

# A Comparison of Quality of Life and Psychosocial Functioning in Obsessive-Compulsive Disorder and Body Dysmorphic Disorder

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**Background.** Obsessive-compulsive disorder (OCD) and body dysmorphic disorder (BDD) are possibly related disorders characterized by poor functioning and quality of life. However, few studies have compared these disorders in these important domains.

**Methods.** We compared functioning and quality of life in 210 OCD subjects, 45 BDD subjects, and 40 subjects with comorbid BDD+OCD using reliable and valid measures.

**Results.** OCD and BDD subjects had very poor scores across all measures, with no statistically significant differences between the groups. However, comorbid BDD+OCD subjects had greater impairment than OCD subjects on 11 scales/subscales, which remained significant after controlling for OCD severity. Comorbid BDD+OCD subjects had greater impairment than BDD subjects on 2 scales/subscales, which were no longer significant after controlling for BDD severity, suggesting that BDD severity may have accounted for greater morbidity in the comorbid BDD+OCD group.

**Conclusions.** Functioning and quality of life were poor across all three groups, although individuals with comorbid BDD+OCD had greater impairment on a number of measures. It is important for clinicians to be aware that patients with these disorders—and, in particular, those with comorbid BDD and OCD—tend to have very poor functioning and quality of life across a broad range of domains.

**Keywords** Body dysmorphic disorder, Obsessive compulsive disorder, Quality of life, OCD-spectrum disorders, Somatoform disorders, Anxiety disorders

## INTRODUCTION

Body dysmorphic disorder (BDD), a distressing or impairing preoccupation with an imagined or slight defect in appearance, is widely considered to be related to obsessive-compulsive disorder (OCD). Studies comparing BDD to OCD have found many similarities, including sex ratio, illness sever-

ity, course of illness, and most comorbidity (1–4). Differences have also been found, such as more severe depressive symptoms, more frequent suicidal ideation, and poorer insight in BDD (2,4,5). While both disorders are associated with very poor functioning and quality of life (6,7), little is known about how they compare across these important domains.

In a study of 60 outpatients with OCD, mental health-related SF-36 scores were similar to published norms for patients with depression and poorer than norms for the U.S. population and for patients with type II diabetes (7). In a study

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of 62 outpatients with BDD (6), mental health-related SF-36 scores were poorer than norms for all of the above groups. BDD scores were also poorer than those reported in the OCD study; however, BDD and OCD were not directly compared, and it is unclear whether the poorer BDD scores reflect poorer quality of life in BDD or were due to other factors (e.g., sample selection). Additional data suggest that patients with BDD, and those with both BDD and OCD (BDD+OCD), may be more impaired than those with OCD. For example, Frare et al. (1) found that patients with BDD and those with BDD+OCD were less likely than OCD subjects to be married, had lower educational attainment, and were more likely to be unemployed or not in school. Phillips et al. (3) found that subjects with BDD and those with BDD+OCD were less likely to be married than OCD subjects. Furthermore, subjects with BDD+OCD were more likely to be living alone than OCD subjects and more likely to be unemployed than those with BDD.

More recently, Phillips et al. (8) compared subjects with BDD to subjects with OCD and subjects with comorbid BDD+OCD on a broad range of demographic and clinical variables. Subjects with BDD had significantly poorer insight than those with OCD and were more likely to be delusional. Subjects with BDD were also significantly more likely than those with OCD to have lifetime suicidal ideation, as well as lifetime major depression and lifetime substance use disorder. Those with comorbid BDD+OCD had greater morbidity than subjects with BDD and OCD, but differences between the comorbid group and BDD group were no longer significant after controlling for BDD severity. Despite the wide range of variables examined, functioning and quality of life were not systematically compared in this study.

To our knowledge, this is the first study to directly compare functioning and quality of life in BDD versus OCD using reliable and valid measures, and the first to compare BDD versus OCD across multiple domains of functioning and quality of life. This study compared 210 subjects with OCD, 45 subjects with BDD, and 40 subjects with comorbid BDD+OCD using such measures. Based on the existing literature and our clinical impressions, we hypothesized that subjects with BDD+OCD and those with BDD would be more impaired than subjects with OCD, and, more specifically, that BDD subjects would have poorer social functioning than OCD subjects, given the interpersonal nature of the disorder (3). This latter hypothesis is compatible with apparent differences in the underlying core beliefs in these two disorders (although they have not been directly compared). Veale et al. (9) found that 69% of 50 subjects with BDD endorsed core beliefs with an interpersonal theme (e.g., "If my appearance is defective, I shall end up alone and isolated," or "I am unlovable"). Core beliefs in OCD appear to often focus on inflated responsibility, importance of control, and overestimation of harm (10). Given the interpersonal nature of core beliefs in BDD, one might expect that individuals with BDD would have poorer social functioning than those with OCD.

## METHODS

### Subjects

Subjects participated in one of two similar longitudinal studies conducted at the same site: one on the course of OCD and the other on the course of BDD. Only data from the intake assessment are included in this report. The studies have very similar methodology and the same interviewer training procedures and trainers. Inclusion criteria for the BDD study were: (1) age 12 or older; (2) a diagnosis of past or current DSM-IV BDD or its delusional variant; (3) availability for an in-person interview. Inclusion criteria for the OCD study were: (1) age 6 years or older; (2) a primary diagnosis of DSM-IV OCD; (3) treatment was sought for OCD; and (4) willingness to participate in annual interviews. The presence of an organic mental disorder that would interfere with the collection of valid interview data was the only exclusion criterion for both studies.

In order to minimize differences in how the samples were ascertained, a subset of the original study samples was selected. BDD study subjects were included in the BDD group if they

1. were age 19 or older;
2. had a primary diagnosis of BDD;
3. met full BDD criteria at the intake interview;
4. were receiving mental health treatment at the time of study intake; and
5. did not have current or past OCD.

OCD study subjects were included in the OCD group if they

1. were age 19 or older;
2. had a primary diagnosis of OCD;
3. met full OCD criteria at the intake interview;
4. were receiving mental health treatment at the time of study intake; and
5. did not have current or past BDD.

Subjects who currently met DSM-IV criteria for both OCD and BDD, were age 19 or older, and were receiving mental health treatment at the time of the study intake were included in the BDD+OCD comorbid group (25 from the BDD study with primary BDD, and 15 from the OCD study with primary OCD).

OCD study and BDD study participants were both recruited from Rhode Island/southeastern Massachusetts. All OCD study participants were obtained from psychiatric treatment settings, including consecutive admissions to an outpatient OCD specialty clinic, inpatient units of a private psychiatric hospital, community mental health centers, two general outpatient psychiatric clinics, and the private practices of three experts in cognitive-behavioral therapy for OCD. BDD subjects were obtained from treating clinicians (67.1%) and advertisements (32.9%) (although all subjects included in this report were currently receiving mental health treatment; see above). Clinicians who referred subjects to the BDD study practiced in a broad

range of clinical settings, primarily settings that do not specialize in BDD.

The final sample consisted of 210 OCD subjects (123 females; 84 single;  $M_{\text{age}} = 39.8$ ;  $SD = 12.6$ ), 45 BDD subjects (30 females; 23 single;  $M_{\text{age}} = 36.5$ ;  $SD = 12.7$ ), and 40 subjects with comorbid BDD+OCD (18 females; 25 single;  $M_{\text{age}} = 36.5$ ;  $SD = 11.7$ ). This study was approved by the hospital Institutional Review Board, and all subjects signed statements of informed consent. Data on functioning and quality of life for the full BDD sample ( $n = 176$ ) and OCD sample ( $n = 197$ ) have been previously reported (11–12).

### Assessments

The Structured Clinical Interview for DSM-IV (13) determined diagnosis. The following reliable and valid measures assessed current functioning and quality of life. The self-report Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) assessed quality of life (14). A converted total score on the “General” (“Short Form”) is also reported. The self-report Social Adjustment Scale-Self Report (SAS-SR) assessed social functioning (15). The self-report *Medical Outcomes Study 36-Item Short-Form Health Survey* (SF-36) assessed mental and physical health status and quality of life (16). The rater-administered Longitudinal Interval Follow-Up Evaluation (LIFE) assessed functional impairment (17). LIFE subscales range from 1 (no impairment) to 5 (severe impairment); scores higher than 2 indicate impairment. Global psychiatric symptoms and functioning were assessed with the rater-administered Global Assessment of Functioning Scale (GAF), and social and occupational functioning was assessed with the Social and Occupational Functioning Assessment Scale (SOFAS) (18). Lower scores on the Q-LES-Q, SF-36, GAF, and SOFAS reflect poorer functioning/quality of life, and higher scores on the SAS-SR and LIFE reflect poorer functioning. OCD severity was assessed with the 10-item reliable and valid Yale Brown Obsessive-Compulsive Scale (Y-BOCS) (19). BDD severity was assessed with the 12-item reliable and valid Yale Brown Obsessive-Compulsive Scale Modified for BDD (BDD-YBOCS) (20).

### Statistical Analysis

Group differences were examined using  $\chi^2$  analyses for categorical variables and ANOVA for continuous variables, followed by Tukey post-hoc analyses. Comorbid BDD+OCD subjects had significantly more severe BDD symptoms than BDD subjects on the BDD-YBOCS (20) ( $p = .004$ ) and more severe OCD symptoms than OCD subjects at a trend level on the Y-BOCS (19) ( $p = .048$ ). Therefore, secondary analyses examined whether significant differences remained after controlling for BDD or OCD severity. We did not use a Bonferroni adjustment for multiple comparisons because this study is

exploratory, and because it has been noted that this adjustment is too conservative (21). However, we did apply a partial alpha adjustment, using  $p < .01$  to determine statistical significance;  $p$  values from  $p = .01$  to  $p < .05$  were considered to constitute a trend.

### RESULTS

The OCD, BDD, and BDD+OCD groups did not significantly differ on gender ( $\chi^2(2) = 4.19$ ,  $p = .123$ ), age ( $F = 2.04$ ,  $p = .132$ ), or marital status ( $\chi^2(6) = 9.58$ ,  $p = .143$ ). Subjects in the BDD group and in the OCD group had similar severity of BDD and OCD symptoms, respectively ( $23.8 \pm 6.3$  on the first 10 items of the BDD-YBOCS for the BDD group, and  $23.0 \pm 5.8$  on the Y-BOCS for the OCD group;  $F = .73$ ,  $df = 1, 253$ ,  $p = .395$ ).

First, we compared the proportion of OCD and BDD subjects who were excluded from certain SAS-SR and Q-LES-Q domains, as scoring approaches for these scales exclude subjects who may be more severely ill from some subscales, thereby possibly minimizing impairment as reflected in scale scores. For example, individuals who are not working do not answer questions on the SAS-SR Work subscale and are therefore excluded from scoring of this domain. The only difference found was that a higher proportion of BDD subjects were excluded from the SAS-SR Parental subscale ( $\chi^2 = 7.65$ ,  $p = .006$ ), which indicates that fewer BDD subjects had children.

Scores for all three groups reflected very poor functioning and quality of life (Table 1). Compared to published community norms (14), mean scores on the Q-LES-Q General (Short Form) scale were 1.5 standard deviation ( $SD$ ) units poorer for OCD subjects, 2.0  $SD$  units poorer for BDD subjects, and 2.4  $SD$  units poorer for BDD+OCD subjects. Mean SAS-SR Overall Adjustment scores were 1.8  $SD$  units poorer than published community norms for OCD and BDD subjects and 2.8  $SD$  units poorer for BDD+OCD subjects (15). Mean scores on the SF-36 mental health subscales, compared to US population norms (16), were 1.3  $SD$  units poorer for OCD subjects, 1.7  $SD$  units poorer for BDD subjects, and 1.9  $SD$  units poorer for BDD+OCD subjects.

A number of significant differences were found in three-way analyses (Table 1). Consistent with our predictions, post-hoc analyses showed that BDD+OCD subjects had significantly poorer scores than OCD subjects on 11 of 38 scales/subscales. Total scale scores and global scores significantly differed between BDD+OCD subjects and OCD subjects for the Q-LES-Q General ( $p < .001$ ), SAS-SR Overall Adjustment ( $p = .005$ ), LIFE Global Social Adjustment ( $p = .003$ ), and GAF ( $p < .001$ ). Significant differences on subscales were found for Q-LES-Q Social ( $p = .004$ ), SF-36 Social Functioning ( $p = .002$ ), Q-LES-Q Emotional Well-Being ( $p = .003$ ) and Physical Health ( $p = .004$ ), SF-36 Vitality ( $p = .002$ ) and Role Limitations due to Physical Problems ( $p = .007$ ), and LIFE Satisfaction ( $p < .001$ ). At a trend level, BDD+OCD

**Table 1** Quality of Life and Psychosocial Functioning Measures for OCD vs BDD vs Comorbid BDD-OCD

Variable	OCD (n = 210)	BDD (n = 45)	Comorbid BDD & OCD (n = 40)	F value	df	p
<b>Q-LES-Q<sup>a</sup></b>						
General (Short Form)	58.3 ± 17.1	51.1 ± 13.1	45.7 ± 17.7	F = 9.77	2,259	< .001 <sup>c</sup>
Physical Health	54.0 ± 19.6	53.8 ± 18.4	42.3 ± 18.1	F = 5.41	2,265	.005 <sup>c</sup>
Emotional Well-Being	54.9 ± 18.6	49.2 ± 14.6	43.3 ± 18.9	F = 6.60	2,266	.002 <sup>c</sup>
Household	59.3 ± 23.5	55.5 ± 21.1	47.2 ± 28.1	F = 3.48	2,256	.032
Leisure	58.4 ± 19.0	52.8 ± 18.1	50.2 ± 18.1	F = 3.65	2,265	.027
Social	59.7 ± 17.8	57.3 ± 16.1	49.0 ± 20.5	F = 5.16	2,260	.006 <sup>c</sup>
Work	47.5 ± 35.3	52.3 ± 29.6	36.8 ± 35.4	F = 1.54	2,219	.216
School	31.5 ± 33.5	35.7 ± 33.8	27.3 ± 35.0	F = 0.20	2,77	.822
<b>SAS-SR<sup>b</sup></b>						
Overall Adjustment	2.2 ± 0.5	2.2 ± 0.4	2.5 ± 0.6	F = 5.28	2,264	.006 <sup>c</sup>
Work	2.0 ± 0.7	2.0 ± 0.6	2.3 ± 0.6	F = 2.01	2,234	.136
Social and Leisure	2.5 ± 0.7	2.5 ± 0.6	2.9 ± 0.9	F = 4.56	2,264	.011
Extended Family	1.9 ± 0.6	2.0 ± 0.6	2.1 ± 0.6	F = 0.58	2,261	.562
Primary Relationship	2.2 ± 0.7	2.2 ± 0.4	2.6 ± 0.7	F = 0.98	2,123	.378
Parental	1.7 ± 0.6	1.8 ± 0.7	1.4 ± 0.5	F = 0.63	2,96	.535
Family Unit	2.3 ± 1.0	2.2 ± 0.9	2.6 ± 1.2	F = 1.51	2,263	.222
<b>SF-36<sup>a</sup></b>						
Mental Health	47.1 ± 21.8	44.4 ± 17.9	37.1 ± 22.4	F = 3.49	2,264	.032
Role Limitations/Emotional	44.4 ± 41.4	24.6 ± 35.4	25.4 ± 36.7	F = 6.64	2,267	.002 <sup>e</sup>
Social Functioning	57.4 ± 28.6	47.3 ± 26.4	39.9 ± 24.4	F = 7.22	2,266	.001 <sup>c</sup>
Vitality	41.3 ± 22.6	38.8 ± 21.3	27.2 ± 20.3	F = 6.13	2,264	.003 <sup>c</sup>
General Health	58.6 ± 23.2	59.1 ± 22.9	54.7 ± 24.0	F = 0.50	2,267	.610
Physical Functioning	80.9 ± 24.3	84.9 ± 22.1	79.3 ± 26.8	F = 0.60	2,263	.547
Role Limitations/Physical	71.8 ± 39.7	60.6 ± 44.2	49.3 ± 45.1	F = 5.20	2,263	.006 <sup>c</sup>
Bodily Pain	69.3 ± 24.0	69.6 ± 24.7	61.0 ± 23.8	F = 1.95	2,266	.144
<b>LIFE<sup>b</sup></b>						
Global Social Adjustment	3.9 ± 1.0	3.9 ± 0.7	4.5 ± 0.7	F = 5.60	2,290	.004 <sup>c</sup>
Work Impairment	3.9 ± 1.2	3.5 ± 1.5	4.4 ± 1.0	F = 5.83	2,255	.003 <sup>d</sup>
School Impairment	3.9 ± 1.2	4.5 ± 1.1	4.5 ± 0.8	F = 2.36	2,61	.103
Household Impairment	3.6 ± 1.1	3.5 ± 1.2	3.6 ± 1.2	F = 0.10	2,288	.908
Recreation	2.9 ± 1.3	2.8 ± 1.3	3.5 ± 1.4	F = 3.26	2,289	.040
Relationships-Family						
Mother	2.2 ± 1.1	2.6 ± 1.5	2.8 ± 1.5	F = 4.41	2,233	.013
Father	2.3 ± 1.1	2.9 ± 1.5	3.0 ± 1.3	F = 5.44	2,199	.005 <sup>c</sup>
Siblings	2.6 ± 1.1	3.2 ± 1.4	2.7 ± 1.4	F = 4.17	2,270	.017
Spouse/Mate	2.3 ± 1.2	2.1 ± 1.2	3.4 ± 1.2	F = 4.87	2,122	.009 <sup>e</sup>
Children	1.9 ± 1.0	2.1 ± 1.4	2.1 ± 1.4	F = 0.23	2,134	.794
Other relative	2.6 ± 1.3	2.3 ± 1.5	2.6 ± 1.3	F = 0.73	2,27	.930
Relationships-Friends	2.5 ± 1.3	2.9 ± 1.4	3.0 ± 1.2	F = 3.24	2,289	.040
Satisfaction	3.0 ± 0.9	3.1 ± 0.8	3.7 ± 0.8	F = 10.67	2,291	< .001 <sup>c,d</sup>
GAF <sup>a</sup>	48.5 ± 9.6	47.2 ± 10.0	41.8 ± 10.2	F = 8.11	2,292	< .001 <sup>c</sup>
SOFAS <sup>a</sup>	51.2 ± 11.9	50.8 ± 11.3	44.3 ± 10.4	F = 3.96	2,236	.020

<sup>a</sup>Lower scores on the Q-LES-Q, SF-36, GAF, and SOFAS reflect poorer functioning/quality of life. <sup>b</sup>Higher scores on the SAS-SR and LIFE reflect poorer functioning. <sup>c</sup>Comorbid BDD-OCD scores are worse than OCD scores and reflect worse functioning in these domains. <sup>d</sup>Comorbid BDD-OCD scores are worse than BDD scores and represent worse functioning in these domains. <sup>e</sup>Post-hoc tests are significant at the trend level ( $p < .05$ ).

subjects had poorer scores than OCD subjects on SF-36 Role Limitations due to Emotional Problems ( $p = .022$ ) and LIFE relationships with father ( $p = .012$ ). All of the above differences remained significant after controlling for OCD severity.

BDD+OCD subjects had significantly poorer scores than BDD subjects on 2 of 38 scales/ subscales. There were no significant differences in terms of total scale scores or global scores; however, these two groups significantly differed on the subscales of LIFE Satisfaction ( $p = .003$ ) and Work ( $p = .003$ ).

There was a trend for BDD+OCD subjects to have poorer scores than BDD subjects on SAS Overall Adjustment ( $p = .025$ ), LIFE Global Social Adjustment ( $p = .022$ ), relationships with spouse/mate ( $p = .011$ ), and the GAF ( $p = .031$ ). None of these differences remained significant after controlling for BDD severity.

Contrary to our hypothesis, OCD and BDD subjects did not significantly differ on any scales, and social functioning was not significantly poorer in BDD. However, BDD scores were

poorer than OCD scores at a trend level on the Q-LES-Q General Scale ( $p = .039$ ), SF-36 Role Limitations due to Emotional Problems ( $p = .011$ ), and LIFE relationships with siblings ( $p = .012$ ).

## DISCUSSION

OCD subjects and BDD subjects had very poor functioning and quality of life across a range of measures. Consistent with previous studies, scores were notably poorer than community or U.S. population norms. BDD and OCD scores were also poorer across all Q-LES-Q domains than reported for a number of other mental disorders (22), although our samples were not directly compared to individuals with other disorders; such studies are needed.

Consistent with our hypothesis, BDD+OCD subjects had poorer functioning and quality of life than OCD subjects, even after controlling for OCD severity. However, functioning/quality of life was not significantly poorer for BDD+OCD subjects than for BDD subjects after controlling for BDD severity. This latter finding suggests that greater BDD severity accounted for differences between BDD+OCD subjects and BDD subjects found in initial analyses. Previous studies which found greater impairment for individuals with BDD+OCD did not control for severity of BDD or OCD (1,3). Thus, it is not known whether more severe BDD or OCD symptoms accounted for the greater morbidity in subjects with both BDD and OCD in previous studies.

Our hypothesis that BDD would be associated with poorer functioning and quality of life than OCD was not confirmed, although power was somewhat limited due to the BDD sample size, and larger studies are needed. Our finding that social functioning was not significantly worse in BDD than in OCD was surprising, given BDD's interpersonal nature (23). However, BDD subjects had poorer mean scores than OCD subjects on 9 of 16 scales/subscales that primarily or only assess social functioning, whereas OCD subjects had poorer mean scores than BDD subjects on 3 of these 16 scales (the two groups had the same mean scores on 4 of these scales). A lack of statistically significant differences on some of these scales may reflect limited statistical power to detect significant differences. It is also possible that our measures do not adequately reflect certain components of social functioning that may be poorer for BDD, such as intimacy, dating, and social avoidance. Studies that assess different domains of social functioning/quality of life are needed. Alternatively, these disorders may be similar in terms of social impairment, as disorders (such as BDD) that appear more interpersonally focused in terms of symptom content or underlying core beliefs may not necessarily interfere more with social functioning than disorders whose symptoms are not as interpersonally focused.

This study has a number of limitations which future research is needed to address. Although we attempted to obtain a broadly ascertained sample, the sample was a treated sample and one of convenience, and it is unclear how generalizable our findings are to the community. To minimize possible bias due to differences

in inclusion and exclusion criteria in the BDD and OCD studies, we matched the BDD and OCD samples on a number of variables. It is nonetheless possible that there are unknown biases (for example, those due to differences in sample ascertainment). In addition, the BDD and BDD+OCD groups were relatively small and larger samples may be needed to detect significant differences between them. Interrater reliability was not established across interviewers for the two studies. However, three of the functioning/quality of life scales are self-report measures, and interviewers for both studies were trained to conduct the rater-administered measures by the same experienced trainers. The BDD+OCD group contained more subjects with primary BDD ( $n = 25$ ) than with primary OCD ( $n = 15$ ); thus, findings for that group may be more applicable to patients with primary BDD than with primary OCD. Our study is also limited by lack of a comparison group of matched normal controls. However, this study also has certain strengths, such as use of both reliable and valid interviewer-administered measures and self-report measures, as well as the examination of a relatively broad range of functioning domains that have not previously been compared across these disorders. Additional studies are needed to address the limitations of this study and to further examine the important domains of functioning and quality of life in BDD and OCD. In the meantime, it is important for clinicians to be aware that patients with these disorders—and, in particular, those with comorbid BDD and OCD—tend to have very poor functioning and quality of life across a broad range of occupational, social, and other domains.

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