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Personal and Appearance-Based Rejection Sensitivity in Body Dysmorphic Disorder

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Abstract

Although rejection sensitivity may be an important feature of body dysmorphic disorder (BDD), no studies have examined rejection sensitivity in a clinical sample and compared types of rejection sensitivity in individuals with BDD. Personal and appearance-based rejection sensitivity scores in forty-six patients diagnosed with BDD were compared with published norms. Associations between rejection sensitivity, BDD severity, and other clinical variables were examined. Personal and appearance-based rejection sensitivity scores were 0.6 and 1.1 standard deviation units above published norms, respectively. Greater personal rejection sensitivity was associated with more severe BDD and depressive symptoms, poorer mental health, general health, and physical and social functioning. Greater appearance-based rejection sensitivity was associated with more severe BDD and depressive symptoms, and poorer general health. Appearance-based rejection sensitivity contributed more unique variance to BDD severity than personal rejection sensitivity did; however, personal rejection sensitivity contributed more unique variance to general health than appearance-based rejection sensitivity did.

Keywords

body dysmorphic disorder; obsessive-compulsive and related disorders; rejection sensitivity; appearance; functioning; quality of life

Body dysmorphic disorder (BDD) is an often severe psychiatric disorder characterized by time-consuming preoccupations with one or more perceived defects or flaws in appearance

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that are not observable or appear slight to others. BDD-related preoccupations cause clinically significant distress or impairment in functioning and, at some point during the course of the disorder, are accompanied by repetitive behaviors or mental acts that occur in response to the appearance preoccupations (e.g., mirror checking, skin picking, excessive grooming, comparing with others) (APA, 2013; Phillips, 2005). Using a variety of measures, studies have consistently found marked impairment in psychosocial functioning and quality of life in BDD (IsHak et al., 2012; Phillips, 2000; Phillips, Menard, Fay, & Pagano, 2005). For example, in a prospective study of psychosocial functioning in BDD, the cumulative probability of attaining functional remission on the Social and Occupational Functioning Assessment Scale (APA, 2000) over a mean follow-up period of 2.7 ± 0.9 years was only 10.6% (Phillips, Quinn, & Stout, 2008). Social functioning in BDD appears particularly poor. Mean Overall Social Adjustment total scores on the Social Adjustment Scale Self-Report (SAS-SR) are more than two standard deviation (SD) units below community norms (Phillips, Menard, Fay, & Pagano, 2005). Social Functioning subscale scores on the Medical Outcomes Study Short Form Health Survey (SF-36) are 0.4 SD units poorer than norms for depression (Phillips, Menard, Fay, & Pagano, 2005). Levels of social anxiety are associated with poorer psychosocial functioning over 12 months in individuals with BDD without comorbid social anxiety disorder, particularly fear and avoidance of social situations (Kelly, Walters, & Phillips, 2010). In addition, BDD is associated with severe interpersonal problems, particularly related to difficulties with being assertive and high levels of social inhibition (Didie, Loerke, Howes, & Phillips, 2012).

One possible reason for social and interpersonal problems among individuals with BDD is their tendency to be distressed if they perceive that others are negatively evaluating them. In one BDD study, one of the most frequently endorsed personality disorder criteria was being easily hurt by criticism and feeling embarrassment and shame in association with perceived criticism (Phillips & McElroy, 2000). A previous report found that individuals with BDD who were ascertained for major depressive disorder had high levels of personal rejection sensitivity (Phillips, Nierenberg, Brendel, & Fava, 1996). That is, they tended to be worried that others would negatively evaluate them and reject them. Clinical observations additionally suggest that personal rejection sensitivity is common in persons with BDD (Phillips, 2005).

Despite the apparent importance of personal rejection sensitivity in BDD, studies of this topic are limited. One study found that personal rejection sensitivity as assessed by the Rejection Sensitivity Questionnaire (Downey & Feldman, 1996) partially mediated the relationship between social anxiety symptoms and body dysmorphic concerns in sample of undergraduates (Fang et al., 2011). This finding suggests that personal rejection sensitivity may be an independent but related construct associated with social anxiety in BDD. However, this cross-sectional study was in done in an undergraduate student sample that was administered the Body Dysmorphic Disorder Symptoms Scale (BDD-SS; Wilhelm, 2006, Wilhelm, Phillips, & Steketee, 2013), which is not a diagnostic measure, rather than in individuals who were identified on the basis of a clinical interview as having a diagnosis of BDD.

A more specific type of rejection sensitivity, appearance-based rejection sensitivity, may also be a key characteristic of BDD. Appearance-based rejection sensitivity is defined as anxiety-provoking expectations of social rejection based on physical appearance (Park, 2007). From a clinical perspective, individuals with BDD often report that they avoid social situations because they fear that other people will negatively evaluate their appearance (Kelly et al., 2010). Furthermore, in a sample of college students, levels of appearance-based rejection sensitivity were positively associated with self-reported BDD symptoms on the Body Dysmorphic Disorder Questionnaire and with acceptance of cosmetic surgery (Calogero, Park, Rahemtulla, & Williams, 2010; Park, Calogero, Harwin, & Diraddo, 2009) even after controlling for levels of personal rejection sensitivity. In addition, a recent study of individuals with BDD in mental health treatment or support groups found that these individuals reported high levels of anxiety associated with their perceptions of their appearance and perceptions of others regarding their appearance, as well as anxiety related to negative evaluation of their appearance (Anson, Veale, & de Silva, 2012). Thus, appearance-based rejection sensitivity may be an important feature of BDD.

Despite the apparent importance of rejection sensitivity in BDD, particularly appearance-based rejection sensitivity, prior studies are limited to analog samples. To our knowledge, no studies have evaluated appearance-based rejection sensitivity and personal rejection sensitivity in a sample diagnosed with BDD. Furthermore, all studies to date were conducted in undergraduate students, which limits the samples' representativeness in terms of age and other demographic variables. In addition, prior studies have not examined the association of personal rejection sensitivity and appearance-based rejection sensitivity with BDD severity and other clinical correlates in a sample diagnosed with or ascertained for BDD.

Although rejection sensitivity appears to be an important characteristic of BDD, to our knowledge, current BDD treatment approaches do not specifically target rejection sensitivity. If rejection sensitivity appears to be highly associated with BDD symptoms and psychosocial functioning, the inclusion of treatment approaches that specifically target rejection sensitivity (either personal or appearance-based) may improve psychosocial treatment approaches for BDD. Therefore, the purpose of the present study is to provide information on associations between appearance-based rejection sensitivity and personal rejection sensitivity and clinical correlates of BDD. Based on the studies described above, as well as our clinical experience with BDD, we expected both personal and appearance-based rejection sensitivity would be positively associated with BDD symptom severity and severity of depressive symptoms, and negatively associated with psychosocial functioning. However, given appearance-based rejection sensitivity's direct relevance to BDD symptoms and presentation, we expected appearance-based rejection sensitivity to have stronger associations with BDD severity, severity of depressive symptoms, and psychosocial functioning than personal rejection sensitivity.

Method

Participants

Data on 46 men and women (age 18 years or older; 35 women, 11 men; M_{age} = 32.6 years, SD_{age} = 12.1 years) with a current DSM-IV diagnosis of BDD were obtained from a

database of 200 individuals who participated in an observational study examining the longitudinal course and outcome of BDD. This larger study, described in detail elsewhere (Phillips, Menard, Fay, & Weisberg, 2005), included 200 adults and adolescents who were evaluated and prospectively followed for 7–9 years. The inclusion criteria for the larger study were DSM-IV BDD, age 12 or older, and ability to be interviewed in person. The only exclusion criterion was the presence of an organic mental disorder that would interfere with the collection of valid interview data. Participants were enrolled during the first 2.5 years of the study and carefully evaluated at baseline.

The Structured Clinical Interview for DSM-IV Patient Version (SCID-I/P), a standard semi-structured instrument for diagnosing Axis I disorders (First, Spitzer, Gibbon, & Williams, 1995, 1996), was used to diagnose BDD and other Axis I disorders at study intake. The Longitudinal Interval Follow-up Evaluation (LIFE), a widely used semi-structured measure for rating and assessing the course of psychiatric disorders (Keller et al., 1987), obtained information on the diagnostic status of BDD, social anxiety disorder, and other disorders during the study's follow-up period. This was accomplished by using the LIFE's Psychiatric Status Ratings (PSRs), which are reliable and valid disorder-specific, global ratings of disorder severity based on DSM-IV criteria (Warshaw, Keller, & Stout, 1994). PSRs are assigned for each week of follow-up; in the present study, the PSR corresponded to the date of the last follow-up interview in the study. A score of 5, 6, or 7 reflects full criteria for BDD or social anxiety disorder ("in episode"); a score of 3 or 4 reflects partial remission, and a score of 1 or 2 reflects full remission.

The 46 individuals included in the present study completed measures of rejection sensitivity in years 4–8 of follow-up. All participants in the current report were age 18 or older and met criteria for current DSM-IV BDD at the time rejection sensitivity was assessed (i.e., last year of participation in the study). Fifty-nine participants had current BDD at the time they completed the assessments in this report; because measures of rejection sensitivity were added to the study after the last study assessment began, 46 of these 59 participants filled out the rejection sensitivity measures. Of these 46 participants, 58.7% were in mental health treatment at the time of their initial intake, 93.5% had a lifetime history of mental health treatment, and 19.6% had a current diagnosis of social anxiety disorder. All study procedures were approved by the hospital Institutional Review Board; all participants signed statements of informed consent prior to participation.

Measures

Participants were administered a number of reliable and valid measures. Internal consistencies for all measures are listed in Table 1. The Rejection Sensitivity Questionnaire-Adult Version (A-RSQ) is a nine-item self-report measure designed to assess global rejection sensitivity to interpersonal situations (Berenson et al., 2009). Participants read nine hypothetical interpersonal interactions that could be associated with personal rejection (e.g., After a bitter argument, you call or approach your significant other because you want to make up"). Participants are asked to rate their anxiety over each situation and their expectations for being rejected by the person in each situation. The range of scores is 1–36, with higher scores indicating greater levels of rejection sensitivity. The A-RSQ has good

internal consistency (α = .70) and good convergent validity with measures of anxiety and avoidance in relationships (Berenson et al., 2009). The normative sample mean of the A-RSQ is 8.6 (*SD* = 3.6), which is based on 685 adults who completed an internet survey utilizing the A-RSQ (Berenson et al., 2009).

The Appearance Based Rejection Sensitivity Questionnaire (Appearance-RS)is a 15-item self-report instrument that measures appearance-specific rejection sensitivity (Park, 2007). Participants read 15 hypothetical situations that could be associated with rejection by others based on his/her appearance (e.g., "You are at a party and are shorter than everyone there"). Participants rate their anxiety over the situation and their expectations of rejection by people based on these specific appearance-based situations. The range of scores is 1–36, with higher scores representing greater appearance-based rejection sensitivity. The Appearance-RS has high internal consistency (α = .90) and test-retest reliability (*r* = .69) over a 6- to 8-week period (Park, 2007). The normative sample mean of the Appearance-RS is 11.9 (*SD* = 5.7), based on data from a sample of 242 undergraduates from the northeastern United States (Park, 2007).

The Yale-Brown Obsessive-Compulsive Scale Modified for BDD (BDD-YBOCS)is a 12-item semi-structured clinician-administered interview that rates current severity of BDD (Phillips et al., 1997). The BDD-YBOCS has strong inter-rater and test-retest reliability over 1 week (ICC for total score = .99 and .88, respectively), internal consistency (Cronbach's α = .80), and convergent validity (*r* = .55 with the CGI; Phillips et al., 1997).

The Beck Depression Inventory (BDI-II)is a 21-item self-report questionnaire that measures depression severity (Beck, Steer, & Brown, 1996). It has good internal consistency (α = .92) and construct validity (Beck, Steer, Ball, & Ranieri, 1996).

The Medical Outcomes Study Short-Form Health Survey (SF-36)is a 36-item self-report measure of current physical and emotional health status and health-related quality of life (Ware, 1993; Ware & Sherbourne, 1992). Subscales represent the following components of health-related quality of life: Physical Functioning, Role Limitations Due to Physical Problems, Bodily Pain, General Health, Energy/Vitality, Social Functioning, Role Limitations Due to Emotional Problems, and Mental Health. It has well-established norms. α coefficients are .62–.94; nearly all are ≥.80 (Ware, 1993). Test-retest correlations are .60–.81 over 2 weeks (Ware, 1993). SF-36 scores predict outcomes such as ability to work and use of health care services (Ware & Sherbourne, 1992).

Procedure

Participants in the present study were interviewed at study intake and then re-interviewed each year after the intake interview. The data from the present study come from the last assessment, which occurred between years 4–8 of the larger prospective study. There were no relationships between time of the assessment in the 4–8 year follow-up period and study measures. Clinician and self-report measures were collected fairly concurrently; the median difference was 1 week. Only six participants filled out self-report questionnaires more than 3 weeks from their clinical interview. All data examined in the present report were cross-sectional. Interviews were conducted by trained and experienced interviewers who were

closely supervised by the last author. Detailed information was obtained on symptom status and severity, diagnostic status, comorbidity, treatment received, psychosocial functioning, and quality of life. All participants received financial compensation for their time and travel.

Statistical Analyses

Participants in the present report were selected from a larger deidentified database because they had a current BDD PSR score ≥ 5 (meeting full DSM-IV criteria for BDD) at the time of their last study interview. Rejection sensitivity scores were compared to published normative sample means, and associations between types of rejection sensitivity (personal vs. appearance-based) and BDD severity, quality of life, depressive symptoms, and suicidal ideation (BDI item) were examined using Pearson correlations. Regression analyses were used to compare the unique contributions of variance between appearance-based rejection sensitivity and personal rejection sensitivity to BDD severity, quality of life, and depressive symptoms. Comorbid social anxiety disorder was evaluated as a potential covariate for regression analyses (social anxiety disorder PSR), but since this variable was not associated with either type of rejection sensitivity, it was not entered as a covariate in regression analyses. All tests were two tailed, and the alpha level was 0.05.

Results

Personal rejection sensitivity (A-RSQ score) and appearance-based rejection sensitivity (Appearance-RS) scores were 0.6 and 1.1 standard deviation units above published normative sample means, respectively (Table 1). Personal rejection sensitivity scores and appearance-based rejection sensitivity scores had a significant positive association with each other (r = .44, p = .002).

Greater personal rejection sensitivity was significantly associated with more severe BDD symptoms and depressive symptoms but not with age, gender, or levels of suicidal ideation (BDI item 9). Regarding health-related quality of life, greater personal rejection sensitivity was associated with poorer physical functioning, general health, social functioning, and mental health functioning, but not with role limitations due to physical problems, bodily pain, energy/vitality, or role limitations due to emotional problems (see Table 2).

Similarly, greater appearance-related rejection sensitivity was associated with more severe BDD and depressive symptoms but not with age, gender, or suicidal ideation. Greater appearance-based rejection sensitivity was associated with poorer general health, but it was not related to other health-related quality of life domains (see Table 2).

Regression analyses were conducted on variables that were significantly related to both personal and appearance-based rejection sensitivity, in order to determine which type of rejection sensitivity contributed more unique variance to these clinical variables. Appearance-based rejection sensitivity contributed more unique variance to BDD severity than personal rejection sensitivity did (Table 3). However, personal rejection sensitivity contributed more unique variance to general health than appearance-based rejection sensitivity did. Personal and appearance-based rejection sensitivity variables were not

significant in the regression analysis for depression severity, likely because of significant shared variance between these two variables in relation to depression severity.

Discussion

BDD was characterized by high levels of personal and appearance-based rejection sensitivity, although appearance-based rejection sensitivity was more elevated in this sample of individuals ascertained for BDD than personal rejection sensitivity was. Both types of rejection sensitivity were associated with each other; however, they were not the same construct. The correlation between them (r = .44) was higher than in an American university sample (r = .29; Park, 2007) and a British university sample (r = .21; Calogero et al., 2010), but not another sample of American college students (r = .46; Park et al., 2009). The stronger association between personal and appearance-based rejection sensitivity in our study than in the two college study samples may possibly be because a clinical diagnosis of BDD is associated with a greater severity of appearance concerns. Therefore, social rejection may be more likely to be associated with appearance in a clinical sample. Individuals with BDD have maladaptive beliefs about their appearance, including an overvaluation of the importance of appearance, which they tie to their self-worth and self-esteem (Buhlmann et al., 2002). Clinical observations suggest that people with BDD believe that others will reject them because they are too ugly and not worthy of attention and affection.

Both personal and appearance-based rejection sensitivity were associated with BDD severity. The correlation of BDD severity with appearance-based rejection sensitivity (r = .49, p <.05) was slightly higher than for personal rejection sensitivity (r = .41, p < .05). In their university student sample, Calogero et al., 2010 found a correlation of r = .41 between appearance-based rejection sensitivity and the severity of BDD symptoms. Similar to findings by Calogero and colleagues (2010), we found that the association between appearance-based rejection sensitivity and BDD severity was significant even after accounting for personal rejection sensitivity.

Both personal and appearance-based rejection sensitivity were associated with depressive symptom severity. Indeed, there was a high prevalence of BDD in two studies of individuals with atypical major depressive disorder (13.8%–14.4%) (Nierenberg et al., 2002; Phillips et al., 1996), which is characterized by rejection sensitivity. One of these studies compared the prevalence of BDD in patients with atypical depression versus patients with non-atypical depression, finding a higher prevalence in those with atypical depression (14.4% vs. 5.1%) (Nierenberg et al., 2002). Other studies have found that rejection sensitivity is related to increased depressive rumination regardless of whether participants are currently depressed, have a history of depression, or have never been depressed (Pearson, Watkins, & Mullan, 2011). Rumination, in turn, is elevated in individuals with a history of depression (Bagby, Rector, Bacchiochi, & McBride, 2007; Nolen-Hoeksema, 2000). Thus, it is possible that individuals with BDD may be at increased risk of depressive rumination and other depressive symptoms related to perceived personal and appearance-based rejection, although this topic requires investigation.

Higher levels of personal rejection sensitivity were associated with several aspects of health-related quality of life, whereas appearance-based rejection sensitivity was not except for general health. When personal rejection sensitivity was taken into account in a regression analysis, the relationship between appearance-based rejection sensitivity and general health was no longer significant. This finding suggests that elevated personal rejection sensitivity is associated with more domains of poorer overall functioning and quality of life than appearance-based rejection sensitivity is. However, the sample size in this study was relatively small, and thus, there is a risk of type II error.

Although appearance-based rejection sensitivity is highly associated with BDD severity and other clinical correlates, current DSM-5 diagnostic criteria focus on specific preoccupations with appearance (APA, 2013) rather than more general concerns about appearance and rejection related to appearance. Furthermore, personal rejection sensitivity is not considered a diagnostic feature of this disorder, unlike social anxiety disorder (APA, 2013). Future investigations should focus on both appearance-based and personal rejection sensitivity as clinical features of BDD, including the question of whether one or both might be included as diagnostic criteria in future editions of the DSM.

To our knowledge neither personal rejection sensitivity nor appearance-based rejection sensitivity have been explicit clinical targets in psychosocial interventions for BDD. An important question is whether it would be helpful to target one or both types of rejection sensitivity when treating individuals with BDD. Targeting personal rejection sensitivity, in particular, might be particularly relevant to improvement of health-related quality of life in BDD. In an analog sample, elevated personal rejection sensitivity was significantly related to social anxiety associated with body dysmorphic concerns (Fang et al., 2011), which may possibly contribute to misinterpretation of neutral social cues as being hostile and negative among individuals with BDD (Buhlmann, Teachman, Naumann, Fehlinger, & Rief, 2009). Clinical interventions for BDD might be enhanced by specifically targeting distorted cognitions about social rejection as well as exposure exercises based specifically on a person’s fear of being rejected in social situations. Further research on personal rejection sensitivity may help determine whether specifically targeting rejection sensitivity may help improve current BDD treatment approaches.

The present study had several limitations. The study was based on cross-sectional relationships between rejection sensitivity and clinical correlates of BDD, which limits conclusions about causal relationships between the variables that were examined. Future prospective study of the relationship between rejection sensitivity and the development and maintenance of BDD symptoms and functioning would be helpful in determining the role of types of rejection sensitivity in the clinical presentation and treatment of BDD. We did not have a measure of mental health treatment at the time of the assessment used in the present study, and we therefore do not know how current mental health treatment may be associated with rejection sensitivity and the relationships discussed in this study. For comparisons of normative means, BDD participants were not directly compared to community controls, and comparison samples were not true community samples. In addition, the sample size was relatively small and may have contributed to type II error. However, although rejection sensitivity appears to be a key feature of BDD, the present study is the first study that we are

aware of that studied the associations between two types of rejection sensitivity and clinical correlates of BDD in broadly obtained sample ascertained for BDD. More research is necessary to confirm our findings and to understand reasons underlying the associations we found.

The results of the present study show that both personal rejection sensitivity and appearance-based rejection sensitivity are elevated in individuals with BDD, with appearance-based rejection sensitivity being particularly elevated. Both types of rejection sensitively were significantly associated with more severe BDD and depressive symptoms. However, personal rejection sensitivity showed associations with more domains of health-related quality of life. Future research on rejection sensitivity in BDD may inform understanding of BDD and potential treatment targets for BDD.

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Highlights

- We examined associations between personal and appearance-based rejection sensitivity and body dysmorphic disorder.
- Both personal rejection sensitivity and appearance-based rejection sensitivity were elevated in individuals with BDD.
- Both personal rejection sensitivity and appearance-based rejection sensitivity were associated with more severe BDD and depressive symptoms.
- Personal rejection sensitivity appears to have more associations with domains of health-related quality of life than appearance-based rejection sensitivity in individuals with BDD.

Table 1

Means and standard deviations of study measures.

	Mean	SD	Cronbach's α
A-RSQ	11.84	5.48	.88
Appearance-RS	22.15	9.10	.95
BDD-YBOCS	26.67	8.52	.85
BDI-II	17.24	11.41	.89
SF-36 Scales			
Physical Functioning	78.59	25.88	.95
Role Limitations – Physical Problems	39.13	44.61	.93
Bodily Pain	64.62	28.36	.87
General Health	59.56	24.94	.86
Energy/Vitality	37.17	19.34	.85
Social Functioning	57.34	27.46	.93
Role Limitations – Emotional Problems	61.59	43.30	.88
Mental Health	49.21	20.52	.86

Note. A-RSQ = Adult Rejection Sensitivity Questionnaire; Appearance-RS = Appearance-Based Rejection Sensitivity Questionnaire; BDD-YBOCS = BDD-Yale-Brown Obsessive-Compulsive Scale; BDI-II = Beck Depression Inventory; SF-36 = The Short Form (36) Health Survey.

Table 2

Bivariate Correlations of Study Measures with Rejection Sensitivity Measures

	A-RSQ	Appearance-RS
Age	.17	.07
Gender	.00	−.09
BDD-YBOCS	.41*	.49*
BDI-II	.34*	.30*
BDI- Item 9	.20	.28
SF-36 Scales		
Physical Functioning	−.36*	−.19
Role Limitations – Physical Problems	.20	.15
Bodily Pain	−.22	−.10
General Health	−.42*	−.34*
Energy/Vitality	−.25	−.22
Social Functioning	−.32*	−.20
Role Limitations – Emotional Problems	.18	.20
Mental Health	−.36*	−.19

Note. A-RSQ = Adult Rejection Sensitivity Questionnaire; Appearance-RS = Appearance-Based Rejection Sensitivity Questionnaire; BDD-YBOCS = BDD-Yale-Brown Obsessive-Compulsive Scale; BDI-II = Beck Depression Inventory; SF-36 = The Short Form (36) Health Survey.

*$p < .05$.

Table 3

Summary of Multiple Regression Analyses.

	B	SE	β	t	p
BDD-YBOCS					
$R^2 = 0.28$, $F(2, 43) = 8.69$, $p < .001$					
A-RSQ	0.38	0.22	0.25	1.72	.093
Appearance-RS	0.36	0.13	0.38	−0.67	.011
BDI-II					
$R^2 = 0.14$, $F(2, 43) = 3.61$, $p = .036$					
A-RSQ	0.55	0.33	0.26	1.68	.100
Appearance-RS	0.23	0.20	0.18	1.15	.255
SF-36 General Health					
$R^2 = 0.21$, $F(2, 43) = 5.67$, $p = .007$					
A-RSQ	−1.55	0.69	−0.34	−2.26	.029
Appearance-RS	−0.52	0.41	−0.19	−1.27	.212

Note. A-RSQ = Adult Rejection Sensitivity Questionnaire; Appearance-RS = Appearance-Based Rejection Sensitivity Questionnaire; BDD-YBOCS = BDD-Yale-Brown Obsessive-Compulsive Scale; BDI-II = Beck Depression Inventory; SF-36 = The Short Form (36) Health Survey.