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## Body Dysmorphic Disorder: Some Key Issues for DSM-V

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### Abstract

Body dysmorphic disorder (BDD), a distressing or impairing preoccupation with an imagined or slight defect in appearance, has been described for more than a century and increasingly studied over the past several decades. This paper provides a focused review of issues pertaining to BDD that are relevant to DSM-V. The review presents a number of options and preliminary recommendations to be considered for DSM-V: 1) Criterion A may benefit from some rewording, without changing its focus or meaning; 2) Potential disadvantages of adding a new criterion to reflect BDD compulsive behaviors seem to outweigh potential advantages, but adding such a criterion remains an option that can be considered; 3) A clinical significance criterion seems necessary for BDD to differentiate it from normal appearance concerns; 4) BDD and eating disorders have some overlapping features and need to be differentiated; some minor changes to DSM-IV's criterion C are suggested; 5) BDD should not be broadened to include body integrity identity disorder (apotemnophilia) or olfactory reference syndrome; 6) There is no compelling evidence for including diagnostic features or subtypes that are specific to gender-related, age-related, or cultural manifestations of BDD; 7) Adding muscle dysmorphia as a specifier may have clinical utility; and 8) The ICD-10 criteria for hypochondriacal disorder are not suitable for BDD, and there is no empirical evidence that BDD and hypochondriasis are the same disorder. The issue of how BDD's delusional variant should be classified in DSM-V is briefly discussed and will be addressed more extensively in a separate paper.

## Keywords

body dysmorphic disorder; dysmorphophobia; delusional disorder; classification; DSM-V

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## INTRODUCTION

This review focuses on some key issues pertaining to body dysmorphic disorder (BDD) to be considered for DSM-V. We first briefly summarize the history of BDD's classification to provide a context for our discussion of key issues that are specifically relevant to DSM-V (this paper is not intended to be a general or comprehensive overview of BDD). The key issues reflect problems with DSM-IV or concepts that are critical to the diagnosis of BDD. In addition, research on BDD has substantially increased since DSM-IV was developed in the early 1990s, and thus we consider whether changes are needed to reflect new scientific findings.

This paper was commissioned by the DSM-V Anxiety, Obsessive-Compulsive Spectrum, Post-Traumatic, and Dissociative Disorders Work Group. It represents the work of the authors for consideration by the work group. Recommendations provided in this paper should be considered preliminary at this time; they do not necessarily reflect the final recommendations or decisions that will be made for DSM-V, as the DSM-V development process is still ongoing. It is possible that this paper's recommendations will be revised as additional data and input from experts and the field are obtained.

### History of BDD's Classification

In DSM-IV, BDD is classified as a separate disorder in the somatoform section (see Table 1 for diagnostic criteria).<sup>[1]</sup> In ICD-10, BDD is classified as a type of "hypochondriacal disorder," along with hypochondriasis, in the somatoform section.<sup>[2]</sup> BDD has been described around the world for more than a century by many psychopathologists, including Kraepelin and Janet.<sup>[3-5]</sup> In DSM-III,<sup>[6]</sup> BDD was called "dysmorphophobia." It did not have specified diagnostic criteria but was mentioned as an example of an atypical somatoform disorder (the "atypical" designation was similar to DSM-IV's "Not Otherwise Specified" category). DSM-III stated that dysmorphophobia applied to "individuals who are preoccupied with some imagined defect in physical appearance that is out of proportion to any actual physical abnormality that may exist."

In DSM-III-R,<sup>[7]</sup> BDD became a separate disorder in the somatoform section and had the following diagnostic criteria: A) Preoccupation with some imagined defect in appearance in a normal-appearing person. If a slight physical anomaly is present, the person's concern is grossly excessive. B) The belief in the defect is not of delusional intensity, as in Delusional Disorder, Somatic Type (i.e., the person can acknowledge the possibility that he or she may be exaggerating the extent of the defect or that there may be no defect at all). C) Occurrence not exclusively during the course of Anorexia Nervosa or Transsexualism.

DSM-IV made minor wording changes to DSM-III-R's criterion A.<sup>[8]</sup> A major change was addition of the clinical significance criterion (Criterion B) to differentiate BDD from normal

appearance concerns. DSM-III-R's criterion C was changed because BDD can co-occur with anorexia nervosa and gender identity disorder, and needs to be differentiated from them.<sup>[9, 10]</sup>

Another major change from DSM-III-R to DSM-IV was deletion of DSM-III-R's criterion B, which focused on insight/delusional. BDD's delusional variant (which characterizes individuals who are completely convinced that their belief about perceived physical flaws is accurate) has been inconsistently classified in previous editions of DSM. In DSM-III, delusional BDD was not clearly identified. It may have been considered an example of an atypical somatoform disorder, atypical psychosis, or atypical paranoid disorder.<sup>[5]</sup> DSM-III-R specifically mentioned delusional BDD, classifying it as a type of delusional disorder, somatic subtype (a psychotic disorder). Furthermore, DSM-III-R differentiated delusional BDD from non-delusional BDD, as indicated in criterion B (see above). However, the DSM-III-R text noted, "It is unclear, however, whether the two different disorders can be distinguished by whether or not the belief is a delusion (as in DSM-III-R), or whether they are merely two variants of the same disorder."

In DSM-IV, the distinction between delusional and non-delusional BDD was diminished, reflecting preliminary evidence that BDD's delusional and non-delusional variants may in fact be variants of the same disorder.<sup>[11-13]</sup> The distinction between delusional and non-delusional BDD was minimized in two ways: 1) DSM-III-R's criterion B was deleted, and 2) double coding of BDD and its delusional variant was allowed; in other words, patients with delusional BDD could receive a diagnosis of both delusional disorder and BDD. In ICD-10, BDD's delusional variant ("delusional dysmorphophobia") is classified as a type of "other persistent delusional disorder." The relationship between BDD's delusional and non-delusional variants is discussed briefly in this review and more extensively in a separate review on delusional/insight/psychosis across a range of psychiatric disorders (Phillips KA, et al., in preparation).

## STATEMENT OF THE ISSUES

1. Criterion A: a) Is the term "preoccupation" adequate? If so, should it be better operationalized? b) Should the word "imagined" be changed? c) Should the word "defect" be changed?
2. What are advantages and disadvantages of adding a new criterion to reflect BDD compulsive behaviors?
3. Criterion B: Should the presence of distress or impairment in functioning, or both, be required for the diagnosis of BDD? If so, can this clinical significance criterion be better defined or operationalized?
4. Criterion C: Should the diagnostic hierarchy with other mental disorders be retained? If so, should it specifically mention other disorders in addition to anorexia nervosa? Or should the hierarchy be narrowed to pertain only to anorexia nervosa and perhaps other eating disorders?

5. Should BDD's criteria be broadened to include olfactory reference syndrome or body integrity identity disorder (apotemnophilia)?
6. Do BDD's diagnostic criteria appear suitable cross-culturally?
7. Do BDD's diagnostic criteria appear suitable from a developmental perspective?
8. Do BDD's diagnostic criteria appear suitable for both genders?
9. In ICD-10, BDD is classified as a type of "hypochondriacal disorder." Are these criteria suitable for BDD?
10. How should BDD's delusional variant be classified in DSM-V?

## SIGNIFICANCE OF THE ISSUES

A number of these issues were examined during the development of DSM-IV; some were not resolved, and others need revisiting in light of subsequent research.<sup>[10]</sup> Diagnostic criteria should reflect a reliable and valid construct that enables patients' symptoms to be accurately diagnosed so appropriate treatment can be provided. Thus, accurate wording of diagnostic criteria (which pertains to a number of the above issues) is central to the health care that patients receive. In addition, diagnostic criteria should facilitate professional communication, and they need to be easily understood by clinicians and be "patient-friendly" to the extent possible.

Issue #2 is important because most patients with BDD have BDD-related compulsive behaviors, which are not reflected in DSM-IV's diagnostic criteria. Regarding issue #5, some authors consider olfactory reference syndrome and body integrity identity disorder (apotemnophilia) to be forms of BDD, raising the question of whether BDD's diagnostic criteria should be broadened to include these constructs. Regarding issues #6-8, notable developmental, cultural, or gender-related variations of clinical presentations should be reflected, to the extent possible, in DSM. Doing so will increase the likelihood that important variations in symptomatology will be accurately diagnosed. Such variations could be reflected in the criteria set (for important variations), as a subtype or specifier, or in the text. One challenge is to determine which variations (if they exist) are important enough to highlight in DSM-V. Highlighting all of them may not be possible, as diagnostic criteria should not be unnecessarily complex, and the text has space limitations and is not intended to provide a comprehensive description of such issues. Issue #10 has long been debated in the literature and may influence patient care and the type of treatment received. (This issue is relevant to other disorders in DSM, as discussed elsewhere [Phillips KA, et al., in preparation].) Where BDD should be classified in DSM-V is addressed in a separate review.<sup>[14]</sup>

## SEARCH METHODS

A literature search was conducted using Web of Science, PubMed, Psycinfo, and other relevant databases. The DSM-IV Source Book,<sup>[15]</sup> DSM-IV Options Book,<sup>[16]</sup> and proceedings from the preparatory research planning conference series for DSM-V on Obsessive-Compulsive Spectrum Disorders were also consulted.<sup>[17, 18]</sup> In addition, reference

sections of published articles were examined. The search had no time limit and was limited to English language articles. Search terms included “body dysmorphic disorder,” “dysmorphophobia,” “delusional disorder,” “muscle dysmorphia,” “classification,” “somatoform disorders,” “taijin kyofu,” “taijin kyuofusho,” and “koro.” For issue #1, general dictionaries and medical dictionaries were also consulted; search terms included “preoccupation,” “worry,” “obsession,” “imagined,” “perceived,” “defect,” “flaw,” “imperfection,” and “blemish.” For other sections of this review, search terms included “apotemnophilia,” “body integrity identity disorder,” “amputation,” “paraphilias,” “desire for amputation,” “olfactory reference syndrome,” “olfactory paranoid syndrome,” “monosymptomatic hypochondriasis,” “jiko-shu-kyofu,” “delusional halitosis,” “psychosomatic halitosis,” “olfactory hallucination,” “hallucinations of smell,” “olfactory delusional syndrome,” “olfactory delusional disorder,” “olfactory paranoia,” “olfactory hypochondriasis,” “delusion” and “smell,” “delusions of bromosis,” “bromidrosiphobia,” “gender identity disorder,” “transsexualism,” “eating disorders,” “anorexia,” and “bulimia.” Search terms for issue #10 are detailed in a separate review. There are several references to unpublished data, which were obtained from secondary data analyses that were conducted for the specific purpose of informing the DSM-V process.

## RESULTS

### 1) Criterion A: a) Is the term “preoccupation” adequate? If so, should it be better operationalized? b) Should the word “imagined” be changed? c) Should the word “defect” be changed?

The concept captured by criterion A is central to BDD and appears suitable for its definition. This core aspect of BDD has been consistently described in the published literature for more than a century<sup>[5, 19]</sup> and in various editions of DSM, and to our knowledge it has not been questioned or challenged by empirical findings. However, questions can be raised about the specific terms that are used and whether they might be improved. We know of no studies examining different wording for criterion A. Here we consider definitions of various terms, with the purpose of improving this criterion’s clarity and patient friendliness but not caseness. We examine terms that are widely understood by professionals and laypersons, and consider relevant data and clinical impressions regarding their potential clinical utility.

**Is the Term “Preoccupation” Adequate?**—In DSM-IV-TR,<sup>[1]</sup> BDD is defined as a “preoccupation with an imagined defect in appearance.” Concerns usually focus on the face or head (e.g., skin, hair, nose) but can involve any body area.<sup>[20-26]</sup> “Preoccupation” has been defined as an “extreme or excessive concern,”<sup>[27]</sup> and it implies that the mind or attention is “absorbed” or “engrossed.”<sup>[28-30]</sup> This term appears to capture BDD symptoms very well; individuals with BDD report thinking about their perceived appearance flaws for an average of 3 to 8 hours a day, and about one quarter report thinking about them for more than 8 hours a day.<sup>[31, 32]</sup> Furthermore, most individuals with BDD report having only limited control or no control over these thoughts.<sup>[31, 32]</sup>

Might “obsession” be more appropriate to describe appearance-focused thoughts in BDD? From a clinical perspective, many BDD patients say they are “obsessed” with their

appearance. Indeed, an issue discussed in the literature is whether BDD should be classified as an obsessive-compulsive spectrum disorder, if this category is included in DSM-V, because of its similarities to OCD.<sup>[14, 33-35]</sup> DSM-IV-TR describes obsessions as recurrent and persistent thoughts, impulses, or images that produce marked anxiety or distress. Like individuals with OCD, those with BDD commonly respond to their disturbing thoughts with compulsive actions (such as mirror checking or excessive grooming).<sup>[20, 21, 26]</sup> Furthermore, in studies comparing patients with BDD to patients with OCD using the Yale-Brown Obsessive Compulsive Scale (Y-BOCS)<sup>[36]</sup> and a slightly modified version of this scale for BDD,<sup>[37]</sup> total score and/or individual-item scores for BDD preoccupations did not significantly differ from those for OCD obsessions (in terms of time spent preoccupied, resulting distress and functional impairment, resistance, and control), suggesting similarities between BDD and OCD cognitions.<sup>[31, 38]</sup> Thus, replacing “preoccupation” with “obsession” may usefully emphasize these similarities between BDD and OCD.

It is less clear, however, to what extent individuals with BDD experience “impulses” or “images,” which are part of the definition of OCD obsessions. Several recent reports describe vivid imagery in relation to BDD appearance concerns,<sup>[32, 39]</sup> but this issue has received little investigation. From a clinical perspective, BDD preoccupations about appearance, at their core, do not involve impulses in the way some OCD obsessions can. Thus, it may be preliminary to refer to BDD and OCD thoughts with the same word. Furthermore, the advantages of replacing “preoccupation” with “obsession” are unclear, as the former term appears to capture the experience of individuals with BDD and to have performed adequately in criterion A. Although we have focused on the “process” that occurs in obsessional thinking, we might also note that the content of BDD and OCD thoughts differs, as does degree of insight (or “ego-dystonicity”), as discussed in a separate review.<sup>[14]</sup> These latter two concepts differ from the process involved in obsessions, and thus are not discussed in detail here.

“Worry” is another potential replacement for, or addition to, “preoccupation.” Worry is the cognitive component, as distinct from physiological symptoms, of anxiety;<sup>[40]</sup> worry also has an emotional component.<sup>[41]</sup> More specifically, worry involves the perception of threat from a potential future negative event. The event usually has a low probability of occurrence and/or is outside the person’s control.<sup>[40]</sup> In DSM-III-R,<sup>[7]</sup> worry became a feature of generalized anxiety disorder and was retained in DSM-IV, which defines it as “apprehensive expectation.”

It is unclear to what extent BDD is characterized by worry, or “apprehensive expectation.” BDD is associated with high levels of social anxiety,<sup>[42, 43]</sup> with many patients reporting worries that in future social interactions they will be ridiculed by other people because of how they look. Others worry that their appearance will get even worse over time.<sup>[32]</sup> However, it is unclear how universal, or fundamental, the experience of worry is to BDD, as this specific concept has not been studied in BDD. Our clinical impression is that many, but not all, persons with BDD describe worry as a core symptom. Furthermore, “worry,” unlike “preoccupation,” does not reflect the concept of the mind’s being absorbed, engrossed, or “captured” by particular thoughts; the latter concept seems more fundamental to BDD’s definition.



**Summary and Preliminary Recommendations:** The concept conveyed by DSM-IV's criterion A seems suitable for BDD, and "preoccupation" appears appropriate to describe the absorbing, excessive, and time-consuming nature of BDD thoughts about perceived appearance flaws. There is no compelling evidence for replacing this term with another term. In the absence of evidence that other terms are preferable, we recommend that preoccupation remain in criterion A. However, alternative concepts such as those discussed above can be mentioned in the text, as they do appear to characterize the experience of some, if not many, individuals with BDD.

**Should the Term Preoccupation Be Better Operationalized?**—Appearance concerns are very common in the general population.<sup>[44]</sup> and therefore the reliability and validity of BDD's definition might be enhanced by requiring preoccupation for a specified amount of time per day. Should DSM-V require that the person spend a certain amount of time actively focused on and thinking about their perceived appearance defects? (In our view, this would not include time during which the individual is "aware" of their perceived defects "in the back of his/her mind"). A time requirement is included in DSM-IV's criterion C for OCD, a disorder with similarities to BDD. The OCD criterion requires that obsessions or compulsions cause "marked distress, are *time consuming (take more than 1 hour per day)*, or significantly interfere..." with the person's functioning. A time criterion is also included in the clinician questions for BDD in the Structured Clinical Interview for DSM-IV.<sup>[45]</sup> These questions require clinicians to ask "*how often*" the patient thinks about his or her appearance. An optional follow-up question asks whether the patient thinks about his/her appearance concerns for "*at least an hour per day.*"

There appear to be both advantages and disadvantages of including a time cutpoint in BDD's criteria. Doing so would likely increase the inter-rater reliability of the diagnosis, as it is unknown how clinicians currently operationalize "preoccupation." Also, this addition has some face validity, in that thinking about perceived appearance flaws for less than an hour a day, for example, might not be sufficient to be considered "preoccupation." A potential disadvantage of including a time criterion, however, is that there are no data to support a particular cutpoint, and any cutpoint would be somewhat arbitrary. Should the cutpoint be 50 minutes a day? 75 minutes a day? If too high or too low a cutpoint were chosen, validity might be decreased. Thus, it may be preferable not to specify a certain amount of time in criterion A. Indeed, a BDD diagnosis may be warranted for an individual who thinks about his or her perceived appearance flaws for a little less than an hour a day but meets the other diagnostic criteria (i.e., is significantly distressed or functionally impaired by these concerns). In one study, 16.5% of 121 individuals with clinically significant distress or impairment due to BDD preoccupations reported thinking about their appearance for less than one hour a day (Phillips KA, unpublished data). Many of these individuals would likely benefit from clinical attention, and thus it seems they should be identified by BDD's diagnostic criteria. (Needing and benefitting from treatment is a reflection of clinical utility, which in turn is an important component of what constitutes a mental disorder.<sup>[46]</sup>) Another potential limitation of such a criterion is that it can be difficult for patients to assess exactly how many minutes a day they are preoccupied with their appearance.

**Summary and Preliminary Recommendations:** Operationalizing preoccupation may have the advantage of increasing diagnostic reliability. However, data are lacking on the most valid cutpoint, making any cutpoint arbitrary. Also, this change could potentially decrease the validity and clinical utility of the diagnosis by not identifying individuals who need clinical attention. Furthermore, there is no compelling need for BDD's diagnostic criteria to mirror those of OCD. On balance, evidence supporting this change does not appear persuasive.

**Should the Word “Imagined” Be Changed?**—The term “imagined” implies that the individual has formed “a notion without a sufficient basis”<sup>[27]</sup> and has “a mental image of something that is not immediately available to the senses.”<sup>[30]</sup> Thus, this word suggests that persons with BDD are preoccupied with something that others cannot perceive. While this is often true (in the remaining cases, the defect is “slight”), the clinical utility of the term “imagined” is questionable. Many patients with BDD are convinced that their appearance flaws are real and that they (and other people) actually see them.<sup>[47]</sup> Thus, this term can be confusing to patients with poor or absent insight, who may feel misunderstood, invalidated, or even insulted when their concern is described as “imagined.” Thus, it seems preferable to replace “imagined” with an accurate term or phrase that is more suitable for clinical use.

The term “perceived” has the advantage of capturing the actual perceptual distortions that appear to characterize BDD,<sup>[48]</sup> and thus adding this term to criterion A might be helpful. However, it would be problematic to use this term alone, as it does not clearly convey that the individual appears normal to other people. Also, “perceived” could be interpreted to refer to very noticeable physical deformities, which are not part of the BDD construct. Thus, if “perceived” is added to criterion A, “perceived defect” needs to be modified in some way – for example, by adding a phrase such as: “that is not observable or appears slight to others.”

In most cases of BDD, observers can reliably agree that the physical “defects” are nonexistent or only slight, as opposed to more clearly present and noticeable.<sup>[49]</sup> However, clinician judgment may be needed in some cases to make this distinction, which is sometimes difficult.<sup>[50]</sup> It would be difficult to operationalize this judgment in the criteria, and we therefore do not recommend that the criteria be changed to do so. This issue should, however, be discussed in the text. How DSM-V might handle clinically significant preoccupation with clearly present and observable defects or flaws in appearance is beyond the scope of this review.

**Summary and Preliminary Recommendations:** The word “imagined” has limited clinical utility. We propose adding the term “perceived” before “defect” and also adding the following phrase to criterion A: “that is not observable or appears slight to others.” This phrasing uses more neutral language than “imagined” but conveys a similar concept.

**Should the Word “Defect” Be Changed?**—A defect is “an imperfection that impairs worth or utility; a lack of something necessary for completeness, adequacy, or perfection”<sup>[27]</sup> or implies a “deficiency.”<sup>[28]</sup> In our clinical experience, many patients consider the term “defect,” and its meaning, acceptable and an accurate reflection of their



experience. However, others consider it too “strong” or harsh. There are similar concerns about a term like “deformity.” The second part of criterion A uses “anomaly,” which has some of the same drawbacks as the above terms. For example, “anomaly” implies a “deviation” or “something different, abnormal, or peculiar.”<sup>[27]</sup>

One potential alternative is “flaw, although definitions for “flaw” are similar to those for “defect” and suggest “impaired soundness” or a “shortcoming.”<sup>[28]</sup> Nonetheless, “flaw” may sound less harsh or extreme (although this is a subjective interpretation that may vary from person to person). “Imperfection” is an alternative that may be easier for clinicians to discuss with patients, but this term is often used as a synonym for “defect,” “flaw,” or “deficiency.”<sup>[28]</sup> An additional problem with “imperfection” is that it is actually true that the appearance of most people is not perfect, and thus this term could minimize the difference between normal appearance problems and BDD, which is characterized by a distorted view of one’s appearance.

Another option is to replace “defect” with “concern,” which is a “marked interest or regard usually arising through a personal tie or relationship” or “an uneasy state of blended interest, uncertainty, and apprehension” or “matter for consideration.”<sup>[51]</sup> Thus, “appearance concern” could be used to convey that appearance is of interest or importance to the person with BDD and also that they are disquieted, troubled by, or anxious about how they look. In our clinical experience, however, “appearance concern” is too non-specific for BDD’s diagnostic criteria.

**Summary and Preliminary Recommendations:** None of these options seems clearly preferable. Because “defect” is currently part of criterion A and seems well-suited to the experience of many patients, it seems reasonable to retain it. There may be benefits to also using the term “flaw,” which may be considered less harsh and perhaps better suited to the experience of some patients. Thus we recommend adding “flaw” to criterion A. We further suggest that “defect” and “flaw” parenthetically include the plural forms of these terms, because available data indicate that most individuals with BDD are preoccupied with multiple body areas.<sup>[21, 26]</sup>

**Preliminary Recommendation for Criterion A:** “Preoccupation with a perceived defect(s) or flaw(s) in physical appearance that is not observable or appears slight to others.”

## 2) What are advantages and disadvantages of adding a new criterion to reflect BDD compulsive behaviors?

Nearly all individuals with BDD perform at least one compulsive behavior—for example, examining perceived defects in mirrors and other reflecting surfaces, comparing their appearance with that of other people, seeking reassurance about how they look, excessively grooming (e.g., combing, styling, plucking, or pulling hair), camouflaging disliked body areas (e.g., repeatedly applying makeup), picking their skin to try to improve perceived flaws, tanning (e.g., to darken “pale” skin or diminish perceived acne or scarring), exercising excessively, touching disliked body areas to check them, frequently changing clothes to find a more flattering outfit, seeking cosmetic treatment, and compulsively buying clothes, makeup, or beauty products.<sup>[5, 20, 25, 26, 52, 53]</sup> These behaviors resemble OCD

compulsions in that they are repetitive behaviors or mental acts that the person feels driven to perform in response to the appearance preoccupation, and which aim to prevent or reduce distress or prevent some dreaded event or situation (such as being laughed at because they are “ugly”). The behaviors are time consuming, typically difficult to resist or control, and not pleasurable.<sup>[18]</sup> However, some BDD compulsions (e.g., mirror checking) do not appear to follow a simple model of anxiety reduction, which is more commonly seen in OCD.<sup>[54]</sup>

Potential advantages of requiring compulsive behaviors in the criteria are: 1) They are a key aspect of the clinical picture that needs assessment, monitoring, and targeting in treatment. 2) They increase the specificity of the diagnostic criteria. 3) They may improve differentiation of BDD from disorders with which BDD may be confused, such as social phobia and major depressive disorder, potentially increasing diagnostic accuracy. 4) They reflect the likely relatedness of BDD and OCD.<sup>[14]</sup> Potential disadvantages include: 1) Not all patients report compulsive behaviors (99% do over their lifetime, 94% do currently, and 10% of those with current DSM-IV BDD perform compulsive behaviors for less than 1 hour/day (Phillips KA, unpublished data).<sup>[26, 32]</sup> 2) Clinicians could overlook BDD compulsions and thus miss the diagnosis of BDD because: a) there are many compulsions to ask about (those above are only the most common), b) some are idiosyncratic (e.g., repeatedly tying ropes around one’s calves to make them look smaller), and c) some patients may be too embarrassed to reveal them.<sup>[55, 56]</sup> 3) The criteria would be more complex. 4) There is no evidence to suggest that omitting compulsions from DSM-IV has led to BDD’s under-diagnosis (although this is possible).

One option is have criterion A denote preoccupation with appearance *or* the presence of compulsive behaviors (rather than requiring them). However, BDD compulsions are unlikely to occur in the absence of appearance preoccupations. Although over time, BDD compulsions might possibly become more like habits that could occur in the absence of current preoccupation, data are lacking.

**Summary and Preliminary Recommendations**—Adding compulsive behaviors to the criteria has advantages and disadvantages. Neither approach is clearly more correct. However, potential disadvantages – in particular, underdiagnosing BDD due to the first two disadvantages discussed above – seem to outweigh potential advantages. Thus, we recommend that compulsions be emphasized in the text but not added to the diagnostic criteria. However, adding compulsions to the criteria remains an option that can be considered.

**3) Criterion B: Should distress or impairment in functioning, or both, be required for the diagnosis of BDD? If so, can this clinical significance criterion be better defined or operationalized?**

**Should Distress or Impairment in Functioning Be Required for the Diagnosis of BDD?**—DSM-III-R’s criteria for BDD did not require the appearance concerns to cause distress or impairment in functioning. A study of 258 college students who completed a self-report questionnaire based on DSM-III-R criteria found that 46% of subjects had some preoccupation with a dissatisfying aspect of their bodies, and 28% had both dissatisfaction

and “an exaggeration of their perceived body image.”<sup>[57]</sup> While this study did not use clinical interviews, and in theory there should not be preconceived notions about the “acceptable” prevalence of a disorder, the developers of DSM-IV were concerned that the DSM-III-R criteria, as suggested by this study, could potentially identify more than one quarter to nearly half of the general population as having BDD, a remarkably high prevalence rate. There was also concern that the body image concerns of many of these individuals would not warrant treatment. Thus, criterion B – which states that the preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning – was added to DSM-IV. The same criterion or a very similar one, often referred to as the “clinical significance criterion,” was also added to many other disorders in DSM-IV to aid in differentiating disorder from non-disorder.

Another study, which used a self-report questionnaire with a sensitivity of 100% and a specificity of 89% for the diagnosis of DSM-IV BDD in clinical settings,<sup>[52]</sup> found that 28.7% (29/101) of a sample of U.S. college students were preoccupied with body image concerns. But when the clinical significance criterion was also used, only 4% of the entire sample (4/101), or 14% of those who were preoccupied, met DSM-IV criteria for BDD.<sup>[58]</sup> In a nationwide study in the U.S. with a probability sample of 2,048 respondents, on this same questionnaire 87.4% of respondents reported worrying about their appearance.<sup>[59]</sup> Additional questions, including questions about associated distress and impairment in functioning, reduced BDD’s point prevalence to 2.4%. Thus, this criterion has a dramatic effect on BDD’s prevalence.

Many studies in non-clinical samples (which did not assess BDD) similarly indicate that appearance concerns are very common in the general population. One study found that 56% of 3,452 women and 43% of 548 men were dissatisfied with their overall appearance.<sup>[44]</sup> In another study, a high proportion of nonclinical women from the community (n=73) were dissatisfied with an array of specific body areas (e.g., 52% with their skin, 40% with their teeth, 40% with their hair).<sup>[60]</sup> In undergraduate samples, 95% of men expressed dissatisfaction with their appearance,<sup>[61]</sup> and 46% of normal-weight men and 74% of normal-weight women reported thinking about their “weight/appearance” “all the time” or “frequently.”<sup>[62]</sup> While the constructs assessed in these studies do not precisely map onto BDD’s criterion A, these data indicate that dissatisfaction and preoccupation with appearance are very common – even normative – in the general population. Yet, it is doubtful that all or most of these individuals would merit a psychiatric diagnosis or treatment (although future research could suggest otherwise).

Taken together, these findings suggest that BDD should be differentiated from more normal and common appearance concerns in order to identify people who need treatment and for whom it is worthwhile to expend health care resources. Indeed, use of criterion B identifies individuals who have very poor functioning and high levels and rates of depression, anxiety, social anxiety, anger/hostility, suicidality, and other proxy measures of “distress.”<sup>[24, 42, 56, 58, 63-66]</sup> Scores on standardized measures of functioning/quality of life yield very large effect sizes ( $d=1.5$  to  $2.07$ ) for individuals with BDD compared with general population or community norms.<sup>[67-69]</sup> More severe BDD symptoms are significantly associated with poorer functioning/quality of life.<sup>[67-69]</sup>

A potential criticism of applying criterion B specifically to BDD symptoms is that in the presence of comorbid mental illness, physical illness, or other causes of functional impairment, it is occasionally difficult to determine whether impairment is due to BDD specifically. Yet in the authors' clinical experience, this differentiation can usually be made fairly easily. For example, a patient with both BDD and OCD who is housebound can be asked to what extent their unwillingness or inability to leave their house is due specifically to their BDD symptoms (for example, because they are self-conscious or anxious about having the "ugly" body parts seen or mocked by other people) or because of their OCD symptoms (for example, because they fear becoming contaminated). While attribution of disability or distress specifically to BDD requires clinical judgment, clinical judgment is needed to diagnose all disorders in DSM. And while this assessment is occasionally complex, the advantages of retaining this criterion seem to outweigh advantages of deleting it. Another potential concern about criterion B is that different people may have different thresholds for experiencing distress or impairment in functioning; the latter may also be affected by the level of demand required by one's environment (e.g., job) or available social or financial support. Again, clinical judgment is needed when evaluating this criterion. An important question is, if this criterion were deleted, what would replace it? New criteria would be needed to compensate for its deletion by conveying the clinical significance of BDD symptoms. However, no research to our knowledge has been done on the development of alternative criteria.

Would it be preferable to require *both* distress *and* impairment in functioning to qualify for BDD? Available data suggest that the false negative diagnosis rate (compared to DSM-IV criteria) would be higher if *both* distress and impairment were required. The previously noted nationwide, random-sample survey (n=2,048) found that among respondents meeting criteria for DSM-IV BDD, 90% (45/49) qualified on the basis of the distress criterion, and 51% (25/49) on the basis of the impairment criterion.<sup>[59]</sup> Of those with DSM-IV BDD, only 51% (25/49) met both the distress *and* disability criteria. Forty one percent (20/49) met only the distress criterion, while not meeting the disability criterion. Thus, the false negative rate associated with requiring both distress and disability (compared with requiring either) would have been 49%.

In a study of 176 participants with current DSM-IV BDD (two thirds were currently receiving mental health treatment) who were clinically interviewed, 87.5% of subjects had *both* moderate or greater distress *and* moderate or greater impairment in functioning due to BDD. Of the 176 subjects, 9.1% had moderate or greater impairment in functioning with only mild or no distress, and 3.4% had moderate or greater distress with only mild or no impairment in functioning (Phillips KA, unpublished data). Thus, if at least moderate distress *and* impairment in functioning were required for the BDD diagnosis, the false negative diagnosis rate would have been 12.5% compared to DSM-IV criteria. Thus, changing criterion B from *or* to *and* might have less of an impact on BDD's prevalence in clinical samples than in community samples. However, the higher false negative rate in the population-based study may have resulted from inclusion of less severely ill individuals in that study; in addition, that study did not include in-depth clinical interviews and thus may have missed certain types of functional impairment.

From a clinical perspective, requiring both clinically significant distress *and* impairment in functioning would probably fail to identify some people who need treatment. Those who are suffering, but not necessarily impaired to a clinically significant degree, would likely warrant and potentially benefit from treatment, and those who are functionally impaired, but report less than moderate distress, should likewise be offered treatment (from a clinical perspective, such patients may benefit from treatment). Thus, retaining the current criterion seems reasonable.

**Summary and Preliminary Recommendations:** Some differentiation of BDD from normal appearance concerns is needed, as appearance concerns (for example, dissatisfaction and preoccupation) are very common in the general population. The current distress or impairment criterion has performed adequately and has good face validity from a clinical perspective. Furthermore, alternatives to this criterion have not been studied.

To differentiate BDD from normal appearance concerns, distress and functional impairment need to be included in the BDD criteria set itself. Clinical experience indicates that distress and impairment due to BDD specifically can usually be readily ascertained. An alternative that has been discussed, which would entail deleting criterion B and using a global rating of functional impairment instead (which would be rated for all disorders or other causes of impairment combined, analogous to the Global Assessment of Functioning in DSM-IV), would not suffice to differentiate BDD psychopathology from normal appearance concerns.

### **Can the Clinical Significance Criterion Be Better Defined or Operationalized?**

—This issue is relevant to DSM-V more broadly, as the clinical significance criterion is part of the diagnostic criteria for many disorders. Distress is not well operationalized in the BDD literature or, to our knowledge, the psychiatric literature more broadly, and better operationalization of distress would be desirable for DSM-V. Better operationalization and measurement of disability or impairment in psychosocial functioning – as both a global measure and as a criterion for specific disorders – is also needed for DSM-V. A comprehensive discussion of possible improvements for DSM-V more generally is beyond the scope of this review, but we will comment briefly on two possible approaches.

1. *Provide examples of distress and impairment:* The term “distress” presumably encompasses a broad range of upsetting emotions, such as depressed mood, anxiety, anger, hopelessness, guilt, and shame. One option would be for DSM-V to better identify some of the emotions this term might encompass. Several examples of distress that are especially relevant to a particular disorder could be mentioned in the criterion. It is probably best to limit the number of examples in the criterion to keep criteria sets reasonably brief and easy to remember. Thus, for BDD, criterion B might state, “The preoccupation causes clinically significant distress (for example, depressed mood, anxiety, or shame)...” The text could provide additional examples of distress that are characteristic of a particular disorder.

Similarly, the clinical significance criterion as applied to individual disorders could include additional examples of impairment in psychosocial functioning, such as work, academic, household, family, friendships, dating, intimacy, recreation, self-care, and activities of daily living. Studies of BDD and other disorders have found

very poor psychosocial functioning across many domains such as these.<sup>[67-72]</sup> Although adding examples would make this criterion slightly more complex, this change would have the advantage of highlighting types of dysfunction particularly relevant to a disorder and reminding clinicians of the many ways in which mental illness can impair psychosocial functioning.

2. *Dimensionalize ratings of severity and distress:* With the DSM-IV clinical significance criterion, distress or impairment can be only present or absent. Even a simple 5-point scale, from 0 to 4 – with anchors of none (0), mild (1), moderate (2), severe (3), or extreme (4) – would capture more information about the patient’s clinical status. It would also have the advantage of allowing change in level of distress or functioning to be assessed over time. This 5-point scale is included in the BDD-YBOCS, the most widely used measure of BDD severity, which has good interrater reliability.<sup>[37]</sup> A cutpoint, such as moderate or higher, would be needed to indicate whether the criterion is met.

**Summary and Preliminary Recommendations:** Distress and impairment should arguably be better operationalized in DSM-V. This could be accomplished, in part, by identifying types or examples of distress and impairment in the criterion. Adding just a few examples might be best, as too lengthy a list could be difficult to recall. If examples are added, they should be clearly indicated to be only examples and not an exhaustive list of the types of distress or impairment patients can experience. It may also be helpful to dimensionalize these constructs. This issue is relevant for many disorders, and such a change would ideally be consistent across DSM-V.

*Preliminary Recommendation for Criterion B:* “The preoccupation causes clinically significant distress (for example, depressed mood, anxiety, shame) or impairment in social, occupational, or other important areas of functioning (for example, work, school, relationships, household).”

**4) Criterion C: Should the diagnostic hierarchy with other mental disorders be retained? If so, should it specifically mention other disorders in addition to anorexia nervosa? Or should the hierarchy be narrowed to pertain only to anorexia nervosa and perhaps other eating disorders?**

**The Diagnostic Hierarchy between BDD and Eating Disorders—**BDD’s criterion C states “The preoccupation is not better accounted for by another mental disorder (e.g., dissatisfaction with body shape and size in Anorexia Nervosa).” BDD and eating disorders are both characterized by body image dissatisfaction, concern with and disturbance in body image, and obsessional thinking.<sup>[73-75]</sup> Criterion C indicates that if a patient has preoccupation/dissatisfaction with appearance that is limited to body shape and size, and if the patient’s symptoms meet the other diagnostic criteria for anorexia nervosa, then anorexia nervosa – rather than BDD -- should be diagnosed. The rationale for this criterion is that without it, most patients with anorexia nervosa would likely also be diagnosed with BDD, as they are presumably preoccupied with an imagined defect in appearance (excessive body fat and/or being overweight). Many patients with bulimia nervosa might also be diagnosed with



BDD. Indeed, some eating disorder researchers consider disturbed body image, not problematic eating behavior, to be the core abnormality in eating disorders.<sup>[73-76]</sup>

**Similarities and Differences between BDD and Eating Disorders:** In addition to body image dissatisfaction and disturbance, shared clinical features of BDD with eating disorders include preoccupation with body weight and shape, dieting, and excessive exercising in some patients with BDD.<sup>[21, 75, 77]</sup> However, BDD and eating disorders also have differences. Two studies that directly compared BDD (n=51 and n=56) and eating disorder (n=45 and n=61) samples found equally severe body image preoccupation, dissatisfaction, and distress in both groups.<sup>[75, 78]</sup> However, those with an eating disorder had greater dissatisfaction and preoccupation with their weight, waist, and stomach, and more psychological symptoms on the Brief Symptom Inventory than those with BDD. Subjects with BDD had dissatisfaction with more diverse body areas (e.g., skin, face, hair) and less concern with weight. BDD subjects also had more negative self-evaluation and self-worth due to appearance concerns, more avoidance of activities due to self-consciousness about appearance, and poorer functioning and quality of life due to appearance concerns. Perhaps most important, recommended pharmacotherapy and psychosocial treatments for BDD and eating disorders differ,<sup>[79-84]</sup> underscoring the need to differentiate these disorders.

**Comorbidity of BDD and Eating Disorders:** BDD and eating disorders can be comorbid, in which case both disorders should be diagnosed. Criterion C is not intended to prevent diagnosis of both disorders when they co-occur. In a clinical sample of 293 subjects with BDD, 3% had lifetime anorexia nervosa and 8% had lifetime bulimia nervosa.<sup>[85]</sup> In a more broadly ascertained BDD sample (n=200), 9% had lifetime anorexia nervosa, 6.5% had lifetime bulimia nervosa, and 17.5% had lifetime eating disorder NOS.<sup>[9]</sup> Conversely, among 41 inpatients with anorexia nervosa, 39% had lifetime BDD consisting of concerns unrelated to weight.<sup>[86]</sup> In this study, patients who had BDD in addition to anorexia nervosa had greater functional impairment, nearly twice as many lifetime psychiatric hospitalizations, and triple the lifetime rate of suicide attempts (63% vs 20%). Thus, when BDD and an eating disorder co-occur, both disorders should be diagnosed because this comorbidity appears to confer additional severity and risk, and because both disorders need to be targeted in treatment.

**Overlap between BDD and ED-NOS:** In most cases BDD can be fairly easily distinguished from an eating disorder. For example, a man (or woman) who is preoccupied with perceived acne and has no concerns about being overweight or fat, or any abnormal eating behaviors, can easily be diagnosed with BDD rather than an eating disorder. In BDD patients with weight-related concerns and some abnormal eating behavior who do not meet full diagnostic criteria for anorexia nervosa or bulimia nervosa, the distinction can be more challenging. The diagnostic boundaries between eating disorder NOS and BDD are not well-defined, and the lack of research on this topic leaves it unclear as to whether BDD or eating disorder NOS is the more appropriate diagnosis for some individual patients.<sup>[87]</sup> Thus, it is unclear how the diagnostic hierarchy in DSM might be modified to specifically address the differentiation between eating disorder NOS and BDD cases involving weight and abnormal eating. Studies are needed that compare BDD and eating disorder NOS across a variety of

domains (e.g., phenomenology, comorbidity, neurobiology) to better understand their relationship and differences.

**Summary and Preliminary Recommendations:** Research on the relationship between eating disorders and BDD is limited, but available data indicate that these disorders have important differences and require different treatment approaches. Thus, they need to be differentiated diagnostically. Furthermore, diagnosing eating disorder symptoms as two different disorders (both BDD and an eating disorder, which could occur in the absence of criterion C) would result in “artifactual” and clinically unhelpful “comorbidity.” Thus, it is important to retain criterion C so eating disorders are not misdiagnosed as BDD. It may be helpful to specifically mention concerns with body fat and weight in the criterion, to further aid clinicians in differentiating eating disorders from BDD.

We preliminarily recommend that the DSM-IV hierarchy be broadened to include all eating disorders, not just anorexia nervosa. However, a concern is that the hierarchy would also pertain to eating disorder NOS, which in some cases has a very unclear boundary with BDD, and it is important that BDD not be misdiagnosed as eating disorder NOS. Therefore, before a final recommendation regarding criterion C is made for DSM-V, it will be important to examine the new DSM-V criteria for eating disorders, as well as examples of eating disorder NOS, to determine whether criterion C should be limited to anorexia nervosa and bulimia nervosa (and not include eating disorder NOS).

An additional consideration is that it is our impression that the phrase “not better accounted for” is confusing to some clinicians and other users of DSM (for example, it seems to sometimes be misconstrued to mean that BDD cannot be diagnosed if the patient also has an eating disorder, even if the patient also meets full criteria for BDD). Therefore, we recommend that alternate wording be considered, such as “is not limited to” or “is not restricted to.” This issue is relevant to many disorders across DSM, and thus consistency across disorders will be desirable.

**The Diagnostic Hierarchy Between BDD and Other Disorders—**In our clinical experience, BDD can be confused with disorders other than eating disorders.<sup>[32]</sup> The specific issue pertaining to criterion C is whether other disorders might be misdiagnosed as BDD (not the converse – i.e., whether BDD might be misdiagnosed as other disorders -- which seems more common). Gender identity disorder (GID) is worth discussing in this regard. It may be a candidate for inclusion in BDD’s criterion C, as there is a small subgroup of patients who present with symptoms relevant to this differential diagnosis. DSM-IV’s GID criteria note that symptoms may include a perception in boys that the penis or testes are disgusting, and in girls a wish to not grow breasts.<sup>[1]</sup> For adolescents and adults, DSM-IV GID criteria include preoccupation with getting rid of primary and secondary sex characteristics.<sup>[1]</sup> The text notes that individuals with GID are often preoccupied with appearance.<sup>[1]</sup>

Our literature search did not identify any articles on the relationship between BDD and GID, and it is unclear how often these disorders are confused with each other. On the one hand, it may be helpful to add a phrase to BDD’s criterion C indicating that appearance

preoccupations are not limited to concerns with physical sex characteristics in an individual with GID. On the other hand, patients with GID have many other prominent symptoms that are not characteristic of BDD, diminishing the likelihood that GID would be misdiagnosed as BDD. In addition, GID is relatively rare, and adding GID to criterion C would make this criterion more complex. Thus, it may be preferable to instead discuss the differential diagnosis of BDD and GID in the DSM-V text.

BDD is sometimes confused with schizophrenia, because BDD often involves delusional beliefs about appearance and/or delusions of reference.<sup>[11, 32, 88-90]</sup> However, it seems unlikely that schizophrenia would be misdiagnosed as BDD, because schizophrenia involves many other symptoms that are not characteristic of BDD. To our knowledge, there are no other disorders in DSM that might be misdiagnosed as BDD and should therefore be included in criterion C.

**Preliminary Recommendation for Criterion C:** “The appearance preoccupations are not restricted to symptoms of an eating disorder (i.e., concern with body fat or weight)”

#### **5) Should BDD’s criteria be broadened to include olfactory reference syndrome or body integrity identity disorder (apotemnophilia)?**

**Olfactory Reference Syndrome**—Some authors consider olfactory reference syndrome (ORS) a form of BDD,<sup>[91]</sup> raising the question of whether BDD’s diagnostic criteria should be broadened to include features of ORS. ORS consists of an often-delusional preoccupation with the false belief that oneself emits a foul or offensive body odor.<sup>[92, 93]</sup> Many patients with ORS have prominent delusions of reference, falsely believing that other people take special notice of the supposed body odor in a negative way (for example, turn away in disgust). DSM-IV-TR does not classify ORS as a separate disorder, but the text on delusional disorder identifies ORS symptoms as one of the most common types of delusional disorder, somatic type. DSM-IV-TR also mentions ORS symptoms in the text on social phobia.

BDD and ORS have some shared clinical features, such as preoccupation with perceived bodily abnormalities, poor insight or delusional beliefs in a majority of patients, associated referential thinking and compulsive behaviors (to diminish perceived appearance flaws in BDD and perceived body odor in ORS), and frequent avoidance of social situations.<sup>[93, 94]</sup> However, BDD and ORS also appear to have some differences, including but not limited to the content of the central beliefs (involving appearance versus body odor), the nature of many of the repetitive behaviors, and possibly the disorders’ treatment response.<sup>[95]</sup> Most importantly, ORS has not been well studied, and its relationship to BDD has not been investigated. In the absence of evidence, considering ORS a form of BDD seems premature. A more detailed review of ORS for DSM-V is available elsewhere.<sup>[95]</sup>

**Summary and Preliminary Recommendations:** Because systematic research on the relationship between BDD and ORS has not been done, it seems premature to broaden BDD’s clinical features to include ORS.

**Body Integrity Identity Disorder (Apotemnophilia)**—“Body integrity identity disorder,” or “apotemnophilia,” is a poorly understood and likely rare clinical phenomenon that is occasionally confused with BDD. A number of case reports and case series have been published.<sup>[96-107]</sup> Individuals with body integrity identity disorder have a longstanding desire to have a specific limb amputated.<sup>[108]</sup> Confusion between body integrity identity disorder and BDD may arise because both conditions involve dissatisfaction with an aspect of bodily appearance, and both disorders can involve doing surgery on oneself to remove a disliked body part.<sup>[32, 109]</sup>

However, unlike in BDD, most individuals with body integrity identity disorder report that the driving desire behind a wish for amputation is to correct an experience of mismatch between their sense of bodily identity and their actual anatomy.<sup>[106]</sup> Indeed, some authors have termed this “body integrity identity disorder.”<sup>[106, 108]</sup> An alternative primary motivation in some individuals appears to be sexual arousal.<sup>[96, 106]</sup> In this case, the phenomenon may represent a type of paraphilia, for which some authors have suggested that the term “apotemnophilia” is more appropriate.<sup>[96, 106, 108]</sup>

Research on body integrity identity disorder, or apotemnophilia, is very limited, and its relationship to other disorders is not well understood. However, it does not appear to be a form of BDD. Individuals with such desires to have a limb amputated, unlike those with BDD, are not concerned about the limb’s appearance.<sup>[110]</sup> They do not perceive their limb as inherently defective, and they are not ashamed or self-conscious of it.<sup>[106]</sup> Rather, the distress appears to center on the feeling that the limb is not congruent with their sense of self.<sup>[106]</sup> Some persons desire the sexual arousal that they believe will accompany being an amputee.<sup>[96, 106]</sup> It is unclear how either form of this syndrome is best classified. Some authors have drawn parallels between body integrity identity disorder and gender identity disorder,<sup>[99, 103, 106]</sup> and some have suggested that “apotemnophilia” might best be classified as paraphilia NOS.<sup>[106]</sup>

**Summary and Preliminary Recommendations:** While virtually no research has been done on body integrity identity disorder, it appears to have different core clinical features than BDD. Thus, there is no good evidence for broadening BDD’s clinical features to include body integrity identity disorder. In the text on BDD, differences between BDD and body integrity identity disorder, as well as issues pertaining to differential diagnosis, could be noted.

## 6) Do BDD’s diagnostic criteria appear suitable cross-culturally?

Most studies on BDD have focused on patients in Western settings, although some studies and many cases and case series have been reported around the world.<sup>[e.g., 5, 24, 111-124]</sup> To our knowledge, no studies have directly compared BDD’s clinical features across different countries or cultures. A qualitative comparison by Phillips of case reports and case series of BDD from around the world suggest more similarities than differences.<sup>[52]</sup> Similarities included gender ratio and other demographic features, which body areas were disliked and what aspects were disliked, types of compulsive BDD behaviors, and levels of BDD-related distress and impairment in social and occupational functioning. Thus, BDD may be largely

invariant across cultures. Indeed, while the application of evolutionary theory to disorders such as BDD is at a preliminary stage, it might be argued that BDD may in part have an evolutionary basis (i.e., desire to attract mates or avoidance of social ostracism).<sup>[112, 125]</sup> Yet, Phillips' comparison suggested that cultural values and preferences may influence and shape BDD symptoms to some degree.<sup>[52]</sup> For example, eyelid concerns appear common in Japan but rare in Western countries. Worry about displeasing other people by being unattractive also seems more common in Japan than in the U.S.<sup>[52]</sup>

In this regard, a significant psychiatric literature has focused on a related diagnostic construct, taijin kyofusho. Taijin kyofusho, or anthropophobia (fear of people), literally means a fear of interpersonal relations. The Japanese diagnostic system distinguishes four subtypes of taijin kyofusho, one of which -- shubo-kyofu -- is defined as "the phobia of a deformed body."<sup>[113]</sup> This subtype is similar to BDD as defined in DSM-IV. However, a possible difference is that taijin kyofusho is more prominently characterized by concerns about offending others. There are little data on the extent to which patients with taijin kyofusho meet formal criteria for BDD. However, in one study, 10% of subjects with taijin kyofusho had BDD.<sup>[126]</sup>

Koro is another possible cultural relative of BDD. DSM-IV discusses the differential diagnosis between koro and BDD in the BDD text, and it lists koro in the glossary of culture-bound syndromes. Koro, which occurs primarily in epidemics in Southeast Asia, consists of a fear that the penis (or labia, nipples, or breasts in women) is shrinking or retracting and will disappear into the abdomen. This fear is often accompanied by a belief that death will result. No systematic studies have compared koro to BDD. Nonetheless, koro appears to have some similarities to BDD, including a focus on and distress over one's body, in particular, the genitals (which is reported in 16% of men with BDD).<sup>[21, 127]</sup> However, koro differs from BDD, most importantly in its primary focus: that a feared event (disappearance of the penis) will ultimately cause death, rather than preoccupation with perceived ugliness. Other differences are that koro usually has a brief duration, usually arises in a particular geographic area in epidemic fashion, consists primarily of acute anxiety and fear, and often responds to reassurance.<sup>[128-130]</sup>

The DSM-IV text on BDD also notes that culturally related concerns about physical appearance, and the importance of proper physical presentation, may influence or amplify preoccupations with perceived physical deformities. Indeed, there are some cross-cultural differences in how physical appearance is evaluated; at the same time, there is a growing literature on the universality of certain concepts of beauty, and the extent to which cultural factors impact on BDD's pathogenesis or clinical expression remains unclear.<sup>[131-137]</sup>

**Summary and Preliminary Recommendations**—Given the absence of any direct comparison studies of BDD's clinical features across cultures, and given impressions that BDD symptoms are more similar than dissimilar cross-culturally, there is no compelling evidence for including a cultural subtype or culturally specific features of BDD in its diagnostic criteria.

The DSM-V text on BDD should include a discussion of taijin kyofusho (specifically shubo-kyofusho), koro, and the possibility that culturally related concerns about physical appearance can influence appearance concerns. Shubo-kyofusho and koro should also be mentioned in other sections of DSM-V that focus on cultural manifestations of mental disorders (for example, in a glossary of cultural manifestations of disorders).

### 7) Do BDD's diagnostic criteria appear suitable from a developmental perspective?

Because BDD usually begins during early adolescence, considering whether its criteria appear suitable for youth is important. In the two largest BDD studies in clinical samples (n=200 and n=293), BDD's mean age at onset was  $16.0 \pm 6.9$  (range 4-43) and  $16.4 \pm 7.0$  years (range 5-49).<sup>[26, 85]</sup> The mode was 13 in both samples, and 70% of cases had onset of BDD before age 18.

Few studies have systematically examined a broad range of BDD's clinical features in youth. One study reported on a clinical sample of 33 children and adolescents with BDD, and another compared BDD's clinical features in a more broadly ascertained (but largely clinical) group of 36 adolescents versus 164 adults who were clinically interviewed.<sup>[138, 139]</sup> BDD's clinical features were similar in youth in both reports, consisting of prominent, distressing, time-consuming appearance preoccupations and prominent appearance-related compulsive behaviors. Nearly all youth evidenced substantial impairment in psychosocial functioning that was attributed primarily to BDD symptoms.

In the study that directly compared youth to adults, there were far more similarities than differences.<sup>[139]</sup> However, youth had more delusional BDD beliefs, more severe BDD symptoms at a trend level, and a significantly higher rate of current substance use disorders (30.6% vs 12.8%). Lifetime rates of comorbidity and functional impairment were similar in youth and adults, even though youth had had fewer years over which to have developed these problems. In addition, a significantly higher proportion of youth than adults reported a lifetime suicide attempt (44.4% vs 23.8%).<sup>[139]</sup> In another study, adolescent inpatients with BDD had significantly higher scores on a standardized measure of suicide risk than inpatient adolescents without significant body image concerns.<sup>[140]</sup>

Taken together, these preliminary findings suggest that BDD appears largely similar in youth and adults but that youth may differ from adults in several clinically important ways.

Although BDD exists in late life, published reports focusing on the elderly are limited to a few case reports.<sup>[52]</sup> Our clinical experience suggests that BDD's clinical features in the elderly are similar to those in non-elderly adults, although this issue needs to be studied.

**Summary and Preliminary Recommendations**—Very little research has been done on BDD in youth, and available data do not provide compelling evidence that BDD's key diagnostic features differ substantially between youth and adults. Thus, it does not seem warranted to add age-related manifestations to the diagnostic criteria or an age-related subtype pertaining to youth. However, the differences discussed above, while preliminary and in need of further study, can be noted in the text. BDD's usual age of onset should also be highlighted in the text.



Because no systematic research has been published on BDD's clinical features in late life, adding late life-related manifestations or a late life-related subtype to BDD's diagnostic criteria is not warranted. The text, however, could note that BDD can occur in late life.

## 8) Do BDD's criteria appear suitable for both genders?

**Clinical Features of BDD in Females Versus Males**—Issues pertaining to gender in DSM are also discussed in a separate review (Yonkers et al, in preparation). Three published studies have directly compared females and males with BDD.<sup>[21, 127, 141]</sup> Females and males in these studies had many similarities, including most demographic and clinical characteristics, such as which body areas are disliked, types of compulsive BDD behaviors, BDD severity, suicidality, and comorbidity. Of note, both genders were equally likely to seek and receive cosmetic treatment, such as surgery or dermatologic treatment, for their BDD concerns.

All three studies found, however, that males are more likely to be preoccupied with their genitals, and females are more likely to have a comorbid eating disorder. The following differences were found in two of the three studies: females were more likely to be preoccupied with weight, hips, breasts, legs, and excessive body hair, to hide perceived defects with various camouflaging techniques, to check mirrors, and to pick their skin as a symptom of BDD; males were more likely to have muscle dysmorphia, be preoccupied with thinning hair, be single, and have a substance-related disorder. Males had significantly worse scores on one measure of psychosocial functioning, were less likely to be working because of psychopathology, and were more likely to be receiving disability payments (for any reason or because of BDD).

**Summary and Preliminary Recommendations:** BDD's clinical features in males and females appear largely similar across a broad range of clinical features. This finding, combined with the fact that this topic has been only minimally studied, suggests that BDD's core diagnostic criteria do not need to be modified to reflect gender-related manifestations. However, gender differences are clinically relevant and should be mentioned in the text.

**Muscle Dysmorphia**—One form of BDD – muscle dysmorphia – occurs almost exclusively in males. Muscle dysmorphia consists of preoccupation with the idea that one's body is insufficiently muscular or lean, or is “too small.”<sup>[142, 143]</sup> In reality, these men look normal or may even be very muscular. Many men with muscle dysmorphia attend to a meticulous diet and time-consuming workout schedule, which can cause bodily damage, and use anabolic-androgenic steroids and other substances in an attempt to get bigger.<sup>[142-148]</sup>

The relationship between muscle dysmorphia and other forms of BDD has received limited investigation. One study found that 5 of 15 bodybuilders with muscle dysmorphia also displayed other, more classic, BDD symptoms.<sup>[145]</sup> Other studies found that 9.3% of 193 men, 22.2% of 63 men, and 25% of 95 men with BDD had muscle dysmorphia.<sup>[21, 142, 148]</sup> The latter study compared men with muscle dysmorphia (86% of whom had additional non-muscle appearance concerns) to men with BDD but not muscle dysmorphia, finding similarities in demographic features, BDD severity, delusional beliefs, and number of non-muscle-related body areas of concern.<sup>[148]</sup> However, those with muscle

dysmorphia were significantly more likely to lift weights excessively (71% vs. 12%), diet (71% vs. 27%), and exercise excessively (64% vs. 10%). They also had poorer quality of life, were significantly more likely to have attempted suicide (50% vs 16%), and had a significantly higher lifetime prevalence of substance use disorders (86% vs 51%), including anabolic steroid abuse/dependence (21% vs 0%). Thus, while data are limited, these findings suggest that the muscle dysmorphia form of BDD appears relatively common among males with BDD and is associated with severe psychopathology. Muscle dysmorphia also appears to have a number of notable, clinically significant differences from other forms of BDD that are important to its identification and treatment. While treatment studies that focus specifically on muscle dysmorphia have not been done, clinical experience suggests that psychosocial treatment for BDD may need some modification for muscle dysmorphia.<sup>[149]</sup> Indeed, muscle dysmorphia may be more closely linked than other forms of BDD are to eating disorders.<sup>[145, 150]</sup>

**Summary and Preliminary Recommendations:** There appear to be some important differences between muscle dysmorphia and other forms of BDD, including problematic risk behaviors, which require careful clinical attention. In addition, clinical experience suggests that psychosocial treatment approaches for BDD need to be modified to some extent for this form of BDD. Therefore, adding muscle dysmorphia as a specifier may have clinical utility.

#### **9) In ICD-10, BDD is classified as a type of “hypochondriacal disorder.” Are these criteria suitable for BDD?**

ICD-10 classifies both BDD and hypochondriasis as a type of “hypochondriacal disorder.”<sup>[2]</sup> ICD-10’s criterion A2 for hypochondriacal disorder (“a persistent preoccupation with a presumed deformity or disfigurement”) is similar to DSM-IV’s criterion A for BDD.<sup>[2]</sup> The first half of ICD-10’s criterion B is similar to DSM-IV’s criterion B (“preoccupation with the belief and the symptoms cause persistent distress or interference with personal functioning in daily living”). However, the second part of ICD-10’s criterion B is not similar to DSM-IV’s criterion (“and leads the patient to seek medical treatment or investigations [or equivalent help from local healers]”). Furthermore, ICD-10’s criterion C for hypochondriacal disorder does not seem applicable to BDD (“persistent refusal to accept medical advice that there is no adequate physical cause for the symptoms or physical abnormality, except for short periods of up to a few weeks at a time immediately after or during medical investigations”). Regarding the latter, a majority of patients with BDD seek cosmetic treatment (e.g., dermatologic, surgical) for BDD concerns, but not all patients do.<sup>[23, 24, 151, 152]</sup> In fact, many patients do not reveal their appearance preoccupations to others, including clinicians, because of embarrassment, fears of being negatively judged and misunderstood by the treatment provider, or for other reasons.<sup>[55, 56]</sup> Another problem with ICD-10’s criteria B and C is that there are many barriers in certain countries to seeking medical treatment or evaluation, including lack of health insurance, cost, and unavailability of services. Barriers such as these should not determine whether or not a person is diagnosed with BDD.

There is no evidence that BDD and hypochondriasis are the same disorder and should have the same diagnostic criteria. While no studies have directly compared these disorders, the

core BDD symptoms involving preoccupation with being ugly are quite different from the belief that one has a serious disease. Only 15.5% of individuals with BDD have ever believed that their body was malfunctioning in some way, and few with this belief focus specifically on having a disease (Phillips KA, unpublished data). Furthermore, a study that used the Kellner Symptom Questionnaire<sup>[153]</sup> found that BDD subjects (n=75) had markedly elevated scores on the somatic/somatization symptom scale compared to norms for normal controls but lower scores than published norms for psychiatric outpatients.<sup>[64]</sup> In addition, a study that used the Multidimensional Body-Self Relations Questionnaire<sup>[154]</sup> found that women with BDD are less alert to being or becoming ill compared to population norms.<sup>[155]</sup> These findings suggest that somatization and hypochondriacal concerns are not particularly characteristic of BDD. Comorbidity data additionally suggest that BDD may not be closely related to hypochondriasis. In two studies of BDD (n=200 and n=293), comorbid hypochondriasis was much less common (4.8% lifetime in one study and 1.5% currently in the other study) than comorbidity with many other psychiatric disorders.<sup>[26, 85]</sup>

**Summary and Preliminary Recommendations**—There is no evidence that BDD and hypochondriasis are the same disorder, and ICD-10's criteria for hypochondriacal disorder are not suitable for BDD.

#### 10) How should BDD's delusional variant be classified in DSM-V?

This issue will be more extensively discussed in a separate review (Phillips KA, et al, in preparation). In brief, as discussed earlier, the classification of delusional BDD vs nondelusional BDD in DSM-IV is complex.<sup>[47]</sup> Studies have found that 36% to 39% of individuals with BDD currently have delusional BDD beliefs as assessed by the Brown Assessment of Beliefs Scale (BABS).<sup>[88, 90, 156]</sup> Several studies indicate that there are many more similarities than differences between individuals with delusional BDD and those with nondelusional BDD across a broad range of features, such as most demographic features, core BDD symptoms, most measures of functional impairment and quality of life, comorbidity, and family history.<sup>[11, 88, 89]</sup> Two studies found that on several measures, delusional subjects evidenced greater morbidity; however, this finding appeared to be accounted for by greater BDD symptom severity.<sup>[88, 89]</sup>

Importantly, treatment studies have consistently found that delusional BDD responds as robustly as non-delusional BDD does to monotherapy with serotonin-reuptake inhibitors.<sup>[80, 157-159]</sup> Although data are very limited, it appears that antipsychotics may not be efficacious for delusional or non-delusional BDD.<sup>[80, 160, 161]</sup> Thus, a concern about keeping BDD's delusional form in the psychosis section of DSM-V is that this could lead to ineffective treatment for delusional BDD.

**Summary and Preliminary Recommendations**—Available data suggest that there are far more similarities than differences between delusional and nondelusional BDD. Thus, it seems warranted to combine BDD's delusional and nondelusional variants into a single disorder while removing BDD's delusional variant from the psychosis section of DSM. Options for BDD's criteria include:

- #1)** Use the following types of specifiers: a) good or fair insight, b) poor insight, c) delusional beliefs about appearance. Such specifiers have the potential advantage of conveying the broad range of insight that can characterize BDD beliefs, including delusional beliefs.<sup>[11, 88, 89]</sup> Including a poor insight specifier is highly relevant to BDD, as many individuals with BDD have poor insight<sup>[47]</sup>; in addition, a poor insight specifier has precedence in DSM-IV, where it is used for OCD. These specifiers are similar to categories in the BABS<sup>[156]</sup> and BDD-YBOCS<sup>[37]</sup> Further evidence regarding these specifiers, their potential clinical utility, and use and definition of the term “insight” are further considered in a separate review (Phillips KA, et al., in preparation). Alternatively, additional specifiers could be considered: fair insight could be separated from good insight, or “good or fair insight” could be replaced by separate categories of “excellent,” “good,” and “fair” insight, as in the BABS and BDD-YBOCS. Potential advantages of the greater specificity conferred by more categories must be weighed against the possibility that more specifiers might be more burdensome for clinicians.
- #2)** Indicate in BDD’s core criteria (e.g., in criterion A or a new criterion) that BDD may encompass a range of insight, including delusional beliefs about appearance.
- #3)** Alternatively, DSM-V could include a psychosis dimension to be rated for all patients, regardless of their diagnosis, which would not be disorder specific. If such a dimension is included in DSM-V, to be applicable to BDD its definition would need to reflect the type of absent insight/delusional beliefs relevant to BDD (as opposed to other types of psychosis that are not relevant to BDD, such as auditory hallucinations or thought broadcasting). Even if this dimension were well defined and applicable to BDD, a problem could arise if a patient had several disorders that exhibit a range of delusional/insight (for example, BDD, OCD, and anorexia nervosa), as it might be unclear to which disorder the rating applied.

On balance, while option #3 (inclusion of a psychosis dimension in DSM-V) may have merit, it likely would not be adequate to characterize insight/delusional in BDD specifically. Option #1 seems preferable, as it could also be used for other disorders that may be characterized by a range of delusional/insight, such as OCD and possibly hypochondriasis, anorexia nervosa, and mood disorders (as well as olfactory reference syndrome and hoarding if they are included in DSM-V). The proposed categories and wording for this option are similar to those in the BABS and BDD-YBOCS.<sup>[37, 156]</sup>

## CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS FOR DSM-V

Much more research is needed on all aspects of BDD. Advances in knowledge will likely lead to future refinements of this disorder’s diagnostic criteria and an increased understanding of the relationship between BDD’s delusional and nondelusional forms as well as BDD’s relationship to other psychiatric disorders. In the meantime, based on this

review, we suggest the following preliminary recommendations for BDD's diagnostic criteria, which may change before DSM-V is finalized.

### **Preliminary Recommendations for DSM-V Diagnostic Criteria for BDD**

- A.** Preoccupation with a perceived defect(s) or flaw(s) in physical appearance that is not observable or appears slight to others.
- B.** The preoccupation causes clinically significant distress (for example, depressed mood, anxiety, shame) or impairment in social, occupational, or other important areas of functioning (for example, school, relationships, household).
- C.** The appearance preoccupations are not restricted to symptoms of an eating disorder (i.e., concern with body fat or weight).

Specify whether BDD beliefs are currently characterized by:

- Good or fair insight: Recognizes that BDD beliefs are definitely or probably not true, or that they may or may not be true
- Poor insight: Thinks BDD beliefs are probably true
- Delusional beliefs about appearance: Completely convinced BDD beliefs are true

Specify if:

- Muscle dysmorphia form of body dysmorphic disorder (the belief that one's body build is too small or is insufficiently muscular)

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**TABLE 1**

## DSM-IV Diagnostic Criteria for Body Dysmorphic Disorder

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<b>A.</b>	Preoccupation with an imagined defect in appearance. If a slight physical anomaly is present, the person's concern is markedly excessive.
<b>B.</b>	The preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
<b>C.</b>	The preoccupation is not better accounted for by another mental disorder (e.g., dissatisfaction with body shape and size in Anorexia Nervosa).

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