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Cued Panic Attacks in Body Dysmorphic Disorder

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Abstract

Background—Body dysmorphic disorder (BDD) is a common and often severe disorder. Clinical observations suggest that panic attacks triggered by BDD symptoms may be common. However, to our knowledge, no study has examined such panic attacks in BDD. We investigated the prevalence, clinical features, and correlates of BDD-triggered panic attacks in individuals with this disorder.

Methods—Panic attacks and other variables were assessed using reliable and valid measures in 76 individuals with lifetime DSM-IV BDD.

Results—28.9% (95% CI, 18.5%–39.4%) of participants reported lifetime panic attacks triggered by BDD symptoms. The most common triggers of such attacks were feeling that others were looking at or scrutinizing the perceived appearance defects (61.9%), looking in the mirror at perceived defects (38.1%), and being in bright light where perceived defects would be more visible (23.8%). The most common panic attack symptoms were palpitations (86.4%), sweating (66.7%), shortness of breath (63.6%), trembling or shaking (63.6%), and fear of losing control or going crazy (63.6%). Compared to participants without such panic attacks, those with BDD-triggered panic attacks had more severe lifetime BDD, social anxiety, and depressive symptoms, as well as poorer functioning and quality of life on a number of measures. They were also less likely to be employed and more likely to have been psychiatrically hospitalized and to have had suicidal ideation due to BDD.

Conclusions—Panic attacks triggered by BDD-related situations appear common in individuals with this disorder. BDD-triggered panic attacks were associated with greater symptom severity and morbidity.

Keywords

body dysmorphic disorder; panic attacks; cued panic attacks; panic disorder; anxiety; clinical features

Body dysmorphic disorder (BDD) consists of distressing or impairing preoccupation with nonexistent or slight defects in one's physical appearance (for example, "scarred" skin, a "huge" nose, or "ugly" hair).^{1,2} Patients perform excessive repetitive compulsive behaviors in response to these preoccupations about their appearance, such as mirror checking,

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comparing their appearance with that of other people, and skin picking.^{1,2} This disorder usually has its onset in early adolescence and has a point prevalence in nationwide epidemiologic studies of 1.7%–2.4%.^{2–6} BDD is characterized by substantial morbidity, including high rates of suicidality.^{7–10}

In the largest studies of individuals diagnosed with BDD (N = 200 and N = 293), 13%–20% had lifetime (past or current) panic disorder, and 7%–10% had current panic disorder.^{2,6} These studies diagnosed panic disorder according to DSM-IV-TR criteria—that is, the panic attacks were not triggered by BDD symptoms but were unexpected or uncued (“came out of the blue”).¹¹ In some disorders, however, panic attacks may be triggered by symptoms of that disorder.^{11–13} For example, a person with social phobia may experience panic attacks that are triggered by giving a speech. These “expected,” or “cued,” panic attacks have, from the patient’s perspective, an obvious cue or trigger at the time of the attack, and the cue precedes the attack.^{11,12} Cues or triggers of panic attacks can be external situations, events, objects, internal sensations, or thoughts.^{11,12} Cued panic attacks may occur in anxiety disorders and non-anxiety disorders, such as mood disorders and schizophrenia, and in some general medical conditions (e.g., respiratory disorders).^{11–13}

To our knowledge, no prior study has examined BDD-related cued panic attacks. Our clinical experience suggests that such panic attacks may occur in BDD.¹⁴ For example, some patients describe panic attacks that are triggered by looking in the mirror and feeling acutely distressed by the “defects” they perceive.¹⁴ Other patients describe panic attacks triggered by bright light, which they believe makes the “defects” in their appearance (e.g., skin scarring or discoloration) more visible,¹⁴ or by thinking that other people are scrutinizing or mocking their appearance. In this study, we investigated the prevalence, symptoms, and triggers of cued panic attacks that were triggered by BDD-related thoughts or situations such as these.

We also examined demographic and clinical correlates of such panic attacks. In patients with other psychiatric disorders, the co-occurring presence of panic attacks has been associated with greater illness severity, comorbidity, and suicidality, as well as poorer functioning and quality of life.^{12,15–20} Individuals with panic attacks have also been shown to have higher levels of trait anxiety, state anxiety, and depression than individuals who have never experienced panic attacks.^{18,21,22} The literature that deals specifically with clinical correlates of cued panic attacks is limited. However, patients with social phobia who have cued (situational) panic attacks triggered by feared social situations have greater fear and avoidance of social situations, more severe somatic anxiety and hopelessness, and greater distress and impairment due to social phobia than patients with social phobia without cued panic attacks.²³

Based on our clinical observations, we hypothesized that a relatively high proportion of subjects with BDD would report cued panic attacks triggered by BDD symptoms. Based on findings concerning panic attacks in other disorders, we hypothesized that individuals with BDD-triggered panic attacks would have more severe depression, social anxiety, and BDD symptoms; poorer psychosocial functioning and quality of life; greater comorbidity; and higher rates of suicidality.

METHODS

Participants

Participants were 76 consecutive subjects in a study of the course of BDD that has been described elsewhere.^{2,24} Sources of referral were mental health professionals (46.0%), advertisements (38.6%), our program website and brochures (10.2%), friends and relatives

(3.4%), and non-psychiatrist physicians (1.7%). All participants met full criteria for lifetime DSM-IV-TR BDD, were age 12 or older, and were able to be interviewed in person. The only exclusion criterion was the presence of a mental disorder (e.g., dementia) that would interfere with collection of valid interview data.² The study was approved by the hospital Institutional Review Board. Written informed consent was obtained (assent plus parental consent for adolescents).

Measures

This study employed the DSM-IV-TR definition of panic attacks: a discrete period of intense fear or discomfort, in which four or more of 13 specified somatic or cognitive symptoms developed abruptly and reached a peak within 10 minutes.¹¹ To determine whether subjects had ever experienced panic attacks triggered specifically by BDD-related events, situations, or thoughts, the panic disorder module from The Structured Clinical Interview for DSM-IV Axis I Disorders, Non-Patient Edition (SCID-NP)²⁵ was administered. Subjects were asked whether they had ever had a panic attack, when they suddenly felt frightened or anxious or suddenly developed a lot of physical symptoms. Subjects who answered affirmatively were then asked whether any of these attacks were caused primarily by their BDD symptoms. If they were, the interviewer asked about other panic attack symptoms that occurred during the last bad attack, using panic attack questions from the SCID. At least two lifetime panic attacks were required for subjects to qualify as having BDD-related panic attacks.

Subjects were asked what triggered their panic attacks; based on the authors' clinical experience, options were looking in the mirror; feeling that other people were looking at, staring at, or scrutinizing their appearance "defects"; and being in bright light. An "other" trigger category was also available, which the subject was asked to describe. Unexpected panic attack symptoms (i.e., that "came out of the blue") were inquired about but did not count toward BDD-related panic attacks. Rather, they counted toward a diagnosis of panic disorder (if all diagnostic criteria for panic disorder were met). Panic attacks triggered by symptoms of another psychiatric disorder, a substance-related disorder, or a general medical condition were not considered BDD related. The SCID-NP²⁵ and the The Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II)²⁶ were used to assess Axis I and II disorders.

The BDD Form, a semi-structured instrument (Phillips KA, unpublished) used in previous BDD studies,^{1,6,24} was used to collect data on demographic characteristics and clinical features of BDD (e.g., suicidality, psychiatric hospitalization, being housebound due to BDD, and periods of avoidance of most social interactions or most occupational, academic, or role activities because of BDD symptoms). Lifetime BDD severity was determined with questions from the BDD Form that assessed the greatest social and academic/occupational/role interference ever experienced due to BDD on a 9-point scale ranging from 0 (none) to 8 (extreme). Current BDD severity was assessed with the Yale-Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS), a reliable and valid 12-item semi-structured measure; scores range from 0 to 48.²⁷ The current delusionalism of BDD beliefs was assessed with the Brown Assessment of Beliefs Scale (BABS), a reliable and valid 7-item semi-structured measure that assesses delusionalism/insight in a range of psychiatric disorders;²⁸ scores range from 0 to 24. The Social Phobia Inventory (SPIN) is a 17-item self-report questionnaire that assesses fear, avoidance, and physiological arousal associated with social anxiety during the past week.²⁹ SPIN scores reflect social anxiety from any source (e.g., BDD, social phobia). Scores range from 0 to 68. Current depressive symptom severity was assessed with the Inventory of Depressive Symptomatology-Self Report (IDS-SR) (30-item version; scores range from 0 to 84)³⁰ and a modified version of the 24-item Hamilton Depression Rating Scale (HAM-D)³¹ (scores range from 0 to 50). The

BDD-YBOCS, BABS, SPIN, IDS-SR, and HAM-D have demonstrated high reliability and validity; higher scores indicate greater severity (poorer insight on the BABS).

Quality of life was assessed with the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36), a self-report measure of current mental and physical dimensions of health status and health-related quality of life.³² The mental health subscales are 1) mental health (psychological distress and well-being), 2) role limitations due to emotional problems, and 3) social functioning. Subscale scores range from 0 to 100. The Short Form of the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) consists of the first 14 items of the general activities scale and is often used to yield a total quality of life score³³ (scores range from 14 to 70). Q-LES-Q raw scores were transformed into a converted score, which is expressed as a percentage of the maximum score on each subscale.

Impairment in psychosocial functioning was assessed with the following scales. 1) The interviewer-administered Range of Impaired Functioning Tool (LIFE-RIFT) was used to assess functional impairment in work, household duties, school, recreation, family relationships, satisfaction, and global social adjustment (total scores range from 4 to 20).³⁴ The LIFE-RIFT also assessed whether subjects were not able to work or be in school during the past month because of psychopathology. 2) The self-report Social Adjustment Scale-Self Report (SAS-SR) is a 54-item self-report measure of current social functioning in the domains of work, social and leisure, extended family, primary relationship, parental, and family unit; an overall adjustment scale provides a total score based on these six domains.³⁵ The total scale score ranges from 0 to 4. 3) The interviewer-rated Global Assessment of Functioning Scale (GAF) was used to assess global symptom severity and psychosocial functioning over the past-month.³⁶ 4) The interviewer-rated Social and Occupational Functioning Assessment Scale (SOFAS) is a global measure of psychosocial functioning over the past month.¹¹ Scores on the last two scales ranged from 0 to 100.

These measures of psychosocial functioning and quality of life have demonstrated reliability and validity. Lower scores indicate poorer functioning/ quality of life on the SF-36, Q-LES-Q, GAF, and SOFAS; higher scores indicate poorer functioning on the LIFE-RIFT and SAS-SR. The Q-LES-Q, SAS-SR, and SOFAS were added to the study after intake interviews had begun, and thus some data are missing for some patients ($n = 52, 54$, and 48 , respectively). Interviews were conducted by experienced clinical interviewers whom the first author extensively trained and closely supervised, as described elsewhere.²⁴ High levels of interrater reliability were obtained.²⁴

Statistical Analyses

Data were analyzed with SPSS Version 16.0. The prevalence of lifetime panic attacks triggered by BDD symptoms with the 95% confidence interval was calculated. Means, standard deviations, and frequencies were computed using published scoring algorithms for scales. All subjects (not just those with current BDD) were included in analyses of data from scales that assess current status (e.g., BDD-YBOCS, HAM-D, Q-LES-Q, SF-36). Between-group differences for subjects with or without lifetime BDD-triggered panic attacks were examined using 2-tailed independent t-tests for continuous variables and Pearson chi-square test or Fishers exact test for categorical variables. Given the exploratory nature of the analyses, we report all tests with significance values greater than 95% ($p < 0.05$), two-tailed. Effect size estimates for t-tests (corrected for unequal sample sizes) were determined with Cohen's d ($d = 0.2$ is small, 0.5 is medium, and 0.8 is large), and for chi square with the phi coefficient (Cramer's V [$V = 0.1$ is small, 0.3 is medium, and 0.5 is large]).

RESULTS

Lifetime panic attacks that were triggered by BDD symptoms were reported by 28.9% (95% CI, 18.5%–39.4%) of participants (Table 1). Unexpected/uncued lifetime panic attacks were reported by 22.4% (95% CI, 12.8%–32.0%) of the entire sample; for 82.4% ($n = 14$) of this group, these panic attacks met diagnostic criteria for lifetime panic disorder. Table 1 shows the proportion of individuals with BDD-triggered panic attacks who had at least one attack triggered by each situation, as well as the proportion who experienced each cognitive or somatic panic attack symptom during the last bad attack.

As shown in Table 2, subjects with BDD-triggered panic attacks were less likely to be employed ($p = 0.027$). They had more severe lifetime BDD ($p = 0.001$), with a large effect size, but not more severe BDD currently ($p = 0.276$). As predicted, subjects with BDD-triggered panic attacks had more severe social anxiety on the SPIN ($p = 0.043$) and more severe depressive symptoms on the IDS-SR ($p = 0.012$) and HAM-D ($p = 0.008$). They also had significantly poorer quality of life and psychosocial functioning on six measures, with most effect sizes in the medium to large range. On other quality of life and functioning measures, the two groups did not significantly differ, but some effect sizes were in the medium range, with subjects with BDD-triggered panic attacks having poorer scores. Subjects with BDD-triggered panic attacks were significantly more likely to have been psychiatrically hospitalized ($p = 0.041$).

As predicted, a significantly higher proportion of those with BDD-triggered panic attacks reported lifetime suicidal ideation attributed primarily to BDD ($p = 0.002$) as well as, at a trend level, suicidal ideation for any reason ($p = 0.053$). However, the two groups did not significantly differ with regard to suicide attempts.

In contrast to our prediction, subjects with BDD-triggered panic attacks did not have significantly greater comorbidity (Table 3). A higher proportion of subjects with BDD-triggered panic attacks had lifetime panic disorder (27.3% vs 14.8%), but the difference was not significant ($p = 0.212$), and the effect size was in the small range.

DISCUSSION

Nearly one third of participants (28.9%) had lifetime panic attacks that were triggered primarily by BDD-related situations or events. These panic attacks did not qualify for a diagnosis of panic disorder (because they did not “come out of the blue”), nor were they triggered by symptoms of another mental disorder, a substance-related disorder, or a general medical condition. Twenty two percent of the entire sample had lifetime unexpected (uncued) panic attacks, which in most cases met criteria for panic disorder. These findings are similar to other disorders in which patients may experience cued panic attacks that are triggered by the specific symptoms of that disorder in addition to unexpected/uncued panic attacks.¹³

BDD-cued panic attacks were triggered by frequently encountered situations that are difficult to avoid: social situations, mirrors and other reflecting surfaces, and bright lights. It is possible that the ubiquity of these panic-provoking situations may contribute to the severe distress and impairment that are so common in BDD. By experiencing panic that is triggered by these situations, patients may possibly become even more anxious, fearful, and avoidant in these situations in the future, because the situations may become associated with feelings of panic.²³ Indeed, a study of social phobia found that situational (cued) panic attacks, but not unexpected panic attacks, were associated with greater fear and avoidance of specific situations.²³ However, our study’s cross-sectional design does not allow examination of this hypothesis.

The most common panic attack trigger—the belief that other people were scrutinizing the perceived appearance flaws—is consistent with previous findings on key characteristics of BDD. Most people with BDD have poor insight or delusional BDD beliefs (that is, they are mostly or completely convinced that they look ugly), and a majority are completely or mostly certain that most people agree with their view.³⁷ Furthermore, a majority believe that other people take special notice of them in a negative way (e.g., stare or laugh at them, talk about them) because they look so ugly.^{37,38} These clinical characteristics, which involve fear of negative evaluation by others, are consistent with findings that individuals with BDD have threatening interpretations of ambiguous social situations,³⁹ misinterpret neutral facial expressions as contemptuous and angry in self-referent scenarios,⁴⁰ and have high levels of social anxiety.^{41–43} These BDD features may possibly be involved in the development of panic attacks that are triggered by perceived scrutiny by others; this possibility requires investigation.

Of relevance to the second most common panic attack trigger—looking at perceived defects in the mirror—nearly 90% of individuals with BDD excessively and compulsively check their perceived defects in mirrors or other reflecting surfaces, sometimes for hours a day.^{1,2} Patients typically are very distressed by what they perceive and often feel worse after mirror checking.^{14,44,45} The resulting increase in emotional distress may potentially contribute to the development of BDD-triggered panic attacks. Bright light—the third most common trigger—is perceived by patients as making their flaws more visible to themselves and others.¹⁴ This, in turn, may increase anxiety about the perceived flaws and fear of negative evaluation by others, which may possibly contribute to the occurrence of panic attacks. Our finding that panic attacks are often triggered by bright light is consistent with clinical observations that many individuals with BDD avoid bright light whenever possible (e.g., avoid and face away from light and windows when indoors or avoid going out of the house during the day or on sunny days).^{14,46}

Our finding that subjects with BDD-triggered panic attacks show greater impairment on the GAF and some other measures of impairment is similar to findings by Jack et al., who found that patients with social phobia who had situational (cued) panic attacks had poorer GAF scores and more impairment due to social phobia on the Anxiety Disorders Interview Schedule-Revised (ADIS-R) than patients without panic attacks.²³ Jack et al.'s finding that this group had greater fear and avoidance on the ADIS-R is similar to our finding on the SPIN.²³ However, Jack et al.'s subjects with situational (cued) panic attacks did not have more severe depressive symptoms, which differs from our finding, although other studies have found that panic attacks are generally associated with more severe depression.^{18,21–23} Our results are also consistent with the more extensive literature on panic attacks more generally (not just cued panic attacks) in other disorders, many of which indicate that panic attacks are associated with greater illness severity, anxiety, depression, and suicidal ideation as well as poorer functioning and quality of life.^{12,15–20,22} We did not, however, find an association of BDD-related panic attacks with greater comorbidity, as some studies of other disorders have found for panic attacks more generally.^{12,15,19,20}

This study had several limitations. The sample size was relatively small. Although the study had only one exclusion criterion and a broadly ascertained sample, the sample was nonetheless one of convenience from one setting in the northeastern United States, and the generalizability of the findings to other locations or cultures is unclear. Study strengths include clinical assessments by highly trained and experienced interviewers, use of the SCID panic attack module to assess panic attacks, and use of reliable and valid measures.

This study has several clinical implications. Clinicians should be aware that panic attacks triggered by BDD-related thoughts and situations are common in patients with BDD; they

may be a clue to the presence of this often secretive disorder. It is also important to note that, because BDD-triggered panic attacks are associated with greater morbidity, including suicidal ideation due to BDD, patients with cued panic attacks may warrant closer clinical monitoring.

When evaluating patients with BDD, it is important to inquire about both unexpected and BDD-triggered panic attacks. Specifically, clinicians should ask whether panic attacks “come out of the blue” (i.e., are uncued) or, alternatively, are triggered by BDD-relevant situations such as feeling that one’s perceived appearance defects are being scrutinized by others, looking at one’s perceived defects in mirrors or other reflecting surfaces, being in bright light, or other BDD-relevant situations. In the current study, BDD-triggered panic attacks were even more common than uncued panic attacks (occurring in 28.9% vs 22.4% of participants, respectively). Differentiating cued from uncued panic attacks may have treatment implications. Our clinical experience suggests that recommended treatments for BDD (serotonin-reuptake inhibitors [SRIs] and cognitive-behavioral therapy specifically tailored to BDD)^{46–49} often improve BDD-triggered panic attacks. This outcome is perhaps to be expected, because the panic attacks are triggered by BDD, and as these treatments improve BDD symptoms, cued panic attacks should improve as well. However, this important topic has not been empirically examined. Research is needed to examine this issue and to determine whether some patients’ BDD-triggered panic attacks may instead require a somewhat different treatment approach that more specifically targets this particular symptom—for example, with panic disorder-based cognitive-behavioral treatment or perhaps the addition of a benzodiazepine to an SRI.⁵⁰ In contrast, uncued panic attacks, especially those that qualify for a diagnosis of panic disorder, should be treated with evidence-based treatment for panic disorder.⁵⁰

Because the presence and severity of panic attacks in other disorders may have a negative impact on treatment response, future research should examine improvement in BDD with treatment in subgroups of patients with and without panic attacks. Research is also needed to address this study’s limitations and to further examine the frequency, triggers, and clinical correlates of BDD-triggered panic attacks in persons with this disorder.

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Table 1

Panic attacks triggered by BDD symptoms in subjects with BDD (N = 76)

Variable	n	%
<i>History of panic attacks triggered by BDD</i>	22	28.9
<i>Cued panic attack triggers^a</i>		
Believing other people are scrutinizing or looking at perceived appearance flaws	13	61.9
Looking at perceived appearance flaws in the mirror	8	38.1
Bright lights	5	23.8
Other ^b	4	19.0
<i>Somatic and cognitive symptoms of BDD-triggered panic attacks^c</i>		
Palpitations, pounding heart, or accelerated heart rate	19	86.4
Sweating ^a	14	66.7
Sensations of shortness of breath or smothering	14	63.6
Trembling or shaking	14	63.6
Fear of losing control or going crazy	14	63.6
Nausea or abdominal distress	13	59.1
Paresthesias	11	50.0
Chills or hot flushes	10	45.5
Derealization or depersonalization	10	45.5
Feeling dizzy, unsteady, light-headed, or faint	10	45.5
Chest pain or discomfort	9	40.9
Feeling of choking	4	18.2
Fear of dying	3	13.6

^aData missing for one subject^bOther triggers (*n* = 4): thoughts about the body area of concern (*n* = 2), thoughts about cosmetic procedures the subject had received (*n* = 1), and washing hair (*n* = 1)^cThese symptoms were ascertained with use of the panic attacks module from the Structured Clinical Interview for DSM-IV Axis I Disorders, Non-Patient Edition (SCID-NP)

Table 2

Demographic and clinical characteristics of 76 individuals with BDD

Variable ^{a,b}	With panic attacks ^c (n = 22)	No panic attacks (n = 54)	df	Test statistic	P	Effect size ^d
Demographic characteristics						
Gender (% female)	12 (54.5)	35 (64.8)	1	$\chi^2 = 0.70$	0.403	0.10
Age (years $\pm$ SD)	34.6 $\pm$ 11.1	31.3 $\pm$ 10.9	1,74	$t = -1.20$	0.235	0.30
Minority race/ethnicity (non-white or Hispanic)	4 (19.0)	13 (24.5)	1	$\chi^2 = 0.70$	0.763	0.06
Marital status (% single)	13 (59.1)	43 (79.6)	1	$\chi^2 = 3.40$	0.065	0.21
Education (at least some college)	15 (68.2)	43 (79.6)	1	$\chi^2 = 1.13$	0.287	0.12
Employment status (%employed)	12 (54.5)	43 (79.6)	1	$\chi^2 = 4.92$	0.027	0.25
Symptom severity						
BDD severity (lifetime)	6.9 $\pm$ 1.1	5.6 $\pm$ 1.6	1,74	$t = -3.34$	0.001	0.81
BDD severity (current; BDD-YBOCS)	27.1 $\pm$ 12.9	24.0 $\pm$ 10.5	1,74	$t = -1.10$	0.276	0.28
Delusional of BDD beliefs (BABS)	13.9 $\pm$ 8.1	14.1 $\pm$ 7.1	1,72	$t = 0.120$	0.905	0.03
SPIN	33.9 $\pm$ 18.2	25.7 $\pm$ 13.9	1,70	$t = -2.07$	0.043	0.53
IDS-SR	36.7 $\pm$ 18.4	26.9 $\pm$ 12.6	1,69	$t = -2.57$	0.012	0.65
HAM-D (24 item)	20.2 $\pm$ 13.2	11.5 $\pm$ 9.2	1,29,91	$t = -2.83$	0.008	0.78
Quality of life/psychosocial functioning^e						
SF36						
Mental health	39.4 $\pm$ 25.1	51.8 $\pm$ 23.0	1,70	$t = 2.01$	0.048	0.51
Role-emotional	25.4 $\pm$ 37.9	43.3 $\pm$ 41.1	1,69	$t = 1.72$	0.091	0.44
Social functioning	45.8 $\pm$ 32.0	59.3 $\pm$ 26.7	1,70	$t = 1.84$	0.070	0.47
Q-LES-Q	49.9 $\pm$ 23.6	61.1 $\pm$ 18.6	1,50	$t = 1.80$	0.079	0.55
LIFE-RIFT	14.5 $\pm$ 3.9	11.7 $\pm$ 4.0	1,74	$t = -2.82$	0.006	0.71
SAS-SR	2.4 $\pm$ 0.7	2.1 $\pm$ 0.5	1,52	$t = -1.38$	0.174	0.43
GAF	45.1 $\pm$ 17.7	53.2 $\pm$ 14.4	1,74	$t = 2.08$	0.041	0.51
SOFAS	40.5 $\pm$ 11.1	58.4 $\pm$ 17.7	1,46	$t = 3.39$	0.001	0.99
Not able to work due to psychopathology (past month)	9 (40.9)	12 (22.2)	1	$\chi^2 = 2.73$	0.098	0.19
Not able to be in or attend school due to psychopathology (past month)	9 (40.9)	10 (18.5)	1	$\chi^2 = 4.18$	0.041	0.24

Variable ^{a,b}	With panic attacks ^c (n = 22)	No panic attacks (n = 54)	df	Test statistic	P	Effect size ^d
Avoidance of social interactions (lifetime)	22 (100.0)	45 (83.3)	1	χ^2	0.052	0.23
Avoidance of occupational/role activities (lifetime)	19 (86.4)	33 (61.1)	1	$2 = 4.61$	0.032	0.25
Housebound due to BDD (lifetime) ^b	8 (36.4)	14 (25.9)	1	$2 = 0.83$	0.363	0.10
<i>Psychiatric hospitalization (lifetime)</i>	12 (54.5)	16 (29.6)	1	$2 = 4.17$	0.041	0.23
<i>Suicidality (lifetime)</i>						
Suicidal ideation	21 (95.5)	40 (74.1)	1	χ^2	0.053	0.24
Suicidal ideation due to BDD	19 (86.4)	26 (48.1)	1	$2 = 9.45$	0.002	0.35
Attempted suicide	9 (40.9)	13 (24.1)	1	$2 = 2.15$	0.142	0.17
Attempted suicide due to BDD	5 (22.7)	6 (11.1)	1	χ^2	0.280	0.15

^aResults are presented as n (%) of subjects for 2 analyses and mean $\pm$ standard deviation for t-tests.

^bThe entire sample was included in analyses of data from scales that assess current status (e.g., BDD-YBOCS, HAM-D, SF-36)

^cPanic attacks triggered by BDD symptoms

^dEffect sizes are presented as phi coefficient (Cramer's V) for 2 analyses (0.10, small; 0.30, medium; and 0.50, large) and as Cohen's d for t-tests (0.20, small; 0.50, medium; 0.80, large)

^eData missing for 1 subject in each group

^fFisher's Exact Test

^gLower scores denote poorer psychosocial functioning/quality of life on the SF-36, Q-LES-Q, GAF, and SOFAS; higher scores denote poorer functioning/quality of life on the LIFE-RIFT and SAS-SR

^hCompletely housebound due to BDD symptoms for at least 1 week

BABS: Brown Assessment of Beliefs Scale; BDD-YBOCS: Yale-Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder; GAF: Global Assessment of Functioning Scale; HAM-D: Hamilton Depression Rating Scale; IDS-SR: Inventory of Depressive Symptomatology-Self Report; LIFE-RIFT: Range of Impaired Functioning Tool; Q-LES-Q: Quality of Life Enjoyment and Satisfaction Questionnaire; SAS-SR: Social Adjustment Scale-Self Report; SF-36: Medical Outcomes Study 36-Item Short-Form Health Survey; SOFAS: Social and Occupational Functioning Assessment Scale; SPIN: Social Phobia Inventory

Table 3

Comorbidity in 76 individuals with BDD

Variable ^a	With panic attacks ^b (n = 22)	No panic attacks (n = 54)	df	Test statistic	P	Effect size ^c
Number of comorbid Axis I disorders	4.8 ± 2.0	4.1 ± 1.7		-1.48	0.144	0.39
Any lifetime mood disorder	20 (90.9)	44 (81.5)		— ^d	0.491	0.12
Major depressive disorder	19 (86.4)	41 (75.9)		— ^d	0.371	0.12
Bipolar disorder	0 (0.0)	2 (3.7)		— ^d	1.000	0.11
Any lifetime anxiety disorder	16 (72.7)	42 (77.8)		0.22	0.639	0.05
Panic disorder	6 (27.3)	8 (14.8)		— ^d	0.212	0.15
Agoraphobia	1 (4.5)	0 (0.0)		— ^d	0.289	0.18
Social phobia	9 (40.9)	25 (46.3)		0.18	0.668	0.05
Specific phobia	7 (31.8)	10 (18.5)		— ^d	0.234	0.15
Obsessive-compulsive disorder	12 (54.5)	18 (33.3)		2.94	0.086	0.20
Posttraumatic-stress disorder	3 (13.6)	4 (7.4)		— ^d	0.406	0.10
Generalized anxiety disorder	0 (0.0)	2 (3.7)		— ^d	1.000	0.11
Any lifetime substance use disorder	11 (50.0)	26 (48.1)		0.02	0.884	0.02
Alcohol use disorders	9 (40.9)	22 (40.7)		0.00	0.989	0.00
Non-alcohol substance use disorders	8 (36.4)	20 (37.0)		0.00	0.956	0.01
Any lifetime eating disorder	7 (31.8)	11 (20.4)		1.13	0.287	0.12
Anorexia nervosa	3 (13.6)	1 (1.9)		— ^d	0.071	0.24
Bulimia nervosa	2 (9.1)	2 (3.7)		— ^d	0.575	0.11
Binge eating disorder	1 (4.5)	4 (7.4)		— ^d	1.000	0.05
Eating disorder NOS ^e	1 (4.5)	4 (7.4)		— ^d	1.000	0.05
Any lifetime somatoform disorder	0 (0.0)	1 (1.9)		— ^d	1.000	0.07
Number of comorbid personality disorders	0.9 ± 1.3	0.6 ± 0.8		-1.06	0.294	0.33
Any personality disorder ^f	10 (50.0)	23 (45.1)		0.14	0.710	0.04

^aResults are presented as n (%) of subjects for ² analyses and mean ± standard deviation for t-tests.

^b Panic attacks triggered by BDD symptoms

^c Effect sizes are presented as phi coefficient (Cramer's V) for ² analyses (0.10, small; 0.30, medium; and 0.50, large) and as Cohen's d for t-tests (0.20, small; 0.50, medium; 0.80, large)

^d Fisher's Exact Test

^e Excluding binge eating disorder

^f The SCID-II was not used with adolescents.

df = 1 for ² analyses, 1,74 for number of comorbid Axis I disorders, and 69 for number of comorbid personality disorders