

Original Article

Prevalence of body dysmorphic disorder in medical versus nonmedical students: a questionnaire based pilot study

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Abstract

Objective To prepare a dermatologic version of body dysmorphic disorder (BDD) questionnaire and to ascertain and compare the prevalence of BDD among the medical students versus general university students in Pakistani community.

Subjects and Methods This was a prospective questionnaire-based pilot study conducted at dermatology department of Nawaz Sharif Social Security Teaching Hospital affiliated with The University of Lahore. After informed consent, 400 students, half from medical college and half from non medical institutions, were interviewed with a self reporting questionnaire and evaluated for BDD by employing the clinical parameters as per DSM-5.

Results The age range of participant students was 18-26 years in both the groups and 97.5% were unmarried. In group A, 72 students were males and 128 were females while in group B, 77 were males and 123 were females. The top areas of concern in both the groups were density of scalp hair, acne and its sequelae, skin type and dark complexion of skin with female preponderance in both the groups. Although 35% students were preoccupied to some extent but the prevalence of subjective distress to the threshold of BDD was found in 5% medical students compared to 10% nonmedical students, with female dominance in both the groups.

Conclusion Our study reflects that BDD is relatively more frequent among general university students compared to medical students with overall predominance of female gender.

Keywords

Body dysmorphic disorder, students, appearance, gender.

Introduction

The term, body dysmorphic disorder (BDD) has been formerly attributed to wide array of nomenclatures in medical literature as dysmorphophobia, dysmorphic syndrome, dermatologic hypochondriasis, or dermatologic

nondisease in different contexts.¹⁻⁵ It is mentioned in the category of obsessive-compulsive or associated disorders in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)⁶ and if not treated in time this may become a chronic affliction. The main component of BDD is a fixation with an imaginary flaw in appearance or exaggerated concern with a trivial physical abnormality. This obsession most frequently involves the skin, facial features, obesity, and hair-related issues; however, any component of the body may occupy the patient's thoughts.

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Changing socio-cultural values and excessive exposure to mass media targeting the young people have crafted an imaginary body image that inculcates the insecurity among ordinary people regarding self-image. The tremendous growth in sale of beauty products and increase in aesthetic procedures in dermatology and plastic surgery outlets are testimony to this emerging trend. In this image conscious era many young people are concerned about their looks at campuses, in society or workplace because of variety of personal or social reasons. Their apprehension regarding appearance is considered abnormal when it disturbs the academic, social or occupational working in a significant manner.⁷

The frequency of BDD in the general population is variable and is not very well documented in different countries; however, it is projected to affect about 2.4% of the general population.⁶ The medical disciplines that are thronged by image conscious patients, like aesthetic dermatology and plastic surgery, the prevalence of BDD is predictably on higher side than the general population.^{8,9} The arrival of teenage years sets the stage for anxious youth to begin with early symptoms of BDD¹⁰ but the older adults particularly the students who get markedly troubled with their looks, the prevalence of BDD may range from 2.5 to 28% in different studies.^{11,12} The gender bias regarding onset of BDD in general population is conflicting but some studies are suggestive of female preponderance regarding appearance related concerns.¹³

The vital issue of BDD is one's belief of considering oneself as malformed, ugly, or being unattractive despite the fact that in reality the flaw in appearance is negligible or insignificant. This cognitive deformation becomes fixation resulting in distressing preoccupation that is difficult to manage.¹⁴ This causes considerable

social anxiety or obsession that may compel patients to seek out perfection in their looks and in this pursuit vulnerable people are willing to pay through nose and yet remain dissatisfied.¹⁵

In the current study we prepared the dermatological version of questionnaire regarding appearance related features considering the prevailing socio-cultural sensitivities and clinical experience among young people. The visible features of apprehension that were evaluated included the skin complexion and type, scalp hair density, hirsutism, hypertrichosis, acne scars, facial features, hyperhidrosis and nails. The magnitude of concern regarding these features, gender bias and symptomatic distress among students were ascertained and compared in a structured manner.

Methods

This was a questionnaire-based pilot study conducted at dermatology department of Nawaz Sharif Social Security Teaching Hospital affiliated with the University of Lahore from October 2014 to December 2014. Four hundred students were interviewed with an anonymous, self-explanatory, questionnaire that evaluated clinical features of BDD. Two hundred students in group A, were enrolled at random from 4th and 5th year clinical classes of University College of Medicine and Dentistry Lahore. The other group B, comprising two hundred bachelor level non medical students were recruited from two renowned nonmedical institutes i.e. The Government College University Lahore and Kinnaird College, Lahore and BDD was diagnosed according to DSM-5 criteria.

After the approval and permission of ethical committee of the university, anonymous questionnaires were dispersed to students of both the groups to maintain confidentiality. The

objective and nature of the study was fully explained to the participants and they were requested to fill out the feedback proforma and return within 3 days. The response rate was managed to be 100% in both the groups as additional students were recruited for interview to compensate for the few, who failed to return the questionnaire.

Our questionnaire, comprising three sections was designed with the help of psychiatrist, to set up dermatological version of BDD based on our clinical experience and relevant to socio-cultural perspective. The 1st part of questionnaire was related to demographic data like age, gender, education and marital status of students.

The second part of questionnaire was intended to measure the body image disturbance by incorporating eight appearance-related items of perceived imperfection relevant to dermatological perspective, like sensitivity to complexion, acne and its sequelae, hyperhidrosis/body odour, type of skin, hair density on scalp, facial hirsutism, hypertrichosis, facial features and nails appearance. All the areas of apprehension were rated according to Likert like scale from 0-4 and degree of concern and gender variations determined.

The third part, addressed the symptoms of BDD comprising, compulsive touching the perceived defect or repetitive looking in front of mirror, comparing themselves with celebrities or models and camouflaging the perceived defect. It also addressed the issue of interference in academic, occupational functioning and social life. We also determined the looks rating by asking, how much they feel attractive or dissatisfied with their appearance and how much time they consume thinking regarding features of concern.

Scores were given measuring degree of preoccupation or subjective distress and graded as none, mild, moderate, severe and extreme on 5-point (0-4) Likert like scale. Responses to the questions were evaluated considering the parameters as envisaged in DSM-5 criteria. A score of 2 or more is considered as the cut-off value for diagnosing the BDD as a score of this threshold is likely to detect 98% of individuals with BDD.⁶ The total score for 7 items was 28 and a student acquiring more than 14 with mean score calculated to 2 or above was diagnosed as having BDD. Whereas, the students attaining score less than 2 but more than 1 were considered to be preoccupied to some extent regarding the perceived flaw of physical appearance.

Results were subjected to analysis by using SPSS 20 version for windows and chi-square test was employed where feasible and *p* value of <0.05 was considered as the criteria of significance.

Results

Total 400 participants were enrolled in our comparative study. Group A, comprising 200 students were studying in a private medical and dental college and group B, 200 students were enrolled from nonmedical institutes. The age range of patients in group A (medical students) and group B (nonmedical) were 18-26 years and the mean age in group A was 21.4 years and in group B 23.5 years and most of the students i.e. 97.5 % were unmarried. In group A, 72 (36%) students were males, 128 (64%) were females while in group B 77 (38.5%) students were males, 123 (61.5%) were females.

Body image disturbance regarding different dermatological areas of concern in both the groups with gender variations have been highlighted in **Table 1**. Our study revealed that

Table 1 Comparison of gender & foci of distress among medical students versus nonmedical students.

Body foci of concern	Group A			Group B			P value
	Medical students (n=200)			Non medical students (n=200)			
	Males (n=72)	Females (n=128)	Total	Males (n=77)	Females (n=123)	Total	
1-Scalp hair density	58 (29%)	109(54.5%)	167 (83%)	53(26.5%)	107(53.5%)	160 (80%)	0.700
2-Acne & scars	51(25.5%)	107(53.5%)	158 (78%)	55(27.5%)	99 (49.5%)	154 (77%)	0.183
3-Skin type	55(22.5%)	99(49.5%)	154 (77%)	56(28%)	100 (50%)	156 (78%)	0.62
4. Skin colour	55(39.7%)	98(60.3%)	153(76.5%)	53(21.5%)	89 (44.5%)	142 (71%)	0.320
5-Excessive hair growth	43(21.5%)	96(48%)	139(69.5%)	53(26.5%)	97 (48.5%)	150 (75%)	0.39
6-Hyperhidrosis& body odor	52(26%)	79(39.5%)	131(65.5%)	47(23.5%)	68 (34%)	115(57.5%)	0.013
7-Facial features	42(21%)	77(38.5%)	119(59.5%)	44(22%)	80 (40%)	124 (62%)	0.115
8- Nails	38(19%)	79(39.5%)	117(58.5%)	42(21%)	80 (40%)	122 (61%)	0.263

These foci have multiple responses and percentages in columns will not add up to 100%. The average in both the groups is about 70.5% and Chi-square test applied to determine gender difference regarding concern.

Table 2 Symptoms severity and comparison of gender

BDD scale	Group A			Group B		
	Medical students (n=200)			Nonmedical students (n=200)		
	Males (n=72)	Females (n=128)	Total	Males (n=77)	Females (n=123)	Total
None	35 (17.5%)	85 (42.5%)	120 (60%)	41 (20.5%)	69 (34.5%)	110 (55%)
Preoccupation (1-2)	33 (16.5%)	37 (18.5%)	70 (35%)	28 (14%)	42 (21%)	70 (35%)
Severe distress (3-4)	4 (2%)	6 (3%)	10(5%)	8 (4%)	12 (6%)	20 (10%)

BDD=Body dysmorphic disorder. In questionnaire, each question has 5-grade responses. These have been merged to 3 for better interpretation. Chi-square test was applied and *p* value was 0.049 that is significant.

overall 70.5 % in each group with predominance of females were distressed to some extent regarding different features of their perceived flaw of appearance. Generally, in both groups the main foci of concern in decreasing order of frequency were identical and included, scalp hair density, acne and its sequelae, skin type (dry, sensitive, rough, oily) and complexion, hirsutism/ hypertrichosis, hyperhidrosis/ bromhidrosis, facial features and the nails. The degree of concern was mild to moderate in majority of the students in both the groups and was merged for ease of calculation as these loci have many responses and percentages in columns will not add up to 100% in the **Table 1**.

As far as the degree of symptomatic distress was concerned, the severity of the symptoms was variable as 35% students in both the groups were preoccupied but not to the threshold of BDD score as their mean score was less than 2. The

prevalence of BDD computed as per scale was 10 (5%) among the medical students versus 20 (10%) in nonmedical students and in both groups female students were found to be more distressed as depicted in the **Table 2** (*p*= 0.049). However, in most of the students with BDD, symptomatic distress was moderate to moderately severe with mean score varying from 2-3 and only 2 (1%) students from nonmedical students group B had extreme symptoms.

Discussion

There is tremendous increase in cosmetic procedures in recent years¹⁷ and dermatologists appear to be the preferred physicians most often seen by patients with body dysmorphic disorder (BDD), a distressing or impairing preoccupation with a nonexistent or trivial imperfection in appearance. Although the prevalence of BDD in population-based samples is around 2%, among

dermatologic patients it ranges from 8.5% to 15.0%.¹⁸ The intent of the study was to determine the prevalence of body dysmorphic disorder in medical students versus nonmedical students.

Our study sample revealed the prevalence rate of BDD among the medical students as 5% versus nonmedical students, where it was found to be double i.e. 10%. In general populations or student samples from different countries, prevalence rates vary from 0.7% to 28.0%.^{19,20} A study from Pakistan medical school,²¹ the prevalence of BDD was computed to be 5.8% and was comparable with 5% prevalence in our study among the medical group. A previous study²² calculated the prevalence rate of BDD as 19.1% which is much higher than the 10%, the prevalence rate of nonmedical group in our study sample.

The study highlighted that similarities exist between different aspects of data like gender bias with female preponderance, distress about different foci of concern in 70.5% and relative preoccupation in 35% among the participants of both the groups. However, despite this convergence, the greater prevalence rate of BDD in nonmedical group may be because of relatively higher social anxiety or pressure or phobia of negative appraisal by others in socio-cultural context compared to the medical students. It is plausible that comparatively lesser prevalence among medical students may be attributed to the academic conditioning and better insight as they are well-versed regarding anatomical, pathophysiological and psychological aspects of the image-related physical features. These variations in prevalence may also be attributed to inherent characteristics of the samples, sociocultural values, and/or the use of different criteria, measurements, or diagnostic strategies.²³

Body image can be described as a way person thinks regarding his body and how it appears to the others. Although many people have concerns about unattractive body parts, but only a few of them fulfill the criteria for BDD.²⁴ Our data as shown in **Table 1**, suggest that average body image discontent rate was about 70.5% in both the groups, which is relatively less compared to a study,²¹ sampling local medical college staff with body image dissatisfaction observed in 78.8% of students. Our work is comparable to another study²⁵ that revealed the body image dissatisfaction rate of 74.3% among American students. Our reported level of body image dissatisfaction is consistent with another study showing discontent in 70% of the students.²⁶ The main foci of apprehension in our data have been depicted in **Table 1** and top areas of distress were scalp hair density, acne and its sequelae like scarring or postinflammatory hyperpigmentation, skin type and complexion. This is somewhat consistent to a previous study²⁷ that concluded the top rated dermatological areas of concerns as facial pigmentation and acne scarring. Regarding gender distinction, some studies²⁸ suggest more similarities than differences regarding different foci of concern but regarding skin features of concern, a local study²¹ on medical students showed significant bias in favour of female gender. Gender bias is also very much obvious in our data as in almost all the areas of concern, female preponderance was evident in both the groups.

This looked conceivable considering the local sociocultural preferences, sensitivities and beauty perception crafted by media advertisements and cosmetic industry. This causes negative impact on a woman's self-esteem or body image and young student community cannot remain immune and reflects the general trends prevailing in the society.

Symptomatic distress

Our study data reflects that despite some discontentment in 70.5% of the students regarding appearance-related dermatological features of concern, the symptomatic preoccupation of some degree was observed in 35% students in both the groups. However, scale of pathological preoccupation falling within the threshold of BDD was translated in only 5% (medical students) versus 10% (nonmedical students) and the symptom severity score was moderate (2-3) in majority of the students with female preponderance as shown in **Table 2**.

Regarding specific questions to evaluate symptomatic distress, preoccupation about flaws in appearance in terms of time consumed was seen in 60% medical students vs 61% nonmedical students, repetitive touching of flaws and mirror looking was observed in 84% (medical students) vs 82% (nonmedical students) and comparison with celebrities was 51% (medical students) vs. 53 % (nonmedical students). Similarly attempt to camouflage the perceived flaw was also comparable and observed in 52 % (medical students) vs 55% nonmedical students. However, in certain other responses, nonmedical students seemed to be more distressed compared to medical students as 56% (medical students) vs 60% (nonmedical students) were dissatisfied regarding their overall appearance. Regarding social interaction, some degree of handicap was observed in 65% medical students vs 75% nonmedical students. This increased frequency and severity of score among nonmedical students may to be attributed for increased prevalence of BDD among general students compared to medical students.

Limitations

The current pilot study based on self-report questionnaire had some limitations, as the

questions posed to students had not been validated among general population and different student communities. Although our sample may be representative of university student population but uncertainty is there whether these finding can be generalized. Responses to questions may be exaggerated affecting the reliability of results by using modifications of validated Body Image Disturbance Questionnaire (BIDQ) instrument in dermatological perspective.

Conclusion

Our study reflected that BDD is fairly common among the young adults. The current prevalence of BDD in our sample was estimated to be 5% among medical students versus 10% in general university students with female preponderance. Our survey confirmed that many people have concerns about unattractive body parts, although only a few of them fulfill the criteria for BDD. Further studies to define nationwide prevalence should utilize a clinically validated, structured interview instrument, preferably administered in consultation with mental health professionals.

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