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Original Research Article

PREVALENCE OF BODY IMAGE DISSATISFACTION AND ITS RELATIONSHIP WITH SELF-ESTEEM AMONG ADOLESCENT GIRLS

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ABSTRACT

Background: Adolescence is a critical phase for psychological development, during which body image concerns and self-esteem often emerge. This study aimed to assess the prevalence of body image dissatisfaction and its association with self-esteem among adolescent schoolgirls in an urban Indian setting. **Materials and Methods:** A cross-sectional study was conducted among 268 girls aged 13–18 years from government and private schools. Data were collected using the Body Shape Questionnaire-16A (BSQ-16A) and Rosenberg Self-Esteem Scale (RSES). Descriptive statistics, Chi-square tests, and Pearson's correlation were used for analysis. **Result:** Overall, 48.9% of participants had moderate to marked concern about body image. Moderate self-esteem was most common (60.8%), and 16.4% reported low self-esteem. A statistically significant association was found between body dissatisfaction and self-esteem ($p < 0.001$), with a moderate negative correlation between BSQ and RSES scores ($r = –0.49$, $p < 0.001$). **Conclusion:** High levels of body image concern were strongly associated with low self-esteem among adolescent girls. These findings highlight the need for targeted school-based interventions promoting body acceptance and self-worth.

INTRODUCTION

Adolescence is a transitional phase characterized by significant physical, psychological, and emotional development.[1] Among these, the emergence of body image consciousness plays a pivotal role in shaping an individual's self-concept and mental health. Body image refers to a person's perceptions, thoughts, and feelings about their physical appearance.[1] During adolescence, girls become particularly vulnerable to external influences such as peer pressure, societal expectations, and media portrayals of the "ideal" body, often leading to body dissatisfaction and low self-esteem.[1]

Globally, studies report that nearly 50–70% of adolescent girls are dissatisfied with their body image, often desiring to be thinner regardless of their actual body weight.[2] This dissatisfaction has been linked to various psychosocial issues including low self-esteem, depression, eating disorders, and unhealthy weight-control practices.[3] In the Indian context, recent evidence suggests a rising concern regarding body image among adolescents due to the increasing influence of Western beauty standards and pervasive exposure to social media platforms that promote unrealistic body ideals.[4]

Literature shows that among school-going girls two third are dissatisfied with their body shape, and half perceived themselves to be overweight despite having a normal BMI.[5] It is observed that there exist a significant association between body dissatisfaction and lower self-esteem, with nearly one third of adolescent girls scoring in the low to moderate self-esteem range on standardized scales.[6] These findings are concerning as low self-esteem during adolescence has been associated with long-term consequences such as academic underachievement, substance abuse, and persistent mental health issues.[7]

Cultural norms in India also contribute uniquely to body image concerns. In many regions, fair skin and slender physique are considered desirable traits for females, often reinforced through matrimonial advertisements, social narratives, and family expectations.[8] Moreover, with the growing penetration of smartphones and internet access among adolescents estimated at 76% for Indian teens as per the AESR (2024) exposure to curated and idealized body images on platforms like Instagram and YouTube is becoming a major influence.[9]

Despite the growing relevance of these issues, there remains a paucity of region-specific studies exploring

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the interrelationship between body image perception and self-esteem among adolescent girls in India.[8] Identifying the extent and nature of body dissatisfaction, and its psychosocial correlates, is crucial for planning targeted health education, school counseling programs, and preventive mental health interventions.[7] So, the present study was aimed to assess body image perception and its association with self-esteem among adolescent girls in a cross-sectional school-based setting.

MATERIALS AND METHODS

Study Design and Setting: This cross-sectional, school-based study was conducted among adolescent girls in the age group of 13 to 18 years in North India. The study was carried out over a period of twelve months, from July 2023 to July 2024, in two secondary schools—one government and one private—located in the urban field practice area of the Department of Community Medicine, tertiary care hospital. Prior permissions were obtained from school authorities before initiating the study.

Study Population and Sampling: The study population comprised school-going adolescent girls studying in classes 8 through 12. Inclusion criteria were adolescent girls aged 13–18 years who were present on the day of data collection, provided informed assent, and had parental consent. Exclusion criteria included students with a known psychiatric diagnosis, diagnosed eating or endocrine disorders, or chronic illnesses likely to affect body morphology or self-perception, as well as those who refused participation.

The required sample size was calculated based on an estimated 60% prevalence of body dissatisfaction among adolescent girls in India by Paria et al., with a 95% confidence level and 5% absolute precision.[10] Using the formula $n = Z^2 \times p(1–p)/d^2$, where $Z = 1.96$, $p = 0.60$, and $d = 0.05$, the minimum sample size was found to be 369. After applying a finite population correction for the estimated total population of adolescent girls in the selected schools (approximately 900), the adjusted sample size was calculated to be 244. Considering a 10% non-response rate, the final target sample size was increased to 268 participants. A multistage sampling technique was used. In the first stage, two schools were selected using simple random sampling from a list of eligible schools. In the second stage, systematic random sampling was applied to select students proportionately from each class using class registers as the sampling frame.

Data Collection: Data were collected using a structured, pre-tested, self-administered questionnaire divided into three sections. The first section recorded sociodemographic information including age, class, parental education and occupation, family income, and type of family. The second section evaluated body image perception using the Body Shape Questionnaire-16A (BSQ-16A), a validated instrument consisting of 16 items scored on a 6-point Likert scale, ranging from "never" (1) to "always" (6). The total score ranged from 16 to 96 and was categorized as follows: <38 (no concern), 38–51 (mild concern), 52–66 (moderate concern), and >66 (marked concern about body shape) [11]. The third section assessed self-esteem using the Rosenberg Self-Esteem Scale (RSES), a 10-item tool scored on a 4-point Likert scale. The total score ranged from 0 to 30, with scores <15 indicating low self-esteem, 15–25 moderate self-esteem, and >25 high self-esteem [12]. The questionnaire was developed in English and translated into the local language (Hindi) and then back-translated to ensure content validity.

After obtaining administrative permissions and ethical clearance, the questionnaire was administered in classroom settings during school hours. Participants were assembled in groups and briefed about the study objectives, their rights, and the confidentiality of their responses. They were also informed that participation was voluntary and that they could withdraw at any point without any academic repercussions. Written informed consent from parents and assent from students were obtained prior to data collection. The questionnaires were filled independently under supervision, without peer interaction, and took approximately 20–25 minutes per participant.

Statistical Analysis: Data were entered into Microsoft Excel 2019 and analyzed using IBM SPSS Statistics version 20. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated for sociodemographic variables, BSQ-16A scores, and RSES scores. The association between categories of body image perception and levels of self-esteem was examined using the Chi-square test. Pearson's correlation coefficient was used to evaluate the linear relationship between total BSQ-16A and RSES scores. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations: The study protocol was reviewed and approved by the Institutional Ethics Committee. Written informed consent was obtained from the parents or guardians of all participants, and assent was taken from the adolescent girls themselves. Data confidentiality was strictly maintained, and no personally identifiable information was recorded. Participants found to have high body dissatisfaction or low self-esteem were offered counseling support in collaboration with the school authorities and trained counselors.

RESULTS

Out of the 268 adolescent girls studied, the majority (53.0%) were aged 13–15 years. Participants were almost equally distributed between government (49.3%) and private (50.7%) schools. Most belonged to lower-middle (38.1%) or upper-middle (26.9%)

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socioeconomic status. A significant proportion of mothers (38.4%) had completed secondary education. Nuclear families were predominant (66.4%), and over 80% of participants reported using social media for at least one hour daily [Table 1].

Table 1: Sociodemographic Profile of the Participants (n = 268).

Variable	Frequency	%
Age Group (in years)		
13–15	142	53
16–18	126	47
Grade		
8th	48	17.9
9th	56	20.9
10th	52	19.4
11th	59	22
12th	53	19.8
Type of School		
Government	132	49.3
Private	136	50.7
Socioeconomic Status*		
Upper	18	6.7
Upper Middle	72	26.9
Lower Middle	102	38.1
Upper Lower	63	23.5
Lower	13	4.8
Mother's Education		
Illiterate	28	10.4
Up to Primary	47	17.5
Secondary	103	38.4
Higher Secondary & Above	90	33.6
Family Type		
Nuclear	178	66.4
Joint	90	33.6
Daily Social Media Use (hours)		
<1 hour	52	19.4
1–2 hours	117	43.7
>2 hours	99	36.9

*Modified BG Prasad scale, adjusted to 2024 CPI.

Based on BSQ-16A scores, 31.0% of participants had moderate concern, and 17.9% had marked concern about body image. Only 21.6% reported no concern. The mean BSQ score was 51.3 ± 12.7, indicating a considerable level of body dissatisfaction among the group. Body image concern appeared more pronounced among older adolescents and those in higher grades [Table 2].

Table 2: Distribution of Body Image Perception Based on BSQ-16A Scores (n = 268).

BSQ-16A Score Category	Score Range	Frequency/ Mean± SD	%
No Concern	<38	58	21.6
Mild Concern	38–51	79	29.5
Moderate Concern	52–66	83	31
Marked Concern	>66	48	17.9
BSQ Score	—	51.3 ± 12.7	—

Most participants (60.8%) had moderate self-esteem, while 16.4% had low and 22.8% had high self-esteem. The mean RSES score was 19.8 ± 4.9. Low self-esteem was more commonly observed among students from government schools and among those with mothers having lower education levels [Table 3].

Table 3: Distribution of Self-Esteem Levels Based on RSES Scores (n = 268).

RSES Score Category	Score Range	Frequency/ Mean± SD	%
High Self-Esteem	>25	61	22.8
Moderate Self-Esteem	15–25	163	60.8
Low Self-Esteem	<15	44	16.4
RSES Score	—	19.8 ± 4.9	—

A significant association was observed between BSQ and RSES categories ($p < 0.001$). Among participants with marked concern about body image, 45.8% had low self-esteem. In contrast, 48.3% of those with no concern about body shape had high self-esteem. The proportion of low self-esteem increased with the severity of body dissatisfaction, highlighting a clear inverse relationship [Table 4].

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Table 4: Association Between Body Image Perception and Self-Esteem Levels (n = 268).

BSQ Category\ RSES Category	High SE (n=61)	Moderate SE (n=163)	Low SE (n=44)	Test of significance, p value
	Frequency (%)			
No Concern (<38) (n=58)	28 (48.3%)	26 (44.8%)	4 (6.9%)	Chi-square = 42.78, df = 6, p < 0.001*
Mild Concern (38–51) (n=79)	21 (26.6%)	48 (60.8%)	10 (12.7%)	
Moderate Concern (52–66) (n=83)	10 (12.0%)	65 (78.3%)	8 (9.6%)	
Marked Concern (>66) (n=48)	2 (4.2%)	24 (50.0%)	22 (45.8%)	

*Statistically significant

A statistically significant moderate negative correlation (r = –0.49, p < 0.001) was found between BSQ and RSES scores. This indicates that as body dissatisfaction increased, self-esteem significantly decreased among the participants [Table 5 and Figure 1].

Table 5: Correlation Between Body Image Perception and Self-Esteem Scores (n = 268).

Variable	Pearson's r	95% CI	p-value
BSQ-16A score vs RSES score	–0.49	–0.58 to –0.39	<0.001

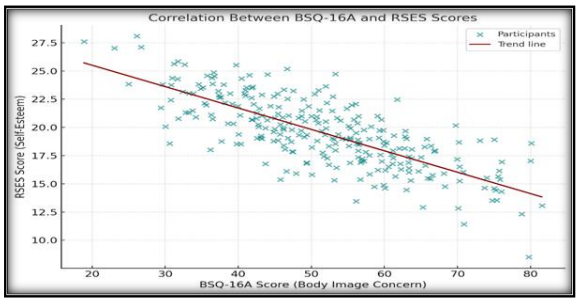

Figure 1: Liner Regression Curve illustrating the inverse correlation between BSQ-16A (body image concern) and RSES (self-esteem) scores.

DISCUSSION

The present study explored the prevalence of body image concerns and their association with self-esteem among 268 adolescent school-going girls aged 13–18 years. In our study, 48.9% of participants had either moderate (31.0%) or marked (17.9%) concern about their body image, as measured by the BSQ-16A, with a mean score of 51.3 ± 12.7. This is comparable to a study by Divya et al., in Hyderabad, which found that more than two third of adolescent girls reported dissatisfaction with their body shape despite normal BMI values.[13] Similarly, Thakur et al., in Sirmour noted that more than half of adolescent girls perceived themselves as overweight and nearly one-third were actively engaging in weight-control behaviors, irrespective of actual weight status.[14] The influence of social media, evident in our study where over 80% of girls reported daily usage of more than one hour, likely contributes to this growing dissatisfaction. Studies by Roberts et al., Anixiadis et al., and Barbierik et al., have demonstrated that prolonged exposure to image-based platforms like Instagram significantly increases body surveillance and internalization of thin ideals.[15-17]

Our findings on self-esteem revealed that 60.8% of participants had moderate self-esteem, while 16.4% had low self-esteem, with a mean RSES score of 19.8 ± 4.9. These results are consistent with those of Mathew et al., who found low-to-moderate self-esteem in 35% of school-going girls in Kerala.[18] Self-esteem in adolescence is a critical determinant of emotional and behavioral adjustment, and persistent low self-esteem is associated with a higher risk of depression, substance use, and academic underachievement.[19]

The association between body image perception and self-esteem was statistically significant in our study (p < 0.001), with nearly 46% of participants with marked body image concern also demonstrating low self-esteem. Conversely, 48.3% of girls who reported no concern for body image had high self-esteem. These findings support earlier evidence from Western and Indian literature.[20,21] For instance, Alfonso-Fuertes et al., observed that adolescents with greater body dissatisfaction reported consistently lower self-esteem over time, especially among females.[20] In India, a study by Ahuja et al., found that adolescent girls with negative body image were three times more likely to report poor self-worth and psychological distress.[21] The strong negative correlation between BSQ and RSES scores in our study (r = –0.49, p < 0.001) reinforces this inverse relationship, which is also supported by longitudinal studies such as those by Flores Mata et al.[22]

The psychological basis for this relationship may lie in the developmental nature of adolescence, a phase characterized by heightened self-awareness, increased sensitivity to social comparison, and identity formation.[23] During this phase, girls tend to define self-worth based on physical appearance, influenced by cultural norms and peer validation.[24] In India, the societal emphasis on fairness, slimness, and conventional beauty standards further aggravates body dissatisfaction, as shown by Sinha et al., who described how media and family narratives in Indian society reinforce idealized physical attributes among young females.[25]

Sociodemographic variables also played a role in influencing these outcomes. Girls from private schools and those in higher socioeconomic groups had slightly higher BSQ scores, possibly due to increased exposure to social media, westernized beauty ideals, and peer pressure. Lower self-esteem was more prevalent among girls whose mothers had lower educational attainment, suggesting that

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maternal influence and communication styles may play a protective role in adolescent mental health.[25] A study by Kamdar et al., also emphasized that parental warmth and supportive parenting were significantly associated with better self-esteem and healthier body image among Indian adolescents.[26]

The results of our study underscore the need for comprehensive school-based health programs focusing on mental well-being, body positivity, and resilience-building among adolescent girls.[27] Interventions should include media literacy, promotion of diverse body types, and opportunities for open dialogue on self-image. Counseling services and peer support programs, particularly in schools serving vulnerable populations, can help address negative self-perceptions before they translate into chronic mental health issues.[28,29]

Limitations

Our study has certain strengths, including the use of validated and culturally adapted instruments (BSQ-16A and RSES), adequate sample size, and inclusion of both government and private school students, offering a broader perspective. However, it is limited by its cross-sectional design, which does not establish causality, and reliance on self-reported data, which may be influenced by social desirability bias. Furthermore, the study was restricted to a single urban area, which may limit generalizability to rural or tribal adolescent populations.

CONCLUSION

This study highlights a high prevalence of body image dissatisfaction among adolescent girls, with nearly half experiencing moderate to marked concern, significantly associated with low self-esteem. A strong inverse relationship was observed between BSQ-16A and RSES scores. These findings underscore the urgent need for body positivity programs, media literacy, and school-based interventions that promote healthy self-perception. Parental education, peer influence, and digital exposure play key roles and must be addressed in adolescent health strategies to prevent long-term psychosocial consequences.

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