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Delusional versus nondelusional body dysmorphic disorder: recommendations for DSM-5

Katharine A. Phillips[1,2,*], **Ashley S. Hart**[1,2], **Helen Blair Simpson**[3,4], and **Dan J. Stein**[5]

[1]Body Dysmorphic Disorder Program, Rhode Island Hospital, Providence, Rhode Island, USA

[2]Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence, Rhode Island, USA

[3]Department of Psychiatry, College of Physicians and Surgeons, Columbia University, New York, New York, USA

[4]Anxiety Disorders Clinic and the Center for OCD and Related Disorders, New York State Psychiatric Institute, New York, New York, USA

[5]Department of Psychiatry, University of Cape Town, Cape Town, South Africa

Abstract

The core feature of body dysmorphic disorder (BDD) is distressing or impairing preoccupation with nonexistent or slight defects in one's physical appearance. BDD beliefs are characterized by varying degrees of insight, ranging from good (ie, recognition that one's BDD beliefs are not true) through "absent insight/delusional" beliefs (ie, complete conviction that one's BDD beliefs are true). The *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed., rev. (DSM-III-R) and The *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (DSM-IV) classified BDD's nondelusional form in the somatoform section of the manual and its delusional form in the psychosis section, as a type of delusional disorder, somatic type (although DSM-IV allowed double-coding of delusional BDD as both a psychotic disorder and BDD). However, little or no evidence on this issue was available when these editions were published. In this article, we review the classification of BDD's delusional and nondelusional variants in earlier editions of DSM and the limitations of their approaches. We then review empirical evidence on this topic, which has become available since DSM-IV was developed. Available evidence indicates that across a range

[*]Address for correspondence: Katharine A. Phillips, MD, Rhode Island Hospital, Coro Center West, Suite 2.030, 1 Hoppin Street, Providence, RI 02903, USA. (Katharine_Phillips@brown.edu).

Drs. Phillips, Stein, and Simpson were members of the DSM-5 Workgroup on Anxiety, Obsessive-Compulsive Spectrum, Posttraumatic, and Dissociative Disorders, which was responsible for body dysmorphic disorder during the DSM-5 development process. This paper is consistent with the workgroup's deliberations on and recommendations for DSM-5.

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of validators, BDD's delusional and nondelusional variants have many more similarities than differences, including response to pharmacotherapy. Based on these data, we propose that BDD's delusional and nondelusional forms be classified as the same disorder and that BDD's diagnostic criteria include an insight specifier that spans a range of insight, including absent insight/delusional BDD beliefs. We hope that this recommendation will improve care for patients with this common and often-severe disorder. This increased understanding of BDD may also have implications for other disorders that have an "absent insight/delusional" form.

Keywords

Body dysmorphic disorder; classification; delusional disorder; delusions; DSM; DSM-5; eating disorders; insight; obsessive-compulsive disorder; treatment

Introduction

Insight is an important dimension of psychopathology across many psychiatric disorders. In addition to its well-recognized importance in psychotic disorders, insight is a clinically important dimension of disorders such as mood disorders, body dysmorphic disorder (BDD), obsessive-compulsive disorder (OCD), and other obsessive-compulsive and related disorders such as hoarding disorder.[1–4] For example, psychotic and nonpsychotic depression have clinically important similarities as well as some differences across a variety of domains, such as neurobiology, prognosis, and treatment response.[1] Insight is likely an important aspect of other disorders as well, such as eating disorders, anxiety disorders, trauma and stress-related disorders, hypochondriasis, and certain other psychiatric disorders, although it has been far less studied in disorders such as these.[5–7] Insight is a multidimensional construct that has somewhat varying definitions in the psychiatric literature.[8] In BDD, OCD, and certain other disorders, insight is usually considered the degree of an individual's conviction in his or her disorder-relevant belief (thus, insight is sometimes referred to as "delusionality" or "degree of delusionality").[2,3,5,8,9]

In this review, we focus on a specific insight-related issue as it pertains to BDD: How should BDD's delusional and nondelusional variants be classified in the *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. (DSM-5)? The relationship between delusional and nondelusional BDD has been discussed and debated for many years, with some discussions appearing in the literature more than half a century ago.[10–12] In more recent years, this topic has received increasing research attention (see, eg, Phillips *et al*.[2,9]). The relationship between delusional and nondelusional BDD is clinically important because it has relevance for patient care. For example, do individuals with delusional BDD respond to the same treatment as those with nondelusional BDD? Do they have similar or different morbidity and prognosis? This topic is also relevant to the classification of other psychiatric disorders that have both delusional and nondelusional forms, which The *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (DSM-IV) classifies in inconsistent ways.

BDD is a common disorder[13] whose core feature is distressing or impairing preoccupation with one or more nonexistent or slight defects in one's physical appearance.[2,10] Individuals with BDD typically describe themselves as looking ugly, abnormal, deformed, or

disfigured.[2,10] Those with the delusional form of BDD are completely convinced that their view of their appearance is accurate (eg, that they truly look deformed, disfigured, or abnormal). In contrast, individuals with nondelusional BDD recognize that their view of their perceived deformities may not be, or is not, accurate. One-third to 60% of individuals with BDD currently have the delusional form of BDD.[9,14–16]

DSM-IV classifies some disorders' delusional (or psychotic) variant as the same disorder as the nondelusional (nonpsychotic) variant. For example, DSM-IV classifies psychotic major depression as a type of major depressive disorder, not as a separate disorder in the psychosis section of DSM.[17] However, DSM-IV takes a quite different approach to BDD, classifying BDD's delusional variant in the psychosis section (as a type of delusional disorder, somatic type) and classifying BDD's nondelusional variant in the somatoform section.[17] However, DSM-IV allows BDD's delusional and nondelusional variants to be double coded—that is, individuals with delusional BDD beliefs can be diagnosed *with both* BDD *and* delusional disorder. It is worth noting that insight in BDD spans a broad range, which includes excellent, good, fair, and poor insight as well as "absent insight/delusional" beliefs.[2,9] The question is whether DSM-5 should (1) classify delusional BDD as the same disorder as nondelusional BDD, characterizing it with this broad range of insight, including absent insight (delusional BDD beliefs) and (2) eliminate the double-coding option.

Delusional and Nondelusional BDD in Earlier Editions of DSM

Pre-DSM-III

The *Diagnostic and Statistical Manual of Mental Disorders*, 1st ed. (DSM-I) and The *Diagnostic and Statistical Manual of Mental Disorders*, 2nd ed. (DSM-II) did not mention BDD.[18,19] However, authors from the 1940s and subsequent decades noted that BDD's historical precursor, "dysmorphophobia," encompassed both nonpsychotic (ie, neurotic) and psychotic thinking, and that BDD was often characterized by overvalued ideation (which is similar to the construct of "poor insight"); see, eg, Phillips,[10] Stekel,[11] and Campanella and Zuccoli.[12]

DSM-III

The *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed. (DSM-III) did not contain a full criteria set for BDD, but it did mention BDD as an example of an "atypical" somatoform disorder (the earlier version of DSM-IV's NOS category).[20] Nor did DSM-III clearly identify delusional BDD. Delusional BDD was variously considered an example of an atypical somatoform disorder, atypical psychosis, or atypical paranoid disorder.[10] In other words, it was unclear in DSM-III whether delusional BDD should be considered a nonpsychotic disorder or a psychotic disorder.

DSM-III-R

The *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed., rev. (DSM-III-R) contained a full criteria set for BDD in the somatoform section, which applied to patients who had some recognition that their view of their perceived deformities was not accurate.[21] Those who had delusional beliefs about their appearance (ie, who were completely

convinced that they looked abnormal or deformed) were diagnosed with delusional disorder, somatic subtype—a psychotic disorder. To clarify the distinction between these two forms of BDD, DSM-III-R's criterion B for BDD stated, "The belief in the defect is not of delusional intensity, as in Delusional Disorder, Somatic Type (i.e., the person can acknowledge the possibility that he or she may be exaggerating the extent of the defect or that there may be no defect at all)." However, the DSM-III-R text noted, "It is unclear, however, whether the two different disorders can be distinguished by whether or not the belief is a delusion (as in DSM-III-R), or whether they are merely two variants of the same disorder" (p. 256). No relevant data existed at that time.

DSM-IV

Limited data that became available during the development of The *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (DSM-IV), as well as clinical observations, suggested that BDD's delusional and nondelusional variants may in fact be the same disorder.[10,22,23] For example, a study of 50 BDD subjects found far more similarities than differences between subjects with delusional BDD and those with nondelusional BDD across a broad range of validators (demographics, phenomenology, course of illness, associated features, comorbid psychiatric disorders, family history, and treatment response).[22] Indeed, the *DSM-IV Options Book*,[24] published several years prior to DSM-IV, noted that there may be a continuum between BDD and the somatic delusions characteristic of delusional disorder. The Options Book additionally stated, "It has therefore been suggested that the proposed subtyping scheme for obsessive-compulsive disorder (i.e., with insight, with overvalued ideas, with delusions) might be adopted for BDD." Thus, the Options Book raised the option of combining BDD's delusional and nondelusional forms into one disorder. However, the relevant DSM-IV workgroup (of which this article's first author was a member) believed that there was insufficient evidence to support this change at the time DSM-IV was published.[25]

Thus, BDD's nondelusional and delusional forms remained separately classified in DSM-IV.[17] However, based on suggestions that these BDD variants may indeed be the same disorder,[10,22,23] DSM-IV diminished their distinctiveness by (1) removing DSM-III-R's criterion B from BDD (which stated that the belief in the defect is not of delusional intensity), thus no longer requiring that some insight be present in BDD, and (2) allowing BDD's delusional and nondelusional forms to be double coded—that is, allowing individuals with delusional BDD to be diagnosed with *both* delusional disorder *and* BDD.[17] The DSM-IV workgroup recognized that DSM-IV's new double-coding option was somewhat problematic, in that it diagnosed the exact same symptoms as two different disorders. However, the double-coding option was intended to convey that BDD's delusional and nondelusional forms may in fact be the same disorder. Double coding was considered a compromise until DSM-5 was developed, when it was hoped that additional data would be available to resolve the issue of whether delusional and nondelusional BDD constitute different disorders or the same disorder.

Problems with DSM-IV's Classification of Delusional BDD and Nondelusional BDD

DSM-IV's approach has a number of problems, most of which have become clear since the publication of DSM-IV, based on our understanding of BDD due to advances in the field:

1. Many cases of delusional BDD do not actually meet diagnostic criteria for delusional disorder, because the total duration of concurrent mood episodes is often not brief relative to the duration of the delusional periods, as required by DSM criteria for delusional disorder.[16]
2. The boundary between delusional BDD and nondelusional BDD is not always clear-cut, and insight may fluctuate or change over time.[10,23] For example, improvement in BDD symptoms with SRI treatment is often accompanied by an increase in BDD-related insight.[26–30] The delusional beliefs of most serotonin-reuptake inhibitor (SRI) responders before treatment are no longer delusional after treatment (Phillips KA, unpublished data). It does not make sense to think that these individuals had one disorder (a psychotic disorder) at one time (eg, before treatment) and a different disorder (BDD) at another time (eg, the end of treatment).
3. The optional double-coding approach is confusing, as it may not be clear which diagnosis to give to individuals with delusional BDD—delusional disorder, BDD, or both.
4. Double coding creates ambiguity as to how delusional BDD should be treated. Should we use standard treatment for psychotic disorders (antipsychotics) or treatments efficacious for BDD (SRIs)?[26–30]
5. DSM-IV's approach to BDD is inconsistent with that for major depressive disorder and bipolar disorder. A limited but emerging literature suggests that eating disorders may also be characterized by a range of insight, including delusional beliefs.[5,31] Yet DSM does not contain a separate form of eating disorders characterized by "absent insight/delusional" disorder-related beliefs in the psychosis section of the manual. This is also the case for certain other non-mood disorders (see, eg, Bosson *et al.*[6] and Phillips *et al.*[7]).

Evidence on the Relationship Between Delusional BDD and Nondelusional BDD

Since DSM-IV was published, studies have examined the relationship between delusional BDD and non-delusional BDD by comparing these two forms of the disorder. Tables 1–3 summarize these findings. The tables organize available data according to external validators —antecedent, concurrent, and predictive. A majority of the studies cited in Tables 1–3 classified BDD beliefs as delusional or nondelusional using the reliable and valid Brown Assessment of Beliefs Scale (BABS).[8]

Data presented in the tables indicate that there are many more similarities than differences between delusional BDD and nondelusional BDD across a broad range of features and validators, such as family history, most socio-demographic features, environmental risk factors, core BDD symptoms, co-occurring symptomatology, morbidity (suicidality, functional impairment, quality of life), cognitive and temperament/personality correlates, comorbidity, and course of illness.[32–49] Two studies[15,32] found that on several measures, delusional subjects evidenced greater morbidity; however, this finding appeared to be accounted for by greater BDD symptom severity.

Most BDD pharmacotherapy studies have examined treatment outcomes for patients with delusional BDD beliefs versus nondelusional BDD beliefs. These studies indicate that delusional and nondelusional BDD appear to respond to the same pharmacologic treatment (Table 3).[26,27,50,51] Specifically, both delusional BDD and nondelusional BDD have been shown to respond to SRI monotherapy.[26–30] In a placebo-controlled study of fluoxetine monotherapy, 50% of subjects with delusional BDD responded to fluoxetine versus 55% of subjects with nondelusional BDD (a nonsignificant difference).[27] In a clomipramine versus desipramine crossover trial, the SRI clomipramine was more efficacious than the non-SRI desipramine, regardless of whether patients had insight or delusional BDD beliefs.[26] In fact, clomipramine monotherapy was even more efficacious for patients with delusional BDD than for those with nondelusional BDD. In addition to the studies shown in Table 3, five smaller open-label trials have examined medication response in subjects with delusional BDD versus subjects with nondelusional BDD.[28–30,52,53] Although sample sizes were small, precluding meaningful statistical analyses comparing outcomes in these two groups, these studies concur with those in Table 3 in indicating similar response rates to SRIs,[28–30] the antiepileptic medication levetiracetam,[52] and buspirone augmentation of SRIs.[53] Research on the efficacy of antipsychotics for BDD is very limited, and more research is greatly needed. However, a small placebo-controlled study of pimozide augmentation of fluoxetine in fluoxetine nonresponders and a small chart-review study suggest that antipsychotic augmentation of SRIs is not effective for either delusional BDD or nondelusional BDD.[50,51] Furthermore, available data (largely retrospective) do not support the efficacy of antipsychotics as monotherapy for delusional BDD or nondelusional BDD (see Table 3).[16]

Discussion

Available data indicate that there are far more similarities than differences between delusional BDD and nondelusional BDD across a broad range of validators and domains within those validators. Given that the approach in DSM-III, DSM-III-R, and DSM-IV was not based on scientific evidence and has substantial limitations, we recommend that (1) DSM-5 remove BDD's delusional variant from the psychosis section and classify it as the same disorder as BDD's nondelusional variant, and (2) patients with delusional BDD receive a diagnosis only of BDD, not both BDD and delusional disorder. The DSM-III-R text acknowledged the possible validity of this approach,[21] and the DSM-IV double-coding option moved BDD's classification in this direction.[17] The fact that DSM-IV already allows delusional BDD to be diagnosed as BDD (albeit double coded with delusional disorder) diminishes the magnitude of this proposed change. Most important, these proposed changes

reflect the evidence that has become available since DSM-IV was developed; we are not aware of any data that support continuation of DSM-IV's approach.

We additionally propose that a dimensional insight specifier that includes BDD's delusional variant be added to BDD's diagnostic criteria.[2] The specifier would indicate that BDD beliefs may be characterized by good or fair insight (the individual recognizes that the BDD beliefs are definitely or probably not true, or that they may or may not be true), poor insight (the individual thinks that BDD beliefs are probably true), and absent insight/delusional BDD beliefs (complete conviction that BDD beliefs are true). BDD's delusional form would no longer receive a psychotic disorder diagnosis; it would instead be classified as BDD, "absent insight/delusional beliefs" specifier. In essence, the proposed approach for DSM-5 would create a delusional "subtype" of BDD, which was suggested two decades ago.[22–24] The range of insight in the proposed specifier is consistent with data indicating that a broad range of insight can characterize BDD beliefs.[9,14,15,23]

This suggested approach has important implications for the diagnosis and treatment of BDD. Making delusional BDD a type of BDD rather than a psychotic disorder may perhaps prevent misdiagnosis of BDD as schizophrenia, which our clinical experience suggests may occur. This approach may also foster more appropriate treatment of BDD. Importantly, all pharmacotherapy studies of which we are aware have consistently found that delusional BDD is as likely as nondelusional BDD to respond to SRI monotherapy.[26–30] Although data on antipsychotics are very limited, it appears that these medications as monotherapy may not be efficacious for delusional BDD (or nondelusional BDD).[16,51] Classifying delusional BDD as a form of the "parent" disorder (ie, BDD) may remind clinicians that delusional BDD appears to respond to the same medication as the parent disorder.

It is important to emphasize, however, that further research on the relationship between BDD's delusional and nondelusional forms is needed. This includes research on all of the validators shown in the tables— in particular, treatment outcome in delusional versus nondelusional patients with pharmacotherapy, cognitive behavioral therapy, and treatment combinations. Research is also needed in additional domains, such as genetic and environmental risk factors, neural substrates, various biomarkers (eg, neuroimaging studies), and cognitive and emotional processing abnormalities. Work in these areas may be particularly helpful in further understanding the relationship between these forms of BDD.

This issue is also relevant to other disorders that have been shown to have, or that may have, an "absent insight/delusional" form. Research on insight/delusionality is needed in a number of disorders, such as eating disorders, hypochondriasis (illness anxiety disorder), hoarding disorder, trauma and stress-related disorders, and anxiety disorders. In particular, research is needed on (1) the range of insight in these disorders, (2) the relationship between these disorders' delusional and nondelusional forms and whether they are the same or different disorders, and (3) the relationship between level of insight and underlying neurobiology as well as important clinical variables such as illness severity, prognosis, morbidity, mortality, and treatment outcome. For example, although data are limited, some studies have found that poor insight, or denial of illness, in anorexia nervosa may be associated with poorer treatment outcome (see, eg, Saccomani *et al.*[54] and Greenfeld *et al.*[55]). Additional research is

needed on whether insight/delusionality predicts not only morbidity, but also mortality, in anorexia nervosa and other disorders.

Conclusion

Available evidence indicates that across a range of validators, BDD's delusional and nondelusional variants have far more similarities than differences. Importantly, BDD's delusional and nondelusional forms appear to respond to the same pharmacologic treatment. Because the classification approach taken in DSM-III, DSM-III-R, and DSM-IV was not evidence-based due to lack of data, and given limitations and problems of this approach, we recommend that DSM-5 and the International Classification of Diseases – 11th Revision (ICD-11) classify BDD's delusional and nondelusional forms as the same disorder, with inclusion of a specifier for absent insight/delusional BDD beliefs. We believe that this approach, which was raised as an option more than 20 years ago in the DSM-IV Options Book,[24] now has sufficient evidence to support its implementation. Our hope is that this approach, if implemented in DSM-5 and ICD-11, will be useful to researchers and clinicians, and that it will improve the care of patients who suffer from this common and often-severe disorder. This increased understanding of BDD may also have useful implications for other disorders, in that it may be more valid and clinically useful to conceptualize their delusional forms as a variant of the nonpsychotic parent disorder rather than as a separate psychotic disorder. Research on this clinically relevant question is greatly needed.

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Table 1

Evidence regarding the relationship between delusional BDD and nondelusional BDD: antecedent validators

Study core features	Sample size	Results for comparisons of delusional vs nondelusional BDD subjects
Familial aggregation		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of 191 individuals with BDD.[32] Family history of BDD was obtained for 188 subjects and their 827 first-degree relatives using the family history method (making probable diagnoses) and Structured Clinical Interview for DSM-IV - Non-Patient Version (SCID-I/NP).	*n*=67 delusional BDD (306 first-degree relatives) *n*=121 nondelusional BDD (522 first-degree relatives)	No significant differences in the proportion of first-degree relatives with probable BDD.
Data for selected other Axis I disorders were obtained for the first 98 subjects enrolled in the study and their 464 first-degree relatives.	*n*=36 delusional BDD (179 first-degree relatives) *n*=62 nondelusional BDD (285 first-degree relatives)	No significant differences in any other Axis I disorder assessed.
Socio-demographic factors		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[32]	*n*=68 delusional BDD *n*=123 nondelusional BDD	No significant differences in age, gender, race, ethnicity, marital status, employment status, occupational level, or living situation. Delusional subjects had lower educational attainment, which remained significant after controlling for BDD severity.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[16]	*n*=52 delusional BDD *n*=48 nondelusional BDD	No significant differences in age, gender, marital status, employment status, or living situation.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[15]	*n*=39 delusional BDD *n*=26 nondelusional BDD	No significant differences in age, marital status, or employment status (full- or part-time). Delusional subjects were more likely to be male and unemployed.
Environmental risk factors		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[33]	*n* =26 delusional BDD *n*=46 nondelusional BDD	Delusional and nondelusional subjects did not significantly differ in total score on the Childhood Trauma Questionnaire[34] or in terms of the proportion who had experienced emotional abuse, physical abuse, sexual abuse, emotional neglect, or physical neglect.

Table 2

Evidence regarding the relationship between delusional BDD and nondelusional BDD: concurrent validators

Study design	Sample size	Results for comparisons of delusional vs nondelusional BDD subjects
BDD symptoms		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[32]	*n* =68 delusional BDD *n*=123 nondelusional BDD	No significant differences in number of body areas of concern or number of BDD-related compulsive behaviors. Delusional subjects had greater severity of current BDD symptoms on the Yale-Brown Obsessive-Compulsive Scale Modified for BDD (BDD-YBOCS).[35] The two groups differed at a trend level on a second BDD severity measure and did not significantly differ on a third BDD severity measure.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[16]	*n* =52 delusional BDD *n* =48 nondelusional BDD	No significant differences in number of body areas of concern, proportion with BDD-related ideas or delusions of reference, or BDD-related compulsive behaviors. Delusional subjects had greater severity of BDD symptoms on the BDD-YBOCS, but this difference was no longer significant when a Bonferroni correction was applied.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[15]	*n* =39 delusional BDD *n* =26 nondelusional BDD	No significant differences in number of body areas of concern. Delusional subjects had more severe BDD symptoms on the BDD-YBOCS and on two other measures of BDD severity.
Co-occurring symptomatology		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[32]	*n* =68 delusional BDD *n*=123 nondelusional BDD	No significant differences in terms of current severity of depressive symptoms (Hamilton Rating Scale for Depression total score).[36]
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[15]	*n* =39 delusional BDD *n*=26 nondelusional BDD	after controlling for BDD severity. Delusional subjects had more severe depressive symptoms on the Zung Depression Scale[37] and more severe social anxiety on the Social Interaction Anxiety Scale,[38] but these differences were not statistically significant
Suicidality		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[32]	*n* =68 delusional BDD *n*=123 nondelusional BDD	No significant differences in rates of suicidal ideation or suicidal ideation attributed primarily to BDD. A significantly higher proportion of delusional subjects had attempted suicide and had attempted suicide primarily because of BDD, but these differences were no longer significant after controlling for BDD severity.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[16]	*n* =52 delusional BDD *n*=48 nondelusional BDD	No significant differences in rates of suicidal ideation attributed primarily to BDD, suicide attempts, or suicide attempts attributed primarily to BDD.
Functional impairment and quality of life		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[32]	*n* =68 delusional BDD *n*=123 nondelusional BDD	No significant differences on 16 psychosocial functioning and quality of life scales or items, including history of psychiatric hospitalization and psychiatric hospitalization primarily for BDD. Delusional subjects had poorer scores on the Social Adjustment Scale-Self Report[39] and the Social Functioning subscale of the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36[40]); however, these differences were no longer significant after controlling for BDD severity.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[16]	*n* =52 delusional subjects *n*=48 nondelusional subjects	Delusional and nondelusional subjects significantly differed on one of five psychosocial functioning items. A higher proportion of delusional subjects had experienced significant impairment in work or academic performance due to BDD, but this difference was not found when a Bonferroni correction was applied.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[15]	*n* =39 delusional BDD *n*=26 nondelusional BDD	No significant differences on three psychosocial functioning items.

Study design	Sample size	Results for comparisons of delusional vs nondelusional BDD subjects
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[41]	*n*=62 BDD (proportion of delusional vs non-delusional subjects not reported)	Delusional subjects had significantly lower scores than nondelusional subjects on three of eight subscales of the SF-36 (mental health, social functioning, and general health). However, analyses did not control for BDD severity, which was significantly correlated with scores on two of these three scales.
Cognitive, emotional, temperament, and personality correlates		
Cross-sectional data from a broadly (clinical and nonclinical) ascertained sample of individuals with BDD.[32]	*n*=68 delusional BDD *n*=123 nondelusional BDD	No significant differences in terms of comorbid personality disorders or the mean number of Axis II disorders.
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[42]	*n*=29 delusional BDD *n*=151 nondelusional BDD	No significant differences in total scores on the Inventory of Interpersonal Problems (IIP-64).[43, *a*]
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD (Phillips KA, unpublished data)	*n*=27 delusional BDD *n*=35 nondelusional BDD	No significant differences in terms of neuroticism, extraversion, openness to experience, agreeableness, or conscientiousness on the NEO Five-Factor Inventory (NEO-FFI).[44]
Patterns of comorbidity		
Cross-sectional data from a broadly ascertained (clinical and nonclinical) sample of individuals with BDD.[32]	*n*=68 delusional BDD *n*=123 nondelusional BDD	No significant differences in any lifetime Axis I comorbidity except that a higher proportion of delusional subjects had lifetime drug abuse or dependence; this difference was no longer significant after controlling for BDD severity. The two groups also did not significantly differ in the mean number of Axis I disorders.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[16]	*n*=52 delusional BDD *n*=48 nondelusional BDD	No significant differences in any lifetime Axis I comorbidity.
Cross-sectional data from a treatment-seeking clinical sample of individuals with BDD.[33]	*n*=39 delusional BDD *n*=26 nondelusional BDD	No significant differences in any lifetime Axis I comorbidity.

[*a*]IIP-64 subscales are domineering/controlling, vindictive/self-centered, cold/distant, socially inhibited, nonassertive, overly accommodating, self-sacrificing, and intrusive/needy.

Table 3

Evidence regarding the relationship between delusional BDD and nondelusional BDD: predictive validators

Study design	Sample size	Results
Course of illness		
Prospective examination of course of illness and predictors of course in a broadly ascertained sample of individuals with BDD (clinical and nonclinical) using the Longitudinal Interval Follow-Up Evaluation.[45–47]	*n*=68 delusional BDD *n*=123 nondelusional BDD	No significant differences in age at BDD onset or duration of BDD (years).[32] Over one year of prospective follow-up, no significant differences in terms of the probability of remission from BDD, and intake score on the Brown Assessment of Beliefs Scale (BABS) did not predict full or partial remission from BDD.[46] After 4 years of follow-up, a lower probability of full or partial remission was not predicted by delusional BDD beliefs or by greater delusionality of BDD beliefs on the BABS at intake.[47] Delusional BDD beliefs and greater delusionality on the BABS did not redict a higher probability of full or partial relapse.[48]
Cross-sectional/retrospective data from a treatment-seeking clinical sample of individuals with BDD using a semistructured interview.[16]	*n*=52 delusional BDD *n*=48 nondelusional BDD	No significant differences in age at BDD onset, duration of BDD (years), or course of illness.
Assessment of BDD outpatients at intake and most recent visit with the Clinical Global Impressions (CGI) Rating Scale[48] in a treatment-seeking clinical practice setting.[15]	*n*=39 delusional BDD *n*=26 nondelusional BDD	No significant differences in age at BDD onset or duration of BDD (years). Delusional subjects had more severe BDD at follow-up on the CGI-Severity scale and significantly less improvement on the CGI-Improvement scale.
Chart review of BDD outpatients' status at baseline and the most recent clinic visit in a clinical practice setting.[49]	*n*=22 delusional BDD *n*=30 nondelusional BDD	No significant association between baseline delusionality and endpoint BDD severity.
Response to treatment		
Double-blind crossover trial of clomipramine versus desipramine (8 weeks of each medication).[26]	*n*=12 delusional BDD *n*=10 nondelusional BDD	Clomipramine was more efficacious than desipramine regardless of whether patients had insight or held their BDD beliefs with delusional intensity, and was more efficacious for delusional patients than for nondelusional patients.
Double-blind parallel-group trial of 12 weeks of fluoxetine versus placebo.[27]	*n*=27 delusional BDD *n*=37 nondelusional BDD	Fluoxetine was as efficacious for those with delusional BDD as for those with nondelusional BDD.
Double-blind parallel-group trial of 8 weeks of augmentation of fluoxetine with pimozide versus placebo.[50]	*n*=12 delusional *n*=16 nondelusional	Pimozide was not more efficacious than placebo. There was no significant effect of baseline delusionality on endpoint BDD severity.
Chart review study of BDD patients treated for up to 8 years in a clinical practice.[51]	*n*=27 delusional *n*=44 nondelusional	Only 15% (2/13) of antipsychotic augmentation of SRI treatments led to response of BDD.
Retrospective assessment of course of illness in a treatment-seeking sample with a semi-structured interview.[16]	*n*=52 delusional subjects *n*=48 nondelusional subjects	Only 1 of 45 antipsychotic treatments was efficacious for delusional BDD.