



# Anorexia nervosa and body dysmorphic disorder: A comparison of body image concerns and explicit and implicit attractiveness beliefs



A.S. Hartmann<sup>a,b,\*</sup>, J.J. Thomas<sup>a,b</sup>, J.L. Greenberg<sup>a,b</sup>, C.M. Elliott<sup>a,b</sup>, N.L. Matheny<sup>a,1</sup>, S. Wilhelm<sup>a,b</sup>

<sup>a</sup> Department of Psychiatry, Massachusetts General Hospital, Simches Research Building, 2nd Floor, 185 Cambridge Street, Boston, MA, USA

<sup>b</sup> Department of Psychiatry, Harvard Medical School, Simches Research Building, 2nd Floor, 185 Cambridge Street, Boston, MA, USA

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## ABSTRACT

Although body image is central to the etiological models of anorexia nervosa and body dysmorphic disorder, studies comparing body image and beliefs about attractiveness between the disorders are rare. Sixty-nine individuals (anorexia nervosa:  $n = 24$ , body dysmorphic disorder:  $n = 23$ , healthy controls:  $n = 22$ ) completed self-report measures (body image and general psychopathology), diagnostic interviews, and Go/No-Go Association tasks measuring implicit associations. Compared to controls, both clinical groups exhibited greater negative body image, a more negative attitude toward their physical selves, and more dysfunctional coping strategies ( $ps < .001$ ). Also, both clinical groups shared greater explicit beliefs about the importance of attractiveness ( $ps < .001$ ). In addition to supporting previous research with regard to comparable body image disturbance, this study also showed that beliefs regarding the importance of appearance (e.g., “one must be attractive to be successful”) might be a fruitful target for therapy across both disorders.

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## Introduction

Anorexia nervosa (AN) and body dysmorphic disorder (BDD) are severe disorders with a higher mortality rates than other mental disorders (Arcelus, Mitchell, Wales, & Nielsen, 2011; Keshaviah et al., 2014; Phillips & Menard, 2006). A thorough understanding of etiologic factors maintaining the disorders as well as successful treatment targets are crucial to reduce suffering. The most salient shared feature of AN and BDD is body image disturbance (e.g., Didie, Kuniega-Pietrzak, & Phillips, 2010; Fairburn & Harrison, 2003). Body image-related thoughts as well as associated feelings and behaviors comprise an integral part of cognitive-behavioral models and are directly targeted in behavioral treatments (e.g., Fairburn & Harrison, 2003; Wilhelm, Phillips, & Steketee, 2013). However, studies aimed at comparing different

aspects of body image between both disorders and healthy controls (HC) are rare. Furthermore, investigations focusing on comparing appearance beliefs—specifically beliefs about the relevance of attractiveness—are missing.

The etiological models of both disorders share features of body image disturbance (e.g., Fairburn, 2008; Veale & Neziroglu, 2010; Wilhelm et al., 2013). Both are purported to be developed and maintained by the reinforcement of maladaptive compensatory strategies and dysfunctional cognitive processes, such as negative appraisals of physical appearance. In accordance with these models, individuals with AN or BDD overestimate the importance of attractiveness, and thus are more likely to misinterpret imperfections in appearance as major flaws in self-worth. Negative feelings resulting from maladaptive interpretations promote efforts to neutralize these feelings with compensatory behaviors (e.g., dieting, binge eating, or purging in AN and persistent mirror checking and grooming in BDD) and avoidance of trigger situations (e.g., “off limits” foods or social situations). Because rituals and avoidance behaviors sometimes temporarily reduce negative emotions, they are reinforced, and, in this way, are hypothesized to maintain dysfunctional body image-related beliefs and behaviors. However, the models of BDD and eating disorders also differ, for example, in the preponderance of avoidance and checking that is present in the models of BDD (i.e., Wilhelm et al., 2013) but not in all models of AN (Fairburn, 2008).

\* Corresponding author. Present address: Institute of Psychology, Department of Human Sciences, Osnabrück University, Knollstrasse 15, 49069 Osnabrück, Germany. Tel.: +49 5419694743; fax: +49 5419694028.

E-mail addresses: [andrea.hartmann@uos.de](mailto:andrea.hartmann@uos.de) (A.S. Hartmann), [jjthomas@mgh.harvard.edu](mailto:jjthomas@mgh.harvard.edu) (J.J. Thomas), [jlgreenberg@mgh.harvard.edu](mailto:jlgreenberg@mgh.harvard.edu) (J.L. Greenberg), [celliott1@mgh.harvard.edu](mailto:celliott1@mgh.harvard.edu) (C.M. Elliott), [matheny@psy.fsu.edu](mailto:matheny@psy.fsu.edu) (N.L. Matheny), [swilhelm@mgh.harvard.edu](mailto:swilhelm@mgh.harvard.edu) (S. Wilhelm).

<sup>1</sup> Present address: Department of Psychology, Florida State University, 1107 West Call Street, Tallahassee, FL, USA.

The few studies that have directly compared the disorders with regard to body image tentatively suggested a higher level of body image disturbance in BDD compared to eating disorders. For example, [Rosen and Ramirez \(1998\)](#) compared body image beliefs of a group of individuals with BDD or eating disorders, including both AN and bulimia nervosa (BN), using the Body Dysmorphic Disorder Examination ([Rosen & Reiter, 1996](#)). Both clinical groups showed comparably higher body dissatisfaction, body checking, and preoccupation than HC groups, while the group with BDD displayed more avoidance of activities as a consequence of self-consciousness and negative self-evaluation due to appearance than the eating disorder and HC groups. As expected, body areas of concern differed between groups, with the eating disorder group mainly reporting shape and weight concerns, and the BDD group focusing on a wider variety of perceived flaws (e.g., face, hair, other specific body parts).

[Hrabosky et al. \(2009\)](#) conducted a more recent study using multidimensional body image measures in individuals with BDD, AN, and BN with the aim of determining presence, specificity, and severity of body image disturbance in these groups. The study showed that all three groups were characterized by greater body image dissatisfaction, dysphoria, investment, and disturbance compared to HC. Besides the differences in the foci of the appearance concerns in BDD and eating disorders, the BDD group also showed greater appearance investment, severity of body image disturbance, and quality of life impairment than both eating disorder groups. In addition, a recent study by [Kollei, Brunhoeber, Rauh, de Zwaan, and Martin \(2012\)](#) corroborated earlier results by finding comparable body image dissatisfaction, however, this study also found that BDD participants engaged in more manipulation of appearance, and, in particular, more compulsive checking, compared to participants with AN.

Even less research has been done on attractiveness or appearance beliefs in both disorders. In BDD, individuals have a tendency to underestimate their own attractiveness (compared to an objective observer rating) and overestimate the attractiveness of others' faces ([Buhlmann, Etcoff, & Wilhelm, 2008](#)). Moreover, they explicitly rate attractiveness to be more important than do HC, and display stronger implicit associations of attractiveness with importance and competence, respectively ([Buhlmann, Teachman, & Kathmann, 2011](#); [Buhlmann, Teachman, Naumann, Fehlinger, & Rief, 2009](#)). Studies have revealed that individuals with AN perceive lower body mass indices (BMI) as more attractive and also overestimate BMIs of all people, including themselves ([Tovee, Emery, & Cohen-Tovee, 2000](#)). In addition, they also associate shape and weight concerns with self-evaluation in the domains of interpersonal relationships, achievement, and performance ([Bleichert, Ansonge, Beckmann, & Tuschen-Caffier, 2011](#)).

The measurement of implicit associations is particularly important in studying egodystonic attitudes—such as the purported link between attractiveness and competence—that individuals may outwardly disavow ([Bar-Anan & Nosek, 2013](#)). Despite overestimating the importance of attractiveness explicitly, it is known that shame, as well as worry that people might perceive them as superficial, might contribute to an individual's reluctance to disclose their appearance concerns ([Buhlmann, 2011](#); [Marques, Alegria, et al., 2011](#); [Marques, Weingarden, LeBlanc, & Wilhelm, 2011](#)). Thus, individuals might not report their true estimation of the importance of attractiveness. Moreover, augmenting self-report measures with performance-based assessments of observable behavior is consistent with one of the aims of the National Institute of Mental Health's (NIMH) Research Domain Criteria (RDoC) initiative (for an overview: [Morris & Cuthbert, 2012](#)). This new research framework encourages investigators to take a dimensional (across-disorder) approach to the study of genetic, neural, and behavioral features of mental disorders focusing on cognition, social processes,

arousal/regulatory systems, and negative and positive valence systems using diverse methodologies.

Comparative studies of AN and BDD that incorporate diverse aspects of body image disturbance are rare but crucial, as they might improve our understanding of both disorders and foster the longitudinal studies that will inform etiological models. In addition, further knowledge about the relationship between AN and BDD might help to identify research gaps with regard to studies including transdiagnostic approaches. For example, if body image disorders such as AN and BDD occupy the unique intersection of crosscutting domains of psychopathology (e.g., a combination of deficits in perception and understanding of the self and systems for social processes) and habit perseveration (e.g., positive valence systems), they may have similar causes and therefore similar therapeutic targets.

Transdiagnostic approaches have been brought forward by Fairburn for eating disorders specifically ([Fairburn et al., 2003](#)). Fairburn's treatment concept ([Fairburn, 2008](#)) has even been successfully evaluated in a transdiagnostic treatment trial ([Fairburn et al., 2009](#)). For the much larger group of emotional disorders, several research groups have put forward the case for a transdiagnostic treatment of anxiety and depressive disorders (for an overview: [Clark, 2009](#)), and several preliminary studies investigating the Unified Protocol Treatment of Emotional Disorders in various age groups have yielded first confirmations of its efficacy (e.g., [Bilek & Ehrenreich-May, 2012](#); [Bullis, Fortune, Farchione, & Barlow, 2014](#); [Chamberlain & Norton, 2013](#); [Wilamowska et al., 2010](#)). In sum, examining similarities and differences across AN and BDD is warranted in order to ascertain their relatedness and develop transdiagnostic treatment approaches that could be tested in the future.

The current study aimed to examine similarities and differences between AN, BDD, and HC in body image concerns, beliefs about attractiveness and its importance, and coping strategies (avoidance, appearance fixing, or acceptance) for negative appearance-related thoughts using explicit and implicit measures. We hypothesized that both clinical groups would show considerably greater body dissatisfaction, greater body image disturbance, greater explicit and implicit beliefs about the importance of attractiveness or appearance to other areas of their lives, and more dysfunctional coping strategies compared to the HC group. Furthermore, in line with the few comparative studies on both disorders, we hypothesized that the BDD group would present with greater body image dissatisfaction, avoidance, and appearance fixing. Differences between the clinical groups in attractiveness beliefs were also examined as an exploratory aim. However, we hypothesized stronger effects (i.e., greater effect sizes) of group differences between clinical groups and HC of implicit compared to explicit measures.

Of note, we have published previously on this sample and its subsets. Each of the prior manuscripts had distinct aims and unique findings. Specifically, in [Hartmann, Thomas, Greenberg, Matheny, and Wilhelm \(2014\)](#), we compared levels of self-esteem and perfectionism in AN and BDD to those in HC. Subsamples of the present AN and BDD groups have also been analyzed in [Hartmann, Thomas, Wilson, and Wilhelm \(2013\)](#) with regard to their level of delusionality of body image beliefs. Lastly, in [Hartmann, Thomas, Rosenfield, and Wilhelm \(2015\)](#), we experimentally examined the efficacy of different strategies (cognitive restructuring, acceptance/mindfulness, and distraction) for negative appearance-related thoughts across AN, BDD and HC in a subsample that did not have previous experience with Cognitive Behavioral Therapy (CBT) or Acceptance and Commitment Therapy (ACT). The only variables presented here that we have already reported in prior papers are demographics and basic clinical descriptives as well as the Body Image Disturbance

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