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A study quantifying body dysmorphophobia in patients with cosmetic concerns visiting a dermatology clinic

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ABSTRACT

Objectives: Body dysmorphic disorder (BDD) is a commonly encountered condition in the practice of cosmetic dermatology that is often unidentified. Recognition of BDD is important while assessing a patient for an esthetic procedure. While a few studies have been performed previously to screen patients for BDD, this study was performed to quantify and compare the extent of BDD in patients attending dermatology clinics with cosmetic concerns.

Material and Methods: A descriptive cross-sectional observational study was conducted over a period of 1 month on 100 patients visiting a private dermatological esthetic clinic. The patients presenting with cosmetic concerns were taken as cases, while those with non-cosmetic concerns were taken as controls. Both groups were evaluated for BDD using the BDD-Yale-brown obsessive-compulsive scale (YBOCS) questionnaire.

Results: The overall prevalence of BDD in our study was found to be 7.2%, which is 3 times the prevalence in the general population. About 62.58% (n = 44) of the cases suffered from BDD with a mean BDD-YBOCS score of 12.586 in contrast to 33.33% of controls (n = 10) with a mean score of 5.56 ($P < 0.05$, $P < 0.05$). Of these cases with BDD, 43% suffered from mild, 32% from moderate, 14% from severe, and 11% from extreme symptoms. BDD prevalence and score were found to be higher in younger patients and females ($P < 0.05$). There was no statistically significant difference in the BDD scores with regard to education, employment, marital status, the nature of concern (skin or hair), or the nature of treatment offered (procedural or non-procedural).

Conclusion: BDD is seen in a higher proportion of patients with cosmetic concerns, with 25% having severe BDD. Screening and quantification of BDD using the BDD-YBOCS questionnaire must be undertaken, especially in patients with cosmetic concerns. Patients with severe BDD require proper counseling and may need a psychiatric referral before an esthetic procedure.

Keywords: Body dysmorphic disorder in dermatologic practice, Body dysmorphic disorder-Yale-brown obsessive-compulsive scale questionnaire, Quantification of body dysmorphic disorder

INTRODUCTION

Body dysmorphic disorder (BDD) or dysmorphophobia, first described by Morselli in 1866, is defined as an excessive preoccupation with an imagined or minor disfigurement in one's external appearance, causing clinically significant distress or impairment in functioning.[1] While the fourth edition of the diagnostic and statistical manual of mental disorders considered BDD a somatoform disorder, the fifth edition classifies it with obsessive-compulsive and related disorders [Table 1].[2]

The prevalence of BDD has been found to be 0.7–2.4% in the general population.[3] Skin, being the largest and most visible organ of the body, is often the source of dysmorphophobia. Unfortunately, the prevalence of BDD is often underrecognized and underreported in dermatologic practice.

Most patients with BDD are likely to have unrealistic expectations regarding treatment outcomes and tend to be dissatisfied even with objectively acceptable results. If symptoms of BDD are not acknowledged, the psychological impact of cosmetic concerns would remain unaddressed. While a few studies have been performed to assess the prevalence of BDD, no study, to the best of our knowledge, has yet attempted to quantify its severity in dermatologic esthetic practice.

Hence, this study was performed to not just screen but also quantify and compare the symptoms of BDD in patients presenting to dermatology clinics for cosmetic concerns.

MATERIAL AND METHODS

A descriptive cross-sectional observational study was conducted over a period of 1 month on 100 patients visiting a private dermatology clinic for cosmetic concerns. Inclusion criteria for cases were outpatients of 15 years of age and above with cosmetic concerns for skin and hair, including acne, acne scars, hirsutism, facial melanoses, keloids, hypertrophic scars, striae, tattoos, nevi, and hair loss. Those with non-cosmetic concerns such as papulosquamous disorders, chronic eczema, photodermatoses, urticaria, exanthems, and vesiculobullous and granulomatous disorders were taken as controls. Exclusion criteria for participation included age <15 years, previous or present personal or family history of psychiatric comorbidity, history of substance abuse, and unwillingness to give consent.

Table 1: DSM 5 criteria for body dysmorphic disorder.

1) Preoccupation with one or more perceived imperfections or defects in one's physical appearance that are not apparent or appear minor to others.
2) At some point in the progression/development of the disorder, the individual engages in repetitive behaviors (e.g., checking in the mirror, excessive grooming, skin excoriation, and seeking reassurance) or mental acts (e.g., comparing one's appearance with other ones) corresponding to/reflecting his concern about his physical appearance.
3) The preoccupation results in clinically significant distress or impairment of social, occupational, or other important functioning
4) The preoccupation with appearance is not better explained by dissatisfaction with weight or adipose tissue in an individual whose symptoms meet the diagnostic criteria for an eating disorder.

DSM: Diagnostic and statistical manual of mental disorders

The patients who fulfilled the inclusion and exclusion criteria were inquired for sociodemographic factors including age, sex, level of education, marital status, and employment status. The nature and duration of the cosmetic concern (skin or hair), as well as the treatment offered (procedural or non-procedural), is shown in Table 2. The BDD-Yale-brown obsessive-compulsive scale (YBOCS) questionnaire was administered to the patients by the clinician. The BDD-YBOCS questionnaire, a modification of the YBOCS for BDD, is a 12-item semi-structured clinician-administered measure of BDD symptom severity. It is valid, reliable, and has good internal consistency. The 12 items are rated on a 0-4 scale, where 0 indicates no symptoms, and 4 indicates extreme body dysmorphic symptoms. The first 10 items assess excessive preoccupation, obsessions, and compulsive behavior associated with dissatisfaction towards physical appearance. Items 11 and 12 assess insight and avoidance, respectively. The total score is calculated as the sum of ratings for the 12 items, with a maximum score of 48.[4.] Scores ≤7 were considered subclinical BDD. Scores from 8 to 15 indicated mild BDD, 16–23 represented moderate BDD, while 24–31 and more than or equal to 32 were categorized as severe and extreme BDD, respectively.[5] The patients detected with severe BDD were referred to a psychiatrist for consultation, where felt necessary.

RESULTS

Of the 100 patients that were included in the study, 70 patients with cosmetic concerns were taken as cases,

Table 2: List of cosmetic concerns and procedural treatments offered.

Concerns for visit	Procedural treatments offered
Acne, acne scars, acne PIH	Chemical peels, Intense-Pulsed Light, Long-pulsed NdYag laser, Q-switched NdYag laser, CO_2 laser, Erbium Yag laser, and Microneedling radiofrequency
Hirsutism	Long-pulsed NgYag laser, Diode laser
Facial melanosis including melasma	Chemical peels, Q-switched NdYag laser
Androgenetic Alopecia	Platelet-rich plasma therapy, Growth factor concentrate therapy
Stria alba	CO_2 laser, Erbium Yag laser, Microneedling radiofrequency, Platelet-rich plasma therapy
Keloid	Intralesional radiofrequency, long-pulsed NdYag laser
Melanocytic nevi	Radiofrequency cauterization
Tattoo removal	-switched Ndyag laser

CO_2: Carbon dioxide, PIH: Post inflammatory hyperpigmentation, NdYag: Neodymium-doped yttrium aluminium garnet

and 30 patients with non-cosmetic concerns were taken as controls. About 53% of the patients belonged to the age group of 15–30 years, followed by 34% in the age group of 31–45 years. The youngest patient was 16 years old, while the oldest patient was 72 years old. The average BDD score of the patients <45 years of years was significantly higher compared to older counterparts ($P < 0.05$). The majority (64%) of the patients were female. The female-to-male ratio of patients with BDD was 1.61. The average BDD score was 3 for men compared to 10 for women ($P > 0.05$). The majority (40%) of the patients suffered from BDD for an average duration of 6–12 months.

About 64% of our patients were unmarried, 34% were married, and 2% were separated. Three patients were illiterate, seven had primary education, six had secondary education, 47 were graduates, and 37 patients were postgraduates. About 72% of our patients were employed, 12% were students, and 16% were homemakers. There was no statistically significant difference in the BDD scores with regard to education, employment, and marital status.

Of all the cases, 66% had presented with cosmetic concerns about their skin, 22% about their hair, and 12% about both skin and hair. The most commonly encountered cause for cosmetic concern was facial melanosis, followed by androgenetic alopecia and acne scars. The nature of the concern did not influence the prevalence or severity of BDD. About 64.3% of the cases ($n = 45$) underwent procedural treatment, while 35.7% ($n = 25$) were offered non-procedural management. Q-switched neodymium-doped yttrium aluminum garnet (NdYag) laser was the most prescribed procedure, followed by platelet-rich plasma therapy. Although the average BDD score was higher for those undergoing procedures, the difference was statistically insignificant ($P > 0.05$).

The prevalence of BDD in our study was found to be 7.2%. Of the total patients, 54% were positive for BDD, while 46% had subclinical BDD as per the BDD-YBOCS score grading system. About 62.58% ($n = 44$) of the cases suffered from BDD in contrast to 33.33% of controls ($n = 10$) ($P < 0.05$). Of these cases with BDD, 43% suffered from mild, 32% from moderate, 14% from severe, and 11% from extreme symptoms. The mean BDD score was significantly higher for cases (12.586) compared to that for controls (5.56) ($P < 0.05$).

About 42% of the patients agreed about spending more than 1 h, of which 18% spent more than 3 h thinking about the perceived defect in their appearance. The thoughts did not interfere much with social or occupational functioning in the majority of the patients, except for 6% of patients who found them extremely incapacitating. About 67% of the patients engaged in compulsive behavior, which commonly involved decreasing order of frequency, actions such as checking mirrors, picking skin, grooming, applying makeup, camouflaging with clothing, and scrutinizing others' appearance and excessive exercise. As many as 40% of patients demonstrated a lack of control over such compulsive behavior/s. About 22% of the patients in the study showed poor insight or a lack of it. Avoidant behavior was seen in 35% of patients of whom 7% deferred to extreme avoidance [Table 3].

Table 3: Symptom severity assessment using BDD-YBOCS questionnaire.

Question	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)
1. Time occupied by thoughts about body defect	20	38	24	8	10
2. Interference due to thoughts about body defect	49	31	10	4	6
3. Distress associated with thoughts about body defect	50	23	10	7	10
4. Resistance against thoughts of body defect	53	17	9	20	1
5. Degree of control over thoughts about body defect	51	21	15	13	0
6. Time spent in activities related to the body defect	33	34	21	6	6
7. Interference due to activities related to body defect	65	19	10	3	3
8. Distress associated with activities related to body defect	59	15	14	4	8
9. Resistance against compulsions	63	17	6	13	1
10. Degree of control over compulsive behavior	60	17	13	10	0
11. Presence of insight	38	28	12	18	4
12. Avoidant behavior	65	9	14	5	7

BDD-YBOCS: Body dysmorphic disorder-Yale-brown obsessive-compulsive scale

DISCUSSION

In this study, 100 patients who attended a dermatology clinic were screened for BDD, of which 54% were screened positive. The prevalence of BDD was 7.2%, which is 3 times the prevalence in the general population. The prevalence in our study is comparable to that of the study done by Thanveer and Khunger, in which 7.5% of the patients with cosmetic concerns screened positive for BDD.[6] Contrastingly, the study done by Modi *et al*. found a prevalence of 13.3%,

possibly due to the difference in the size of the sample studied (2500 patients).[7]

The predominantly affected age group in our study was between 15 and 30 years. Although the patients diagnosed with BDD were younger, the difference in prevalence was not statistically significant. The average BDD score of the patients <45 years of years was significantly higher compared to their older counterparts ($P < 0.05$). This finding is in line with the study by Manivannan wherein the most common age group affected was from 17 to 45 years.[8] In our study, the female-to-male ratio of patients with BDD was 1.61, with average BDD scores being high in women compared to men. However, the difference in the prevalence of BDD and the difference in BDD scores with regard to gender was not found to be statistically significant. This can be explained by the rising body consciousness affecting both genders alike.

While there were more single patients (64%) than there were married (34%), there was no significant difference in their BDD scores. As 53% of our patients were <30 years of age, the higher number of single patients can be explained. While the majority of our patients were educated and employed, the educational or occupational status of patients did not significantly contribute to the presence or severity of BDD. This more likely represents the characteristics of patients coming to our hospital.

In the BDD-YBOCS questionnaire, items question 1 through 5 deal with the obsession regarding the perceived body defect, while items 6 through 10 address the compulsive behavior resulting from the obsession. Item 11 adjudges the presence and extent of insight in the patients. Item 12 remarks on the severity of avoidant behavior. A larger number of patients reported high scores for items 1 (10%), 3 (10%), 8 (8%), and 12 (7%). This infers that the obsessive thoughts interfered with the overall functioning of patients by taking up much time, causing distress and resulting in avoidant behavior. In addition, prevention from indulging in compulsive activities evoked more anxiety. The study by Ramos *et al*. found that 55.1% of patients spending three or more hours a day were concerned about their physical appearance which was higher compared to that in our study (18%).[4] About 22% of patients showed poor insight or a lack of it in our study. This lack of insight did not significantly correlate to the severity of BDD. This implies that despite the realization of the senselessness of the obsession, the patients ended up giving in to the compulsive behavior anyway.

The prevalence or severity of BDD did not vary significantly with reference to the nature of concern. This implies that both skin and hair had an equal share in causing dysmorphophobia. As a higher number of patients had concerns about facial melanosis and androgenetic alopecia, Q-switched NdYag laser and platelet-rich plasma therapy turned out to be the most often prescribed procedures. Ours, being a cross-sectional study, did not detect any significant influence of the nature of treatment offered on BDD. The effect of procedural treatment on BDD could probably be better assessed using longitudinal studies.

The limitations of our study include its cross-sectional nature, shorter study period, and smaller sample size. Longitudinal studies would be better to study the course and prognosis of dysmorphophobia. Our sampling frame was limited to individuals presenting to our private dermatology clinic from which controls were derived. Thus, the results of our study cannot be extrapolated to the general population per se. There was a selection bias in recruiting cases and controls. Further multicenter studies with larger sample sizes are necessary to enable better quantification of dysmorphophobia in patients.

CONCLUSION

To the best of our knowledge, this study is the first to attempt to quantify and compare the extent of BDD in patients attending dermatology clinics with cosmetic concerns. The prevalence of BDD is dermatologic cosmetic practice is 3 times that in the general population. About 25% of our cases with BDD had severe and extreme symptoms, making it a disabling comorbidity. This reiterates the importance of active screening and quantification of BDD as the patients might not be aware of or, if aware, may be too embarrassed. Proper assessment and counseling are important before taking such patients for procedures. Further dermatologic clinic settings contend to be the first site of encounter for such patients. Dermatologic interventions alone may prove unhelpful or even contraindicated in such cases. Prompt detection counseling and, in selected cases, timely referral to psychiatrists will help us address the concerns more comprehensively and holistically.

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REFERENCES

1. Fava GA. Morselli's legacy: Dysmorphophobia. Psychother Psychosom 1992;58:117-8.
2. Schieber K, Kollei I, de Zwaan M, Martin A. Classification of body dysmorphic disorder - what is the advantage of the new DSM-5 criteria? J Psychosom Res 2015;78:223-7.
3. Dixit S, Agarwal GG, Singh JV, Kant S, Singh N. A study on consciousness of adolescent girls about their body image. Indian J Community Med 2011;36:197-202.
4. Ramos TD, Brito MJ, Piccolo MS, Rosella MF, Neto MS, Ferreira LM. Body Dysmorphic Symptoms Scale for patients seeking esthetic surgery: Cross-cultural validation study. Sao Paulo Med J 2016;134:480-90.
5. Elie AI, Oumou OZ, Djibrilla M, Wadoudou KE, Sinet KD, Oumar S, *et al*. Factors associated with body dysmorphic disorder in academia (Benin, 2021). Open J Psychiatr 2023;13:461-78.
6. Thanveer F, Khunger N. Screening for body dysmorphic disorder in a dermatology outpatient setting at a tertiary care centre. J Cutan Aesthet Surg 2016;9:188-91.
7. Modi V, Oswal RM, Mehta S, Thorat K. Body dysmorphic disorder in patients with cosmetic concern attending dermatology clinics: A study of prevalence, demographic correlates, and psychiatric comorbidity. Taiwan J Psychiatry 2023;37:113-8.
8. Manivannan P. Prevelance of body dysmorphic disorder and psychiatric comorbidity in patients attending cosmetology outpatient department in a government tertiary care institution in Tamilnadu (a doctoral dissertation). India: Stanley Medical College; 2018.

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