



Prevalence of Body Dysmorphic Disorder in Private Aesthetic Clinical Settings in Four Latin American Countries: A Cross-Sectional Study



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Abstract

Background Body dysmorphic disorder (BDD) is a psychiatric condition characterized by persistent concern with non-existent or minor defects in one's physical appearance. BDD can be difficult to identify as patients often have limited insight into the condition.

Objective We aimed to determine the prevalence of BDD in patients presenting to private aesthetic clinical settings in four Latin American countries.

Methods We conducted a cross-sectional study From August to October 2022 to evaluate the prevalence of BDD among 360 patients seeking nonsurgical cosmetic procedures in Chile, Mexico, Argentina, and Colombia using the Dysmorphic Concern Questionnaire (DCQ). We reported prevalence estimates for the lowest and highest previously proposed DCQ cutoff points.

Results The DCQ total scores in the study population ranged from 0 to 21, with a mean total score of 5.1 ± 3.4 . The prevalence of positive screening results for BDD (total DCQ score ≥ 9) was 15.8%. The prevalence of a likely diagnosis of BDD (total DCQ score of ≥ 17) was 0.83%.

Limitations The convenience sample limited the generalizability of the findings to Latin America.

Conclusion We encourage colleagues to be more mindful of this diagnosis and to facilitate earlier psychological evaluation in patients who are positive for BDD.

Level of Evidence III This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors www.springer.com/00266.

Keywords Body dysmorphic disorder · Screening · DCQ · Body image · Social media

Introduction

Body dysmorphic disorder (BDD), formally known as dysmorphophobia, is a psychiatric condition characterized by persistent concern with nonexistent or minor defects in one's physical appearance that are either unnoticeable or only slightly visible to others [1]. Patients engage in repetitive behaviors (such as mirror checking, skin picking, excessive grooming, and camouflaging with makeup) or intrusive acts (e.g., comparing one's appearance with that of others) in response to these concerns, resulting in painful emotions [1, 2]. Preoccupation is severe enough to cause significant distress and impairment, leading to poor quality of life and social isolation [3].

The etiology of BDD, similar to most psychiatric disorders, is complex [4]. Previous research has postulated that significant life events, such as teasing related to physical stigma and specific traumatic experiences, contribute to the development and persistence of appearance concerns [4, 5]. For example, Osman et al. [6] found that

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individuals with BDD reported having experienced more frequent distressing images of being bullied or teased because of their appearance than mentally healthy controls did. In addition, Didie et al. [7] reported that 78.7% of patients with BDD reported a history of childhood maltreatment.

Comorbid psychiatric disorders are common with BDD and result in more significant functional impairment [2]. Studies have estimated that individuals with BDD are 2.6 times more likely to engage in suicide attempts and four times more likely to experience suicidal idealization than those without the condition [8]. Hence, failure to recognize BDD can lead to poor physical and psychiatric outcomes in patients, and without appropriate treatment, this condition appears to have a chronic course. BDD can be difficult to identify as patients often have limited insight into the condition. In addition, many individuals with BDD seek medical attention from non-psychiatric specialties and may not recognize themselves as suffering from mental disorders [1, 2].

Since the start of the COVID-19 pandemic, the prevalence of BDD has potentially increased due to two factors: a recent rise in social media use and the growing accessibility and popularity of cosmetic surgery [9]. Time spent on social media has been associated with increased body dissatisfaction, which may trigger dysmorphic concerns and obsessive thoughts about physical appearance. While scrolling on social media, users are constantly exposed to hundreds of images, and each of these exposures can impact perceived beauty standards, certainly influencing the cosmetic ideals that BDD patients try to achieve [10]. Latin American countries are well represented among the top consumers of aesthetic procedures internationally. Based on the number of surgical and nonsurgical cosmetic procedures performed in 2021, four of the top 10 countries are in Latin America: Brazil, Mexico, Argentina, and Colombia [11]. As social and cultural factors may influence the importance placed on physical appearance in this region, we aimed to determine the prevalence of BDD in patients presenting to private aesthetic clinical settings in four Latin American countries.

Methods

We conducted a cross-sectional study from August to October 2022 to evaluate the prevalence of dysmorphic symptoms and body dysmorphic disorder (BDD) among patients aged ≥ 18 years seeking aesthetic procedures in four Latin American countries (Chile, Mexico, Argentina, and Colombia) using the Spanish-translated and previously validated Dysmorphic Concern Questionnaire (DCQ) version). The DCQ is a short screening tool designed by

Oosthuizen et al. [12] to assess dysmorphic concerns in a clinical setting. The questionnaire is a 7-item, self-administered instrument that quantifies the level of severity of appearance-related concerns/behaviors characteristic of BDD on a 4-point scale ranging from 0 (“not at all” to 3 “much more than most people”), with a total maximum score of 21 [13]. The aforementioned questionnaire was deemed suitable for inclusion in this study because of its simplicity of application and the directness of the patient responses. At the outset of the interaction, the researchers delegated the task of completing the questionnaire to patients, who were required to do so manually by handwriting their responses. At the beginning of the encounter, the study clinicians left the patients to complete the questionnaire. Higher DCQ scores indicate greater dysmorphic concerns [14]. All patients were informed of the study’s voluntary nature and reassured that non-participation would not affect ongoing aesthetic treatment. During the study period, all evaluated patients were included in the analysis, and no sampling was conducted. The study was conducted in accordance with the guidelines of the Declaration of Helsinki. Surveys were de-identified and responses were entered into an electronic database.

Descriptive statistics were used to assess participants’ baseline demographic characteristics. Categorical variables were summarized using frequencies and percentages, while continuous variables were summarized using means and standard deviations. Differences between groups in categorical variables were analyzed using the chi-square test. Differences between groups with continuous variables were analyzed using Mann–Whitney and Kruskal–Wallis tests. Different cutoff values have been proposed for the DCQ scale. We reported prevalence estimates for the lowest and highest previously proposed DCQ cutoff points. A cut-off score of 9 has been validated as a positive screen for BDD, with a specificity of 90.6% and a sensitivity of 96.4%, to ensure that more patients with dysmorphic concerns are identified when screening for BDD in dermatologic and cosmetic surgical settings [9, 13]. A higher cut-off score of 17 has been proposed to discriminate patients with BDD from individuals diagnosed with eating disorders [15, 16]. All tests were 2-sided, and p-values less than 0.05 were considered statistically significant. All statistical analyses were conducted using the Stata Statistics software (version 14.0; StataCorp, College Station, TX, USA).

Results

A total of 360 individuals were assessed, with a mean age of 44.0 ± 13.9 and a range of 18–78 years (see Table 1). The response rate to the questionnaire was 100%. Women

constituted 85.0% (306) of the study population, with only 52 participants being males (14.4%). Approximately 30.3% of the patients were recruited at dermatology/plastic surgery private practices in Chile, followed by Argentina (25.3%), Colombia (22.5%), and Mexico (21.9%). The mean age was significantly higher in women than in men (44.9 ± 14.2 vs. 39.0 ± 10.8 ; p value: 0.0047). Patients from Chile had a significantly higher mean age (51.6 ± 10.2) than those from Mexico (37.9 ± 12.3 ; p value < 0.001), Argentina (46.7 ± 15.2 ; p value: 0.006), and Colombia (36.6 ± 11.9 ; p value < 0.001).

The severity levels of the appearance-related concerns characteristic of BDD are presented in Table 2. About 4.2, 2.8, and 4.2% of patients reported “much more than other people” in the DCQ items regarding the degree of concern with physical appearance, spending excessive time worrying about defects, and spending significant time covering up defects, respectively. Patients responded “much more than other people” in the other DCQ items less frequently, including the degree to which they consider being malformed (1.4%), concerns about bodily malfunction (0.8%), the amount of consultation with physicians about these concerns (1.7%), and having been told by others that they are normal looking, but firmly believing something is wrong with their appearance (1.9%).

The DCQ total scores (sum of items) among the study population ranged from 0 to 21, with a mean total score of 5.1 ± 3.4 (see Table 3). Women and men had a mean DCQ total score of 5.2 ± 3.5 (0–21) and 4.6 ± 3.2 (0–16), respectively. There was no statistically significant difference in the mean DCQ total score when stratified by sex (p value = 0.364). Patients from Mexico reported the highest mean DCQ total score (5.5 ± 3.8), followed by Chile (5.3 ± 3.3), Colombia (4.9 ± 2.9), and Argentina (4.6 ± 3.6). However, there was no significant difference in the mean DCQ total score when stratified by country ($p = 0.172$).

The prevalence of positive screening for BDD in the study population (total score of ≥ 9 on the DCQ scale) was 15.8% (57/360). Mexico had the highest prevalence of positive screening for BDD (17.7%), followed by Chile (17.4%), Argentina (14.3%), and Colombia (13.6%).

However, there was no statistically significant difference in the proportion of patients with positive screening for BDD across countries ($p = 0.827$). In addition, the prevalence of a likely diagnosis of BDD in the study population (total score of ≥ 17 on the DCQ scale) was 0.83% (3/360). There was no statistically significant difference in the proportion of patients with a probable diagnosis of BDD across countries ($p = 0.218$). The correlation between the type of procedure and outcomes achieved could not be determined because of the anonymity of the questionnaires administered.

Discussion

To the best of our knowledge, this is the first cross-sectional study to estimate the prevalence of body dysmorphic disorder (BDD) among patients seeking non-surgical cosmetic procedures in four Latin American countries. Overall, the prevalence of BDD in our study population was 15.8% (with only 0.83% of patients obtaining a total DCQ score of ≥ 17), which is consistent with the prevalence reported in the literature.

The prevalence of BDD varies depending on the population and screening instruments used [17]. In 2015, Veale et al. [18] conducted a systematic review to determine the weighted prevalence of BDD in different settings. The locations of the studies were Germany, France, the United States, the United Kingdom, Italy, Iran, Turkey, Sweden, Belgium, Chile, The Netherlands, Australia, Brazil, Pakistan, China, Taiwan, Japan, and Singapore. They found that the prevalence was highest in cosmetic-related settings such as general dermatology (11.3%), general cosmetic surgery (13.2%), and rhinoplasty surgery clinics (20.1%). Conversely, the estimated prevalence of BDD in the general population ranges from 0.7 to 2.9% [9, 19]. In Saudi Arabia, the reported prevalence of BDD in the general population is between 4.2 and 8.8% [20]. Only a few studies have screened for BDD in aesthetic clinical settings using validated screening tools or clinical interviews in Latin America [19]. A study conducted by Calderón et al.

Table 1 Demographic characteristics of participants by country

Patient characteristic	Country					p value
	Chile (109)	Mexico (79)	Argentina (91)	Colombia (81)	Total (360)	
Age, Mean \pm SD, years	51.6 ± 10.2	37.9 ± 12.3	46.7 ± 15.2	36.6 ± 11.9	44.0 ± 13.9	< 0.001
Sex						
Male, % (n)	12.8 (14)	19.0 (15)	6.6 (6)	21.0 (17)	14.4 (52)	0.028
Female, % (n)	87.2 (95)	78.5 (62)	93.4 (85)	79.0 (64)	85.0 (306)	

SD standard deviation

Table 2 Severity level of appearance-related concerns and behaviors characteristic of BDD

DCQ item, % (n)	Patient's score			
	0. Not at all	1. Like most people	2. More than other people	3. Much more than other people
1. The degree of concern with physical appearance	11.7 (42)	61.4 (221)	22.8 (82)	4.2 (15)
2. The degree to which the person considers being misshapen or malformed	69.7 (251)	23.3 (84)	5.6 (20)	1.4 (5)
3. Concerns about bodily malfunction (excessive body odor, flatulence or sweating)	66.9 (241)	26.9 (97)	5.3 (19)	0.8 (3)
4. The amount of consultation with cosmetic surgeons, dermatologists, or physicians about these concerns	27.2 (98)	51.9 (187)	19.2 (69)	1.7 (6)
5. Having been told by others/doctor that the person is normal looking, but strongly believing something is wrong with appearance/body functioning	50.6 (182)	42.2 (152)	5.3 (19)	1.9 (7)
6. Spending excessive time worrying about defect in appearance/body functioning	40.3 (145)	40.8 (147)	16.1 (58)	2.8 (10)
7. Spending significant time covering up defects in appearance/body functioning	46.1 (166)	36.7 (132)	13.1 (47)	4.2 (15)

BDD body dysmorphic disorder; DCQ dysmorphic concern questionnaire

Table 3 DCQ total score and participants screening positive for BDD by country

Patient characteristic	Country					p value
	Chile (109)	Mexico (79)	Argentina (91)	Colombia (81)	Total (360)	
DCQ total score, mean±SD	5.3 ± 3.3	5.5 ± 3.8	4.6 ± 3.6	4.9 ± 2.9	5.1 ± 3.4	0.172
<i>Cut-off score</i>						
≥ 9, % (n)	17.4 (19)	17.7 (14)	14.3 (13)	13.6 (11)	15.8 (57)	0.827
≥ 17, % (n)	0.0 (0)	2.5 (2)	1.1 (1)	0.0 (0)	0.83 (3)	0.218

SD standard deviation

[21], which explored the prevalence of BDD among Chilean dermatological patients, found a prevalence of 12.1%. A study conducted by Morita et al. [22], which explored the prevalence of BDD among patients attending a public dermatological service in Brazil, reported a BDD prevalence of 48% among women with aesthetic complaints.

Social media use has significantly increased since the start of the COVID-19 pandemic, which may contribute to the increased occurrence of BDD [9]. Social media has an undeniable influence on body image, with BDD associated with longer time spent on social media platforms, which encourages unrealistic beauty standards and emphasizes appearance as an important factor of expectation [9, 23]. There are now 4.76 billion active social media users worldwide, equating to 59.4% of the world's population, with a total of 5.44 billion people using mobile phones by early 2023 [24]. In South America, social media use is

growing, with 71.3% social media penetration and 112% mobile connectivity, representing more than one mobile phone per person [24, 25].

The COVID-19 pandemic has led to a global surge in the demand for facial plastic surgery. People's adaptation to stay-at-home measures resulted in a large proportion of individuals working remotely from home with extensive use of video conferencing for communication, which affected the perception of people's facial appearance and accentuated their awareness of displeasing facial features [26]. Given the rapidly increasing accessibility of minor cosmetic procedures, such as nasal reshaping using injectable fillers, further research is needed to determine the prevalence of BDD in other non-surgical cosmetic settings and develop interventions to reduce the burden of this condition.

Many practitioners are reluctant to perform aesthetic interventions in patients who are believed to have BDD. Patients with dysmorphic concerns tend to report poor satisfaction following a cosmetic procedure, with an increased risk of unnecessary elective treatments and cases of aggression and legal actions toward the surgeon [19, 27]. In addition, patients with BDD expressing significant emotional distress and functional impairment may develop anxiety, depression, or even commit suicide. These factors emphasize the importance of screening for BDD before nonsurgical aesthetic interventions. Many surgeons rely primarily on intuitive information from clinical encounters to determine whether a patient has BDD or not.

Recognizing the signs of BDD and identifying high-risk patients during preoperative consultations are crucial, considering that appropriate management may involve psychiatric care rather than cosmetic treatment [19, 27]. Senín-Calderón et al. [28] adapted the structure of the DCQ to Spanish, enabling healthcare professionals in Spanish-speaking countries to make a more accurate diagnosis of dysmorphic concern.

This study has some limitations. First, the convenience sample limited the generalizability of the findings to all patients in Latin America. Second, this study used the DCQ as a screening measure for BDD, but using a different instrument or criteria would produce different results. Third, the use of a self-reported questionnaire for the screening of BDD could have created bias in the way patients responded to the questions. However, these limitations are common to similar studies.

In summary, the estimated prevalence of BDD was consistent with the results reported in the literature.

This study represents the first cross-sectional investigation to assess the occurrence of body dysmorphic disorder (BDD) in private aesthetic clinical settings across four Latin American nations. By conducting this study, we aimed to increase awareness and understanding of BDD in both the scientific community and patients, as evidence indicates that cosmetic treatments for these individuals may actually exacerbate complications and psychological symptoms. Instead of providing treatment, the most effective approach is to refer patients to psychological therapy. Our findings suggest that we should be more proactive in identifying individuals with BDD and providing appropriate treatment.

Further research is needed to evaluate the burden of BDD, considering the high impact of social media and the increasing demand and access to non-surgical cosmetic

procedures, such as nasal reshaping, as these factors may influence the occurrence of BDD.

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Declaration

Conflict of interest None declared.

Patient consent Not applicable.

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