



Epidemiology of Body Dysmorphic Disorder Among Adolescents In Imphal West District, Manipur

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ABSTRACT

Background: Body Dysmorphic Disorder (BDD) is a psychiatric disorder characterized by preoccupation with a perceived flaw(s) in one's appearance, leads sufferers to engage in repetitive behaviours to try to hide or fix the flaw(s) causing significant distress and interference. BDD is an unrecognized and undiagnosed problem among adolescents. Therefore, conducting a study in the Imphal West will identify the adolescents at risk. The objective of the study is to determine the prevalence of BDD among higher secondary students in Imphal West, Manipur.

Methodology: This study was conducted among higher secondary students during Aug 2019 -Feb 2020. Sampling was done by stratified two stage cluster design and self-administered validated Body Image Disturbance Questionnaire was used. Data were summarized using descriptive statistics. Chi-square test was used for comparing proportions.

Results: Out of the total 1207 students, 52% were female. Almost 92.2% of the students were concerned about some aspect of their appearance. About 2.6% met the DSM-V criteria for BDD. Females were significantly dissatisfied with their skin (71.3%), nose (59.3%), hair (34.7%), whereas men with their muscle build (54.8%) and eyes (40.3%).

Conclusions: The study revealed BDD was prevalent but many individuals were unaware about the condition and its treatment.

Key words: Adolescents, Body Dysmorphic Disorder, Pre-occupation, School students

INTRODUCTION

Body dysmorphic disorder (BDD) consists of a pre-occupation with a perceived defect. The 'defect(s)' is not noticeable to other people (or is minimal); however, it is associated with shame, depression, and a poor quality of life.¹ There is no doubt that we live in a culture that emphasizes physical beauty. Whether by means of television, newspapers or magazines, we are constantly presented with images of perfect faces and bodies. BDD sufferers are concerned that there is something seriously wrong with how they look and are desperate to appear normal and blend in.² If an adolescent is constantly preoccupied and upset about body imperfections or appearance flaws, then it may be a sign of Body Dysmorphic Disorder

(BDD).³

BDD usually presents during adolescence and young adulthood being more pronounced in females. The average age of onset is 16-17 years.⁴ The appearance preoccupations are difficult to resist or control and on average consume 3 to 8 hours a day.⁵ They engage in repetitive and time-consuming behaviours, resulting in decreased social, academic and occupational functioning.⁶ Studies show that females were more concerned with their lower bodies (e.g., legs and buttocks) while males were concerned with their upper bodies, overall muscle mass, and genitalia.⁷ Different studies show a variation in the prevalence of BDD in the general population, but, on average, rates of 0.7-1.7% have been reported for com-

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munity samples, 2-13% for non-clinical student samples, and 13% for psychiatric inpatients.⁸⁻¹¹

As cosmetic procedures are on the rise, it is likely that individuals with BDD will increasingly present to dermatologists and surgeons, and therefore they may increasingly be seen by psychiatrists in consultation-liaison settings. BDD usually doesn't get better on its own and if untreated, it may get worse over time and lead to suicidal thoughts and behavior.¹²

Studies have shown that dysmorphic concerns is increasing and found to be more prevalent in student populations as compared to community samples.^{13,8} In spite of that, there has not been much data published from India and in particular, Manipur. Therefore, conducting a study in the Imphal West among the higher secondary students would contribute to identify the adolescents at risk of the condition and might be of some benefit by enabling early intervention or treatment.

The specific objectives were to determine the prevalence of Body Dysmorphic Disorder among higher secondary school students of Imphal West district, Manipur, and to study the association between Body Dysmorphic Disorder and associated risk factors (age, gender differences, body foci of concerns and symptoms of BDD etc.)

MATERIALS AND METHODS

A cross sectional study was conducted among higher secondary school students in Imphal West District, Manipur during August 2019 -February 2020. The study intended to cover all the institutions having more than 70 students studying in class XI and XII standards. Students who suffered from bodily defect and those who refused to participate were excluded. Stratified two stage cluster sampling design with probability proportionate to size was used to select a representative sample. Based on the study by Biby et al prevalence (P) of BDD among student population was 13% with absolute allowable error 3% at 95% confidence level.⁹ The calculated sample size was 502. Multiplying a design effect 2 and adding a non-response of 20%, the sample size was estimated to be 1207.

A self-administered validated Body Image Disturbance Questionnaire (BIDQ) was used to collect data.¹⁴ The questionnaire has three sections - background characteristics, BIDQ and questions addressing symptoms of BDD.¹⁵

BIDQ consists of seven questions measuring pre-occupation, distress, impairment in functioning and behavioural disturbance in relation to body image. Each question contains a five-point rating scale. To screen positive for BDD, the responses must total at least 21 or have a mean of more than 3.0. A score of 3.0 or more will detect 98% of individuals with BDD.

Approval was obtained from the Institutional Ethics Committee before the beginning of study. Written in-

formed consent from all the school authorities and assent from all the participants were obtained. Confidentiality was maintained.

Data were analysed by Statistical Package for Social Sciences SPSS (IBM) version 21.0. Quantitative data were expressed as mean± standard deviation (SD) and Qualitative frequencies as percentages. Analysis was done using chi-square test. A *P*-value of less than 0.05 was considered statistically significant.

RESULTS

Out of 1207 students, 755 (62.6%) were from the private schools and 452 (37.4%) were from the government schools. About 628 (52%) were females, 579 (48%) were males. Majority of the respondents (45.5%) were 17 years old. About 845 participants (70%) were from urban residence.

Among the participants, 31 students (2.6%) had BDD. Further one student (0.1%) met the cut-off mean score for BDD on the BIDQ (score >3), however they were excluded as their primary concern was limited to weight and thus, they did not meet the criteria. Almost 92.2% of the students reported that they were concerned about some aspect of their appearance. The top three reported body foci of concern were: skin (52.7%), nose (46.8%) and chest/breast (40.4%) respectively. When comparing gender, body foci of concern in male students were: eyes (54.9%), chest / breast (40.4%) and nose (33%) while females concern about their skin (71.3%), nose (59.6%) and chest/ breast (40.4%).

It was found that females and those who were residing in urban area were significantly associated with BDD (Table 1).

It was found that nose (67.7%), breast/ chest (64.5%) and head hair (51.6%) were significantly more concerned among BDD group than non BDD group. Other parts of concern like skin, eyes, teeth, being short and others were not associated with BDD and non BDD groups (Table 2)

Table 1: Socio-demographic profile of individuals with and without BDD (n=1206)

Variables	BDD (n=31) (%)	No BDD (n=1175) (%)	P-value
Age in years			
16	9 (29)	348 (29.6)	0.934
17	15 (48.4)	533 (45.4)	
18-19	7 (22.6)	294 (25)	
Gender			
Male	7 (22.6)	571 (48.6)	0.004
Female	24 (77.4)	604 (51.4)	
Class			
XI	18 (58.1)	571 (48.6)	0.298
XII	13 (41.9)	604 (51.4)	
Residence			
Urban	28 (90.3)	817 (69.5)	0.013*
Rural	3 (9.7)	358 (30.5)	

P<0.05 considered as statistically significant. * Fisher's exact test was used

Table 2: Association between body foci of concern among BDD and non BDD individuals (n=1206)

Body foci of concern	BDD (n=31) (%)	No BDD (n=1175) (%)	P value
Skin			
Yes	15 (48.4)	621 (52.9)	0.62
No	16 (51.6)	554 (47.1)	
Nose			
Yes	21 (67.7)	544 (46.3)	0.01
No	10 (32.3)	631 (53.7)	
Breast/ Chest			
Yes	20 (64.5)	467 (39.7)	0.001
No	11 (35.5)	708 (60.3)	
Eyes			
Yes	13 (41.9)	448 (38.1)	0.66
No	18 (58.1)	727 (61.9)	
Head hair			
Yes	16 (51.6)	342 (29.1)	0.001
No	15 (48.4)	833 (70.9)	
Hips/buttocks			
Yes	5 (16.1)	283 (24.1)	0.30
No	26 (83.9)	892 (75.9)	
Teeth			
Yes	7 (22.6)	259 (22.0)	0.94
No	24 (77.4)	916 (78.0)	
Others*			
Yes	2 (6.5)	122 (10.4)	0.47
No	29 (93.5)	1053 (89.6)	

*Thighs, Arms, Shoulders, Stomach etc. P<0.05 considered as statistically significant

Table 3: Association of symptom severity with BDD (n=1206)

Symptoms	BDD (n=31) (%)	No BDD (n=1175) (%)	P value
Mirror checking			
Never	4 (12.9)	354 (30.1)	0.001*
Occasionally	11 (35.5)	547 (46.6)	
Often	16 (51.6)	274 (23.3)	
Compulsive behavior			
Never/occasionally	9 (29)	840 (71.5)	<0.0001
Often	22 (71)	335 (28.5)	
Camouflaging			
Never	6 (19.4)	434 (36.9)	0.01
Occasionally	11 (35.5)	465 (39.6)	
Often	14 (45.2)	276 (23.5)	
Discussing your appearance			
Never/occasionally	16 (51.6)	845 (71.9)	0.013
Often	15 (48.4)	330 (28.1)	
Comparing with others			
Never	9 (29)	376 (32)	0.93
Occasionally	16 (51.6)	585 (49.8)	
Often	6 (19.4)	214 (18.2)	
Avoidance			
Never	5 (16.1)	463 (39.4)	0.001
Occasionally	10 (32.3)	509 (43.3)	
Often	16 (51.6)	203 (17.3)	

P<0.05 considered as statistically significant. * Fisher's exact test was used

While comparing the body foci of concern with gender, females were significantly more often dissatisfied with their skin, nose, head hair, hips/ buttocks and others (thighs, arms, shoulders, abdomen etc.)

whereas men were significantly more often dissatisfied with their overall muscle build and eyes.

From **Table 3** mirror checking (51.6%), compulsive behaviour (71%), camouflaging (45.2%), discussing appearance with others (48.8%) and avoiding social situations (51.6%) were more often seen in BDD individuals than non BDD individuals and it was found to be significant.

DISCUSSION

In the present study, almost 92.2% of the students reported that they were concerned about some aspect of their appearance. This is higher than the levels of body image dissatisfaction reported in the study by Taqui AM et al on Pakistan medical students (78%), Bohne A et al on American college students (74.3%).^{15,16} This may be due to the differences in societal standards, cultural norms and values.

In the present study, 31 individuals (2.6%) had BDD. This rate is comparable to the prevalence of BDD found among US adolescents (2.2%) by Mayville S et al.¹⁷ This may be the reflection of similar mean age which coincides with the time that individuals are most sensitive to their appearance. However, a higher prevalence of BDD was found in studies done among Pakistani and American college students (5.8% and 4%) respectively.^{15,16} Adolescents are usually more concerned about their looks than older generations and this could be due to the physical and psychological changes they go through during this age. Compared to the community-based population samples (0.7–1.7%), this data suggests that BDD was more prevalent among students. Plausible reasons could be the students were more willing to disclose their appearance concern and in the community samples, a large proportion of people were above the age of 30, the prevalence was found to be in the lower side.

Present study showed BDD was higher among females compared to males (3.8% vs.1.2%) which was consistent with Biby EL et al and Bohne A et al studies.^{10,16} This may be attributed to the tremendous growth of cosmetics and increase in aesthetic procedures.

The most frequently disliked body parts were the nose, breast/chest and hair. Females were significantly more concerned with their skin, nose, hair, hips/ buttocks and others (thighs/ abdomen/arms and shoulders) whereas males were dissatisfied with their muscle build and eyes. This finding is similar to other studies conducted by Taqui AM and Phillips KA.^{15,18} Since our study addressed school students who are under constant stress, which leads to the development of acne, this could explain the reason why skin had a high frequency of body concern.

Consistent with previous study done by Taqui AM et al students had time-consuming repetitive behaviours (repetitive mirror checking, touching the phys-

ical defect, hiding or concealing the physical defect, discussing your appearance and avoidance) were significantly associated with BDD yet 'comparing it with other people in magazines' was not significant in the study.¹⁵

The strengths of the present study is that it is one of fewer studies of its kind conducted in order to assess the prevalence and symptoms of BDD among adolescents in Manipur. Since the study was conducted among larger representative sample and due to the random sampling applied for the selection of the study population, it is upheld that the potential introduction of a selection bias was deterred. In addition, a validated instrument was used for diagnosing the disorder.

The limitations of the study include its inability to decipher the etiological association between BDD and the psychosocial characteristics of adolescents due to the cross-sectional study design. In addition, since it relied on self-report measures, there was no objective way to know whether the defects perceived by the students who appeared to meet the criteria for BDD, were exaggerated or not.

CONCLUSION

In the current study, prevalence of BDD was 2.6% among the higher secondary students of Imphal West, Manipur. Females and those residing in urban area were significantly associated with BDD. Females were significantly dissatisfied with their skin, nose, hair, hips/ buttocks and extremities whereas men were dissatisfied with their overall muscle build and eyes. Thus, further evaluation is recommended to determine the extent of the problem and more focus should be given to BDD under school and mental health programs.

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