

## **APPEARANCE-BASED REJECTION SENSITIVITY PREDICTS BODY DYSMORPHIC DISORDER SYMPTOMS AND COSMETIC SURGERY ACCEPTANCE**

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Appearance-based Rejection Sensitivity (Appearance-RS) is the dispositional tendency to anxiously expect, readily perceive, and overreact to rejection based on one's physical appearance. The present research examined associations among Appearance-RS, self-reported symptoms of Body Dysmorphic Disorder (BDD), and motivations underlying acceptance of cosmetic surgery among a sample of American college students. Appearance-RS predicted greater self-reported BDD symptoms and endorsement of cosmetic surgery for both intrapersonal and social reasons. Results remained significant even after controlling for appearance satisfaction, fear of negative evaluation, general rejection sensitivity, and depressive symptoms. This research therefore highlights the importance of considering individual differences in sensitivity to appearance rejection when examining body image disturbances, such as self-reported symptoms of BDD, and reasons for endorsing cosmetic surgery.

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Physical attractiveness plays an important role in Western societies (Bartky, 2003; Calogero, Boroughs, & Thompson, 2007; Dion, Berscheid, & Walster, 1972). Physically attractive people are perceived more favorably and experience significant advantages in employment and in other areas of life than those who are viewed as less physically attractive (Berscheid & Walster, 1974; Eagly, Ashmore, Makhijani, & Longo, 1991; Hosoda, Stone-Romero, & Coats, 2003; Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000). Individuals who fail to meet cultural standards of attractiveness are often teased, stigmatized, and discriminated against (Calogero, Herbozo, & Thompson, 2009; Crandall, 1994; Jones & Crawford, 2006; Puhl & Brownell, 2001) and may come to experience heightened sensitivity to rejection based on their physical appearance (Park, DiRaddo, & Calogero, 2009).

Although it is common for people to feel dissatisfied with their appearance from time to time, individuals who are sensitive to appearance rejection, or have high Appearance-based Rejection Sensitivity (Appearance-RS; Park, 2007), may experience appearance concerns that border on excessive and lead to distress or interference with daily activities. Specifically, individuals with high Appearance-RS may be at risk for displaying symptoms of more extreme forms of body image disturbance, such as that characterized by Body Dysmorphic Disorder (BDD). BDD involves an excessive preoccupation with a slight or imagined defect in one's physical appearance that causes significant distress or impairment in social, occupational, or other areas of functioning (American Psychiatric Association, 2000). Not only might individuals with high Appearance-RS report more BDD symptoms, they may also be more likely to endorse cosmetic surgery as a way to change their perceived appearance flaws. The current research offers a unique perspective to understanding BDD symptoms and reasons for accepting cosmetic surgery, by examining a new construct—Appearance-RS—that connects intrapersonal appearance concerns with interpersonal rejection concerns based on appearance.

Appearance-RS consists of an affective component (i.e., anxiety about how one's appearance is perceived and evaluated by others) and a cognitive component (i.e., expectations of rejection based on one's looks). The affective and cognitive components are theorized to interact with one another in a multiplicative fashion, such that anxieties about appearance rejection amplify cognitive expectations of rejection (Park, 2007). Individuals differ in their sensitivity to ap-

pearance rejection, such that individuals with higher Appearance-RS are more likely to anxiously expect rejection based on their looks, whereas those with lower Appearance-RS are less likely to have this anxious expectation.

Appearance-RS influences how social information about appearance is perceived and processed. People with high Appearance-RS<sup>1</sup> frequently notice others' appearance, compare their attractiveness with others, and feel more alone and rejected when reminded of disliked aspects of their appearance (Park, 2007). High Appearance-RS participants prefer to avoid social interaction in general, even with close others, after receiving negative feedback about their appearance (Park & Pinkus, 2009). They are more vulnerable to mental and physical health risks, such as feeling badly about themselves when comparing their appearance with others, and exhibit symptoms of disordered eating (Park, 2007). High Appearance-RS individuals also feel more rejected and express greater interest in getting cosmetic surgery after recalling a time when they were teased versus complimented based on their looks (Park, Calogero, Harwin, & DiRaddo, 2009). Although this latter study provided initial evidence for a link between Appearance-RS and interest in cosmetic surgery, it did not examine specific motives underlying acceptance of cosmetic surgery, nor did it assess symptoms of more extreme appearance concerns, as is characteristic of BDD. Thus, extending prior research, the present study examined links among Appearance-RS, self-reported BDD symptoms, and motives underlying acceptance of cosmetic surgery among a sample of American college students.

## BODY IMAGE DISTURBANCE AND BDD

Body image disturbance is a broad term that refers to cognitive, affective, and behavioral dimensions related to body image or appearance-related concerns and evaluations (Smolak & Thompson, 2009; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). To date, most body image studies have focused on body dissatisfaction, which represents the evaluative, affective component of body image disturbance. On the other hand, BDD represents a more extreme version of body image disturbance that is characterized by excessive

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1. Appearance-RS is a continuous measure and should be viewed in relative versus absolute terms. For brevity's sake, we use the terms high and low Appearance-RS in the present article.

cognitive preoccupation with a perceived flaw in one's appearance, emotional distress, and impairment in daily functioning (Phillips, 1996; Rosen, Reiter, & Orosan, 1995). The cognitive preoccupation usually focuses on specific areas (e.g., skin, hair, face, nose), but can involve overall appearance as well (Phillips, McElroy, Keck, Pope, & Hudson, 1993; Phillips, Menard, Fay, & Weisberg, 2005).

People with BDD tend to engage in time-consuming appearance-related activities intended to conceal, monitor, or change their perceived defect, such as excessive grooming, frequent mirror-checking (or avoidance), attempting to camouflage a defect, comparing one's appearance with others, and frequent reassurance-seeking from others regarding one's appearance (Grant & Phillips, 2005). They are also likely to have frequent, intrusive thoughts about their perceived physical defect and may feel that their defect is being negatively evaluated by others (Phillips, 1996). Indeed, compared to healthy individuals, those with BDD reported more experiences of appearance-related teasing (Buhlmann, Cook, Fama, & Wilhelm, 2007) and avoided situations that made them feel vulnerable to potential scrutiny of their appearance (Buhlmann, Wilhelm, McNally, Tuschen-Caffier, Baer, & Jenike, 2002; Rosen & Ramirez, 1998). Buhlmann and colleagues (2002) also found that BDD patients, compared to normal controls, exhibited a negative interpretive bias for ambiguous body-related scenarios, social scenarios, and general scenarios. Although people with high Appearance-RS show negative interpretive biases for ambiguous appearance-related feedback, they do not show biases for ambiguous general feedback that is unrelated to appearance (Park & Harwin, 2010).

It is important to note that the studies reviewed thus far examined clinically diagnosed BDD patients; however, most of the studies examining BDD among college students assessed BDD symptoms using self-report measures, such as the Body Dysmorphic Disorder Questionnaire (BDDQ; Phillips, 1996). Rates of BDD symptoms among college students in the U.S., Australia, and Germany, as assessed by the BDDQ, range from 2.3% to 5.3% (Bartsch, 2007; Bohne, Keuthen, Wilhelm, Deckersbach, & Jenike, 2002; Bohne, Wilhelm et al., 2002; Sarwer, Cash et al., 2005). Consistent with the approach of these previous studies, we assessed self-reported BDD symptoms in the present research using the BDDQ. Specifically, we expected Appearance-RS to predict a greater degree of cognitive, affective, and behavioral symptoms that are characteristic of BDD.

## ACCEPTANCE OF COSMETIC SURGERY

Total cosmetic procedures (surgical and minimally invasive) increased by 882% between 1992 and 2008, with over \$10 billion spent on these procedures in 2008 (American Society of Plastic Surgeons [ASPS], 2008). Over 12 million cosmetic procedures were performed in 2008, with approximately 44% of these procedures performed on repeat patients. Specifically, the ASPS reported that patients between the ages of 13 and 19 comprised 5% of all surgical procedures and 1% of all minimally invasive procedures, whereas patients between the ages of 20 and 29 comprised 16% of all surgical procedures and 5% of all minimally invasive procedures. These percentages generally converge with the handful of studies that have reported rates of cosmetic surgery among college students, which range from 3% to 6.4% (Delinsky, 2005; Sarwer et al., 2005; Sperry, Thompson, Sarwer, & Cash, 2009).

Variables that have been shown to be predictive of cosmetic surgery interest include intrapersonal factors, such as body image dissatisfaction (Brown, Furnham, Glanville, & Swami, 2007; Sarwer, Wadden, Pertschuk, & Whitaker, 1998a), basing self-esteem on appearance (Delinsky, 2005; Sarwer et al., 2003), attachment anxiety (Davis & Vernon, 2002), and having previous experience with cosmetic surgery (Swami et al., 2008). Social factors, such as appearance-related teasing (Sarwer et al., 2003), vicarious experiences of cosmetic surgery via family and friends (Brown et al., 2007; Swami et al., 2008), and internalization of sociocultural messages from media and entertainment industries (Sarwer et al., 2005; Sperry et al., 2009) have also been shown to predict cosmetic surgery interest.

In addition to these factors, researchers have theorized two broad motives for endorsing cosmetic surgery: intrapersonal motives (e.g., wanting to feel better about oneself) and social motives (e.g., wanting to please one's partner; Pruzinsky & Edgerton, 1990). Recently, Henderson-King and Henderson-King (2005) developed and validated the Acceptance of Cosmetic Surgery Scale (ACSS) among American college students, to assess how the general population (i.e., nonclinical samples) feels about surgical routes to enhancing appearance. Specifically, the scale assesses intrapersonal and social reasons for accepting cosmetic surgery and the degree to which people would consider undergoing such procedures.

Consistent with previous research, we expected higher levels of Appearance-RS to predict greater consideration of cosmetic surgery. Moreover, because Appearance-RS is theorized to be rooted in concerns about interpersonal rejection, we hypothesized that Appearance-RS would be related to social motivations for wanting cosmetic surgery. Further, because Appearance-RS has also been linked to intrapersonal variables, such as low self-esteem and basing self-worth on appearance (Park, 2007), we hypothesized that Appearance-RS would be related to intrapersonal motives for wanting cosmetic surgery, as well.

In sum, the purpose of the present research was to examine the role of Appearance-RS in predicting self-reported symptoms of BDD and acceptance of cosmetic surgery in a nonclinical sample of American college students. We hypothesized that the more people anxiously expect to be rejected based on their appearance, the more likely they would exhibit self-reported symptoms of BDD and express greater endorsement of cosmetic surgery for both social and intrapersonal reasons. To test the unique predictive validity of Appearance-RS, we controlled for a number of variables that have been shown to be related to Appearance-RS or BDD; specifically, gender, appearance satisfaction, general rejection sensitivity, fear of negative evaluation, and depressive symptoms.

## METHOD

### PARTICIPANTS

A total of 349 students (221 women, 128 men) from Introductory Psychology courses at the University at Buffalo participated in the study for course credit. Because we were interested in associations between Appearance-RS and BDD symptoms, rather than symptoms of disordered eating, we excluded participants who indicated on the BDDQ that their main appearance concern was weight-related. Specifically, participants who responded with a 4 or 5 on a scale from 1 (not at all) to 5 (very often) to the question: "My main concern about how I look is that I'm not thin enough/I might get too fat" were excluded from analyses. Thus, the final sample consisted of 229 participants (123 women, 106 men) aged 17 to 46, with the average age being 19.30 ( $SD = 2.56$ ).

## MEASURES

*Appearance-RS Scale.* The original Appearance-RS Scale consists of 15 scenarios in which individuals might anxiously expect to be rejected based on their appearance (Park, 2007). For example: "You are leaving your house to go on a first date when you notice a blemish on your face." Participants indicate their anxiety about being rejected based on appearance (e.g., How concerned or anxious would you be that your date might be less attracted to you because of the way you looked?) on a scale from 1 (very unconcerned) to 6 (very concerned) and their expectation of appearance-based rejection (e.g., I would expect that my date would find me less attractive) on a scale from 1 (very unlikely) to 6 (very likely). This scale has demonstrated high internal consistency, validity, and test-retest reliability (Park, 2007).

To reduce the length of questionnaires administered in this study, participants completed the brief, 10-scenario version of the Appearance-RS scale, which has been used in previous research and demonstrated high internal reliability (in this sample,  $\alpha = .90$ ; see also Park, DiRaddo, & Calogero, 2009; Park & Pinkus, 2009). Appearance-RS is calculated by multiplying the degree of anxious concern with the degree of rejection expectation in each situation and then averaging across anxious expectation of rejection scores across situations for each participant. Participants possess high Appearance-RS if they score high on both the anxiety and expectation of rejection dimensions across situations. Thus, higher average Appearance-RS scores reflect greater sensitivity to appearance-based rejection. In this sample, average Appearance-RS scores ranged from 1.00 to 29.80.

*Personal Rejection Sensitivity.* The 8-item Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996) measures anxious expectations of rejection across situations in which participants imagine themselves making requests of others. For example: "You ask your friend to do a big favor for you." For each situation, participants indicate their anxiety about each outcome (e.g., How concerned or anxious would you be over whether or not your friend would do this favor?) on a scale from 1 (not at all) to 6 (very much) and their expectation of rejection in the situation, from 1 (very unlikely) to 6 (very likely). Personal-RS scores are calculated in the same way that Appearance-RS is calculated, with higher average scores indicat-

ing greater Personal-RS. In this sample, average Personal-RS scores ranged from 1.00 to 29.62. The scale has good internal reliability ( $\alpha = .80$  in this sample), construct validity, and test-retest reliability (see Downey & Feldman, 1996).

*Fear of Negative Evaluation.* Participants responded to items from Leary's (1983a) Brief Fear of Negative Evaluation Scale (12 items; in this sample,  $\alpha = .78$ ) on a scale from 1 (not at all characteristic of me) to 5 (extremely characteristic of me). Sample items were: "I worry about what other people will think of me even when I know it doesn't make any difference" and "I am afraid others will not approve of me." Higher average scores indicate greater fear of negative evaluation, with scores in this sample ranging from 1.58 to 4.67. This scale has demonstrated high internal reliability, construct validity, and test-retest reliability over a 4-week period (Leary, 1983b).

*Appearance Satisfaction.* Participants responded to the single item, "How attractive do you think you are?" on a scale from 1 (not at all satisfied) to 7 (very satisfied).

*Depressive Symptoms.* Participants completed the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) to assess depressive symptoms over the past week, using a scale from 1 (rarely/none of the time) to 4 (most or all of the time). Sample items were: "I was bothered by things that usually don't bother me" and "I felt depressed." The 20-item scale assesses all of the major dimensions of depressive symptomatology, including depressed mood, feelings of guilt, worthlessness, helplessness, hopelessness, loss of appetite, sleep disturbance, and psychomotor retardation. Higher average scores indicate more depressive symptoms, with scores in this sample ranging from 1.00 to 3.55. The scale has demonstrated good construct and discriminant validity and internal reliability (in this sample,  $\alpha = .88$ ; Radloff, 1977).

*Body Dysmorphic Disorder Questionnaire.* Symptoms of BDD were assessed with the self-report BDDQ (Phillips, 1996). The BDDQ was intended as a screening instrument, not a diagnostic tool; a diagnosis should ideally be determined by a trained clinician in a face-to-face interview. Nevertheless, previous studies using the BDDQ have found that is an internally reliable and valid scale, is highly correlated with clinicians' diagnoses of BDD, and has a reported sensitivity of 100% and a specificity of 89% among individuals with a psychiatric diagnosis (Phillips, 1996).

We conceptualized BDD symptoms as a dimensional construct, because our interest was in examining the degree to which sensitivity to appearance rejection predicted self-reported symptoms of BDD, rather than diagnosing participants or determining categorically the presence or absence of such symptoms. Specifically, we examined the degree to which participants reported core features of BDD symptomatology as assessed by the BDQ, including cognitive preoccupation with appearance, appearance-related distress, and perceived interference in social or occupational functioning due to one's appearance. The items were: I think a lot about my appearance problems; I wish I could think less about my appearance problems; I have been upset a lot because of the way I look; I am very worried about how I look; My preoccupation with my appearance has gotten in the way of doing things with friends or dating; My preoccupation with my appearance has caused me problems with school; and I have avoided doing things because of how I look. Participants responded to each item using a 5-point scale from 1 (not at all/rarely) to 5 (often/very often). Higher average scores indicate more self-reported BDD symptoms, with scores in this sample ranging from 1.00 to 5.00. The overall scale showed good internal reliability (in this sample,  $\alpha = .89$ ).

*Acceptance of Cosmetic Surgery Scale.* Reasons for endorsing cosmetic surgery and consideration of cosmetic surgery were assessed using the three subscales of the Acceptance of Cosmetic Surgery Scale (ACSS; Henderson-King & Henderson-King, 2005). Previous research has shown that each subscale of the ACSS has good test-retest reliability, convergent and discriminant validity, and high internal consistency, with alphas ranging from .84 to .92 (Henderson-King & Henderson-King, 2005). Indeed, several studies to date have examined the subscales as distinct constructs when examining attitudes toward cosmetic surgery (e.g., Henderson-King & Henderson-King, 2005; Swami, Chamorro-Premuzic, Bridges, & Furnham, 2008). Because we were interested in assessing specific reasons for accepting cosmetic surgery, we collected data using the three subscales.

Sample items assessing *social reasons* (5 items,  $\alpha = .92$ ) for cosmetic surgery were: "If a simple cosmetic surgery procedure would make me more attractive to others, I would think about trying it" and "I would seriously consider having cosmetic surgery if I thought my partner would find me more attractive." Sample items assessing *in-*

*trapersonal reasons* (5 items,  $\alpha = .91$ ) for cosmetic surgery were: "People who are very unhappy with their physical appearance should consider cosmetic surgery as one option" and "Cosmetic surgery can be a big benefit to people's self-image." Sample items assessing consideration of cosmetic surgery (5 items,  $\alpha = .82$ ) were: "If I could have a surgical procedure done for free I would consider trying cosmetic surgery" and "If I knew there would be no negative side effects or pain, I would like to try cosmetic surgery." Responses were made on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). Higher average scores indicate greater endorsement of social reasons, intrapersonal reasons, and consideration of cosmetic surgery, with scores in this sample ranging from 1.00 to 6.80 for the social subscale and 1.00 to 7.00 for both intrapersonal and consider subscales.

## RESULTS

Table 1 presents descriptive statistics and zero-order correlations among the study variables. For our primary analyses, we conducted a series of hierarchical regression analyses. At Step 1, we entered all of the control variables. At Step 2, we added the key predictor variable—Appearance-RS—and examined whether adding this variable significantly improved model fit. Because gender was not significantly correlated with Appearance-RS or any of the dependent measures, we dropped this variable from all regression analyses.

Table 2 presents standardized beta coefficients for each variable in each model. As hypothesized, Appearance-RS was significantly related to self-reported BDD symptoms, controlling for all other variables. Specifically, adding Appearance-RS to the model significantly improved model fit and accounted for approximately 9% unique variance in BDD symptoms. Also, as expected, Appearance-RS was significantly related to consideration of cosmetic surgery and to both social and intrapersonal reasons for endorsing cosmetic surgery. Specifically, adding Appearance-RS to the model significantly improved model fit for all three subscales and accounted for approximately 5% unique variance in considering cosmetic surgery, 6% variance in social reasons for endorsing cosmetic surgery, and 4% variance in personal reasons for endorsing cosmetic surgery. Overall, these results suggest that the more sensitive participants

TABLE 1. Means, Standard Deviations, and Zero-Order Correlations Among Study Variables (N = 229)

	1) Appearance-RS	2) Personal-RS	3) Fear of Negative Evaluation	4) Appearance Satisfaction	5) Depressive Symptoms	6) BDDQ	7) Social Reasons for CS	8) Personal Reasons for CS	9) Consider CS
Mean	10.75	8.03	2.80	4.95	1.62	1.95	2.53	3.30	2.84
SD	5.65	3.34	.62	1.19	.44	.88	1.45	1.58	1.52
1	—								
2	.34***	—							
3	.55***	.32***	—						
4	-.35***	-.30***	-.15*	—					
5	.38***	.35***	.34***	-.26***	—				
6	.56***	.20**	.46***	-.23***	.46***	—			
7	.27***	.18**	.09	-.03	.12	.34***	—		
8	.16*	.11	.02	.10	.02	.22**	.72***	—	
9	.25***	.17*	.11	.02	.12	.32***	.79***	.70***	—

Note. Appearance-RS = Appearance-based Rejection Sensitivity; Personal-RS = Personal (General) Rejection Sensitivity. BDDQ = Body Dysmorphic Disorder Questionnaire; CS = Cosmetic Surgery. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



are to rejection based on appearance, the more likely they are to report symptoms of BDD and to consider and endorse cosmetic surgery for both social and intrapersonal reasons.

## GENERAL DISCUSSION

The present findings contribute to a growing body of research examining factors that predict body image disturbance and acceptance of cosmetic surgery. Notably, the current research is the first to demonstrate that individual differences in sensitivity to appearance rejection account for unique variance in self-reported BDD symptoms and endorsement of cosmetic surgery for various reasons. These findings remained even after controlling for appearance satisfaction, general rejection sensitivity, fear of negative evaluation, and depressive symptoms, thus supporting the unique predictive validity of Appearance-RS.

Social psychological factors have been theorized to play a role in the development of BDD (Phillips & Castle, 2002). For example, appearance-related teasing from family and peers is thought to be associated with BDD symptoms later in life (Phillips, 1996). To our knowledge, there have been only two published studies empirically linking appearance-related teasing with BDD. In one study, perceived appearance-based teasing was positively related to severity of BDD symptoms among a clinical sample of BDD patients (Buhlmann et al., 2007). Another study found that individuals with clinically diagnosed BDD reported frequent, distressing images related to early events that involved being bullied or teased about their appearance, or feeling self-conscious about their appearance (Osman, Cooper, Hackmann, & Veale, 2004). The present research extends this literature by demonstrating that anxious expectations of appearance rejection predict self-reported BDD symptoms and acceptance of cosmetic surgery among a nonclinical, college-student population.

Several items on the Appearance-RS scale reflect concerns about interpersonal dating situations (e.g., You are set up on a blind date. The date goes well and you like the person, but he/she has not called you for several days; You are at a dance club and all of your friends have been asked to dance except for you). This emphasis on interpersonal interaction may be especially important to consider when examining BDD symptoms, because individuals with BDD

are often single, anxious about dating, and likely to experience low relationship quality and social isolation (Phillips, 1996; Phillips, Menard, Fay, & Pagano, 2005). Indeed, people with BDD possess information processing biases regarding their perceived physical defects—they assume that other people notice their imagined or slight flaw in appearance and experience increased shame and decreased self-esteem that may serve to fuel their socially avoidant tendencies (Buhlmann & Wilhelm, 2004).

One way that people with high Appearance-RS may seek to alleviate anxieties about appearance rejection is to endorse cosmetic surgery procedures. Indeed, Appearance-RS predicted social reasons for accepting cosmetic surgery (e.g., to please one's partner), consistent with prior research showing that sociocultural influences—such as feeling conditionally accepted by one's peers based on appearance or feeling pressure to meet media appearance ideals—are associated with higher levels of Appearance-RS among college students (Park, DiRaddo, & Calogero, 2009). The present research also found that Appearance-RS predicted intrapersonal reasons for accepting cosmetic surgery (e.g., to boost one's self-image, feel happier). Given that Appearance-RS has been linked to low appearance satisfaction, low self-esteem, and to basing self-worth on appearance (Park, 2007), it makes sense that people with high Appearance-RS would endorse cosmetic surgery as a way to improve their personal appearance, body image, and self-esteem (Brown et al., 2007; Delinsky, 2005; Didie & Sarwer, 2003; Sarwer et al., 1998b, 2003, 2005).

Such findings are also consistent with the idea that people living in Western cultures are highly motivated to maintain, validate, and enhance self-esteem and may go to great lengths to feel good about themselves and avoid feeling badly about themselves (Crocker & Park, 2004; Heine, Lehman, Markus, & Kitayama, 1999). The rise in BDD and cosmetic surgery interest in contemporary Western culture may also be linked to a growing preoccupation with materialism and exposure to mass media advertising that emphasizes outward appearance (Fawcett, 2004). Future research is needed to examine the generalizability of the present findings to other cultures, ages, races, and socioeconomic backgrounds.

A limitation of the current study is that we used self-report questionnaires to assess BDD symptoms. Without visual inspection of participants' perceived appearance defects, one cannot conclusively determine whether or not a person has BDD. Indeed, according to the most recent version of the DSM-IV, three diagnostic criteria must

be met for a diagnosis of BDD: (a) preoccupation with a slight or imagined defect in appearance; (b) marked distress or impairment in social, occupational, or other areas of functioning; and (c) the preoccupation is not attributable to the presence of another psychiatric disorder (e.g., anorexia nervosa). In the present investigation, we did not diagnosis BDD per se, but rather, predicted self-reported BDD symptoms, which reflect more extreme body image disturbances than is typically measured by body dissatisfaction scales. In fact, whereas some degree of body dissatisfaction is considered normative in college populations (Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986; Rodin, Silberstein, & Striegel-Moore, 1984), more extreme types of body image disturbance are less common but more likely to impair daily functioning. Thus, the measurement of BDD symptoms in relation to Appearance-RS could be considered a key strength of the present study.

To assess BDD symptoms, we used the BDDQ, which is a well-validated screening tool among college students (Bartsch, 2007; Bohne, Keuthen, Wilhelm, Deckersbach, & Jenike, 2002; Bohne, Wilhelm, Keuthen, Florin, Baer, & Jenike, 2002; Sarwer, Cash, Magee, Williams, Thompson, Roehrig et al., 2005), and demonstrates excellent convergence with clinical interviews (Grant, Kim, & Crow, 2001; Phillips, 1996). Indeed, an advantage of the BDDQ over clinician-administered interviews is that BDD symptoms can be screened for when a clinician is not available. In addition, because people may be embarrassed or ashamed to publicly discuss their appearance concerns, completing a private, self-report measure may make them feel less self-conscious about disclosing such concerns. Furthermore, to distinguish between BDD symptoms and symptoms of other disorders, we controlled for depressive symptoms and excluded participants if they indicated that their main concern was their weight. Even after accounting for these factors, Appearance-RS was still significantly related to self-reported BDD symptoms. An important direction for future research is to examine whether the findings of the current study can be extrapolated to clinical BDD populations.

A second limitation of this research was its correlational design. Although it is certainly plausible that individuals with BDD symptoms may come to exhibit heightened sensitivity to appearance rejection, we think it is more likely that Appearance-RS may act as an antecedent to the more extreme preoccupation and distress over appearance that is often characteristic of BDD. Further research is

needed, however, to determine whether Appearance-RS predicts BDD symptoms over time, using a prospective design. In addition, we did not examine whether participants who expressed interest in cosmetic surgery actually sought cosmetic surgery. No studies to our knowledge have examined whether acceptance of cosmetic surgery actually leads individuals to seek or undergo cosmetic surgery. Rather, the majority of studies to date have examined either post-operative adjustment to cosmetic surgery or used cross-sectional designs to examine psychosocial motivations for cosmetic surgery among nonclinical samples and patients currently seeking cosmetic surgery (Crerand, Infield, & Sarwer, 2007; Didie & Sarwer, 2003; Figueroa-Haas, Champion, & Secor, 2008; Sarwer, LaRossa, Bartlett, Low, Bucky, & Whitaker, 2003; Sarwer et al., 1998a; von Soest, Kvaalem, Skolleborg, & Roald, 2006). Thus, a direction for future research is to examine specific factors that may address the gap between attitudes toward cosmetic surgery and actually undergoing such procedures.

A third limitation of the present research is that we controlled for a selected set of covariates. Specific covariates were included in the analyses because they have been shown in past research to be related, empirically or theoretically, to Appearance-RS, BDD, and/or cosmetic surgery interest. Future studies could assess additional personality and/or sociocultural variables in predicting BDD symptoms and acceptance of cosmetic surgery, as well as examine other related behavioral or psychological outcomes. Researchers should also collect data on participants' race and Body Mass Index (BMI) to include as covariates or potential moderators.

Overall, the present research found that the more people anxiously expected rejection from others based on appearance, the more likely they were to be preoccupied with their appearance and to experience greater appearance-related distress and interference in their daily lives. Appearance-RS also predicted greater consideration of cosmetic surgery as a way to change one's appearance and was linked to both social and intrapersonal reasons for endorsing cosmetic surgery. Together, these findings suggest that individuals with high Appearance-RS may accept cosmetic surgery as a way to improve their perceived physical flaws, to potentially relieve excessive preoccupation with their appearance and the attendant distress and impairment that may accompany such preoccupation. Future research is needed to clarify further the causal links between Ap-

pearance-RS, BDD symptoms, and actual engagement in cosmetic procedures.

## REFERENCES

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text revision). Washington, DC: Author.
- American Society of Plastic Surgeons. (2009). *2009 report of the 2008 statistics: National clearinghouse of plastic surgery statistics*. Retrieved May 20, 2009, from <http://www.plasticsurgery.org/Media/stats/2008-US-cosmetic-reconstructive-plastic-surgery-minimally-invasive-statistics.pdf>
- Bartky, S. L. (1990). *Femininity and domination: Studies in the phenomenology of oppression*. New York: Routledge.
- Bartky, S. (2003). Foucault, femininity and the modernization of patriarchal power. In R. Weitz (Ed.), *The politics of women's bodies: Sexuality, appearance, and behavior* (pp. 25-45). New York: Oxford University Press.
- Bartsch, D. (2007). Prevalence of body dysmorphic disorder symptoms and associated clinical features among Australian university students. *Clinical Psychologist, 11*, 16-23.
- Bearman, S. K., Presnell, K., Martinez, E., & Stice, E. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence, 35*, 229-241.
- Berscheid, E., & Walster, E. (1974). Physical attractiveness. *Advances in Experimental Social Psychology, 7*, 157-215.
- Bienvenu, O. J., Samuels, J. F., Riddle, M. A., Hoehn-Saric, R., Liang, K.-Y., Cullen, B. A. M., et al. (2000). The relationship of obsessive-compulsive disorder to possible spectrum disorders: Results from a family study. *Biological Psychiatry, 48*, 287-293.
- Bohne, A., Keuthen, N. J., Wilhelm, S., Deckersbach, T., & Jenike, M. A. (2002). Prevalence of symptoms of body dysmorphic disorder and its correlates: A cross-cultural comparison. *Psychosomatics, 43*, 486-490.
- Bohne, A., Wilhelm, S., Keuthen, N. J., Florin, I., Baer, L., & Jenike, M. A. (2002). Prevalence of body dysmorphic disorder in a German college student sample. *Psychiatry Research, 109*, 101-104.
- Brawman-Minzer, O., Lydiard, R. B., Phillips, K. A., Morton, A., Czepowicz, V., Emmanuel, N., et al. (1995). Body dysmorphic disorder in patients with anxiety disorders and major depression: A co-morbidity study. *American Journal of Psychiatry, 152*, 1665-1667.
- Brown, A., Furnham, A., Glanville, L., & Swami, V. (2007). Factors that affect the likelihood of undergoing cosmetic surgery. *Aesthetic Surgery Journal, 27*, 501-508.
- Buhlmann, U., Cook, L. M., Fama, J. M., & Wilhelm, S. (2007). Perceived teasing experiences in body dysmorphic disorder. *Body Image, 4*, 381-385.
- Buhlmann, U., & Wilhelm, S. (2004). Cognitive factors in body dysmorphic disorder. *Psychiatric Annals, 34*, 922-926.
- Buhlmann, U., Wilhelm, S., McNally, R. J., Tuschen-Caffier, B., Baer, L., & Jenike, M. A. (2002). Interpretive biases for ambiguous information in body dysmorphic disorder. *CNS Spectrums, 7*, 435-443.

- Calogero, R.M., Boroughs, M., & Thompson, J.K. (2007). The impact of Western beauty ideals on the lives of women and men: A sociocultural perspective. In V. Swami & A. Furnham (Eds.), *Body beautiful: Evolutionary and sociocultural perspectives* (pp. 259-298). New York: Palgrave Macmillan.
- Calogero, R.M., Herbozo, S., & Thompson, J.K. (2009). Complimentary weightism: The potential costs of appearance-related commentary for women's self-objectification. *Psychology of Women Quarterly*, *33*, 120-132.
- Cansever, A., Uzun, O., Donmez, E., & Ozsahin, A. (2003). The prevalence and clinical features of body dysmorphic disorder in college students: A study in a Turkish sample. *Comprehensive Psychiatry*, *44*, 60-64.
- Crandall, C. S. (1994). Prejudice against fat people: Ideology and self-interest. *Journal of Personality and Social Psychology*, *66*, 882-894.
- Crerand, C. E., Franklin, M. E., & Sarwer, B. D. (2006). Body dysmorphic disorder and cosmetic surgery. *Plastic and Reconstructive Surgery*, *118*, 167-180.
- Crerand, C. E., Infield, A. L., & Sarwer, D. B. (2007). Psychological considerations in cosmetic breast augmentation. *Plastic Surgical Nursing*, *29*, 49-57.
- Crerand, C. E., Phillips, K. A., Menard, W., & Fay, C. (2005). Nonpsychiatric medical treatments of body dysmorphic disorder. *Psychosomatics*, *46*, 549-555.
- Crocker, J., & Park, L.E. (2004). The costly pursuit of self-esteem. *Psychological Bulletin*, *130*, 392-414.
- Davis, D., & Vernon, M. L. (2002). Sculpting the body beautiful: Attachment style, neuroticism, and use of cosmetic surgeries. *Sex Roles*, *47*, 129-138.
- Delinsky, S. S. (2005). Cosmetic surgery: A common and accepted form of self-improvement. *Journal of Applied Psychology*, *35*, 2012-2028.
- Didie, E. R., & Sarwer, D. B. (2003). Factors that influence the decision to undergo cosmetic breast augmentation surgery. *Journal of Women's Health*, *12*, 241-253.
- Dion, K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, *24*, 285-290.
- Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, *70*, 1327-1343.
- Eagly, A. H., Ashmore, R. D., Makhijani, M. G., & Longo, L. C. (1991). What is beautiful is good, but... A meta-analytic review of research on the physical attractiveness stereotype. *Psychological Bulletin*, *110*, 109-128.
- Faravelli, C., Salvatori, S., Galassi, F., Aiazzi, L., Drei, C., & Cabras, P. (1997). Epidemiology of somatoform disorders: A community survey in Florence. *Social Psychiatry and Psychiatric Epidemiology*, *32*, 24-29.
- Fawcett, J. (2004). Is BDD culturally induced? *Psychiatric Annals*, *34*, 900.
- Feldman, S., & Downey, G. (1994). Rejection sensitivity as a mediator of the impact of childhood exposure to family violence on adult attachment behavior. *Development and Psychopathology*, *6*, 231-247.
- Figuroa-Haas, C., Champion, A., & Secor, D. (2008). Motivating factors for seeking cosmetic surgery: A synthesis of the literature. *Plastic Surgical Nursing*, *28*, 177-182.
- Grant, J. E., Kim, S. W., & Crow, S. J. (2001). Prevalence and clinical features of body dysmorphic disorder in adolescent and adult psychiatric inpatients. *Journal of Clinical Psychiatry*, *62*, 517-522.
- Grant, J. E., & Phillips, K. A. (2005). Recognizing and treating body dysmorphic disorder. *Annals of Clinical Psychiatry*, *17*, 205-210.

- Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, *106*, 766-795.
- Henderson-King, D., & Henderson-King, E. (2005). Acceptance of cosmetic surgery: Scale development and validation. *Body Image*, *2*, 137-149.
- Hosoda, M., Stone-Romero, E. F., & Coats, G. (2003). The effects of physical attractiveness on job-related outcomes: A meta-analysis of experimental studies. *Personnel Psychology*, *56*, 431-462.
- Jones, D. C., & Crawford, J. K. (2006). The peer appearance culture during adolescence: Gender and body mass variations. *Journal of Youth and Adolescence*, *35*, 243-255.
- Langlois, J. H., Kalakanis, L., Rubenstein, A. J., Larson, A., Hallam, M., & Smoot, M. (2000). Maxims or myths of beauty? A meta-analytic and theoretical review. *Psychological Bulletin*, *126*, 390-423.
- Leary, M. R. (1983a). A brief version of the fear of negative evaluation scale. *Personality and Social Psychology Bulletin*, *9*, 371-375.
- Leary, M. R. (1983b). Social anxiousness: The construct and its measurement. *Journal of Personality Assessment*, *47*, 66-75.
- Leary, M. R., & Kowalski, R. M. (1993). The interaction anxiousness scale: Construct and criterion-related validity. *Journal of Personality Assessment*, *61*, 136-146.
- Leary, M. R., & Kowalski, R. M. (1995). *Social anxiety*. New York: Guilford Press.
- Mishkind, M. E., Rodin, J., Silberstein, L. R., & Striegel-Moore, R. H. (1986). The embodiment of masculinity: Cultural, psychological, and behavioral dimensions. *American Behavioral Scientist*, *29*, 545-562.
- Osman, S., Cooper, M., Hackmann, M., & Veale, D. (2004). Spontaneously occurring images and early memories in people with body dysmorphic disorder. *Memory*, *12*, 428-436.
- Otto, M. W., Wilhelm, S., Cohen, L. S., & Harlow, B. L. (2001). Prevalence of body dysmorphic disorder in a community sample of women. *American Journal of Psychiatry*, *158*, 2061-2063.
- Park, L. E. (2007). Appearance-based rejection sensitivity: Implications for mental and physical health, affect, and motivation. *Personality and Social Psychology Bulletin*, *33*, 490-504.
- Park, L. E., Calogero, R. M., Harwin, M. J., & DiRaddo, A. (2009). Predicting cosmetic surgery interest: Interactive effects of appearance-based rejection sensitivity and negative appearance comments. *Body Image*, *6*, 186-193.
- Park, L. E., & Crocker, J. (2008). Contingencies of self-worth and responses to negative interpersonal feedback. *Self and Identity*, *7*, 184-203.
- Park, L. E., DiRaddo, A., & Calogero, R. M. (2009). Sociocultural influence and appearance-based rejection sensitivity among college students. *Psychology of Women Quarterly*, *33*, 108-119.
- Park, L. E., & Harwin, M. J. (2010). Visible versus non-visible rejection: Consequences of appearance-based rejection sensitivity. *Journal of Research in Personality*, *44*, 128-132.
- Park, L. E., & Pinkus, R. (2009). Interpersonal effects of appearance-based rejection sensitivity. *Journal of Research in Personality*, *43*, 609-612.
- Phillips, K. A. (1996). Instruments for assessing BDD: The BDDQ: A self-report screening instrument for BDD. In *The broken mirror: Understanding and treating body dysmorphic disorder* (pp. 321-333). New York: Oxford University Press.

- Phillips, K. A., Albertini, R. S., & Rasmussen, S. A. (2002). A randomized placebo-controlled trial of fluoxetine in body dysmorphic disorder. *Archives of General Psychiatry*, *59*, 381-388.
- Phillips, K. A., Atala, K. D., & Pope, H. G. (1995a). Diagnostic instruments for body dysmorphic disorder. In American Psychiatric Association (Ed.), *New research program and abstracts*. 148th Annual Meeting of the American Psychiatric Association. Miami: American Psychiatric Association.
- Phillips, K. A., & Castle, D. J. (2002). Body dysmorphic disorder. In D. J. Castle & K. A. Phillips (Eds.), *Disorders of body image* (pp. 101-120). Hampshire, England: Wrighton Biomedical.
- Phillips, K. A., Grant, J., Siniscalchi, J., & Albertini, R. S. (2001). Surgical and nonpsychiatric medical treatment of patients with body dysmorphic disorder. *Psychosomatics*, *42*, 504-510.
- Phillips, K. A., Hollander, E., Rasmussen, S. A., Aronowitz, B. R., DeCaria, C., & Goodman, W. K. (1997). A severity rating scale for body dysmorphic disorder: Development, reliability, and validity of a modified version of the Yale-Brown obsessive-compulsive scale. *Psychopharmacology Bulletin*, *33*, 17-22.
- Phillips, K. A., McElroy, S. L., Hudson, J. I., & Pope, H. G. (1995). Body dysmorphic disorder: An obsessive-compulsive disorder, a form of spectrum disorder, or both? *Journal of Clinical Psychiatry*, *56*, 41-51.
- Phillips, K. A., McElroy, S. L., Keck, P. E., Pope, H. G., & Hudson, J. I. (1993). Body dysmorphic disorder: 30 cases of imagined ugliness. *American Journal of Psychiatry*, *150*, 302-308.
- Phillips, K. A., & Menard, W. (2006). Suicidality in body dysmorphic disorder: A prospective study. *American Journal of Psychiatry*, *163*, 1280-1282.
- Phillips, K. A., Menard, W., Fay, C., & Pagano, M. E. (2005). Psychosocial functioning and quality of life in body dysmorphic disorder. *Comprehensive Psychiatry*, *46*, 254-260.
- Phillips, K. A., Menard, W., Fay, C., & Weisberg, R. (2005). Demographic characteristics, phenomenology, comorbidity, and family history in 200 individuals with BDD. *Psychosomatics*, *46*, 317-325.
- Phillips, K. A., Neirenberg, A. A., Brendel, G., & Fava, M. (1996). Prevalence and clinical features of body dysmorphic disorder in atypical major depression. *Journal of Nervous Mental Disorders*, *184*, 125-129.
- Pruzinsky, T., & Edgerton, M. T. (1990). Body image change through bodily change. In T. F. Cash & T. Pruzinsky (Eds.), *Body images: Development, deviance, and change* (pp. 217-236). New York: Guilford Press.
- Puhl, R., & Brownell, K. D. (2001). Bias, discrimination, and obesity. *Obesity Research*, *9*, 788-805.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385-401.
- Rief, W., Buhlmann, U., Wilhelm, S., Borkenhagen, A., & Brahler, E. (2006). The prevalence of body dysmorphic disorder: A population-based survey. *Psychological Medicine*, *36*, 877-885.
- Rodin, J., Silberstein, L., & Striegel-Moore, R. (1984). Women and weight: A normative discontent. *Nebraska Symposium on Motivation*, *32*, 267-307.
- Rosen, J. C., & Ramirez, E. (1998). A comparison of eating disorders and body dysmorphic disorder on body image and psychological adjustment. *Journal of Psychosomatic Research*, *44*, 441-449.

- Rosen, J. C., Reiter, J., & Orosan, P. (1995). Cognitive-behavioral body image therapy for body dysmorphic disorder. *Journal of Consulting and Clinical Psychology, 63*, 263-269.
- Sarwer, D. B., Cash, T. F., Magee, L., Williams, E. F., Thompson, J. K., Roehrig, M., et al. (2005). Female college students and cosmetic surgery: An investigation of experiences, attitudes, and body image. *Plastic and Reconstructive Surgery, 115*, 931-938.
- Sarwer, D. B., & Crerand, C. E. (2008). Body dysmorphic disorder and appearance enhancing medical treatments. *Body Image, 5*, 50-58.
- Sarwer, D. B., LaRossa, D., Bartlett, S. P., Low, D. W., Bucky, L. P., & Whitaker, L. A. (2003). Body image concerns of breast augmentation. *Plastic Reconstructive Surgery, 112*, 83-90.
- Sarwer, D. B., Wadden, T. A., Pertschuk, M. J., & Whitaker, L. A. (1998a). Body image dissatisfaction and body dysmorphic disorder in 100 cosmetic surgery patients. *Plastic and Reconstructive Surgery, 101*, 1644-1649.
- Sarwer, D. B., Wadden, T. A., Pertschuk, M. J., & Whitaker, L. A. (1998b). The psychology of cosmetic surgery: A review and conceptualization. *Clinical Psychology Review, 18*, 1-22.
- Smolak, L., & Thompson, J. K. (2009). *Body image, eating disorders, and obesity in youth: Assessment, prevention, and treatment* (2nd ed.). Washington, DC: American Psychological Association.
- Sperry, S., Thompson, J. K., Sarwer, D. B., & Cash, T. F. (2009). Cosmetic surgery reality TV viewership: Relations with cosmetic surgery attitudes, body image, and disordered eating. *Annals of Plastic Surgery, 62*, 7-11.
- Swami, V., Chamorro-Premuzic, T., Bridges, S., & Furnham, A. (2008). Acceptance of cosmetic surgery: Personality and individual difference predictors. *Body Image, 6*, 7-13.
- Swami, V., Arteche, A., Chamorro-Premuzic, T., Furnham, A., Stieger, S., & Haubner, T., et al. (2008). Looking good: Factors affecting the likelihood of having cosmetic surgery. *European Journal of Plastic Surgery, 30*, 211-218.
- Thompson, J. K., Heinberg, L. J., Altabe, M. N., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. Washington, DC: American Psychological Association.
- von Soest, T., Kvalem, I. L., Skolleborg, K. C., & Roald, H. E. (2006). Psychosocial factors predicting the motivation to undergo cosmetic surgery. *Plastic and Reconstructive Surgery, 117*, 51-62.
- Wilhelm S., Otto, M. W., Zucker, B. G., & Pollack, M. H. (1997). Prevalence of body dysmorphic disorder in patients with anxiety disorders. *Journal of Anxiety Disorders, 11*, 499-502.

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