



Published in final edited form as:

Psychiatr Q. 2006 ; 77(3): 223–229.

Social Functioning in Body Dysmorphic Disorder: Assessment Considerations

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Abstract

Individuals with body dysmorphic disorder (BDD) have markedly poor social functioning; however, previous reports may underestimate impairment. Scoring on certain functioning measures such as the Social Adjustment Scale-Self Report (SAS-SR) potentially excludes more severely ill individuals from some domains, thereby possibly underestimating functional impairment. To explore this issue, 73 individuals with BDD who reported having no primary relationship (and were therefore excluded from scoring on the SAS-SR Primary Relationship domain) were compared to 58 individuals with BDD who had a primary relationship. Subjects without a primary relationship had significantly poorer global social adjustment on several measures. They also had poorer scores on the Global Assessment of Functioning Scale and greater severity of BDD and depressive symptoms at a trend level. These findings suggest that the SAS-SR may underestimate social impairment. This underestimation may pertain to other domains of functioning, other disorders, and certain other functioning and quality of life measures.

Keywords

Body dysmorphic disorder; Dysmorphophobia; Social adjustment; Assessment

Body dysmorphic disorder (BDD) is a relatively common disorder that consists of a distressing or impairing preoccupation with an imagined or slight defect in appearance [1]. Individuals with BDD have very poor psychosocial functioning, markedly poor quality of life, and high rates of suicidal ideation poor and attempts [2]. Social impairment, in particular, appears to be nearly universal in BDD [2]. Persons with BDD are often single, avoid dating, have a significant reduction in the quality of their relationships and have high levels of social isolation [3,4]. Despite this disorder's severity, social functioning in BDD has received only limited attention.

In a study of 188 individuals with BDD, 99% reported moderate, severe, or extreme lifetime impairment in social functioning [2]. Studies that have used standard measures of social functioning have also found high levels of impairment. A study of 62 BDD patients found that Medical Outcomes Study 36-Item Short Form Health Survey (SF-36; [5]) social functioning scores were 2.2 standard deviation (SD) units poorer than for the U.S. population [6]. In a study

of 176 more broadly ascertained BDD subjects [4], scores on the SF-36 social functioning scale were similarly poor, and scores on the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q; [7]) social dimension were 1.6 SD units poorer than community scores.

To our knowledge, only two studies [4,8] have examined social functioning in BDD using the Social Adjustment Scale-Self Report (SAS-SR; [9]). One study [8] found that depressed patients with comorbid BDD ($n=28$) had a mean overall social adjustment score of 2.6 ± 0.6 , which was 3.1 SD units poorer than community norms, although their SAS-SR scores were comparable to those of depressed subjects without comorbid BDD ($n=322$). Our group recently found a mean SAS-SR overall social adjustment score of $2.37\pm .52$ in 126 broadly ascertained subjects with BDD [4], which was markedly poorer than community norms. Effect sizes across all SAS-SR domains were very large ($d=0.82-2.07$). In addition, more severe BDD symptoms were significantly correlated with poorer overall social adjustment ($r=.37, p < .0001$).

Even though SAS-SR scores in these studies were notably poor, these findings may actually underestimate social impairment in BDD. Scoring on the SAS-SR systematically excludes possibly more seriously ill individuals from certain subscales, thereby potentially minimizing impairment in social functioning. For example, individuals who are not living with a partner in an intimate relationship do not answer questions on the SAS-SR Primary Relationships subscale and are therefore excluded from scoring of this domain. Similarly, subjects who are not working do not answer the SAS-SR Work subscale questions. If individuals with a certain disorder (or members of a population of interest) have relatively higher rates of unemployment due to psychopathology, or are particularly likely to lack a primary relationship because of psychopathology, then scale scores may underestimate functional impairment in that disorder because this type of scoring algorithm will exclude individuals who may be more severely ill. It is not known how the proportion of subjects excluded from these domains compares across disorders and the extent to which their exclusion reflects psychopathology. While the developers of the SAS-SR have identified this exclusion of severely ill persons from certain domains as a potential limitation of the scale [9], the magnitude of this effect is unknown.

For this reason we re-examined the SAS-SR data noted above [4] for adult BDD subjects. We were particularly interested in the Primary Relationships subscale because our clinical impression is that social and romantic relationships may be particularly impaired in BDD, which may possibly result from and/or maintain this disorder. To our knowledge, this is the first study of any disorder to examine the impact of excluding subjects from scoring on the SAS-SR. We hypothesized that individuals without a primary relationship would have significantly poorer social functioning and more severe BDD symptoms than those with a primary relationship.

Methods

Participants

Subjects were 131 adults with BDD participating in a study of the course of BDD. Data are presented in this report for only a subset of the total sample (131 of 200 subjects) because adolescents under age 18 were excluded from the current report (as it is unlikely that they would be living with a partner in a primary relationship), and because the SAS-SR was added to the assessment battery after the study began. Only intake data are presented in this report. All participants were diagnosed with lifetime (past or current) DSM-IV BDD. 88.6% of the 131 participants met criteria for current BDD, 7.6% were in partial remission, and 3.8% were in full remission. Additional study inclusion criteria were: (1) age 12 or older, (2) living locally and able to be interviewed in person, and (3) willing and able to provide written informed consent. The only exclusion criterion was the presence of an organic mental disorder that would

interfere with the collection of the data. The study was approved by the hospital Institutional Review Board, and subjects signed statements of informed consent.

Assessments

The *Structured Clinical Interview for DSM-IV Non-Patient Version* (SCID-NP; [10]) was used to diagnose BDD. The *Social Adjustment Scale-Self Report* (SAS-SR; [9]) is a 54-item reliable, valid, and widely used self-report measure of current social functioning in the following domains: Primary Relationship (living with a partner), Work (work for pay, school, or housework), Social and Leisure (dating, recreation), Extended Family (relatives), Parental (own children), and Family Unit (partner or children). An Overall Adjustment Score is based on these six domains. Higher scores indicate poorer functioning. The *Global Social Adjustment* item from the Longitudinal Interval Follow-Up Evaluation (LIFE; [11]) was used to assess the lowest level of global social adjustment for at least one week during the previous month. The *Global Assessment of Functioning Scale* (GAF; [1]) and *Social and Occupational Functioning Scale* (SOFAS; [1]) are interviewer-rated global measures of overall symptom severity (GAF) and functioning (GAF and SOFAS) during the past month. Scores range from 0 to 100 with lower scores indicating poorer functioning. The reliable and valid self-report *Medical Outcomes Study 36-Item Short Form Health Survey* (SF-36; [5]) assessed current mental health status and mental health related quality of life. Subscale scores range from 0 to 100, with higher scores indicating better quality of life. The *Quality of Life Enjoyment and Satisfaction Questionnaire* (Q-LES-Q; [7]) is a reliable and valid self-report measure of satisfaction and functioning. Lower scores indicate greater impairment. The reliable and valid interviewer-rated *Yale-Brown Obsessive Compulsive Scale Modified for BDD* (BDD-YBOCS; [12]) was used to assess BDD severity during the past week. Higher scores indicate greater BDD severity. The 17-item *Hamilton Rating Scale for Depression* (HAM-D; [13]) assessed depressive symptoms, and the 17-item self-report *Social Phobia Inventory* (SPIN; [14]) assessed severity of current social anxiety. The SPIN has adequate reliability and validity [14].

Data analysis

Means, standard deviations, and frequencies were calculated. Differences between subjects with and without a primary relationship were compared using 2-tailed, independent *t*-tests for continuous variables and Pearson chi-square tests for categorical variables. An alpha level of .05, two tailed, was used to determine statistical significance. Effect size estimates were determined for *t*-tests 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 chi-square with 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).

Results

73 (55.7%) of adults reported on the SAS-SR that they did not currently have a primary relationship, and 58 (44.3%) reported that they did have a primary relationship. Of the 58 subjects with a primary relationship, 69.0% ($n=40$) were married, and 31.0% ($n=18$) were unmarried but living with a partner. As shown in Table 1, adults without a primary relationship were significantly younger, more likely to be male, and less well educated. A higher proportion of those without a primary relationship were unemployed at a trend level.

As hypothesized, subjects without a primary relationship had significantly poorer scores on SAS-SR Overall Social Adjustment (the scale's total score) than those with a primary relationship. In addition, those without a primary relationship reported significantly worse functioning on the SAS-SR Social/Leisure and Family Unit subscales. The group without a primary relationship also had significantly poorer functioning on the LIFE Global Social

Adjustment scale. There was a trend for subjects without a primary relationship to have lower GAF scores as well as poorer quality of life on the Q-LES-Q total score and the Q-LES-Q social subscale. In addition, subjects without a primary relationship had greater severity of BDD and depressive symptoms at a trend level. However, the two groups did not significantly differ in terms of social anxiety.

Discussion

We found that subjects without a primary social relationship had greater morbidity than those with a primary relationship in a number of clinically important domains. They had significantly poorer overall social functioning on both measures of global social adjustment (SAS-SR and LIFE) as well as poorer functioning in several specific domains of social adjustment on the SAS-SR. They also had poorer functioning on the Q-LES-Q social subscale at a trend level, although their social functioning scores were not significantly worse on the SF-36. For subjects with a primary relationship, mean scores on the SAS-SR, Q-LES-Q (Social and General Scales) and SF-36 Social Functioning scales were 1.3–1.8 SD units lower than community norms [5]. For subjects who were not in a primary relationship, scores on these scales were 1.6–2.5 SD units poorer than community norms.

Despite the many strengths of the SAS-SR, our findings suggest that it has an underrecognized limitation, which is that it may exclude more seriously ill individuals from scoring in certain domains. Thus, previous reports of psychosocial functioning in BDD, and perhaps other disorders as well, may underestimate patients' actual degree of functional impairment. Our data suggest that this is the case for at least one of the SAS-SR domains (Primary Relationships), as subjects excluded from this subscale were more severely ill in a number of important domains. Although we did not specifically examine other SAS-SR subscales in this manner, additional SAS-SR subscales (Work, Extended Family, Parent, and Family Unit) also use this method of exclusion. Ideally, the mean overall scale score should include individuals who do not have a primary relationship (or do not work or function in other domains) if in fact not having a primary relationship is a result of the disorder. While we do not know what proportion of our subjects without a primary relationship did not have a relationship because of psychopathology, we did find that in this study's entire sample of 200 subjects, 88.5% ($n=177$) reported that their appearance concerns caused lifetime avoidance of social interactions and activities (unpublished data). In addition, 69.7% ($n=53/76$) reported that their appearance concerns currently interfered with dating or intimacy (unpublished data). Although not definitive, these findings appear to support the hypothesis that not having a primary relationship may in part reflect BDD symptomatology, consistent with our finding of a trend toward greater BDD severity in subjects without a primary relationship. It is not known whether this scoring method underestimates social impairment more for BDD than for other psychiatric disorders, as it is not known how the proportion of subjects excluded from these domains compares across disorders and the extent to which their exclusion reflects psychopathology. This is an important issue that deserves further investigation across a variety of disorders.

Although this report focuses on the SAS-SR, other functioning and quality of life scales also exclude individuals from the scoring of certain domains. Thus, the issue discussed in this report appears relevant to certain other measures as well. For example, scoring on the widely used Sheehan Disability Scale [15] and Q-LES-Q Short Form [16] does not reflect an inability to work or have social relationships due to psychopathology. Other measures of functioning and quality of life such as the LIFE [11] and Q-LES-Q Long Form [7] address this issue by scoring subjects who would otherwise be excluded from a particular domain with the maximum level of impairment for the scale. Thus, those individuals who have a job but are functioning very poorly would receive the same score as someone who is not working at all because of psychopathology. While this is one way to reflect impairment due to psychopathology in a

scale's score, it may be that not working at all, or being on disability because of mental illness, may reflect greater morbidity than having a job but performing it poorly. In the case of intimate relationships, it may similarly be the case that not having a relationship at all because of psychopathology may potentially reflect greater morbidity than being in a relationship of poor quality. An additional consideration is that because different scales use different scoring approaches to this issue, making comparisons across scales can be complicated. It seems important for scale developers to clarify how scores for seriously ill subjects who might otherwise be excluded from scale domains should be determined, and that users of these measures note how they captured these individuals if no scoring convention is available.

This study has a number of limitations. The Primary Relationship question used to ascertain the proportion of those in our sample who had a primary relationship excluded those who were in a committed relationship but not necessarily living with their partner. Another limitation is that although we attempted to obtain a broadly ascertained sample, the sample was one of convenience, and it is unclear how generalizable our findings are to the community. We did not directly compare BDD subjects to community controls or individuals with other psychiatric disorders. However, this study also has certain strengths, such as use of both reliable and valid interviewer and self-report measures as well as a relatively large sample size.

These findings are clinically relevant, as social functioning and quality of life measures are widely used in clinical practice and research. When administering self-report measures that eliminate subjects from scoring for reasons that may reflect psychopathology, it would be advantageous to supplement these measures with interviewer-based questions to clarify reasons (e.g., psychopathology) for functional impairment. Alternatively, response choices on self-report measures could be extended to ascertain whether subjects excluded from certain domains are being excluded because of psychopathology, and methods could be devised to include those subjects in scoring. Because of the importance of psychosocial functioning and its assessment, these issues deserve further investigation across a variety of disorders and scales.

Acknowledgments

This study was supported by a grant from the National Institute of Mental Health (R01 MH60241) to Dr. Phillips.

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Table 1
Demographic and clinical features of 131 BDD subjects with and without a primary relationship

Variable ^a	Subjects without a Primary Relationship (n=73)	Subjects with a Primary Relationship (n=58)	Community ^c or US Population	Statistic	df	P	Effect Size
Demographics							
Age	32.6 ± 12.8	37.2 ± 10.1	—	$t = -2.29$	129	.02	$d = .39$
Gender (Male)	31 (42.5)	15 (25.9)	—	$\chi^2 = 3.91$	1	.047	$v = .17$
Race (Non-white)	8 (11.1)	7 (12.1)	—	$\chi^2 = 0.03$	1	.87	$v = .02$
Ethnicity (Hispanic)	5 (7.4)	3 (5.2)	—	$\chi^2 = 0.25$	1	.62	$v = .05$
Education (High school or less)	19 (26.0)	7 (12.1)	—	$\chi^2 = 3.96$	1	.047	$v = .17$
Employment (Unemployed)	35 (47.9)	18 (31.0)	—	$\chi^2 = 3.84$	1	.05	$v = .17$
Social Adjustment^b							
SAS Overall Social Adjustment ^c	2.4 ± 0.6	2.2 ± 0.5	1.6 ± 0.3	$t = 2.69$	129	.01	$d = .40$
Primary Relationship Work	—	2.2 ± 0.6	1.8 ± 0.5	—	—	—	—
Social and Leisure	2.1 ± 0.6	2.1 ± 0.6	1.4 ± 0.5	$t = -.40$	114	.69	$d = .12$
Extended Family	2.8 ± 0.8	2.5 ± 0.7	1.8 ± 0.5	$t = 2.53$	129	.01	$d = .43$
Parental ^d	2.0 ± 0.6	1.9 ± 0.6	1.3 ± 0.3	$t = 1.23$	129	.22	$d = .17$
Family Unit ^d	2.1 ± 1.1	1.6 ± 0.4	1.4 ± 0.4	$t = 1.47$	12.9	.17	$d = .63$
LIFE Global Social Adjustment ^d	2.5 ± 1.3	2.2 ± 0.7	1.5 ± 0.6	$t = 2.06$	116.7	.04	$d = .40$
Psychosocial Functioning and Quality of Life ^b	4.0 ± 0.9	3.5 ± 1.1	—	$t = 2.84$	104.7	.01	$d = .50$
GAF	46.1 ± 13.0	50.7 ± 14.3	—	$t = -1.92$	129	.06	$d = .34$
SOFAS	49.1 ± 15.5	53.2 ± 15.5	—	$t = -1.28$	91	.21	$d = .26$
SF-36 Social Functioning QLESQ General (total score)	46.5 ± 27.9	52.2 ± 27.2	83.3 ± 22.7	$t = -1.16$	128	.25	$d = .20$
QLESQ Social (subscale)	50.2 ± 18.6	56.3 ± 17.0	78.1 ± 13.7	$t = -1.91$	126	.06	$d = .34$
Psychiatric Symptoms ^b	52.5 ± 19.3	58.1 ± 17.8	75.9 ± 14.2	$t = -1.70$	129	.09	$d = .30$
BDD- YBOCS (BDD severity)	28.8 ± 9.5	25.8 ± 10.7	—	$t = 1.71$	129	.09	$d = .31$
17-item HAM-D (Depression)	10.3 ± 6.7	8.1 ± 6.5	—	$t = 1.91$	127	.06	$d = .33$
SPIN (Social anxiety)	31.3 ± 15.2	32.5 ± 15.9	—	$t = -0.43$	128	.67	$d = .08$

^aResults are presented as *n* (%) or mean ± SD for each group. *N* = 131 for all analyses unless noted in table.

^bScores are reported for the entire sample of adults, including those currently in full or partial remission from BDD.

^cHigher scores are worse on the SAS-SR; SAS-SR scores from published norms [9] for a nonclinical community sample randomly drawn from the general population of an urban area are presented (*n* = 482); SF-36 Social Functioning scores from published norms [5] for the general US population (*n* = 2474); Q-LES-Q scores from published scores for a community sample (Endicott J, personal communication) are presented.

^dDegrees of freedom represent equal variances not assumed.