
Major reason	8.3 (1)
Somewhat of a reason	33.3 (4)
Minor reason	8.3 (1)
Not a reason	50.0 (6)

^a Results are presented as mean±S.D. or as % (n).^b Data were obtained on up to three main concerns for each subject.^c Some subjects endorsed more than one reason for not disclosing their symptoms to their prior or current mental health care provider.^d Applies only to subjects with current BDD.

Table 2
Demographic and clinical characteristics of subjects with and without BDD on a general inpatient psychiatric unit

Variable ^a	BDD (n=16)	No BDD (n=84)	χ^2 or F	df	P	Effect size ^b
Age	31.9±11.0	40.9±12.5	F=7.24	98	.008	.26
Female	68.8 (11)	66.7 (56)	$\chi^2=0.03$	1	.871	.02
Race	0 (0)	3.6 (3)	$\chi^2=0.59$	1	.443	.08
(nonwhite)						
Marital status	56.3 (9)	36.9 (31)	$\chi^2=2.10$	1	.148	.15
(single)						
CES-D	38.3±9.6	32.0±8.3	F=7.25	98	.008	.26
BAI	29.4±14.7	23.5±13.2	F=2.59	98	.111	.16

^a Results are presented as mean±S.D. or as % (n).

^b Effect sizes are reported as Cramer's V for χ^2 analyses and eta for ANOVA (.10=small, .30=medium, .50=large for both effect size measures).