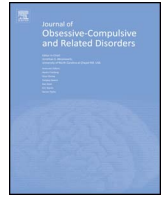




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Do obsessive beliefs predict body image disturbance?

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A B S T R A C T

The controversial re-classification of body dysmorphic disorder with obsessive-compulsive disorder (OCD) in the Obsessive-Compulsive Related Disorders chapter of the latest diagnostic statistical manual was based primarily on neuropsychological research and theory. However, little research has examined the extent to which cognitive variables known to be important in the development and maintenance OCD (e.g., “obsessive beliefs”) are related to body image disturbance (BID). The present study was designed to test the hypothesis that obsessive beliefs uniquely predict BID after controlling for other related variables. A total of 601 participants completed a battery of self-report measures of BID severity, obsessive beliefs, OCD symptoms, general distress, and pathological eating attitudes. As predicted, BID was positively correlated with all three obsessive belief domains. Contrary to hypotheses, only the need for perfectionism/certainty obsessive belief domain emerged as a significant unique predictor of BID. Limitations and potential implications for understanding, assessing, and treating BID-related conditions are discussed.

Body dysmorphic disorder (BDD) is a psychological condition that is characterized by excessive preoccupation with an imagined or slight defect in one's appearance that causes distress and functional impairment (American Psychiatric Association [APA], 2013). Common concerns include perceived flaws in the size, shape, or quality of one's skin, hair, muscles, face, thighs, or genitals. Such preoccupations are accompanied by anxiety or shame, as well as urges to perform certain “repetitive behaviors” such as mirror gazing (or mirror avoidance), excessive grooming or camouflaging the perceived defect, and seeking reassurance from others to alleviate distress (APA, 2013, p. 242). Although the prevalence of BDD is comparable among men and women (e.g., APA, 2013; Phillips & Castle, 2001; Phillips & Diaz, 1997), research indicates that there are gender-specific differences in appearance-related preoccupation (e.g., men are more likely to express concern about genitals and body build than are women; Phillips, Menard, Pagano, Fay, & Stout, 2006). Furthermore, some authors have argued that self-reporting of body image disturbance (BID) is more socially acceptable for women than for men, making it difficult to determine the gender distribution of BID-related conditions (e.g., Veale, Boocock, Gournay, & Dryden, 1996).

Historically, BDD has been difficult to classify within formal diagnostic systems because it shares a number of features with other conditions, including obsessive-compulsive disorder (OCD) and eating disorders (Cororve & Gleaves, 2001). In the most recent edition of the Diagnostic and Statistical Manual (DSM-5; APA, 2013), BDD has been

re-categorized into the Obsessive-Compulsive and Related Disorders (OCRDs) chapter. Although not all experts agree with this reclassification (Mataix-Cols, Pertusa, & Leckman, 2007; Stein & Phillips, 2014), advocates for this change underscore shared factors in the etiology, course, and treatment of the two conditions as justification for their co-classification (e.g., Hollander, Friedberg, Wasserman, Yeh, & Iyengar, 2005). For instance, some researchers point to evidence suggesting common genetic vulnerability (e.g., Bienvenu, Samuels, Riddle, Hoehn-Saric, & Liang, 2000; Monzani et al., 2012) and neurocircuitry (Hollander, 2005) between OCD and BDD. Moreover, comparable prevalence rates (APA, 2013) and high comorbidity rates (as high as 30%; Gunstad & Phillips, 2003) between BDD and OCD provide additional support for their relatedness.

Critics (e.g., Abramowitz & Jacoby, 2015), however, argue that classification on the sole basis of putative biological similarities overlooks important empirically established characteristics of OCRDs. Accordingly, they assert that examining commonalities in psychological processes (e.g., dysfunctional beliefs; Beck, 1976) is a more clinically useful approach to understanding and treating OCRDs. Indeed, some researchers have observed similarities in the cardinal symptoms and cognitive processes thought to maintain BDD and OCD symptoms (e.g., Neziroglu, Wilhelm, & Knauz, 2001; Wilhelm & Neziroglu, 2002). For example, the subjective experience of preoccupation with imagined appearance defects in BDD has been likened to obsessional thoughts because appearance-related preoccupations (a) are experienced as

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uncontrollable and (b) have the ability to provoke distress and urges to avoid triggers and perform safety behaviors (e.g., Chosak et al., 2008), as is the case with OCD. Indeed, the DSM-5's definition of BDD-related "preoccupations"—intrusive, unwanted, time-consuming, and usually difficult to resist or control—is highly consistent with its description of an "obsession"—a recurrent and persistent thought, urge, or image that is experienced as intrusive or unwanted (APA, 2013). Nonetheless, despite the emerging evidence that BDD and OCD are related, few empirical studies have examined the extent to which they share cognitive vulnerabilities.

The importance of "obsessive beliefs" (i.e., dysfunctional appraisals about distressing thoughts) in the development and maintenance of OCD is well established (e.g., Wu & Carter, 2008). The Obsessive-Compulsive Cognitions Working Group (OCCWG, 1997, 2001, 2003, 2005) has emphasized three obsessive belief domains, including: (a) overestimating threat/responsibility for harm, (b) the importance of/need to control thoughts, and (c) the need for perfectionism/certainty. Consider a man with OCD who experiences obsessive doubts and checking rituals related to turning off household appliances. He might (a) overestimate the likelihood that he will forget to turn off the stove and cause a house fire, (b) interpret his obsessive doubts as "proof" that he lacks mental control, and (c) insist that the stove must be turned off in the "right way" to prevent harm. If BDD shares dysfunctional beliefs with OCD, this condition should also be associated with the aforementioned obsessive beliefs specifically related to appearance. To illustrate, a woman preoccupied with the shape of her lips might (a) overestimate the likelihood that someone will notice her perceived defect, (b) believe she should be able to control her preoccupation with her appearance, and (c) insist on grooming and camouflaging until her appearance is "just right."

As previously mentioned, research testing the hypothesis that individuals with OCD symptoms and BID exhibit common cognitive vulnerability factors is scant; moreover, studies directly testing the importance of obsessive beliefs in BID are limited to perfectionism—which does appear to be a cognitive process important to BID¹ (Hartmann, Thomas, Greenberg, Matheny, & Wilhelm, 2014; Schieber, Kollei, de Zwaan, Müller, & Martin, 2013). To illustrate, someone with BID might be prone to idealize the "perfect" appearance (i.e., over-value physical appearance and self-scrutinize perceived body defects). Supporting the notion that BDD and OCD share this cognitive vulnerability, research suggests that relative to community controls, OCD and BDD patients score higher on measures of perfectionism; yet these patient groups do not differ from each other in their level of perfectionism (Buhlmann, Etcoff, & Wilhelm, 2008). Similarly, the distress associated with perceived physical asymmetry in BDD (e.g., "uneven" eyebrows) resembles the anxiety provoked by asymmetry among those with OCD (e.g., touching something with the right hand, but not the left). Experimental research provides mixed support for this parallel. In one study, over 25% of BDD patients reported symmetry-related preoccupations, and these patients were more likely to have a lifetime diagnosis of OCD than were BDD patients without symmetry concerns (Hart & Phillips, 2013). In another study, however, symmetry detection ability and preference were equivalent among BDD patients, OCD patients, and healthy individuals (Reese, McNally, & Wilhelm, 2010).

No work to date, however, has investigated the relationship between BID and other obsessive belief domains such as threat overestimation/responsibility and the importance of/need to control thoughts. The present study was therefore designed to examine the degree to which obsessive beliefs predict BID after controlling for OCD symptoms and established BID-related cognitive factors; namely,

¹ Although not discussed here, research implicates several additional cognitive factors in the maintenance of BID other than obsessive beliefs, including information processing biases, rumination, and delusional beliefs (e.g., Buhlmann & Wilhelm, 2004; Veale, 2004)

general distress and eating attitudes (e.g., Feusner, Neziroglu, Wilhelm, Mancusi, & Bohond, 2010). In light of inconsistent findings related to BID gender distribution and gender-specific symptom presentation (e.g., Veale et al., 1996), we also controlled for gender. On the basis of growing research suggesting that BDD and OCD are closely related, we predicted positive associations between BID and all three obsessive belief domains. In light of work demonstrating a relationship between perfectionism and BDD, we further predicted that among the three obsessive belief domains, perfectionism/certainty would account for the greatest amount of unique variance in BID.

1. Method

1.1. Participants

We tested our hypotheses using a nonclinical sample given the dimensional structure of BID (e.g., Cash, Phillips, Santos, & Hrabosky, 2004), obsessive beliefs and OCD symptoms (Abramowitz et al., 2014), and dietary restraint (e.g., Holm-Denoma, Richey, & Joiner, 2010). A total of 601 undergraduate students at a large university in the southeastern United States participated in this study for course credit. Participation was open to all undergraduates enrolled in introductory psychology courses at the university during the data collection period. Approximately 1,800 undergraduate students may have been enrolled in introductory courses at the research site during this study period. Slightly more than half of the sample identified as female ($n=331$; 55.5%) with a mean age of 19.97 years old ($SD=1.20$, range 18–32). The majority of participants identified as white ($n=429$; 71.9%), with 10.9% ($n=65$) identifying as black, 9.2% ($n=55$) identifying as Asian, 5.2% ($n=31$) identifying as Hispanic/Latino, and 2.8% ($n=17$) identifying with another racial/ethnic group. Fifteen (2.5%) participants had a lifetime diagnosis of an eating disorder (nine [1.5%] reported a lifetime anorexia nervosa diagnosis, six [1%] reported a lifetime bulimia nervosa diagnosis, and two [$<1\%$] reported a lifetime binge eating disorder diagnosis; two [$<1\%$] participants reported a lifetime comorbidity of anorexia nervosa and bulimia nervosa).

1.2. Procedure

Upon electronically consenting to participate, respondents were directed to a survey link hosted by Qualtrics, a secure online survey development tool. Participants completed the measures described below in addition to a demographics questionnaire. This study was approved by the university's Institutional Review Board.

1.3. Measures

1.3.1. Body Image Disturbance Questionnaire (BIDQ; Cash et al., 2004)

The BIDQ is widely-used 7-item self-report BID screening measure derived from the validated Body Dysmorphic Disorder Questionnaire (Dufresne et al., 2001; Phillips, 2005). Participants rate the strength of their concerns and preoccupations with physical appearance, appearance-related distress, the effects of body image concerns on multiple aspects of functioning, and appearance-related avoidance behavior on a 1 (*not at all*) to 5 (*extremely*) scale. Higher scores indicate greater overall BID. Although the BIDQ has not been validated for use in BDD samples, it has demonstrated strong reliability and validity in nonclinical samples endorsing variable levels of BID (Cash et al., 2004). We therefore elected to use the BIDQ as our outcome measure given our use of a nonclinical sample in the present study. The BIDQ displayed good internal consistency in this sample ($\alpha=.89$).

1.3.2. Obsessive Beliefs Questionnaire (OBQ-44; Obsessive Compulsive Cognitions Working Group [OCCWG], 2005)

The OBQ-44 is a 44-item self-report instrument that assesses

dysfunctional beliefs thought to contribute to the escalation of normal intrusive thoughts into clinical obsessions (“obsessive beliefs”). Items load onto three subscales: (a) threat overestimation and responsibility (OBQ-RT), (b) importance and control of intrusive thoughts (OBQ-ICT), and (c) perfectionism and need for certainty (OBQ-PC). The OBQ-44 has demonstrated good validity, internal consistency, and test-retest reliability in previous research (OCCWG, 2005). The OBQ-44 showed excellent internal consistency in the current sample ($\alpha_{\text{tot}}=.95$, $\alpha_{\text{RT}}=.90$, $\alpha_{\text{ICT}}=.91$, $\alpha_{\text{PC}}=.90$).

1.3.3. Dimensional Obsessive-Compulsive Scale (DOCS; Abramowitz et al., 2010)

The DOCS is a 20-item self-report measure that assesses the severity of four consistently replicated OCD symptom dimensions (which load onto four DOCS subscales): contamination, responsibility for harm and mistakes, symmetry/ordering, and unacceptable thoughts. Each subscale begins with a description of the symptom dimension along with examples of representative obsessions and rituals. Participants rate five items (rated 0–4) per dimension to assess the following parameters of severity: (a) time occupied by obsessions and rituals, (b) avoidance behavior, (c) associated distress, (d) functional interference, and (e) difficulty disregarding the obsessions and refraining from the compulsions. The DOCS has demonstrated excellent psychometric properties (Abramowitz et al., 2010).

1.3.4. Depression Anxiety Stress Scales-21 (DASS-21; Antony, Bieling, Cox, Enns, & Swinson, 1998)

The DASS-21 is a short-form version of the 42-item DASS (Lovibond & Lovibond, 1995) that assesses subjective distress over the past week along three subscales: depression, anxiety, and stress. Participants rate how each of the 21 statements (e.g., “I found it hard to wind down”) applies to them on a 0 (rarely) to 4 (very much, or most of the time) scale; higher scores indicate greater general distress. The DASS-21 has demonstrated good reliability and construct validity in both clinical and non-clinical samples (Henry & Crawford, 2005). The DASS-21 showed excellent internal consistency ($\alpha=.93$) in the current sample.

1.3.5. The Eating Attitudes Test- 26 (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982)

The EAT-26 is a widely used self-report measure of pathological eating behaviors and concerns. Participants rate the extent to which each of the 26 statements applies to them on a never to always scale. Responses are scored such that higher scores indicate greater pathology; possible scores range 0–63. The EAT-26 has demonstrated good internal consistency and validity in previous research (Garner et al., 1982). The EAT-26 displayed good internal consistency in this sample ($\alpha=.88$).

1.4. Data analytic strategy

Data were initially screened to ensure that relevant statistical assumptions were met. We then conducted zero-order (Pearson) correlations to examine the relationships among study variables and test for bivariate redundancy in our predictors. Continuous predictor total and subscale scores were also mean-centered to reduce multicollinearity prior to regression analyses. To test study hypotheses, we conducted a simultaneous linear regression in which gender, DOCS scores, DASS-21 scores, EAT-26 scores, and OBQ subscale scores were jointly entered as predictors of BID. We opted for a simultaneous instead of hierarchical regression approach given that (a) we had no psychometric or theoretical reasons to enter our predictor variables in specified blocks, and (b) statistical output displayed in a simultaneous model is equivalent to that obtained in the final step of a hierarchical model.

Table 1
Means, standard deviations, and distribution of study measures.

	Min	Max	Mean	(SD)	Skew	Kurtosis
BIDQ	1	5	1.95	(.74)	.97	.88
DOCS	0	58	11.55	9.61	1.23	1.97
DASS-21	0	110	28.73	(20.98)	1.09	1.22
EAT-26	0	43	5.91	(7.14)	2.40	6.66
OBQ	44	291	143.46	(40.58)	.05	.11
OBQ-RT	16	111	53.12	(16.49)	.11	-.23
OBQ-ICT	12	74	31.13	(12.39)	.46	-.15
OBQ-PC	16	106	59.20	(17.58)	-.02	-.11

Note. BIDQ=Body Image Disturbance Questionnaire average score; DOCS=Dimensional Obsessive-Compulsive Scale; DASS-21=Depression Anxiety Stress Scales-21; EAT-26=Eating Attitudes Test; OBQ=Obsessive Beliefs Questionnaire; RT=Threat overestimation and responsibility subscale; ICT=Importance and control of thoughts subscale; PC=Perfectionism and need for certainty subscale; Min=Minimum observed value; Max=Maximum observed value; SD=Standard deviation.

2. Results

2.1. Data screening

Prior to testing primary hypotheses, data were screened to assess concordance with statistical assumptions. Three univariate outliers were detected (all cases scored above 4 standard deviations from the mean on the EAT-26 and were confirmed as outlier values upon visual inspection of the data) and were consequently excluded from further analysis, bringing the final sample size to 598. Following exclusion of these cases, no other outliers were detected and distributions of scores on all of the study measures were free of significant skew (all values < 4). Some positive kurtosis was observed in the data (EAT-26 kurtosis value of 6.66; see Table 1); however, this value was only slightly higher than the ideal kurtosis absolute value limit of 4, and Kline (2005) has argued that detrimental effects of positive kurtosis values up to 10 are negligible at $N \geq 100$. Consequently, to retain interpretive value, we elected not to apply a transformation to the data before conducting the analyses reported below. Descriptive statistics for all study variables are shown in Table 1. In general, mean scores fell within the expected range for undergraduate samples.

2.2. Zero-order correlations

Zero-order correlations were conducted to examine the relationships among study variables. As seen in Table 2, BIDQ scores were significantly correlated with all study variables (all $ps < .001$, ranging in magnitude from .20 to .48), such that greater BID was associated with being female as well as with greater OCD symptoms, general distress, pathological eating attitudes, and obsessive beliefs.

Table 2
Zero-order bivariate correlations between study measures.

	1	2	3	4	5	6	7
1. BIDQ	–						
2. Gender	-.21*	–					
3. DOCS	.33*	.01	–				
4. DASS-21	.42*	-.02	.57*	–			
5. EAT-26	.48*	-.18*	.27*	.31*	–		
6. OBQ-RT	.23*	< .01	.53*	.40*	.26*	–	
7. OBQ-ICT	.20*	.02	.53*	.38*	.29*	.68*	–
8. OBQ-PC	.28*	-.05	.44*	.38*	.30*	.69*	.58*

Note. BIDQ=Body Image Disturbance Questionnaire average score; DOCS=Dimensional Obsessive-Compulsive Scale; DASS-21=Depression Anxiety Stress Scales-21; EAT-26=Eating Attitudes Test; OBQ=Obsessive Beliefs Questionnaire; RT=Threat overestimation and responsibility subscale; ICT=Importance and control of thoughts subscale; PC=Perfectionism and need for certainty subscale.

* $p < .001$.

Table 3
Simultaneous linear regression predicting body dysmorphic concerns.

	<i>B</i>	<i>SE_B</i>	β	<i>t</i>	<i>p</i>	<i>spr</i> ²
Gender	-.230	.061	-.154	-3.75	< .001	.023
DOCS	.009	.004	.118	2.17	.031	.008
DASS-21	.008	.002	.220	4.33	< .001	.030
EAT-26	.035	.005	.347	7.80	< .001	.099
OBQ-RT	-.002	.003	-.038	-.55	.580	.001
OBQ-ICT	-.006	.004	-.100	-1.69	.091	.005
OBQ-PC	.006	.003	.134	2.26	.025	.008

Note. All predictors were mean-centered before being entered into the regression model. BIDQ=Body Image Disturbance Questionnaire average score; DOCS=Dimensional Obsessive-Compulsive Scale; DASS-21= Depression Anxiety Stress Scales-21; EAT-26=Eating Attitudes Test; OBQ=Obsessive Beliefs Questionnaire; RT=Threat overestimation and responsibility subscale; ICT=Importance and control of thoughts subscale; PC=Perfectionism and need for certainty subscale; *B*=Unstandardized regression coefficient; *SE_B*=Standard error of regression coefficient; β =Standardized regression coefficient; *t*=*t*-test statistic; *p*=significance value; *spr*²=squared semipartial correlation.

2.3. Regression analyses

A simultaneous linear regression analysis was conducted to compare the relative predictive power of OBQ subscales as well as gender, DOCS scores, DASS-21 scores, and EAT-26 scores. Model predictors jointly explained 33.8% of the variance in BIDQ scores, $F(7, 407) = 29.68, p < .001$. As shown in Table 3, gender, DOCS scores, DASS-21 scores, and EAT-26 scores emerged as significant unique predictors of BID ($ps < .05$). Of the three OBQ domains, only the OBQ-PC subscale emerged as a significant unique predictor of BIDQ scores after controlling for other study variables ($p=.025$). Neither the threat overestimation/responsibility nor importance of/need to control thoughts domains emerged as significant predictors of BIDQ scores after controlling for other study variables ($ps > .05$).

3. Discussion

The present study was designed to examine the extent to which obsessive belief domains uniquely predict BID after controlling for gender, OCD symptoms, general distress, and eating attitudes. As predicted, BID was positively correlated with all three obsessive belief domains: threat overestimation/responsibility, perfectionism/certainty, and the importance of/need to control thoughts. However, only the perfectionism/certainty domain remained a significant unique predictor of BID after controlling for other study variables. Our findings are consistent with previous studies specifically implicating the importance of perfectionism in BID-related conditions (Buhlmann et al., 2008; Hartmann et al., 2014; Schieber et al., 2013).

That gender emerged as a significant unique predictor of BID is inconsistent with epidemiological research demonstrating comparable BDD prevalence rates between men and women. However, it could be that BID-related functional impairment (as assessed by the BIDQ) is greater among women relative to men (e.g., Phillips et al., 2006). Alternatively, because the present study assessed BID regardless of clinical diagnosis, it is possible that gender is a significant predictor of self-reported BID rather than meeting BDD diagnostic criteria per se (e.g., Veale et al., 1996). In this sense, our finding that gender was a significant predictor of BID in our nonclinical sample is consistent with previous research (e.g., Cash et al., 2004).

The unique relationship between perfectionism/certainty beliefs and BID is consistent with theoretical models of the development and maintenance of BDD, which point to (a) maladaptive beliefs about the importance and necessity of bodily perfection and (b) selective attention to body image as the critical ingredients underlying the onset of body image disturbance and obsessional preoccupation with perceived flaws in one's appearance (Veale et al., 1996; 2004). It also suggests functional congruence between some domains of obsessive beliefs and

BID. That is, one would logically expect that beliefs about the need for bodily perfection would overlap with the obsessional preoccupation with appearance characteristic of individuals with BID. Although the present study utilized a nonclinical sample, it represents a preliminary investigation of the degree to which obsessive beliefs are associated with OCRD-related phenomenon (i.e., BID). Furthermore, our BID outcome measure was derived from a validated BDD-specific questionnaire (Dufresne et al., 2001; Phillips, 2005), suggesting that although we did not capture BDD phenomenology in this study, we *did* assess a BDD-consistent phenomenon (i.e., BID). To the extent that our nonclinical sample can be used to draw inferences about treatment-seeking individuals, the current study suggests that perfectionism is an important treatment target when working with individuals with BID (as discussed further below). Moreover, our findings suggest that it is important to assess for BID in individuals presenting for the treatment of other conditions (e.g., OCD, social phobia) who strongly endorse obsessive beliefs related to the need for perfectionism and certainty.

The absence of a unique relationship between the importance/control of thoughts domain and BID was unexpected given that this obsessive belief domain has been strongly implicated in the development and maintenance of OCD. For example, Tolin, Worhunsky, and Maltby (2006) found that after controlling for depression and trait anxiety, only the importance/control of thoughts domain distinguished between treatment-seeking patients with OCD and anxious controls. Our findings suggest that although certain obsessive beliefs are uniquely predictive of BID (i.e., concerns about perfectionism/certainty), the cognitive framework of body image disturbance is nevertheless distinct from that associated with OCD. Moreover, the fact that perfectionism/certainty beliefs appear to be shared among individuals with BID and those with symptoms of other anxiety concerns (e.g., social anxiety disorder; Antony, Purdon, Huta, & Swinson, 1998) suggests at least a somewhat similar cognitive framework between anxiety disorders and OCRDs.

As previously discussed, the inclusion of BDD within the same diagnostic category as OCD in DSM-5 was motivated by the idea that these two conditions are etiologically related (e.g., APA, 2013; Hollander, Zohar, Sirovatka, & Regier, 2011; Stein, Craske, Friedman, & Phillips, 2011). Furthermore, biological factors have been emphasized when drawing etiological links between these two conditions. As discussed elsewhere (e.g., Abramowitz & Jacoby, 2015; Deacon, 2013), little is known about the etiology of these conditions, which is likely related to a multitude of biological and psychological factors. Psychological models of OCD and BDD highlight empirically supported *maintenance* factors, as opposed to putative *causal* ones. Empirically established psychological maintenance factors, such as dysfunctional beliefs, have been largely ignored by those grouping OCD and BDD together in DSM-5. The present investigation, which was intended to complement existing research linking BDD to OCD, represents one of the first efforts to test whether a known cognitive process in OCD (i.e., obsessive beliefs) is relevant to the experience of BID (a hallmark feature of BDD). The lack of a unique relationship between the importance/control of thoughts and the responsibility/threat domains and BID suggests some degree of distinction between the cognitive profiles of individuals with BID and OCD symptoms. Although this is consistent with the notion that BDD and OCD might be related problems, it also suggests that from a cognitive perspective, OCD- and BID-related concerns are nevertheless distinct.

To the extent that our findings from a nonclinical sample have relevance to the clinical management of BDD, they highlight the importance of perfectionism and the need for certainty. Specifically, clinicians should continue to apply cognitive-behavioral interventions to target these constructs in the context of BID (e.g., Wilhelm, 2006; Wilhelm, Phillips, & Steketee, 2013). For example, to address perfectionism, clinicians might help individuals identify and rectify dichotomous (e.g., "all or nothing") thinking, reduce self-criticism, and increase cognitive flexibility. Behavioral procedures (i.e., response

prevention) can be used to help the individual reduce excessive tidying and arranging related to their appearance. Similarly, clinicians can help individuals presenting with BID increase their tolerance of uncertainty through the use of educational, cognitive, and behavioral techniques often used in the treatment of OCD (e.g., Wilhelm & Steketee, 2006), such as Socratic questioning and systematic exposure to not knowing for sure how others perceive their appearance. Importantly, the use of these strategies depends of an accurate assessment of dysfunctional cognitions more than it depends on diagnostic status—not everyone with a diagnosis of BDD will require such interventions.

A number of study limitations warrant mention. First, this study utilized self-report methodology; it would be beneficial for future work to incorporate clinician-rated assessments of psychopathology or reports from additional observers (e.g., friends, significant others). Second, we utilized a nonclinical sample in this study; therefore, our findings may not generalize to individuals with a clinical diagnosis of BDD or to those from other demographic backgrounds. However, using a nonclinical sample allowed us to capture a broader range of variability in BID. Furthermore, variables we considered in our study (i.e., BID, obsessive beliefs, OCD symptoms, general distress, and eating attitudes) are conceptualized as dimensional, rather than categorical (Abramowitz et al., 2014; Cash et al., 2004; Holm-Denoma et al., 2010) and thus thought to be present in (and relevant to) the psychological functioning of both clinical and nonclinical individuals. Nonetheless, additional research examining the relationships between these variables in clinical samples is warranted. Third, the correlational nature of the study design prevents drawing causal conclusions about the role of obsessive beliefs in the etiology or the maintenance of BID. Longitudinal and/or experimental work is needed to clarify the causal and temporal relationships between these variables.

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