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ScienceDirect
Comprehensive Psychiatry 49 (2008) 561–569
Comprehensive PSYCHIATRY
www.elsevier.com/locate/comppsych

Occupational functioning and impairment in adults with body dysmorphic disorder

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Abstract

Objective: Body dysmorphic disorder (BDD) is relatively common and appears to be associated with marked impairment in psychosocial functioning. Previous reports, however, did not investigate occupational functioning in detail, assess impairment specifically in occupational functioning using standardized measures in a nontreatment seeking sample, or examine correlates of occupational impairment.
Methods: Occupational functioning and other clinical variables were assessed in 141 adults with BDD. Measures included the Range of Impaired Functioning Tool and other reliable and valid self-report and interviewer-administered measures.
Results: Fewer than half of subjects were working full-time, and 22.7% were receiving disability pay. Thirty-nine percent of the sample reported not working in the past month because of psychopathology. Of those subjects who worked in the past month, 79.7% reported impairment in work functioning because of psychopathology. Adults with BDD who were not working because of psychopathology were comparable to subjects who were working in most demographic variables, delusionality of BDD beliefs, and duration of BDD. However, compared to subjects who worked in the past month, those not currently working because of psychopathology had more severe BDD and more chronic BDD. They also were more likely to be male, had less education, and had more severe depressive symptoms, a higher rate of certain comorbid disorders, poorer current social functioning and quality of life, a higher rate of lifetime suicidality, and were more likely to have been psychiatrically hospitalized.
Conclusions: A high proportion of individuals with BDD were unable to work because of psychopathology; most who worked reported impairment in occupational functioning. Certain clinical variables, including more severe and chronic BDD, were associated with not working.

1. Introduction

Body dysmorphic disorder (BDD) is defined in the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-IV) as a distressing or impairing preoccupation with an imagined or slight defect in appearance. This disorder appears to be relatively common, with a reported prevalence of 0.7% to 1.7% in community or general population samples [1-4]. Body dysmorphic disorder is associated with high lifetime rates of psychiatric hospitalization, suicidal ideation and suicide attempts, and markedly poor social functioning and quality of life [5-10]. Impairment in occupational functioning also appears common. In a study of 188 subjects with BDD from the United States, 38% were currently unemployed, and 77% reported that their BDD symptoms had interfered moderately, severely, or extremely with occupational, academic, or role functioning over the course of their illness [7]. In a study from England [8], 50% of 50 subjects with BDD were currently unemployed; in 2 studies from Italy, 53% of 58 subjects with BDD and 47% of 34 subjects with BDD were currently unemployed [11,12]; and in a study from Brazil, 85% of 20 subjects with BDD were currently unemployed [13]. Despite these unemployment rates and indications of occupational impairment, these studies did not specifically assess problems in occupational functioning using standardized measures that examine this domain specifically, nor did they examine correlates of occupational impairment.

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doi:10.1016/j.comppsych.2008.04.003

There are only limited data on occupational functioning in BDD using standard measures. Several studies reported poor global functioning on the Global Assessment of Functioning Scale (GAF), the Social and Occupational Functioning Assessment Scale (SOFAS), and the Schneier Disability Profile [14]; these measures incorporate occupational functioning but do not report on this domain specifically. Scores on these measures suggest moderate functional impairment [15-18]. Several studies reported specifically on the Medical Outcomes Study 36-item Short-Form Health Survey (SF-36) role-emotional domain [19], which assesses problems with work or other daily activities as a result of emotional problems. Scores for BDD patients (n = 62) were 1.62 SD units poorer than published US population norms [6]. In 3 BDD pharmacotherapy studies (n = 15, n = 15, and n = 60), SF-36 role-emotional scores were 1.47 SD units, 2.12 SD units, and 1.58 SD units poorer than US population norms, respectively [16,18,20]. These studies are limited, however, by relatively small samples and by assessment of functioning in individuals who sought consultation or treatment in a BDD specialty setting or who participated in pharmacotherapy trials, which may limit the generalizability of the findings. In addition, little is known about the characteristics of individuals with BDD who do not work and correlates of occupational impairment.

It is important to assess functional impairment [21], as functional impairment may warrant interventions and research efforts that differ from those needed for psychiatric symptoms [21,22]. Furthermore, occupational impairment—including days missed from work, unemployment, and consequences such as collection of disability pay—may have serious economic consequences [23].

The present report has several aims. We previously reported that a high proportion of the present sample was unemployed, was not working because of psychopathology, and had poor scores on several quality of life measures, including work-related subscales [5]. However, our previous report did not examine occupational status and functioning in further detail, and it did not examine clinical correlates of not working because of psychopathology. Therefore, the aim of the present report is to (1) further examine occupational status and functioning in a more broadly ascertained sample of adults with BDD and (2) examine clinical correlates of being unable to work because of psychopathology in this sample. On the basis of variables associated with occupational impairment in depressive and anxiety disorders [24-26], we hypothesized that subjects who were not currently working because of psychopathology would have more severe depressive symptoms. On the basis of our clinical impressions, we also predicted that subjects not currently working because of psychopathology would have greater lifetime impairment because of BDD symptoms specifically.

The present study expands upon earlier studies of impairment in individuals with BDD in that it is the first study to focus on work impairment in a broadly ascertained BDD sample. Previous studies have been conducted with patients seeking clinical consultation or treatment at a BDD specialty clinic, or in patients participating in pharmacotherapy efficacy studies, which may limit the generalizability of the findings. Our subjects were broadly ascertained, and one third was receiving no mental health treatment at all. This study also assessed occupational functioning and impairment with standardized measures. To our knowledge, no previous studies have examined clinical correlates of not working because of psychopathology in individuals with BDD. Furthermore, this is the first study to specifically examine the above hypotheses related to occupational impairment and functioning in BDD.

2. Methods

2.1. Subjects

Subjects were 141 adults age 21 and older who currently met full criteria for DSM-IV BDD and were participating in an observational study of the course of BDD (68.8% female; mean age, 36.1 ± 10.9 years). Adolescents (≤20 years) were excluded from this report because its primary focus is on impairment in occupational functioning, and adolescents were not expected to be employed. This report includes data only from the study's intake (baseline) assessment. Study inclusion criteria were current DSM-IV BDD or its delusional variant (delusional disorder, somatic type), age 12 or older, and ability to be interviewed in person and provide a valid interview. The only exclusion criterion was an organic mental disorder (eg, delirium), although no potential subjects were actually excluded for this reason.

Subjects were recruited from a wide variety of sources. Referrals from mental health professionals and other physicians yielded 48.9% of the sample, and advertisements (eg, radio, newspaper) generated 47.5% of the sample. The remaining 3.5% of participants came from other sources that included friends, family members, and self-referrals. All subjects were compensated $50 for the intake interview. Skin (78.7%), hair (61.7%), and nose (41.1%) concerns were the 3 most common body areas of concern. A more comprehensive description of our sample's body areas of concern and other phenomenologic features (eg, associated compulsive behaviors) has been reported elsewhere [27]. Two thirds (66.7%) of the sample were receiving mental health treatment at the time of their intake interview (61.7% outpatient; 5.0% inpatient, partial hospital, or residential). We did not collect data on how many subjects were currently receiving treatment for BDD specifically; however, 81.0% of the sample in this report considered BDD their most problematic disorder currently. Most subjects (93.8%) had received mental health treatment for any reason in their lifetime. The study was

approved by the Butler Hospital (Providence, RI) institutional review board, and all subjects signed statements of informed consent.

2.2. Assessments

2.2.1. Occupational status and impairment

The rater-administered Longitudinal Interval Follow-up Evaluation (LIFE), a semistructured measure, assessed current occupational status and impairment [28]. The LIFE has good reliability, concurrent validity, and predictive validity [29,30]. It categorizes employment and work functioning in 2 ways. The occupational status category allows the rater to choose up to 3 categories that describe the subject's work status during the entire past month (eg, a subject could have been unemployed but expected to work during the first week of the month and then started a full-time job during the second week that they held for the rest of the month. This subject would be coded as both unemployed but expected to work and employed full-time). Working *part-time* is defined as working up to 30 hours per week; working *full-time* is defined as working more than 30 hours per week. The second LIFE employment category codes *work impairment*. This is defined as the lowest level of work functioning during the worst week of the past month. Scoring options are as follows: 1, no impairment, working at a high level; 2, no impairment, working at a satisfactory level; 3, mild impairment; 4, moderate impairment; 5, severe impairment; 6, unable to work because of psychopathology; and 7, unable to work because of psychopathology and some other reason (s). For example, a subject who did not work for the first 2 weeks of the month because of BDD symptoms but then started a job in the 2 weeks before the interview would be coded as not working because of psychopathology because this reflects the lowest level of functioning during the past month.

Subjects who were not working because of psychopathology (n = 44) and those who were not working because of psychopathology and some other reason(s) (n = 11) were combined and coded as not working because of psychopathology in the past month. In the latter case, psychopathology was judged to be a significant part of the reason a subject was not working. We combined these 2 groups because comparisons indicated that they were similar across nearly all variables that were examined (see Results).

Current occupational status (excluding employed subjects who were primarily students) was assessed with the widely used Hollingshead Occupational Scale: 2-factor version [31]. Scores range from 9 (unskilled jobs) to 1 (major professional jobs). Interrater reliability and convergent validity of the Hollingshead is high (r = .68-.91) [32]. The BDD Form, a semistructured instrument used in previous BDD studies [7,33], obtained data on whether subjects were receiving disability payments. This measure also assessed the greatest social impairment and academic, occupational, or role impairment ever experienced because of BDD symptoms on a 9-point scale ranging from none to extreme (this measure does not separate occupational from academic impairment).

2.2.2. Additional assessments of functioning and quality of life

Two global measures of functioning were used: (1) the GAF [34], which assessed occupational/academic functioning, social functioning, and psychiatric symptom severity and (2) the SOFAS [35], which assessed occupational/academic functioning and social functioning. Scores on both scales range from 0 to 100, with lower scores denoting greater severity. Scores on the GAF and SOFAS rated the lowest level of functioning during the past month. Several widely used, reliable, and valid measures assessed functioning and quality of life. The self-report Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) assessed quality of life [36]. We report the converted total score from the "Short Form," which has 16 items. The 54-item self-report Social Adjustment Scale-Self Report (SAS-SR) measured social functioning [37]. The overall adjustment score is reported. The Q-LES-Q and SAS-SR both contain questions regarding current work functioning that contribute to the total score as well as questions about other domains. The self-report Medical Outcomes Study SF-36 Health Survey assessed role impairment because of emotional problems, mental health status, and social functioning [19]. Lower Q-LES-Q and SF-36 scores, and higher SAS-SR scores, reflect poorer functioning or quality of life. We previously reported on these measures in this sample [5] but have not previously examined them specifically in relation to whether subjects were unable to work because of psychopathology.

2.2.3. Psychiatric symptoms and severity

The *Structured Clinical Interview for DSM-IV, nonpatient version* (SCID-I/NP) [34] diagnosed BDD and other Axis I disorders. The SCID Axis II Personality Disorders (SCID-II) [38] diagnosed personality disorders. Current BDD severity was assessed with the Yale-Brown Obsessive-Compulsive Scale modified for BDD (BDD-YBOCS) [39], a reliable and valid 12-item, semi-structured, interviewer-administered measure. The total score ranges from 0 to 48. The Brown Assessment of Beliefs Scale (BABS), a reliable and valid 7-item semistructured interviewer-administered scale, assessed current delusionality of appearance beliefs [40]. Scores range from 0 to 24, with a score above 18 plus a score of 4 on the conviction item indicating the presence of delusional (as opposed to nondelusional) BDD beliefs. Current severity of depressive symptoms was assessed with the self-report Inventory of Depressive Symptomatology-Self Report (30-item version; scores range from 0-84) [41] and the rater-administered 24-item Hamilton Rating Scale for Depression (scores range from 0-72) [42]. The reliability and validity of these depression severity measures has been established [43,44]. On the above symptom measures, higher scores indicate greater symptom severity/psychopathology. The BDD Form acquired data on lifetime suicidal ideation and

attempts, variables pertaining to the course of BDD (retrospectively assessed), and receipt of mental health treatment.

Ratings were obtained by experienced interviewers and were done in person with all study participants. The interviewers underwent an extensive training program to administer the above measures, which included reviewing video tapes, administering mock interviews with experienced interviewers and being closely supervised during their training and initial interviews [45].

2.2.4. Statistical analysis

Means, SDs, and frequencies were calculated. Between-group differences were examined using χ^2 analysis or Fisher's exact test for categorical variables and F-tests for continuous variables. Variables in Table 1 reflect data from the entire sample of 141 adults with current BDD. Analyses in Table 2, which compare the 55 adults with current BDD who were not working in the past month because of psychopathology to the 74 adults with current BDD who worked in the past month, excluded 12 subjects who were not working for reasons other than psychopathology: students (n = 3), teachers on summer break (n = 2), women on maternity leave (n = 2), subjects who were unemployed but not expected to work by self or others (n = 2), a homemaker (n = 1), a subject caring for a sick family member (n = 1), and a subject who was laid off from his job (n = 1). It seemed problematic to include these 12 subjects in either the currently working group or in the group not currently working because of psychopathology. We report as significant all *P* values less than .05, 2-tailed. Because of the number of significance tests conducted, caution should be used when interpreting significant results, as some of them, particularly those of only modest significance, may reflect chance associations. We did not correct for multiple comparisons because this study is exploratory, and because adjusting for multiple comparisons has limitations [46]. Effect size estimates for F-tests were determined with Cohen's d (d = 0.2 is a small effect size, 0.5 is a medium effect size, and 0.8 is a large effect size) and for analyses of categorical data with the ϕ coefficient (Cramer's V) (V = 0.1 is a small effect size, 0.3 is a medium effect size, and 0.5 is a large effect size).

3. Results

Table 1 shows the current occupational status of the full sample of 141 adults with current BDD. As noted above, subjects could be included in more than one group (eg, if

Table 1
Occupational status and impairment in 141 adults with current body dysmorphic disorder

Variable	n (%) or mean (SD)
Work status (current)[a]	
Employed full-time[b]	59 (41.8)
Employed part-time[b]	26 (18.4)
Unemployed[c]	53 (37.6)
Student[d]	17 (12.1)
Homemaker[e]	12 (8.5)
Volunteer part-time[f]	11 (7.8)
Leave of absence because of psychopathology[g]	6 (4.3)
Leave of absence because of medical reasons[g]	2 (1.4)
Retired	1 (0.7)
Hollingshead occupational status	
Professional/executive	2 (2.4)
Medium business/manager	13 (15.9)
Small business/administrative	23 (28.0)
Clerical	25 (30.5)
Skilled manual	8 (9.8)
Semi-skilled	7 (8.5)
Unskilled	4 (4.9)
Work impairment (current)	
No impairment, working at high level	8 (5.7)
No impairment, working at satisfactory level	7 (5.0)
Mild impairment	30 (21.3)
Moderate impairment	21 (14.9)
Severe impairment	8 (5.7)
Not working because of psychopathology	44 (31.2)
Not working because of psychopathology and some other reason(s)[h]	11 (7.8)
Not working for reasons other than psychopathology	12 (8.5)
Disability payments (current)	
Collecting disability payments (not primarily because of BDD)	18 (12.8)
Collecting disability payments primarily because of BDD	14 (9.9)
Work/academic impairment (lifetime) because of BDD[i,j]	
Avoidance of occupational/role activities[k]	102 (72.3)
Work/academic impairment	
None	2 (1.4)
Mild	8 (5.7)
Moderate	36 (25.5)
Severe	34 (24.1)
Extreme	61 (43.3)
Days missed from work	69.5 ± 232.5

Notes to Table 1:

[a] Work status reflects the month before study intake. Subjects could be in more than one category.

[b] *Full-time employment* is defined as more than 30 hours per week; *part-time employment* is defined as at most 30 hours per week.

[c] Includes 29 subjects not expected to work by self or others (eg, because of physical disability or being financially well-off with no need to work) and 24 subjects expected to work by self or others.

[d] Includes both full-time and part-time students.

[e] Includes both full-time and part-time homemakers.

[f] Of the 11 volunteers, 7 were working, 3 were not working because of psychopathology, and 1 was a homemaker.

[g] Subjects were considered employed and planning on returning to work once able to do so.

[h] Psychopathology was judged to be a significant reason for not working plus an additional reason was required (eg, medical illness).

[i] Body dysmorphic disorder was considered to be the main reason for impairment in both the interviewer's and subject's opinion.

[j] The BDD Data Form, which obtained lifetime data, does not differentiate between occupational and academic functioning; functioning was assessed when BDD symptoms were at their worst.

[k] Avoided going to work or school for more than 1 consecutive week.

Table 2
Demographic and clinical characteristics of 129 adults with current BDD who were working vs not working because of psychopathology

Variable[a]	Not working because of psychopathology in the past month[b] (n = 55)	Working in the past month (n = 74)	Statistic[c]	*P*	Effect size
Demographics					
Sex (% female)	31 (56.4)	54 (73.0)	3.87	.049	V = 0.17
Age	36.7 ± 11.0	36.7 ± 11.7	0.00	.975	d = 0.01
Race (non-white)	5 (9.1)	10 (13.7)	0.64	.422	V = 0.07
Ethnicity (Hispanic)	2 (3.8)	4 (5.6)	—	1.00	V = 0.04
Marital status (never married)	40 (72.7)	52 (70.3)	0.09	.760	V = 0.03
Education (at least some college)	33 (60.0)	66 (89.2)	15.06	<.001	V = 0.34
Hollingshead occupation[d]	4.6 ± 1.3	3.7 ± 1.4	4.42	.039	d = 0.38
Symptom severity					
Lifetime impairment because of BDD	7.2 ± 1.1	5.6 ± 1.7	40.67	.001	d = 1.14
BDD-YBOCS	32.2 ± 7.1	28.4 ± 5.7	11.69	.001	d = 0.61
BABS	16.3 ± 5.6	15.4 ± 5.8	0.74	.390	d = 0.15
HAM-D	24.0 ± 10.9	12.8 ± 8.8	40.84	<.001	d = 1.15
Inventory of Depressive Symptomatology	39.0 ± 10.4	27.1 ± 11.1	36.08	<.001	d = 1.08
Course					
Age of onset of BDD	17.3 ± 7.9	16.4 ± 7.2	0.46	.497	d = 0.12
Duration of BDD (years)	19.2 ± 11.1	19.4 ± 13.3	0.07	.932	d = 0.05
Continuous course of illness[e]	49 (90.7)	57 (77.0)	4.13	.042	V = 0.18
Quality of life and psychosocial functioning (current)[f]					
SF-36[g]					
Mental health	32.0 ± 16.8	47.7 ± 19.0	21.91	<.001	d = 0.84
Role emotional	9.8 ± 20.3	39.0 ± 39.3	23.60	<.001	d = 0.87
Social functioning	32.8 ± 23.1	54.6 ± 25.5	23.23	<.001	d = 0.86
Q-LES-Q[g]	41.4 ± 15.1	54.9 ± 14.6	18.24	<.001	d = 0.77
SAS-SR[h]	2.6 ± 0.5	2.2 ± 0.4	17.12	<.001	d = 0.74
GAF	35.1 ± 6.8	52.1 ± 7.8	165.80	<.001	d = 2.31
SOFAS	36.3 ± 6.7	55.1 ± 8.9	101.54	<.001	d = 1.81
Suicidality (lifetime)					
Suicidal ideation	51 (92.7)	52 (70.3)	9.89	.002	V = 0.28
Suicidal ideation because of BDD[i]	44 (80.0)	33 (44.6)	16.44	<.001	V = 0.36
Suicidal ideation (current)[j]	23 (42.6)	13 (17.8)	9.39	.002	V = 0.27
Attempted suicide	21 (38.2)	11 (14.9)	9.20	.002	V = 0.27
Attempted suicide because of BDD[i]	14 (25.5)	3 (4.1)	12.63	<.001	V = 0.31
Comorbidity (current)					
Mood disorder	42 (76.4)	28 (37.8)	18.87	<.001	V = 0.38
Psychotic disorder (lifetime)[k]	1 (1.8)	3 (4.1)	—	.636	V = .064
Anxiety disorder	39 (70.9)	36 (48.6)	6.42	.011	V = 0.22
Substance use disorder	9 (16.4)	9 (12.2)	0.46	.496	V = 0.06
Eating disorder[l]	6 (10.9)	4 (5.4)	—	.323	V = 0.10
Somatoform disorder	2 (3.6)	0 (0.0)	—	.180	V = 0.15
Any personality disorder (lifetime)	34 (66.7)	25 (34.2)	12.65	<.001	V = 0.32
No. of current comorbid disorders	3.4 ± 1.5	2.3 ± 1.2	21.52	<.001	d = 0.83
Mental health treatment history					
Age first received treatment	22.0 ± 8.5	23.4 ± 8.6	0.71	.401	d = 0.15
Mental health treatment (lifetime)	55 (100.0)	66 (89.2)	—	.021	V = 0.22
Mental health treatment (current)	43 (78.2)	45 (60.8)	4.39	.036	V = 0.18
Psychiatrically hospitalized (lifetime)	33 (60.0)	16 (21.6)	19.73	<.001	V = 0.39
Psychiatrically hospitalized for BDD (lifetime)[i]	13 (23.6)	4 (5.4)	9.17	.002	V = 0.27

[a] Results are presented as n (%) or as mean ± SD.
[b] Includes subjects who were unemployed (n = 42) and those who were employed (n = 7 full-time; n = 2 part-time; n = 4 leave of absence) but were unable to work for at least 1 consecutive week during the month before study intake as a result of psychopathology.
[c] F, χ^2; the symbol "—" designates Fisher's exact test.
[d] Mean scores reflect level of clerical/sales worker or small business owner; this variable includes only those subjects who currently had a job.
[e] Retrospectively assessed; continuous = symptoms had not remitted for at least 1 month since onset.
[f] Analyses include only those subjects meeting full BDD criteria at intake (past week).
[g] Lower scores on the Q-LES-Q and SF-36 reflect poorer functioning or quality of life.
[h] Higher scores on the SAS-SR reflect poorer social functioning.
[i] Primarily because of BDD, in both the subject's and interviewer's judgment.
[j] Score of at least 1 on the HAM-D suicide item.
[k] Does not include delusional BDD.
[l] Includes eating disorder NOS.

they worked part-time and were also a student). Fewer than half of subjects (41.8%; n = 59) were employed full-time; an additional 18.4% (n = 26) were employed part-time. Of the sample, 37.6% were currently unemployed. Regarding current work impairment (Table 1), 89.4% of subjects reported some impairment. Of the sample (n = 55/141), 39.0% did not work for at least 1 consecutive week in the past month at least in part because of psychopathology. Of these subjects, 76.4% (n = 42) were unemployed for the entire month before the interview (the remaining 13 were employed for part of the month [n = 7 full-time; n = 2 part-time; n = 4 on leave of absence]). Thirty-two (22.7%) of the sample were currently receiving disability payments.

Of the 11 subjects who were not working because of psychopathology and some other reason, 6 reported that a medical illness was the other reason they were not working. The other 5 subjects were not working because of having no desire to work (n = 1), being laid off (n = 1), quitting their job because they did not enjoy it (n = 1), physical problems that interfered with work (n = 1), and scheduling conflict (n = 1). We compared subjects who were not working because of psychopathology (n = 44) to those who were not working because of psychopathology and some other reason (n = 11) on all variables reported in this article (these variables are shown in Table 2). The 2 groups significantly differed on the GAF (P = .032) and the SOFAS (P = .012), with poorer scores for the not working because of psychopathology group but not on any other variables.

Subjects also reported high rates and levels of work or academic impairment over their lifetime because of BDD (Table 1). Ninety-two point nine percent reported that BDD symptoms interfered at least moderately with lifetime work/academic functioning, and 43.3% reported extreme lifetime interference in work and/or academic functioning due to BDD.

Table 2 compares the 55 subjects who did not work for at least 1 week in the past month because of psychopathology to the 74 subjects who worked full-time or part-time for the entire past month. Subjects included in the not working because of psychopathology group are represented across multiple categories listed under current work status in Table 1. As shown in Table 2, subjects who were not working because of psychopathology were more likely to be male, less likely to have attended at least some college, and had lower mean Hollingshead scores. Those not currently working because of psychopathology also had a history of more severe impairment because of BDD symptoms and more severe BDD symptoms currently as assessed by the BDD-YBOCS. They also had more severe depressive symptoms, although they did not have more delusional beliefs on the BABS. They also reported a more chronic course of BDD.

Subjects who did not work because of psychopathology also had significantly poorer scores on all measures of psychosocial functioning and quality of life, with large effect sizes. In this group, the mean GAF and SOFAS scores indicated severe impairment in psychosocial functioning (ie, major impairment in several areas). A significantly higher proportion of those who did not work because of psychopathology reported lifetime suicidal ideation and attempts, with very high rates in this group. They were also significantly more likely to have a current comorbid mood disorder, anxiety disorder, or personality disorder; to have received mental health treatment; and to have been psychiatrically hospitalized for any reason or primarily because of BDD.

4. Discussion

Occupational impairment and functioning is an important aspect of psychopathology that has never before been examined in BDD in the detail presented in this report. Our finding that 37.6% of BDD subjects were currently unemployed is consistent with previous research on BDD [7-9]. Unemployment rates in previous studies range from 38% to 85%, with higher rates reported in smaller BDD samples [8,12,13]. Although the current sample was not directly compared to another clinical sample, these unemployment rates are higher than or equivalent to those reported for certain other serious mental illnesses. For example, a naturalistic study of 269 psychiatric inpatients and outpatients with major depressive disorder in Finland reported an unemployment rate of 21% [24]. In a prospective, longitudinal study of 293 adults with obsessive-compulsive disorder (OCD), 41% of the sample was unemployed [47]. In 1 large community study, 22% and 24% of individuals with OCD were unemployed [48]. Although it is unclear to what extent our sample reflects individuals with BDD in the community, our sample was broadly ascertained, with minimal exclusion criteria.

Our finding that 22.7% of subjects were currently receiving disability payments is similar to findings for anxiety disorders such as generalized anxiety disorder (25%) and panic disorder with agoraphobia (17%), but is higher than reported for OCD (14%) [49,50] and panic disorder without agoraphobia (10%) [48]. However, because our BDD sample was not directly compared to these other clinical samples, caution should be used when making such comparisons.

It is worth underscoring that a very high proportion of the sample reported impairment—both over their lifetime and currently—in occupational functioning. It is notable that nearly half of the sample reported not working in the past month because of psychopathology (39%) or severe work impairment because of psychopathology (5.7%). This finding is consistent with previous BDD research [7,12]. In an OCD study that is very similar to our study and which also used the LIFE, 34% of 197 OCD subjects were currently unable to work because of psychopathology, and 4% reported current severe impairment because of psychopathology [50]. Thus, BDD may be comparable to

OCD in terms of impairment in occupational functioning. In addition, work impairment scores on the SAS-SR were similar to those in the National Institute of Mental Health Collaborative Depression Study for subjects with current major depression [51].

Our findings that subjects who were not working because of psychopathology had more severe BDD and depressive symptoms, were more likely to have certain comorbid disorders and had more comorbid disorders, is in a sense not surprising, given that all of these variables contributed to subjects' overall degree of psychopathology. Greater comorbidity is related to work impairment in other disorders such as OCD [52] and schizophrenia [53]. Regarding BDD symptoms specifically, we recently found in prospective analyses that more severe BDD symptoms predicted poorer overall psychosocial functioning (work functioning specifically was not examined) [54]. It is worth noting that not working because of psychopathology was associated not only with more severe BDD symptoms but also with a more chronic course of BDD. More than 90% of subjects had not remitted from BDD for more than a month since onset of their BDD, which usually began during adolescence. BDD's chronicity may interfere with the achievement of important developmental milestones such as entering the workforce or obtaining an academic degree. However, the hypothesis that a more chronic course of BDD predicts worse work functioning needs to be examined prospectively.

Subjects who did not work because of psychopathology also had markedly lower scores across all measures of social functioning and quality of life than subjects who were working. The SF-36 scores for nonworking subjects were 2.2 to 2.4 SD units lower than norms for the general US population [19]. Our finding of markedly high rates of suicidal ideation and attempts in the nonworking group has particular clinical importance, especially in light of preliminary findings that individuals with BDD may have markedly elevated rates of completed suicide [55].

We have previously examined differences in our sample between subjects who were currently receiving mental health treatment versus those who were not [27]. We found few differences between treated and untreated subjects for occupational functioning and impairment [27]. Currently treated subjects were not significantly more likely than untreated subjects to be unemployed (37.5% vs 24.4%; $P = .14$) or collecting disability payments (20.1% vs 10.6%; $P = .10$), and the 2 groups reported a similar number of days missed from work or school because of BDD. However, a greater proportion of treated subjects than untreated subjects reported lifetime occupational/academic interference because of BDD (100.0% vs 95.5%; $P = .04$), and treated subjects had lower GAF scores (43.2 ± 11.0 vs 49.7 ± 9.4; $P < .001$).

Our findings have some important treatment implications. Although treatment research on BDD is still limited, available data indicate that appropriate pharmacotherapy may improve occupational and academic functioning. For example, an open-label escitalopram study [16] found significant improvement on the SOFAS and the SF-36 role limitations because of emotional problems subscale. A double-blind cross-over trial [15] found that the serotonin reuptake inhibitor (SRI) clomipramine was significantly more effective than desipramine in improving scores on the Schneier Disability Profile [14]. In an open-label trial of citalopram [18] and a randomized controlled trial of fluoxetine [20], significant improvement was reported on the work impairment domain of the LIFE-RIFT [29]. This important issue has not been examined in cognitive behavioral therapy (CBT) studies, which are limited to 3 waitlist-controlled trials and case series [56-58]. The assessment of functional improvement, not just symptom reduction, in treatment outcome studies is important for future research.

This study had a number of limitations. We did not confirm information obtained via self-report measures, and we did not verify whether subjects were working or receiving disability payments. In addition, we did not compare BDD subjects to another clinical sample. Our data were obtained cross-sectionally rather than prospectively. However, this study also has some strengths, such as use of reliable and valid interviewer and self-report measures, a more broadly ascertained sample than most previous BDD studies, and more detailed examination of an important aspect of a relatively common but understudied disorder. Given the notable occupational impairment reported in BDD, future studies are needed to further investigate this clinically and economically important issue.

Acknowledgment

This study was supported by a grant from the National Institute of Mental Health Bethesda, MD (R01 MH60241) (Dr K A Phillips).

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