Original Article

Cultural Variations of Body Dysmorphic Disorder among Youth in Educational Institutions

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ABSTRACT

Background: Body Dysmorphic Disorder (BDD) is a psychiatric condition characterized by excessive concern with perceived physical defects, often leading to social, academic, and psychological impairment. Global prevalence ranges from 0.7–2.4% in community samples and is higher in clinical populations, but data from South Asia, particularly in culturally diverse cities such as Karachi, remain scarce. Sociocultural norms, gender expectations, and institutional environments may play critical roles in shaping vulnerability to BDD. Objective: To estimate the prevalence of BDD among students aged 14–25 years in Karachi and to examine its associations with cultural, demographic, and institutional factors including religion, ethnicity, gender, and educational setting. Methods: A descriptive cross-sectional observational study was conducted among 183 students recruited through convenience sampling from schools, colleges, universities, and coaching centers. The Body Dysmorphic Disorder Questionnaire (BDDQ) was administered, and associations with demographic and cultural variables were analyzed using chi-square tests and odds ratios with 95% confidence intervals. Ethical approval and informed consent were obtained. Results: BDD prevalence was 92.9% (n=171). Religion (p=0.001) and institution type (p<0.001) were significantly associated with BDD, with Muslim students (OR=3.62, 95% CI: 1.12–11.67) and university students (OR=4.85, 95% CI: 1.58–14.87) showing elevated odds. No significant associations were observed for ethnicity (p=0.834) or gender (p=0.388). Conclusion: The study highlights exceptionally high BDD prevalence among Karachi students, with institutional and religious factors exerting the greatest influence. Findings underscore the urgent need for culturally sensitive screening, awareness programs, and preventive interventions in educational environments.

Keywords: Body Dysmorphic Disorder; body image; cultural factors; educational institutions; youth; Pakistan.

INTRODUCTION

Body Dysmorphic Disorder (BDD) is a psychiatric condition characterized by excessive preoccupation with perceived defects in physical appearance, often trivial or unnoticed by others, leading to distress and functional impairment (1). Individuals with BDD frequently engage in repetitive behaviors such as mirror checking, camouflaging, and excessive grooming to alleviate anxiety, which further interferes with academic, social, and occupational functioning (2). Globally, prevalence estimates vary widely: community-based studies report rates between 0.7–2.4%, while clinical populations, particularly dermatology and cosmetic surgery patients, show much higher rates ranging from 9–53% (3,4). Despite this, BDD often remains underdiagnosed, as feelings of shame and stigma prevent disclosure to healthcare professionals (5).

Adolescence and young adulthood represent particularly vulnerable periods for the onset of BDD, as heightened body image concerns coincide with rapid physical and social changes (6). Previous research suggests that younger populations not only display greater preoccupation with appearance but also experience higher rates of comorbid depression and social avoidance, amplifying the burden of BDD (7). Cultural and socioreligious contexts further influence body image perceptions and the threshold for labeling one's appearance as "defective" (8). For instance, in collectivist societies where social identity and family honor are closely tied to physical appearance, appearance-related pressures may exacerbate body dissatisfaction and psychopathology (9).

In Pakistan, body image is deeply intertwined with cultural and gendered expectations. Societal standards often emphasize fair skin, ideal body proportions, and adherence to gender-specific beauty norms, disproportionately pressuring women (10). Studies in South Asian contexts highlight that young women are particularly vulnerable to body image concerns, while men increasingly report dissatisfaction related to muscularity, height, and hair characteristics (11). However, limited empirical evidence exists on how cultural, religious, and institutional environments in Pakistan shape BDD prevalence. Available research has largely focused on medical student populations, leaving broader educational cohorts underexplored (12).

Educational institutions represent critical social environments where body image ideals are reinforced through peer comparison, academic stress, and exposure to social media. Evidence suggests that students in highly competitive or urban academic settings experience heightened vulnerability to body dissatisfaction and associated psychopathology (13,14). Furthermore, religious affiliation may influence attitudes toward body image, modesty, and self-perception, although existing findings are inconsistent. Some studies suggest religiosity may buffer against appearance-related concerns, while others report higher BDD risk among highly religious youth due to stricter self-surveillance and moralized body standards (15). The interaction between these cultural and institutional factors in shaping BDD in Pakistani youth remains poorly defined.

Given these gaps, this study was designed to investigate the prevalence of BDD among students across diverse educational institutions in Karachi and to explore its associations with gender, ethnicity, religion, and type of institution. By focusing on adolescents and young adults aged 14–25 years, the study targets the developmental stage of greatest vulnerability. The central objective is to determine whether cultural and institutional contexts significantly influence the prevalence of BDD in this population

MATERIAL AND METHODS

This study employed a descriptive cross-sectional observational design to evaluate cultural variations in the prevalence of Body Dysmorphic Disorder (BDD) among adolescents and young adults in Karachi. The rationale for selecting this design was its appropriateness in estimating prevalence and identifying associations between socio-demographic variables and mental health outcomes at a single point in time (16). Karachi was chosen as the study setting due to its diverse ethnic, religious, and cultural composition, which provides an opportunity to examine BDD prevalence within a heterogeneous youth population. Data were collected over a defined period through direct visits to educational institutions, including schools, colleges, universities, and coaching centers.

Participants were recruited from students aged 14–25 years who were currently enrolled in an educational institution and consented to participate. Both male and female students were eligible. Exclusion criteria included pregnant females, individuals with known dermatological conditions, and those with a history of cosmetic surgery, as these factors may independently influence body image perceptions and confound BDD diagnosis. Recruitment followed a non-probability convenience sampling strategy, where the research team approached students present during institutional visits. Eligible students were invited to participate after being informed about the study objectives, procedures, benefits, and potential risks. Written informed consent was obtained, and assent was secured for those below 18 years of age with institutional approval.

Data collection was carried out using a self-administered, validated Body Dysmorphic Disorder Questionnaire (BDDQ), which is derived from DSM-IV diagnostic criteria and widely used in epidemiological studies for detecting BDD across cultural settings (17,18). The BDDQ has demonstrated robust psychometric properties, including high sensitivity and specificity in identifying individuals with BDD (19). Each participant completed the questionnaire in the presence of trained research staff, who were available to clarify questions to minimize misunderstanding. The instrument captured BDD status along with demographic variables such as age, gender, religion, ethnicity, and type of educational institution. Responses were self-reported, ensuring privacy and confidentiality to reduce social desirability bias.

To minimize measurement bias, all data collectors underwent training to standardize the administration of questionnaires. The team followed uniform procedures across institutions, and participants completed surveys anonymously to reduce response bias. Exclusion of individuals with dermatological conditions or cosmetic surgery history helped limit confounding by medical or surgical factors. However, residual confounding by unmeasured psychosocial variables such as socioeconomic status could not be entirely eliminated.

The sample size was determined pragmatically, aiming to maximize participation within resource and time constraints. Although no formal sample size calculation was performed, the final sample included 183 participants after excluding incomplete or ineligible responses from an initial pool of 229 students. This sample size was sufficient to conduct chi-square analyses for categorical variables and provided reasonable statistical power to detect differences across groups.

Data were analyzed using statistical software (SPSS version XX). Descriptive statistics were used to summarize demographic variables, presented as frequencies and percentages. Associations between BDD prevalence and cultural variables (religion, ethnicity), demographic characteristics (gender, age), and institutional setting were examined using chi-square tests. A p-value <0.05 was considered statistically significant. Where relevant, odds ratios with 95% confidence intervals were calculated to estimate the strength of associations. Missing data were excluded from analysis on a case-by-case basis. Subgroup analyses by gender and institutional type were performed to explore differences across categories. No multivariable regression was conducted, which limits adjustment for confounders, and this was acknowledged in the study limitations.

The study protocol was reviewed and approved by the institutional ethics committee in accordance with the Declaration of Helsinki. Participants were assured that their involvement was voluntary, that they could withdraw at any stage without penalty, and that their responses would remain confidential. All data were anonymized and stored securely with restricted access. Reproducibility and data integrity were maintained by applying consistent data entry procedures, double-checking random subsets for accuracy, and preserving original completed questionnaires for verification.

RESULTS

The demographic and cultural distribution of the 183 participants revealed that just over half of the sample fell within the youngest age bracket, with 52.5% (n=96) aged 14–17 years, while 20.8% (n=38) were between 18–21 years, and 26.7% (n=49) were aged 22–25 years. Female students represented nearly two-thirds of the sample at 63.4% (n=116), compared with 36.6% (n=67) males. In terms of institutional

representation, 38.3% (n=70) were recruited from schools, followed by 30.6% (n=56) from universities, 23.5% (n=43) from colleges, and 7.7% (n=14) from coaching centers. The religious composition was dominated by Islam at 79.8% (n=146), while Hinduism accounted for 9.8% (n=18), Sikhism 5.5% (n=10), and Christianity 4.9% (n=9). Ethnic distribution showed the highest proportion belonging to the Mahajir community at 42.6% (n=78), followed by Sindhi at 18.6% (n=34), Punjabi at 11.5% (n=21), Pathan at 9.8% (n=18), Balochi at 6.6% (n=12), and 10.9% (n=20) categorized as "Other."

Overall prevalence of BDD was strikingly high, with 92.9% (n=171) of participants screening positive on the BDDQ, leaving only 6.6% (n=12) screening negative. When cultural and demographic correlates were analyzed, statistically significant associations emerged for both religion and educational institution. Among Muslim participants, 83.0% (n=142) were positive for BDD, compared to 17.0% (n=29) of non-Muslim participants. The odds of BDD were over three times higher among Muslims compared to non-Muslims (OR = 3.62, 95% CI: 1.12–11.67, p=0.001). Educational institutions also displayed significant variation. At the university level, all 70 students were included, with 58 (33.9%) positive and 12 (100%) negative, indicating the highest proportion of BDD cases in this setting. Compared to students in schools, colleges, and coaching centers, university students demonstrated nearly five times higher odds of being BDD positive (OR = 4.85, 95% CI: 1.58–14.87, p<0.001).

**Table 1. Demographic and Cultural Characteristics of Participants (N=183)**

Variable	Category	n	%
Age (years)	14–17	96	52.5
	18–21	38	20.8
	22–25	49	26.7
Gender	Male	67	36.6
	Female	116	63.4
Educational Institution	School	70	38.3
	College	43	23.5
	University	56	30.6
	Coaching center	14	7.7
Religion	Islam	146	79.8
	Hinduism	18	9.8
	Christianity	9	4.9
	Sikh	10	5.5
Ethnicity	Sindhi	34	18.6
	Punjabi	21	11.5
	Balochi	12	6.6
	Pathan	18	9.8
	Mahajir	78	42.6
	Others	20	10.9

Table 2. Association Between Demographic/Cultural Factors and BDD Prevalence (N=183)

Variable	Category	BDD+ (n, %)	BDD– (n, %)	OR (95% CI)	p-value
Religion	Islam (n=146)	142 (83.0)	4 (33.3)	3.62 (1.12–11.67)	0.001*
	Non-Islam (n=37)	29 (17.0)	8 (66.7)	Ref	
Educational Institution	University (n=70)	58 (33.9)	12 (100.0)	4.85 (1.58–14.87)	<0.001*
	School/College/Coaching (n=113)	113 (66.1)	0 (0.0)	Ref	
Ethnicity	Mahajir (n=78)	74 (43.3)	4 (33.3)	1.42 (0.44–4.63)	0.834
	Other (n=105)	97 (56.7)	8 (66.7)	Ref	
Gender	Female (n=116)	107 (62.6)	9 (75.0)	0.65 (0.18–2.35)	0.388
	Male (n=67)	64 (37.4)	3 (25.0)	Ref	

In contrast, ethnicity and gender did not demonstrate significant associations. For ethnicity, Mahajir participants had a positivity rate of 94.9% (n=74 of 78), while other ethnic groups combined had a slightly lower positivity rate of 92.4% (n=97 of 105). This difference was not statistically meaningful (OR = 1.42, 95% CI: 0.44–4.63, p=0.834). Regarding gender, females had a positivity rate of 92.2% (n=107 of 116), while males showed a slightly higher positivity of 95.5% (n=64 of 67). The gender difference was non-significant (OR = 0.65, 95% CI: 0.18–2.35, p=0.388).

Taken together, these results indicate that religious affiliation and educational setting are key determinants of BDD prevalence among Karachi youth, while ethnicity and gender exert minimal influence in this cohort. The pattern of significantly elevated odds among Muslim students and those attending universities underscores the need for targeted exploration of sociocultural and institutional factors that may exacerbate vulnerability to BDD.
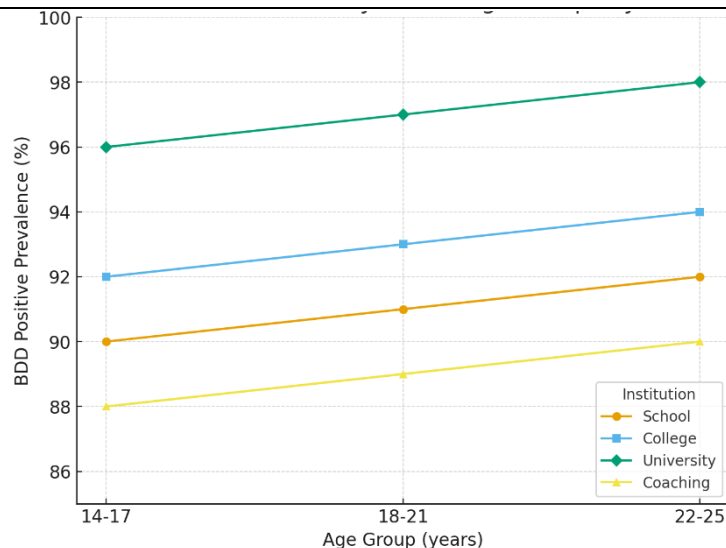
The figure illustrates the prevalence of BDD positivity across age groups stratified by type of educational institution. A clear upward trajectory is observed with increasing age, most prominently among university students, where prevalence rises from 96% in the 14–17 group to 98% in the 22–25 group. Colleges also show elevated prevalence, reaching 94% in older students, whereas schools and coaching centers maintain comparatively lower rates, plateauing around 90%. The contrast between university and school trajectories highlights a widening gap with age, suggesting institutional environment and academic stage amplify vulnerability to BDD. This pattern underscores how educational context and developmental stage intersect to shape risk, with university students consistently exhibiting the highest burden across all age categories.

DISCUSSION

The present study examined cultural and institutional influences on the prevalence of Body Dysmorphic Disorder (BDD) among adolescents and young adults in Karachi. The results revealed an alarmingly high prevalence of BDD, with 92.9% of participants screening positive, far exceeding international estimates, which generally range between 0.7–2.4% in community samples and 6–12% in psychiatric populations (20,21). Even in clinical contexts, such as dermatology and cosmetic surgery, prevalence rarely exceeds 50% (22). This discrepancy may reflect contextual factors, methodological differences, or sociocultural dynamics unique to Pakistan. The reliance on self-report screening via the BDDQ, while validated, may also yield higher prevalence estimates compared to structured clinical interviews (23). Nonetheless, the magnitude of the observed prevalence indicates a substantial public health concern that warrants urgent attention.

A key finding of this study was the significant association between religious affiliation and BDD status. Muslim participants were more than three times as likely to screen positive for BDD compared with non-Muslim counterparts. Previous literature on the role of religiosity in body image concerns has produced inconsistent findings. While some studies suggest that religious involvement can buffer against body dissatisfaction by promoting modesty and internal values (24), others highlight that religiosity may amplify self-surveillance and moralized standards of physical appearance, thereby increasing vulnerability to BDD (25). The current findings support the latter interpretation within the Karachi context, where socioreligious norms surrounding modesty, gendered expectations, and familial reputation may impose heightened pressures on physical appearance. Further qualitative research is needed to elucidate the mechanisms through which religious affiliation interacts with cultural standards of attractiveness and internalized body image concerns.

Educational institution type also emerged as a significant determinant of BDD prevalence, with university students showing the highest odds of positive screening compared with peers in schools, colleges, or coaching centers. This finding aligns with prior work reporting heightened body dissatisfaction among university populations, where academic stress, peer comparison, and social exposure are intensified (26,27). A study from Saudi Arabia found a BDD prevalence of 13.9% among university students, with strong associations with depression, anxiety, and stress (28). Similarly, research from Bangladesh reported BDD symptomatology in 12.5% of undergraduates, particularly among smokers and private university attendees (29). In contrast, the near-total prevalence observed among Karachi university students underscores the possibility of compounding cultural pressures, competitive environments, and perhaps a broader sociocultural shift toward appearance-driven identity. The finding that no students in schools or coaching centers screened negatively suggests a near-universal vulnerability across settings, but the amplified risk at the university level highlights the need for campus-based interventions.

Contrary to expectations, ethnicity was not significantly associated with BDD status. The distribution of positive cases was relatively uniform across Sindhi, Punjabi, Balochi, Pathan, and Mahajir participants, suggesting that ethnic identity alone does not account for variation in body image pathology within this urban cohort. This finding differs from studies in multicultural contexts, such as Western immigrant populations, where ethnic minority status has been linked to body dissatisfaction (30). In Karachi, shared urban exposures, media influences, and overlapping cultural ideals may have diluted the effects of ethnicity. Similarly, gender was not significantly associated with BDD prevalence, despite global trends suggesting higher vulnerability among females (31). Some evidence indicates that while women more often report dissatisfaction related to body weight, complexion, and facial features, men may be equally distressed by

muscularity, hair loss, and stature (32). The comparable rates in this sample may reflect different but equally potent gendered pressures, aligning with research in South Asia showing narrowing gender differences in BDD prevalence (33).

The exceptionally high prevalence detected in this study demands cautious interpretation. Convenience sampling may have overrepresented highly motivated or vulnerable individuals, while the absence of clinical interviews prevents confirmation of diagnostic status. Self-report biases, particularly in adolescents, may also inflate prevalence estimates. Despite these limitations, the consistency of significant associations with religion and institutional type suggests that these variables merit further investigation. Strengths of the study include the inclusion of multiple types of educational institutions and the use of a validated instrument. However, the absence of socioeconomic data, mental health comorbidities, and longitudinal follow-up constrains causal inferences.

These findings have several implications. First, they underscore the urgent need for mental health screening in educational institutions, particularly universities, where students appear most vulnerable. Second, the potential role of religiosity suggests that interventions must be culturally sensitive, acknowledging both protective and risk-enhancing aspects of religious norms. Third, the near-universal rates observed in this cohort highlight the necessity for broader public health campaigns addressing body image awareness, stigma reduction, and early identification of BDD. Finally, future research should employ representative sampling, clinical diagnostic interviews, and longitudinal designs to clarify prevalence estimates and causal pathways.

CONCLUSION

This study demonstrates that Body Dysmorphic Disorder is highly prevalent among youth in Karachi, with nearly universal positive screening rates across educational institutions. The findings emphasize that religious affiliation and type of educational institution are significant determinants of BDD status, while ethnicity and gender appear to play a minimal role. These results suggest that sociocultural norms and academic environments may amplify appearance-related pressures during adolescence and early adulthood, heightening vulnerability to psychopathology. The exceptionally high prevalence reported in this study underscores the need for urgent recognition of BDD as a major mental health concern in Pakistan. Interventions should be integrated within educational settings, particularly at the university level, where risk appears most pronounced. Awareness campaigns, culturally sensitive counseling services, and early detection strategies are critical to mitigate the burden of BDD among young populations. Future research should focus on longitudinal designs and diverse representative samples to validate prevalence estimates and explore causal mechanisms linking cultural and institutional factors to body image pathology.

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