REVIEW PAPER

Prevalence, Assessment and Underdiagnosed Impact of Body Dysmorphic Syndrome (BDD) in Cosmetic and Aesthetic Clinical Practice: A Narrative Review

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Abstract: Body Dysmorphic Disorder (BDD) is considered one of the high-risk psychological health disorders due to its significant impact on patients. However, it is often overlooked. This review aims to discuss BDD and highlight the importance of cosmetic and clinical practitioners in distinguishing BDD patients from other individuals seeking aesthetic or cosmetic treatments, as well as to explore the impact of BDD on cosmetic and clinical practice. It was found that BDD patients are often found in primary care and dermatology settings because they may not recognize the need for psychiatric treatment. Many seek cosmetic treatments, which usually do not alleviate their distress and result in temporary satisfaction, leading to dissatisfaction and shifting blame to practitioners. BDD patients can exhibit aggressive behaviours, posing risks to cosmetic providers, including verbal, physical, and legal threats. Therefore, raising awareness and understanding of BDD among clinical and cosmetic practitioners is crucial to care for these patients effectively and to avoid unnecessary financial, physical, and psychological strains of unwarranted procedures.

Keywords: Aesthetic and Cosmetic clinical practice, Body dysmorphic disorders, Psychological health

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Introduction

Body Dysmorphic Disorder (BDD) is defined as an excessive preoccupation with perceived or minor flaws in one's appearance, which are often invisible to others, and it is considered part of a psychiatric disorder [1]. Individuals with BDD suffer from great distress and interference, which can be extreme due to their concerns with perceived flaws as they engage in repetitive behaviours to hide or fix their flaws [2]. It is considered one of the high-risk psychological health disorders due to its impact on the patient. Nevertheless, it is often overlooked. This oversight is partly due to patients seeking cosmetic or aesthetic treatments to address their perceived defects, believing them to be genuine physical imperfections [2]. Moreover, most BDD patients conceal their body image concerns, driven by embarrassment, fear of judgment, believing their clinician would not understand their worries, not being aware of the availability

of BDD treatment, not being queried about BDD, perceiving BDD as insignificant, do not want to acknowledge that their body image concern is a problem and assuming others do not face similar problems [3].

Patients with BDD often find themselves dissatisfied with the outcomes of aesthetic treatments, with symptoms sometimes worsening post-treatment [4,5]. Research by Sarwer et al. [4] revealed that 88% of patients became more conscious about their perceived flaws following aesthetic treatment, and 76% reported developing new concerns. Additionally, almost 98% of BDD patients gain no benefit from cosmetic interventions, and 16% perceive a deterioration in their self-image [5,6].

There is general agreement that screening BDD before aesthetic procedures and reassessing after that for the emergence of any new psychological problem is very important [7]. Failure to do so may have negative effects on both patients and practitioners [8], including instances where practitioners face violence or legal threats from BDD patients [9,10]. Early identification of BDD allows for appropriate management, emphasizing psychiatric approaches over cosmetic interventions [11]. Failure to recognize BDD may be detrimental to patients, physically and psychologically [12], as without proper treatment, the condition will become more severe [13].

This narrative review aims to consolidate the current literature on BDD, focusing on its prevalence, assessment tools, and the importance of distinguishing BDD patients in aesthetic and cosmetic settings. It also addresses how underdiagnosed BDD patients may impact cosmetic and aesthetic clinical practice and the necessity for increased awareness and screening among practitioners.

Methodology

This paper reviews BDD using the Google Scholar system. Research articles published between 2016 and 2022 were searched using the term' body dysmorphic disorder' in titles. Relevant articles on BDD were screened for inclusion, including its prevalence, assessment tools, and the importance of clinical practitioners in distinguishing BDD patients from those seeking aesthetic or cosmetic treatments. The potential impact of underdiagnosed BDD patients on cosmetic and aesthetic clinical practice was also considered. Citations and references from these articles were searched, retrieved, and evaluated following the same criteria as the original search.

What is Body Dysmorphic Disorder

In the recently released International Classification of Diseases 11 (ICD-11) by the World Health Organization, BDD is defined as a continuous preoccupation with one or more perceived defects in appearance that are either imperceptible or only minimally noticeable to others [14]. This persistent fixation frequently leads to repetitive actions such as frequent mirror checking and attempting to conceal these perceived flaws or camouflaging [15], thus causing a negative impact on various aspects of one's life functioning [16,17,18]. This condition is also known as "dysmorphophobia" and "dermatologic hypochondriasis" in the medical literature [19].

BDD is categorized as an obsessive-compulsive related condition rather than a somatoform disorder. It encompasses a pathological fear of ugliness regarding certain aspects of appearance being perceived as "not right" or even "hideous" even though no such flaws are noticeable to others or are considered minor [20]. It is a relatively common yet under-recognized psychiatric disorder that often presents to non-psychiatric physicians [21].

Typically, BDD begins in early adolescence, and due to its chronic nature, BDD persists into adulthood, often leading to increasingly severe consequences [13,22]. The perceived physical defect can involve any part of

the body, with skin, hair, or nose becoming the most common areas of concern [23]. The body parts that are frequently affected in BDD patients include skin (65%), hair (55%), nose (39%), eyes (19%), specifically for women are breasts (18%) and for men, bones (14%) [24]. Another form of BDD is known as muscle dysmorphia and BDD by proxy. Muscle dysmorphia refers to a condition where an individual perceives their muscles to be too small or inadequate, while in BDD, by proxy, an individual becomes preoccupied with a perceived physical flaw in another person [3]. According to various studies conducted among practitioners, most of them agreed that BDD is a contradiction for aesthetic or cosmetic treatment [4,25,26].

History of Body Dysmorphic Disorder

BDD has been recorded for centuries. However, recently, it has started to receive more attention in research [27]. BDD was initially described as "Dysmorphophobia" in 1886 by an Italian psychopathologist called Enrique Morselli [28]. Dysmorphophobia originates from the Greek term "dysmorfia," which pertains to unattractiveness, particularly in facial features. This term was initially introduced in the "Histories of Heroditus." It alludes to a legend about the "least attractive girl in Sparta," who, upon being touched by a goddess, changes into a stunning woman [28]. A French psychologist, Pierre Janet, has labeled this disease as "l'obsession de la honte du corps," which means "obsessions of shame of the body" [19]. More than centuries ago, Sigmund Freud, a psychologist, described a probable case of BDD referred to as the "Wolf Man," which involved his patient, who was so preoccupied with his nose, causing him considerable social distress [29].

BDD was first described in the Diagnostic and Statistical Manual of Mental Disorders, third edition (DSM-3) in 1980 as an atypical somatoform disorder and was then classified as a distinct somatoform disorder in 1987 [29]. In 1980, the DSM-III included BDD under the term "dysmorphophobia," denoting an excessive worry about one's appearance [27]. This disorder was then renamed BDD in the fourth edition of the DSM [29], and in the DSM-5, BDD is now categorized under obsessive-compulsive and related disorders [19].

Symptoms and Impact of Body Dysmorphic Disorder in Daily Life

BDD is regarded as a psychological disorder where sufferers grapple with distress and preoccupation regarding the perceived flaws in their appearance, often resulting in substantial impairment in their social, occupational, and interpersonal functioning [30,31]. In more serious cases, BDD patients may find themselves incapable of leaving their homes or interacting with others to fulfil social and occupational obligations [32]. Individuals with BDD often experience feelings of shame and disgust [5] due to their exaggeration of any minor anomalies, causing a detrimental impact on their Quality of Life (QoL) [33-35]. BDD patients are too self-conscious and frequently experience ideas of reference, such as a strong belief that others are observing, evaluating, or discussing the perceived defect or flaw [14].

Individuals with BDD are prone to displaying signs of social anxiety and engaging in avoidant behaviours due to fear of being ridiculed or excluded [36]. Their preoccupation with perceived bodily defects is often associated with fear of negative judgment by others, which is similar to the Social Anxiety Disorder (SAD) feature [37]. SAD is defined as 'a marked and persistent fear of social or performance situations in which embarrassment may occur' according to the DSM-IV [38]. SAD, characterized by concern about others' perceptions [39], encompasses anticipatory anxiety, cognitive and physical symptoms in social contexts, and avoidant behaviours when the distress becomes persistent [40]. As the main

feature of SAD is fear of being negatively judged by others, various social situations can trigger the anxiety, including performing in public (such as speaking, eating, or writing), starting or maintaining conversations, attending parties, dating, meeting new people, or interacting with authority figures. Among these, public speaking is the most frequently feared situation [37].

Many studies indicate that BDD and social anxiety share common features with one another [37,41,42], specifically the fear of being negatively judged by others and the fear of embarrassment [43]. Based on clinical observation, both BDD and social anxiety involve a fear of negative evaluation in social settings [44] and a tendency to avoid social interactions [45]. However, in BDD, social fear and avoidant are primarily linked to perceived physical "defects" [46]. A study involving 50 participants with BDD found that self-reported evaluations of social phobia and anxiety symptoms were notably high [47]. Additionally, individuals with BDD exhibited greater withdrawal from activities due to appearance-related concerns compared to those with eating disorders and nonclinical controls [48]. Another study found that individuals with BDD tend to perceive social situations as more threatening compared to controls or individuals with Obsessive-Compulsive Disorder (OCD) [44].

The resulting anxiety arises from their perception of having an abnormal appearance, which often leads to excessive grooming, frequent mirror checking, and various other obsessive behaviours [36]. Individuals with BDD often engage in repetitive behaviours or avoidant behaviours to alleviate the negative feelings caused by their perceived bodily 'defects' such as anxiety [49]. Repetitive behaviours include mirror checking, skin picking, seeking reassurance, undergoing repeated plastic surgeries, and excessive grooming. In contrast, avoidant behaviours might include avoiding social interactions or situations like attending school or parties [50]. Since these repetitive and avoidant behaviours can provide temporary relief from negative emotions, they are negatively reinforced, which is thought to perpetuate dysfunctional beliefs associated with BDD [49]. Moreover, these repetitive behaviour acts may last around 3 to 8 hours per day on average and are typically time-consuming, difficult to manage, and distressing to the individual with BDD [23].

Additionally, patients frequently report experiencing hopelessness, shame, or discomfort regarding their appearance and body image. Such feelings can contribute to the development of depressive symptoms and mask the underlying BDD condition [29,47,51,52]. These circumstances will then lead to isolation and social withdrawal, which, in turn, perpetuates and sustains suicidal thoughts, creating a vicious cycle [53,54]. BDD may result in self-harming behaviours or, in extreme cases, suicidal tendencies [1,55]. The report shows that BDD patients have high rates of suicidal thoughts (46%) and suicide attempts (18%), and this condition is often comorbid with other psychiatric disorders, including Major Depressive Disorder (MDD), SAD, and OCD [16, 55-57]. The risk of suicidality in individuals with BDD is estimated to be 4 to 2.6 times higher than that of the general population with regard to both suicidal thoughts and suicide attempts [55]. The delusional form of BDD is regarded as more severe and is associated with a higher risk of suicide [55,58]. BDD seems to foster the four psychological factors believed to predict suicide, including feelings of burdensomeness, thwarted belongingness, low fear of death, and high tolerance for physical pain [59].

Role of Cognitive Distortions in Body Dysmorphic Disorder

Symptoms of BDD arise from cognitive distortions, which can lead to negative behaviours such as excessive preoccupation with appearance, avoidant behaviour, and other

related actions. Cognitive distortions are defined as flawed and ineffective thinking patterns that arise during information processing [60] and will make us believe something false as though it were true [61]. This will lead to dysfunctional behaviours and emotions, fostering negative thoughts about oneself and others [62,63]. Most psychological disorders involve distorted thinking patterns [64], and this includes BDD.

Patients with BDD tend to have selective attention to perceived appearance flaws and abnormalities in holistic processing [27]. Based on clinical observations, individuals with BDD tend to selectively attend to one appearance's flaws while disregarding the rest of their body. These observations are supported by studies that evaluated the abnormalities in holistic processing in BDD patients. For instance, a study using the Rey-Osterrieth Complex Figure Test (RCFT) found that people with BDD were more likely to concentrate on minor details of a complex figure rather than its overall shape when asked to draw it from memory [65]. Individuals with BDD tend to process visual information in a detail-focused manner rather than a holistic one. This style of processing can hinder their ability to properly contextualize visual details (such as scars or pimples), causing these features to seem larger or more distorted than they are [27].

Additionally, BDD patients possess maladaptive beliefs about self-appearance or distorted body image. They view themselves as flawed or unattractive despite evidence showing otherwise. This distorted perception strengthens negative self-beliefs like feeling unattractive, unworthy, or inadequate [66]. They may overemphasize the significance of attractiveness and equate attractiveness to overall happiness, such as, "If I were more attractive, my whole life would be better." The BDD patient might also have maladaptive interpretations, including thinking, "My skin is so repulsive that no one will ever love me" or "Everyone will be focused on my ugly face" [27].

Reasoning and interpretive biases are significant aspects of BDD. Individuals with BDD often have poor insight and delusional thinking. As a result, they may exhibit cognitive biases that disrupt their reasoning processes, such as making hasty conclusions without adequate evidence or struggling to interpret ambiguous information [27]. Research indicates that individuals with BDD exhibit a disorder-specific negative interpretive bias when faced with ambiguous information [67]. This bias can reinforce their distorted beliefs about themselves and their body image. For example, on a self-report questionnaire featuring ambiguous scenarios (e.g., "While talking to colleagues, you notice that some people seem to pay special attention to you. What thoughts come to mind?"), those with BDD are more likely to interpret the situation negatively (e.g., "I'm sure they are judging my appearance") compared to individuals with OCD and those without any disorders [67].

Individuals with BDD also display a troubling pattern of referential thinking and "mind reading," wherein they believe that others are focusing on their appearance and judging, mocking, or rejecting them due to their looks [68]. Such thoughts contribute to negative or threatening interpretations of ambiguous social information. For example, individuals with BDD often misinterpret neutral facial expressions as signs of anger or contempt [69] and mistakenly interpret ambiguous self-referent situations, perceiving negative appearance-related outcomes as probable explanations for the ambiguity [44,70]. Individuals with BDD are sensitive to facial expressions due to intense fear of negative evaluation by others and the frequent presence of ideas of reference, such as believing that others are staring at them. For instance, individuals with BDD might view a neutral facial expression as negative. Furthermore, their poor insight and ideas of reference, which are common in BDD patient, can lead to a tendency to perceive others' emotional expressions as threatening and as being rejected, which can further intensify their

worries about their own appearance and social appeal [71]. Moreover, it can also exacerbate BDD symptoms and lead to greater social avoidance [69, 71-72].

Differentiating Body Dysmorphic Disorder from Related Disorders

BDD often overlaps with other psychological disorders. Many symptoms of BDD also occur in other psychiatric conditions, while psychiatric disorders are common comorbidities in individuals with BDD. BDD is frequently associated with several other conditions, including eating disorders, anxiety disorders, MDD, substance use disorders, social phobia, OCD, panic disorder, and post-traumatic stress disorder [58,68,73,74]. A study found that the most common associated disorders among individuals with BDD were MDD (76%), followed by SAD (37%) and OCD (32%) [74]. Approximately 94% of BDD patients have reported experiencing depression at some point due to their disease [68]. Additionally, OCD and social phobia are notably prevalent among individuals with BDD, with prevalence rates ranging from 32–33% and 37–39%, respectively. Approximately 10–15% of individuals with BDD have a history of anorexia nervosa or bulimia nervosa, and 2–7% have experienced somatoform disorders [73,74,75]. Therefore, due to this symptom overlap, BDD is often misdiagnosed and not properly identified. **Table 1** shows several differential diagnoses for BDD and their similarities [76,77].

Table 1 Differential diagnoses of BDD.

Condition/Disorder	Similarities and Differences with BDD
Normal appearance concern	**Similarities:** Concern about appearance flaws. **Differences:** Unlike BDD, normal concerns about appearance include a lack of obsessive preoccupations, compulsive behaviours, and any psychological distress or functional impairment.
Obvious bodily defects	**Similarities:** Preoccupied with bodily defects. **Differences:** To distinguish this condition from BDD, all DSM-5-TR diagnostic criteria for BDD must be met in these cases.
Isolated dysmorphic concern	**Similarities:** Presence of perceived bodily dysmorphic concern. **Differences:** Absence of compulsive, repetitive, or ritual behaviours in BDD.
Obsessive-compulsive disorder (OCD)	**Similarities:** Involves time-consuming, repetitive behaviours, including grooming rituals. **Differences:** In OCD, grooming rituals are not aimed at correcting perceived appearance flaws but may be driven by fears of contamination or a need for things to feel "just right."
Excoriation disorder	**Similarities:** Repetitive skin picking. **Differences:** In excoriation disorder, skin picking is not aimed to improve appearance. In BDD, skin picking is done to improve the appearance of perceived skin defects.

Trichotillomania	**Similarities:** Repetitive hair pulling. **Differences:** Trichotillomania refers to a condition where individuals struggle to resist the urge to pull out their hair. However, this behaviour is not aimed at enhancing appearance. In BDD, hair pulling is intended to address perceived defects in facial or body hair.
Eating disorders	**Similarities:** Distressing and impaired preoccupation with appearance. **Differences:** In eating disorders, the focus of preoccupation is on body weight and shape, leading to disordered eating behaviours to lose weight.
Social anxiety disorder	**Similarities:** Avoidance and distress in social situations. **Differences:** Social avoidance in SAD stems from a fear of embarrassment due to one's actions or words. In BDD, social anxiety is specifically related to fears of negative judgments about perceived appearance flaws.
Depression	**Similarities:** May include feelings of ugliness as part of low self-esteem. **Differences**: In depression, concerns about appearance are not the primary focus. Unlike BDD, depression does not usually involve repetitive behaviours like mirror checking or excessive grooming.

Therefore, when differentiating BDD from other conditions, it is crucial to determine if the core issue revolves around perceived flaws in one's appearance [27]. For instance, although BDD and OCD are frequently comorbid and share traits like perfectionism, recurrent thoughts, and repetitive and avoidant behaviour [78], BDD is diagnosed when the concerns are specifically related to appearance, such as having obsessive thoughts about one's skin not being smooth [27]. In contrast to compulsions in OCD, BDD-specific rituals are carried out to hide, improve, or check perceived appearance flaws, like repeatedly checking one's appearance in the mirror or seeking cosmetic surgery. Similarly, distinguishing between BDD and SAD involves identifying whether the fear of negative evaluation by others is due to one's appearance rather than broader concerns such as being embarrassed, being liked, or being viewed as unintelligent [27].

When it comes to distinguishing between BDD and anorexia nervosa or other eating disorders, one way to differentiate them is by identifying the presence of eating pathology, which is less typical of BDD [79]. However, weight concerns might be less informative for this distinction as clinically significant weight concerns can also occur in individuals with BDD [80]. Specifically, muscle dysmorphia, a subtype of BDD, may have greater overlap with eating disorders due to excessive dieting, exercise, and preoccupation with weight and body shape. Muscle dysmorphia is more common in males, but research on its connection with eating disorders is still limited [79].

BDD may involve delusional beliefs that can occur on a continuum, which can sometimes resemble psychotic thinking. However, it differs from disorders like schizophrenia or schizoaffective disorder, which involve a broader range of psychotic symptoms and unusual behaviour, as the delusional belief in BDD only involves one's appearance. In summary, BDD shares various features with other disorders, but it is distinguishable by a significant disconnect between physical appearance and body image, poor insight, and high levels of suicidality [27].

Prevalence of Body Dysmorphic Disorder in Aesthetic or Cosmetic Setting

The estimated prevalence of BDD in the general population ranges from 0.7% to 3.2% [81-83]. Veale et al. [83] reported higher prevalence rates in specific settings such as adult psychiatric outpatients (5.8%) and inpatients (7.4%). Moreover, prevalence rates surged even higher in non-psychiatric settings, including general cosmetic surgery (13.2%), rhinoplasty surgery (20.1%), orthognathic surgery (11.2%), orthodontics/cosmetic dentistry settings (5.2%), dermatology outpatients (11.3%), and cosmetic dermatology outpatients (9.2%).

BDD is notably more prevalent among individuals seeking aesthetic treatments, particularly concerning facial features [8, 11]. Singh and Veale [3] found higher frequencies of BDD in cosmetic-related settings such as dermatology (11.3%), cosmetic surgery (13.2%), orthognathic surgery (11.2%), and rhinoplasty surgery (20.1%). A systematic review by Minty & Minty [84] revealed varying prevalence rates among dermatology patients (2.1% to 36%) and general cosmetic surgery patients (2.9% to 57%). Kattan et al. [25] reported a prevalence of approximately 5% in cosmetic patients, consistent with findings by Bouman et al. [26]. Furthermore, Salari et al. [85], in a recent systematic review and meta-analysis based on 48 articles, found a BDD prevalence of 19.2% among 14,913 individuals seeking cosmetic surgery.

Given that BDD often manifests in preoccupations with facial features, skin, and hair [17,18,83], dermatologists are frequently consulted by individuals with BDD [86, 87]. This explains the higher prevalence rate found in cosmetic and aesthetic clinical settings compared to the general population.

Screening and Diagnosis Tools of Body Dysmorphic Disorder

Presently, there are no established clinical guidelines for accurately screening BDD [8]. Nevertheless, there are several screening and diagnosis tools available for identifying BDD patients, including the diagnostic criteria such as the Structured Clinical Interview for DSM-IV (SCID) [5], DSM-5 [1] as well as Body Dysmorphic Disorder Questionnaire (BDDQ) [29]. Diagnostic tools are recommended for use not only for diagnosis purposes but also for the screening phase [88].

The SCID is a reliable, valid semi-structured interview and can be utilized to diagnose BDD as well as any comorbid conditions. It is the standard used for diagnosing psychological disorders in a psychiatric setting [89]. It is a 24-question, structured clinical interview designed for DSM-IV Axis I Disorders. However, this questionnaire can take anywhere from 15 minutes to several hours to administer, which may make it impractical in busy clinical settings. Furthermore, it was developed primarily for psychiatric contexts and has not been validated for use in cosmetic surgery settings [5].

The DSM-5 and BDDQ have proven valuable tools and have been extensively used for assessing BDD prevalence in specific patient groups and the general population [25]. Phillips and Hollander [90] strongly recommended the use of DSM-5 criteria to screen for BDD due to its potential impact on cosmetic post-procedural outcomes. To diagnose BDD using the DSM-5, the following criteria must be met [91]:

1. The individual is preoccupied with perceived defects or flaws in their physical appearance that are either imperceptible or only minimally noticeable to others.
2. The individual engages in repetitive behaviours due to their preoccupation.
3. This preoccupation causes significant distress or impairment in one or more major areas of their daily life.
4. The preoccupation cannot be better explained by an eating disorder.

BDDQ is a four-item tool designed based on the established criteria for BDD as outlined in DSM-5 [92]. The BDDQ is a self-administered screening tool that is brief (taking 1-2 minutes to complete), allowing patients to fill it out while waiting to see the surgeon [5]. The BDDQ has been validated using the SCID-V, the gold standard diagnostic tool that can be used for BDD within the field of plastic and reconstructive surgery [93]. This questionnaire has high sensitivity (94%) and specificity (90%) for identifying BDD [94], making it a robust alternative to the gold standard for identifying BDD symptoms and recommended to be included as a standard assessment tool in these fields [11, 94-96]. This screening tool has shown good predictive value outside psychiatric settings. It has been employed in numerous studies to estimate the prevalence of BDD across various populations, including those undergoing oculoplastic surgery, oral and maxillofacial surgery, rhinoplasty, and patients with acne. [11,97,98]. The BDDQ is the preferred questionnaire in dermatology, plastic surgery, and dentistry due to its concise self-report questions that align with the DSM-5 diagnostic criteria [95,96]. The BDDQ also serves as the basis for modified versions tailored to specific populations, such as the BDDQ-DV and BDDQ-AS [95].

There are additional tools available that can assist in diagnosing BDD by differentiating it from other comorbid disorders. For instance, the Hospital Anxiety and Depression Scale (HADS) is useful for assessing levels of anxiety and depression. HADS can aid in diagnosing BDD by ruling out comorbid conditions such as depression or SAD, which are commonly associated with BDD. The HADS is a 14-item self-report tool and has been validated for use to screen anxiety disorders and depression effectively in various settings, including non-psychiatric hospitals, general practice, psychiatric clinics, and among individuals in the general population [99,100].

Individuals with BDD often feel reluctant to disclose their symptoms, particularly to clinicians. Therefore, administering a Health-Related Quality of Life (HRQoL) assessment can offer valuable insights into the patient's daily life and help identify underlying issues. Since preoccupation with perceived flaws that cause significant distress or impairment in one or more major areas of daily life is a diagnostic criterion for BDD, assessing a patient's QoL can provide important information for diagnosing the condition. Ishak et al. [101] stated that patients with BDD experience significant symptom severity and functional impairments and endure a substantial negative impact on their QoL. It was found that factors such as the severity of BDD symptoms are strongly associated with the impairment of QoL [16].

BDD also impacts various aspects of QoL, such as family life, overall well-being, and job security. Compared to the general population, individuals with BDD tend to have lower incomes, are less likely to live with a partner, and have higher unemployment rates [30]. Low health-related QoL, often reported in BDD patients [102], includes low general mental health, enjoyment, social adjustment, and social functioning [103]. Furthermore, patients with BDD often have significantly poor mental health status and mental health-related QoL, including diminished mental health, role limitations due to emotional problems, and impaired social functioning [101]. Evidence indicates that greater

severity of BDD symptoms is strongly associated with poorer mental health-related QoL [101]. Additionally, BDD also impacts physical health-related QoL, such as physical functioning, bodily pain, and role limitations due to physical problems. However, these effects are not as pronounced as those on mental health-related QoL [102].

Among HRQoL tools that can be utilized is the disease-specific QoL, such as the Dermatology Life Quality Index (DLQI), as patients with BDD are likely to visit dermatology settings due to their concerns about appearance. The DLQI is a validated self-report tool specifically designed for assessing QoL in dermatological contexts and has been widely used [104]. It consists of 10 questions that evaluate QoL in six subdomains: symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment. The higher the score on the DLQI, the greater the impairment in the individual's QoL [33]. Brohede et al. [33] conducted a prevalence study in dermatology settings using BDDQ along with HADS and DLQI. The study found that patients who screened positive for BDD exhibited high levels of anxiety and depression, and their QoL was significantly impaired. Scores for both HADS and DLQI are higher in BDD-positive patients.

In addition to the tools mentioned above, other questionnaires have also been used in clinical settings. **Table 2** shows several of these tools for screening and diagnosing BDD (for more information, see Sjogren [88].

Table 2 Tools for Screening and Diagnosing BDD [88].

Type of tools	Purposes
Body Dysmorphic Disorder Questionnaire (BDDQ)	Screening
Body Dysmorphic Disorder Questionnaire- Dermatology Version (BDDQ-DV)	Screening
Body Image Disturbance Questionnaire (BIDQ)	Screening
Structured Clinical Interview for DSM-5, with BDD module (SCID)	Diagnosis
Body Dysmorphic Disorder Examination (BDDE)	Diagnosis and severity

However, there are several limitations to the screening and diagnostic tools discussed above and other tools available in the literature. Some of the existing tools, such as SCID, are time-consuming and challenging to interpret without specialized psychometric training [8]. Furthermore, many of these tools have not been extensively validated, and those that have been validated are often limited to specific fields. A review conducted by Pereira et al. [95] concluded that, despite its high prevalence, there are still limited validated screening tools available for BDD, specifically within the aesthetic field [81,82,105-107]. Further research is needed to identify and develop optimal screening tools that can be effectively used in clinical settings for diagnosing BDD.

Underdiagnosed of Body Dysmorphic Disorder in Cosmetic and Aesthetic Clinical Practice

BDD is currently underdiagnosed in cosmetic and aesthetic medical settings. It is often ignored by cosmetic or aesthetic medical practitioners, especially when it involves monetary gains from performing the procedures. According to Kattan et al. [25], the prevalence of BDD was indeed underestimated by cosmetic treatment providers based on the reported prevalence of BDD in cosmetic settings [9,108], along with the results of their study. BDD patients tend to hide the presence of their illness to undergo any form of cosmetic procedure [26].

Studies have shown that there are difficulties in accurately diagnosing BDD or identifying patients during preoperative cosmetic or aesthetic medical consultations. This situation will increase the likelihood of conducting unnecessary treatment with ethical and medicolegal repercussions [7,109]. In a survey conducted among American Society for Dermatologic Surgery (ASDS) practicing members, it was discovered that 61% of ASDS dermatologists identified cases of BDD in individuals only after a procedure had been carried out, even though 94% of the surveyed dermatologists were acquainted with BDD, and 62% considered it a contradiction to aesthetic treatment [4]. Besides that, a survey among members of the American Society for Aesthetic Plastic Surgery (ASAPS) revealed that 85% of respondents had conducted surgery on a patient with BDD, which they discovered only after the procedure. Additionally, of those surgeons, 82% reported that these patients experienced unsatisfactory postoperative results [110].

Among factors for the underdiagnosis of BDD cases may be a lack of training or experience in diagnosing psychological disorders among cosmetic and aesthetic clinical practitioners. Therefore, they might find it especially challenging to assess if the preoccupation with appearance is excessive, particularly in cases of mild defects, contributing to the ongoing debate about whether the BDD incidence in the aesthetic population is underestimated [8,82]. A survey conducted on 402 participants revealed that only two participants were correctly diagnosed as BDD patients by aesthetic surgeons when 42 of them were screened positive on a BDD questionnaire, and 16 were clinically suspected of having BDD [5]. Therefore, greater familiarity with BDD diagnostic criteria may lead to a higher rate of accurately identifying cases of BDD [25] by clinical practitioners.

Other factors contributing to the underdiagnosed of BDD is that it can be challenging to distinguish BDD from other psychiatric disorders with overlapping features, such as social anxiety, depression, OCD, and eating disorders [76] as BDD may cooccur with these psychiatric conditions. BDD is rarely identified, even within inpatient psychiatry, unless a detailed diagnostic interview is carried out [111]. The symptoms can overlap with other comorbidities, which complicates the diagnosis of BDD [112]. For instance, both eating disorders and BDD involve disturbances in body image. However, dissatisfaction with eating disorders is primarily centred on body weight and shape. In contrast, in BDD, concerns about appearance are more varied and are not typically associated with dysfunctional eating behaviours [113]. Therefore, there is a possibility that the patient will receive a diagnosis of a comorbid disorder while the presence of BDD remains undetected [3].

Discussion

Impact of treating body dysmorphic disorder patient towards cosmetic and clinical medical practice

BDD patients are commonly found in primary care and dermatology settings compared to psychiatric practice [114]. This is because most of the patients have a limited understanding of their

own condition and thus might not be aware of the importance of undergoing psychiatric treatment [33]. Many BDD patients find themselves seeking aesthetic or cosmetic treatments instead of mental health professionals, which is most likely unnecessary and fails to alleviate their internal distress [115,116]. Their satisfaction following treatments is temporary, and their anxiety will then be shifted to another part of their body [29]. Ultimately, the treatment they received left them with unsatisfying results even though it was medically successful [117]. As individuals with BDD frequently experience dissatisfaction with the treatments they receive, they may potentially shift the blame to the clinical practitioners providing those treatments. They may demand a comprehensive assessment, multiple consultations, and consult various physicians, among other actions [118]. Some of them might assert that the treatment yielded no results and even worsened their appearance [92,119].

BDD patients are also associated with physical aggression and violence [36]. Approximately one-third of individuals with BDD reported violent or aggressive behaviours related to their condition [120,121]. Consequently, there is a possibility that the interaction between BDD patients and cosmetic providers is getting out of hand, placing the latter at risk of physical harm. Several surveys conducted among clinical and cosmetic practitioners showed that there have been occasions where they have been threatened by BDD patients either verbally, physically, or even legally. The study by Bouman et al. [26] found that around 16.2% of the participants reported having been threatened verbally by BDD patients, and 6.4% faced legal threats. Meanwhile, Sarwer [110] discovered that 33% of the participants had experienced legal threats, 10% had encountered both legal and physical threats, and 2% had faced physical threats alone from BDD patients. In another study, Sarwer et al. [4] found that 9% of participants had been subjected to legal threats, and 2% experienced physical threats from BDD patients. Besides that, Kattan et al. [25] reported that 9.2% of the participants had been verbally threatened by BDD patients, while 1% had been threatened physically. Furthermore, there has been an instance where BDD patients carried out an attack due to dissatisfaction with the postoperative or post-treatment outcomes [32]. One case involved a patient assaulting a plastic surgeon with a knife. At the same time, another attempted to murder a dermatologist, and there was a case where one dermatologist and two plastic surgeons were murdered by BDD patients [68,122].

Therefore, addressing the underdiagnosis of BDD is of paramount importance, especially among clinical and cosmetic practitioners, to avoid unwanted outcomes. Besides that, it is imperative to raise awareness about BDD among clinical and cosmetic practitioners, and they should familiarize themselves with clinical guidelines and diagnostic criteria of BDD, which will enable them to effectively care for these patients, ultimately sparing them from unnecessary financial, physical, and psychological strains of unwarranted procedures [25].

Approach to managing body dysmorphic disorder

Evidence indicates that BDD frequently remains undiagnosed despite its prevalence and impact [83]. As mentioned earlier, this may be partly due to BDD sufferers' reluctance to seek mental health support due to feelings of shame and embarrassment, lack of self-awareness, and preferences for non-mental health treatment like cosmetic surgery [123]. However, even when individuals with BDD do seek mental health care, they are unlikely to openly discuss their appearance concerns [83]. The combination of patients' reluctance to disclose their symptoms and clinicians' limited awareness of BDD can lead to misdiagnosis, with BDD symptoms sometimes

being mistaken for other common comorbid conditions such as depression or SAD [83]. Additionally, distinguishing mild BDD symptoms from normal concerns about appearance can be particularly challenging, especially among adolescents [124].

A key aspect in effectively managing BDD is the prompt recognition of its clinical presentation. For detection of BDD, screening tools and direct questioning about the symptoms help identify the condition as the patient will often not disclose their symptoms voluntarily. This will prompt referral to psychiatric evaluation [91]. The direct questioning approach should be approached with sensitivity and in a non-judgmental manner to aid in detecting BDD symptoms [91]. Refrain from engaging in arguments with the patient, especially regarding their physical appearance, as arguing to correct the patient's fixed false beliefs is not effective. Instead, focus on optimizing the treatment of the patient's psychiatric symptoms [125] by referring the patient to mental health professionals.

In the initial psychiatric evaluation, the objectives are to establish a trusting relationship, gather detailed historical information related to the presenting issue, and perform a mental status examination. Building rapport with patients with BDD is crucial, especially for those with a lack of insight who may be reluctant to disclose their history or engage in their treatment plan. The evaluation should incorporate interview questions that effectively address each of the DSM5-TR diagnostic criteria for BDD [91].

Way forward

The level of awareness and understanding of BDD among the public and health professionals in Malaysia is still low. Additionally, the prevalence of the disorder remains unknown, contributing to a low detection rate. To address this issue, the first step should be determining the prevalence of BDD among Malaysians. Only then can appropriate countermeasures be developed. Besides studying prevalence, research on the awareness and knowledge of BDD among clinicians and the public should be conducted in various settings.

Meanwhile, public awareness can improve over time, but it remains a major obstacle for individuals with BDD to spontaneously disclose their symptoms, even when these are their primary concerns. As previously stated, individuals with BDD are often more likely to present to clinicians outside of a psychiatric setting initially. Therefore, it is crucial for clinicians to screen for BDD to enhance its recognition. Professionals in dermatology, plastic surgery, primary care, and dentistry can play a vital role in diagnosis by conducting screenings and identifying the condition. Following this, clinicians should refer patients to psychiatric healthcare professionals and work together to create a comprehensive treatment plan for the patient [26].

Hence, collaboration between aesthetic clinicians and mental health professionals is important for providing comprehensive care to individuals with BDD, as these patients warrant a referral for psychiatric evaluation. Given that many individuals with BDD seek aesthetic or cosmetic procedures to address their perceived flaws, aesthetic clinicians are often among the first to identify and refer patients who may have underlying psychological health issues. Fostering this collaboration will ensure that patients receive appropriate treatment for both their psychological and physical concerns, preventing them from undergoing unnecessary or excessive cosmetic procedures that could potentially exacerbate their condition. A standardized guideline for the referral process needs to be developed to ensure a smooth referral flow. A regulatory body needs to be formed to develop these guidelines. Several important key points can be included in this guideline:

1. Screening method for BDD:

   - Develop standardized screening tools for BDD specifically for the Malaysian population.
   - Provide detailed information about the patient's concerns and any observations related to their appearance-focused behaviour. This helps in making a diagnosis and classifying the urgency of the referral.

2. List of mental health professionals for treating BDD:

   - Establish a directory of mental health professionals who are experienced in treating BDD to facilitate smooth referrals and ensure that patients receive appropriate treatment and support.

3. After-Referral Follow-Up Procedures:

   - Establish procedures to ensure patients receive appropriate care after being referred to mental health professionals.
   - Implement a method to monitor the patient's progress and adherence to the treatment plan and modify the treatment plans as necessary.

Conclusions

Screening for BDD by aesthetic practitioners is critically important [126] as it may help them recognize the patient with BDD or other psychiatric conditions that might pose a contraindication for procedures [127,128]. A thorough understanding of the diagnostic criteria for BDD may result in a higher number of accurate BDD diagnoses and fewer cases going undetected [25]. In Malaysia, there is a significant lack of information on the prevalence and awareness of BDD among cosmetic and clinical practitioners. Addressing this research gap is essential to improve clinical outcomes and patient care. Future studies should focus on assessing BDD prevalence specifically within Malaysian populations, as well as evaluating the level of awareness and knowledge among aesthetic and cosmetic practitioners. Additionally, research should explore the barriers that hinder the recognition and diagnosis of BDD in clinical practice. By bridging these gaps, we can enhance early detection, ensure appropriate management, and mitigate potential adverse impacts on both patients and practitioners.

Conflicts of Interest

The authors declare no conflict of interest.

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