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Relationship between nutritional status and body shape concerns among adolescents: A gender based study

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ABSTRACT

Adolescence is a critical period of physical and psychosocial development during which changes in body size and shape may influence concerns related to physical appearance. The present study examined the relationship between nutritional status and body shape concerns among 300 adolescents, comprising 150 girls and 150 boys aged 16–18 years. Nutritional status was assessed using Body Mass Index (BMI), while body shape concerns were assessed using the Body Shape Questionnaire (BSQ-34) developed by Cooper *et al.* (1987). A significant gender difference was observed in nutritional status, with girls more represented in the severe thinness and thinness/underweight categories, whereas boys had a significantly higher mean BMI than girls (20.42 ± 4.06 vs. 18.09 ± 3.53). Body shape concerns also differed significantly by gender, with girls reporting higher mean BSQ-34 scores than boys (102.80 ± 44.56 vs. 83.21 ± 33.85). BMI category was significantly associated with BSQ-34 concern category among both girls and boys; however, a significant positive correlation between BMI and BSQ-34 score was observed only among girls. Hierarchical multiple regression showed that gender, BMI and socio-economic status were significant statistical predictors of BSQ-34 scores, with the final model explaining 28.0 per cent of the variance. The findings indicate that body shape concerns occur across different nutritional-status categories and that the relationship between BMI and body shape concerns varies by gender. The findings highlight the importance of considering objective nutritional status together with body shape concerns when addressing adolescent health.

Keywords: Body Image Perception, BMI, Gender

Introduction

Adolescence is a period of rapid physical, emotional and social development, marked by considerable changes in height, weight, body shape and physical appearance. During this period, adolescents become increasingly aware of their bodies and may compare their appearance with that of peers and socially valued ideals. Body image is a multidimensional construct involving how individuals perceive, think and feel about their bodies, including perceptions of body size and shape, appearance-related evaluations and associated emotions (Grogan, 2002) [1].

Although body image is a broad construct, the present study focuses specifically on body shape concerns/body dissatisfaction, as assessed by the Body Shape Questionnaire-34 (BSQ-34). The BSQ-34 primarily assesses concerns related to body shape, weight and appearance and should therefore not be interpreted as a comprehensive measure of overall body image. Body dissatisfaction refers more specifically to negative evaluation or concern regarding body size, shape or appearance (Cash *et al.*, 2011) [2].

Body shape concerns may become more pronounced when adolescents perceive a discrepancy between their actual appearance and the body shape they consider desirable. Such perceptions may be influenced by peers, family members, traditional media and social networking platforms. Nutritional status and body image are related but distinct aspects of adolescent health. Nutritional status can be assessed objectively using anthropometric indicators such as BMI, whereas body shape concerns represent a subjective evaluation of the body.

Gender is an important consideration in understanding body shape concerns. Although both girls and boys may experience concerns regarding physical appearance, the nature of these concerns may differ. Girls have traditionally been exposed to a thinness-oriented appearance ideal and may place greater emphasis on body weight and achieving a smaller or thinner body. Boys may be more concerned with developing a larger, muscular, lean or physically strong physique (Grogan, 2002; McCabe and Ricciardelli, 2004; Voelker *et al.*, 2015) [1, 3]. Consequently, girls may more frequently desire weight reduction, whereas boys may desire weight gain or increased muscularity. These gender-specific appearance ideals suggest that adolescents with similar BMI values may evaluate their bodies differently.

Research among Indian adolescents has also demonstrated differences in body-weight perception and body shape concerns according to gender and nutritional status (Johnson *et al.*, 2015; Deshmukh *et al.*, 2017) [5, 4]. The relationship between BMI and body shape concerns is particularly important because concerns may

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occur at both lower and higher levels of BMI. Adolescents with overweight or obesity may experience dissatisfaction because of concerns regarding body size, while adolescents with normal or low BMI may also perceive their bodies negatively or feel dissatisfied with their appearance.

Evidence from Indian adolescents has demonstrated significant differences in body-image attitudes across BMI categories, with girls generally reporting greater concerns regarding appearance and body satisfaction (Deshmukh *et al.*, 2017) [4]. Flores *et al.* (2017) [6], in a systematic review, reported a positive association between BMI and body-image dissatisfaction among children and adolescents. Longitudinal evidence has further indicated that body dissatisfaction may increase from adolescence into young adulthood, with increasing BMI associated with greater body dissatisfaction (Bucchianeri *et al.*, 2013) [7].

Body shape concerns are relevant not only to perceptions of physical appearance but also to adolescent psychosocial well-being. Body dissatisfaction has been associated with psychological difficulties, including depressive symptoms, anxiety, low self-esteem and social withdrawal. Adolescents with overweight or obesity may additionally experience weight-related teasing, stigma and peer victimisation (Voelker *et al.*, 2015) [3]. Body dissatisfaction has also been associated with unhealthy weight-control practices, including restrictive dieting and other attempts to alter body weight or appearance (Stice *et al.*, 2002; Sztaier *et al.*, 2006) [8, 9].

Therefore, examining body shape concerns in relation to nutritional status separately among girls and boys is important for understanding whether objective BMI corresponds with adolescents' subjective evaluation of their bodies. The present study was undertaken to examine the relationship between nutritional status and body shape concerns among adolescents, with particular emphasis on gender differences.

Objectives

- To assess the nutritional status of adolescent girls and boys aged 16–18 years.
- To assess body shape concerns among adolescent girls and boys.
- To examine gender differences in nutritional status and body shape concerns.
- To determine the association and correlation between BMI and body shape concerns among girls and boys.
- To identify the predictors of body shape concerns among adolescents.

Methodology

Research design and participants: A differential and exploratory research design was adopted to assess gender differences in nutritional status and body shape concerns and to examine the association between BMI and body shape concerns. The study was conducted in Dharwad city, Karnataka, among 300 adolescents aged 16–18 years studying in 11th and 12th grades. Participants were selected from 10 pre-university colleges through purposive sampling, with equal representation of girls ($n = 150$) and boys ($n = 150$).

Data collection and measures

Prior permission was obtained from the concerned pre-university colleges. The purpose and procedures of the study were explained to the participants, and oral informed consent was obtained before participation. Confidentiality and anonymity of the information provided by participants were maintained. Personal and family characteristics were recorded using a self-structured schedule covering age, gender, height, weight, type of family, parental education, parental occupation and monthly family income.

BMI was calculated using the formula: $\text{BMI} = \text{Weight (kg)} / \text{Height (m}^2\text{)}$

Nutritional status was classified according to the WHO (2007) BMI-for-age reference into severe thinness, thinness/underweight, healthy weight, overweight and obese categories. Body shape concerns were assessed using the Body Shape Questionnaire-34 (BSQ-34) developed by Cooper *et al.* (1987) [10]. The reliability of the BSQ-34 in the present study was assessed using Cronbach's alpha and the Guttman split-half method, yielding coefficients of 0.97 and 0.96, respectively. Socioeconomic status was assessed using the Modified Kuppuswamy Socio-Economic Status Scale updated by Radhakrishnan *et al.* (2023) [11].

Statistical analysis: Data were coded and entered in Microsoft Excel and analysed using SPSS version 21.0. Descriptive statistics, chi-square test, independent-samples *t*-test, correlation and hierarchical multiple regression were used for analysis. Statistical significance was considered at the levels reported in the respective tables

Results

The majority of the adolescents (74.00%) were aged 16–17 years, while 26.00 per cent were aged 17–18 years. Regarding maternal education, the largest proportion of mothers had completed high school (37.70%), followed by intermediate/diploma education (20.70%) and middle school education (17.00%). About 8.30 per cent were graduates, 5.30 per cent had professional/honours education and 8.00 per cent were illiterate. Among fathers, 25.30 per cent had intermediate/diploma education and 24.70 per cent were graduates, followed by high school (20.30%) and middle school education (15.00%). Only 5.30 per cent of fathers were illiterate (Table 1).

$N = 300$

Figures in parenthesis indicates percentage

Most mothers were homemakers/unemployed (73.30%), whereas fathers were predominantly engaged in agricultural/fishery work (31.70%) and skilled work/shop and market sales (24.70%). Most adolescents belonged to nuclear families (71.00%), while 29.0 per cent belonged to joint families. With regard to socioeconomic status, 40.30 per cent belonged to the lower-middle category, 32.00 per cent to the upper-middle category and 24.70 per cent to the upper-lower category. Only 2.30 per cent belonged to the upper category and 0.70 per cent to the lower category. The socio-demographic profile indicates that the study participants predominantly came from nuclear families and lower-middle to upper-middle socioeconomic backgrounds. The relatively similar representation of girls and boys provides a basis for gender-based comparison within the study population.

Overall, the adolescents predominantly belonged to nuclear families and lower-middle to upper-middle socio-economic groups, with mothers largely being homemakers and fathers mainly engaged in agricultural and skilled occupations.

$N = 300$

Figures in parenthesis indicates percentage, *Significant at 0.05 level, ** Significant at 0.01 level

A significant gender difference was observed in nutritional status (Table 2). Girls constituted a greater proportion of adolescents with severe thinness (64.00%) and thinness/underweight (62.20%), whereas boys constituted a greater proportion of adolescents with normal BMI (57.10%) and obesity (75.00%). The proportion of overweight adolescents was equal among girls and boys (50.00% each; fig. 1). The association between gender and BMI was statistically significant ($\chi^2 = 10.58$, $p < 0.05$). Further, boys had a significantly higher mean BMI than girls (20.42 ± 4.06 vs. 18.09 ± 3.53 ; $t = 3.01$, $p < 0.01$). The co-existence of thinness and excess weight in the study population indicates the varied nutritional challenges experienced during adolescence and reflects the broader double burden of malnutrition. Similar evidence among Indian adolescents has demonstrated the simultaneous occurrence of undernutrition, overweight and obesity (Pandurangi *et al.*, 2022; Jaleel *et al.*, 2024) [13, 12]. Wangaskar *et al.* (2021) also reported the coexistence of thinness, overweight and obesity among

adolescents. Liao *et al.* (2013) [14] reported lower BMI among female adolescents compared with males.

The higher representation of girls in the thinness categories and the higher mean BMI among boys may be related to differences in adolescent growth patterns, body composition and nutritional require-

ments. However, the cross-sectional nature of the present study does not permit conclusions regarding the causes of these gender differences. The findings nevertheless indicate the importance of assessing both undernutrition and excess weight among adolescents rather than focusing exclusively on obesity.

Table 1. Socio-demographic profile of the adolescents

Variable	Girls (<i>n</i> = 150) f (%)	Boys (<i>n</i> = 150) f (%)	Total (<i>n</i> = 300) f (%)
Age			
16-17 years	108 (48.60)	114 (51.40)	222 (74.00)
17-18 years	42 (53.80)	36 (46.20)	78 (26.00)
Mother's education			
Professional/Honors	11 (7.30)	5 (3.30)	16 (5.30)
Graduate	15 (10.00)	10 (6.70)	25 (8.30)
Intermediate/ diploma	33 (22.00)	29 (19.30)	62 (20.70)
High school	53 (35.40)	60 (40.00)	113 (37.70)
Middle School	27 (18.00)	24 (16.00)	51 (17.00)
Primary School	5 (3.30)	4 (2.70)	9 (3.00)
Illiterate	6 (4.00)	18 (12.00)	24 (8.00)
Father's education			
Professional/Honors	9 (6.00)	5 (3.30)	14 (4.70)
Graduate	41 (27.30)	33 (22.00)	74 (24.70)
Intermediate/ diploma	33 (22.00)	43 (28.70)	76 (25.30)
High school	27 (18.00)	34 (22.70)	61 (20.30)
Middle School	28 (18.70)	17 (11.30)	45 (15.00)
Primary School	7 (4.70)	7 (4.70)	14 (4.70)
Illiterate	5 (3.30)	11 (7.30)	16 (5.30)
Mother's occupation			
Professional	3 (2.00)	4 (2.70)	7 (2.30)
Technicians/assoc professionals,	5 (3.30)	3 (2.00)	8 (2.70)
Clerk	6 (4.00)	3 (2.00)	9 (3.00)
Skilled worker, shop/market sales workers	3 (2.00)	4 (2.70)	7 (2.30)
Agricultural/fishery workers	5 (3.30)	5 (3.30)	10 (3.30)
Craft/ related trade workers	16 (10.70)	5 (3.30)	21 (7.00)
Machine operator	5 (3.30)	1 (0.70)	6 (2.00)
Elementary worker	7 (4.70)	5 (3.30)	12 (4.00)
Unemployed/House wife	100 (66.70)	120 (80.00)	220 (73.30)
Father's occupation			
Legislators/senior officials/ managers	4 (2.70)	-	4 (2.70)
Professional	7 (4.70)	2 (1.30)	9 (3.00)
Technicians/assoc professionals,	14 (9.30)	15 (10.00)	29 (9.70)
Clerk	19 (12.70)	10 (6.70)	29 (9.70)
Skilled worker, shop/market sales workers	34 (22.70)	40 (26.70)	74 (24.70)
Agricultural/fishery workers	39 (26.00)	56 (37.30)	95 (31.70)
Craft/ related trade workers	8 (5.20)	2 (1.30)	10 (3.30)
Machine operator	10 (6.70)	9 (6.00)	19 (6.30)
Elementary worker	15 (10.00)	13 (8.70)	28 (9.30)
Unemployed	-	3 (2.00)	3 (1.00)
Type of family			
Nuclear	108 (50.70)	105 (49.30)	213 (71.00)
Joint	42 (48.30)	45 (51.70)	87 (29.00)
Socio-economic status (SES)			
Upper	4 (2.60)	3 (2.00)	7 (2.30)
Upper middle	52 (34.70)	44 (29.30)	96 (32.00)
Lower middle	51 (34.00)	70 (46.70)	121 (40.30)

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Variable	Girls (<i>n</i> = 150) f (%)	Boys (<i>n</i> = 150) f (%)	Total (<i>n</i> = 300) f (%)
Upper lower	43 (28.70)	31 (20.70)	74 (24.70)
Lower	-	2 (1.30)	2 (0.70)

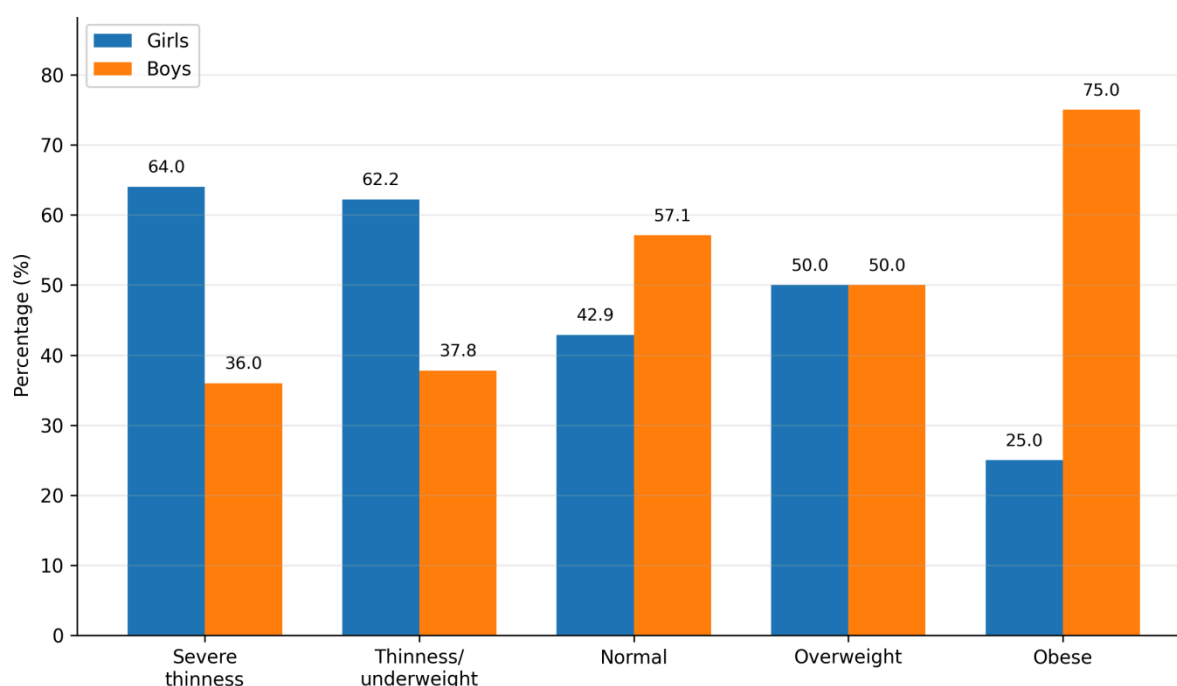
Table 2. Association and comparison of nutritional status between boys and girls

BMI	Girls (<i>n</i> = 150) f (%)	Boys (<i>n</i> = 150) f (%)	Total (<i>n</i> = 300) f (%)	χ^2	Girls Mean + SD	Boys Mean + SD	t-value
Severe thinness	16 (64.00)	9 (36.00)	25 (100.00)	10.58*	18.09 + 3.53	20.42 + 4.06	3.01**
Thinness/ underweight	46 (62.20)	28 (37.80)	74 (100.00)				
Normal	70 (42.90)	93 (57.10)	163 (100.00)				
Overweight	17 (50.00)	17 (50.00)	34 (100.00)				
Obese	1 (25.00)	3 (75.00)	4 (100.00)				

Table 3. Association and comparison of body shape concerns between boys and girls

BSQ-34 body shape concern	Girls (<i>n</i> = 150) f (%)	Boys (<i>n</i> = 150) f (%)	Total (<i>n</i> = 300) f (%)	χ^2	Girls Mean + SD	Boys Mean + SD	t-value
Not concerned	51 (43.20)	67 (56.80)	118 (100.00)	29.54***	102.80 + 44.56	83.21 + 33.85	4.48***
Slightly concerned	34 (36.60)	59 (63.40)	93 (100.00)				
Moderately concerned	47 (69.10)	21 (30.90)	68 (100.00)				
Highly concerned	18 (85.70)	3 (14.30)	21 (100.00)				

Figures in parenthesis indicates percentage, *** Significant at 0.001 level

**Figure 1.** Percentage-distribution of nutritional status by gender

The findings demonstrated a significant gender difference in body shape concerns (Table 3). Among adolescents classified as not concerned, 43.20 per cent were girls and 56.80 per cent were boys. In the slightly concerned category, girls constituted 36.60 per cent and boys 63.40 per cent. In contrast, girls constituted 69.10 per cent of the

moderately concerned group and 85.70 per cent of the highly concerned group (fig. 2). The association between gender and BSQ-34 concern category was statistically significant ($\chi^2 = 29.54$, $p < 0.001$). Girls also had a significantly higher mean BSQ-34 score than boys (102.80 ± 44.56 vs. 83.21 ± 33.85 ; $t = 4.48$, $p < 0.001$).

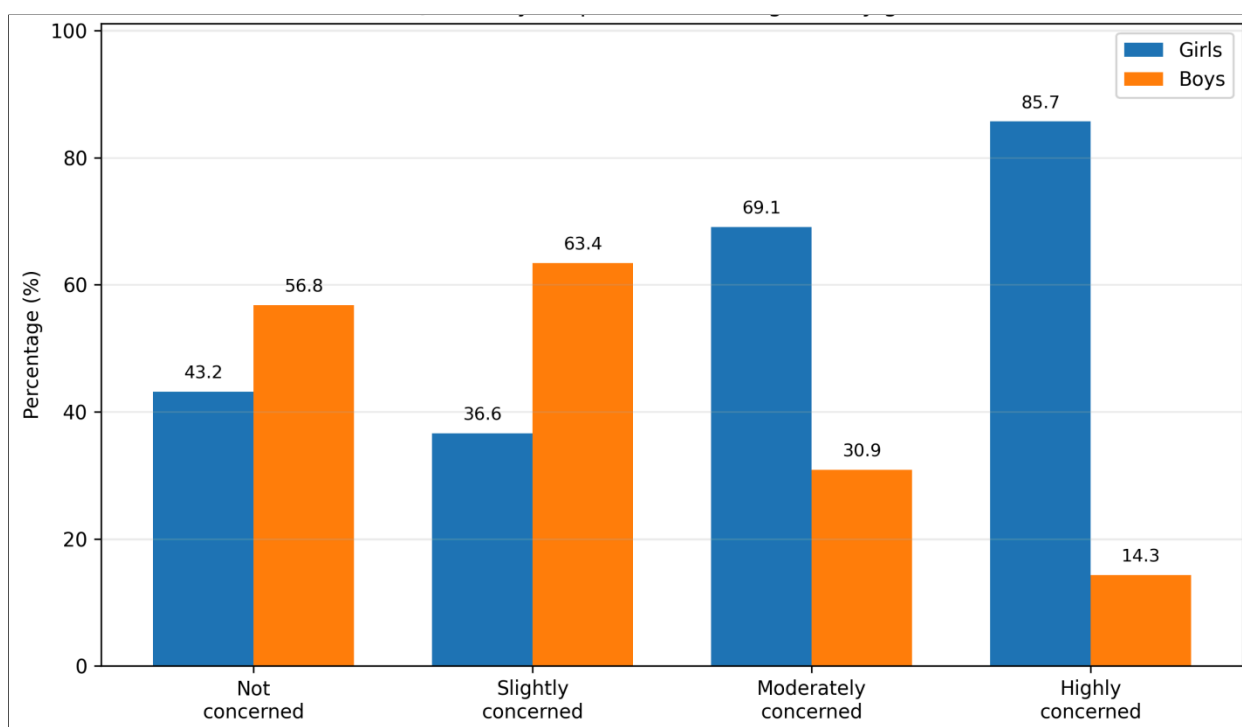


Figure 2. Percentage distribution of body shape concern among girls and boys.

This finding is consistent with previous studies reporting greater body dissatisfaction or body shape concerns among adolescent girls than boys (Voelker *et al.*, 2015 [3]; Jimenez Flores *et al.*, 2017 [6]; Deshmukh and Kulkarni, 2017 [4]; Bustos *et al.*, 2019) [15]. Martini *et al.* (2022) [16], in a systematic review, reported that weight dissatisfaction was more prevalent among girls, while Flores *et al.* (2017) [6] similarly identified greater body-image dissatisfaction among adolescent girls. Napp (2026) [17] also reported higher body dissatisfaction among girls than boys across international adolescent samples. The greater body shape concern observed among girls may be associated with gender-specific appearance ideals, sociocultural expectations regarding body shape and greater sensitivity to appearance-related evaluation and comparison during adolescence. At the same

time, boys also demonstrated body shape concerns, indicating that appearance-related concerns are not exclusive to girls. The nature of these concerns may differ, with boys potentially placing greater emphasis on muscularity, leanness or physical strength (McCabe and Ricciardelli, 2003, 2004; Voelker *et al.*, 2015) [18, 19]. An important conceptual consideration is that the BSQ-34 measures body shape concerns/body dissatisfaction, rather than overall body image. Therefore, the higher scores among girls in the present study should be interpreted specifically in terms of greater concern regarding body shape, weight and appearance.

Figures in parenthesis indicates percentage,** Significant at 0.01 level,

Table 4. Association and comparison between BMI and body shape concerns among boys and girls

BSQ-34 body shape concern	BMI					Total f (%)	Modified χ^2	r-value
	Severe thinness f (%)	Thinness/ Underweight f (%)	Normal f (%)	Overweight f (%)	Obese f (%)			
Girls								
Not concerned	5 (9.80)	23 (45.10)	21 (41.20)	2 (3.90)	-	51 (100.00)	22.73*	0.28**
Slightly concerned	7 (20.60)	10 (29.40)	14 (41.20)	3 (8.80)	-	34 (100.00)		
Moderately concerned	4 (8.50)	11 (23.40)	22 (46.80)	9 (19.10)	1 (2.10)	47 (100.00)		
Highly Concerned	-	2 (11.10)	13 (72.20)	3 (16.70)	-	18 (100.00)		
Boys								

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BSQ-34 body shape concern	BMI					Total f (%)	Modified χ^2	r-value
	Severe thinness f (%)	Thinness/ Underweight f (%)	Normal f (%)	Overweight f (%)	Obese f (%)			
Not concerned	3 (4.50)	15 (22.40)	45 (67.20)	2 (3.00)	2 (3.00)	67 (100.00)	22.35*	0.11 NS
Slightly concerned	5 (8.50)	9 (15.30)	34 (57.60)	11 (18.60)	-	59 (100.00)		
Moderately concerned	1 (4.80)	3 (14.30)	14 (66.70)	2 (9.50)	1 (4.80)	21 (100.00)		
Highly concerned	-	1 (33.30)	-	2 (66.70)	-	3 (100.00)		

* Significant at 0.05 level, (Blank cells are excluded from the analysis)

Among girls, adolescents who were not concerned were predominantly thin/underweight (45.10%) or had normal BMI (41.20%). Among highly concerned girls, the majority had normal BMI (72.20%), followed by overweight (16.70%) and thinness/underweight (11.10%). BMI was significantly associated with BSQ-34 concern categories among girls ($\chi^2 = 22.73$, $p < 0.05$) and showed a significant positive correlation with BSQ-34 scores ($r = 0.28$, $p < 0.01$).

Among boys, BMI was also significantly associated with BSQ-34 concern category ($\chi^2 = 22.35$, $p < 0.05$), but the correlation between BMI and BSQ-34 score was not statistically significant ($r = 0.11$). Adolescents with normal BMI constituted the largest proportion of the not concerned (67.20%), slightly concerned (57.60%) and moderately concerned (66.70%) groups. Among highly concerned boys, 66.70 per cent were overweight and 33.30 per cent were thin/underweight (Table 4).

The findings therefore indicate that BMI and body shape concerns are related, but the relationship differs by gender. The significant positive correlation among girls suggests that higher BMI was associated with greater body shape concerns. Among boys, although BMI categories were significantly associated with concern categories, the absence of a significant correlation suggests that the linear relationship between BMI and the continuous BSQ-34 score was weak.

The presence of considerable body shape concern among girls with normal BMI is particularly important. It indicates that objective nutritional status alone may not adequately explain how adolescents evaluate their bodies. Flores *et al.* (2017) [6] similarly reported that body dissatisfaction can occur among adolescents across different BMI categories. Deshmukh *et al.* (2017) [4] reported differences in body shape concerns according to BMI and gender among Indian adolescents, while Calzo *et al.* (2012) [20] found that the association between BMI and body dissatisfaction differed between adolescent boys and girls.

The present findings also demonstrate that body shape concerns should not be considered solely a consequence of overweight or obesity. Adolescents with normal or low BMI may also experience concerns regarding their body shape. Perceived discrepancy between actual and ideal appearance, social comparison and appearance-related expectations may contribute to these concerns. Consequently, screening for body shape concerns may be relevant across the BMI spectrum rather than being restricted to adolescents with high BMI.

Hierarchical multiple regression was conducted to determine the contribution of personal, parental and familial characteristics to body shape concerns (Table 5). In Model I, age, gender and BMI together explained 24.9 per cent of the variance in BSQ-34 scores. With the addition of parental characteristics in Model II, the explained variance increased to 27.2 per cent. The final model, which additionally included familial characteristics, explained 28.0 per cent of the variance ($R^2 = 0.280$; adjusted $R^2 = 0.255$).

Table 5. Predictors of body shape concerns among adolescents

Predictors	Model –I		Model –II		Model –III	
	Beta	SE	Beta	SE	Beta	SE
Personal characteristics						
Age	-0.080	4.029	-0.059	4.033	-0.062	4.038
Gender	-0.270***	4.491	-0.248***	4.509	-0.240***	4.523
BMI	0.312**	0.582	0.297***	0.582	0.290***	0.583
Parental characteristics						
Mother's education			0.060	1.964	0.042	1.992
Father's education			0.020	1.940	-0.062	2.445
Mother's occupation			0.047	1.147	0.022	1.211
Father's occupation			0.080	1.509	-0.070	2.673
Familial characteristics						
Type of family					0.033	4.872
SES					0.241*	1.236
F- value	24.49***		13.58**		11.21**	
R	0.499		0.521		0.529	
R ²	0.249		0.272		0.280	
Adjusted R ²	0.239		0.252		0.255	

*** Significant at 0.001 level, ** Significant at 0.01 level, * Significant at 0.05 level,

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In the final model, gender ($\beta = -0.240, p < 0.001$), BMI ($\beta = 0.290, p < 0.001$) and socioeconomic status ($\beta = 0.241, p < 0.05$) were significant predictors of BSQ-34 scores. Age, parental education, parental occupation and type of family were not significant predictors.

The contribution of BMI to body shape concerns is consistent with previous research showing that BMI is associated with body dissatisfaction during adolescence (Paxton *et al.*, 2006; Quick *et al.*, 2013) [21, 22]. Deshmukh *et al.* (2017) [4] also reported differences in body shape concerns according to gender, BMI and socioeconomic status among Indian adolescents.

The significant association with socioeconomic status may reflect differences in social environments and appearance-related experiences; however, the mechanisms underlying this association cannot be established from the present study. Importantly, the final model explained 28.0 per cent of the variance, indicating that a substantial proportion of individual differences in body shape concerns remained unexplained by the variables included in the model. Other psychosocial and appearance-related factors may therefore contribute to body shape concerns.

Because the present study used a cross-sectional design, the regression findings represent statistical associations rather than causal relationships. The findings should therefore not be interpreted as demonstrating that higher BMI, gender or socioeconomic status causes greater body shape concerns.

Taken together, the findings demonstrate the coexistence of nutritional and psychosocial dimensions of adolescent health. Girls were more represented in the thinness categories and reported greater body shape concerns, whereas boys had a higher mean BMI and were more represented in the normal and obese categories. BMI category was significantly associated with BSQ-34 concern category among both girls and boys, but a significant positive correlation between BMI and BSQ-34 score was observed only among girls.

The findings further demonstrate that body shape concerns may occur even among adolescents with normal BMI. Thus, objective anthropometric status and subjective body-related concerns should be considered as related but distinct dimensions of adolescent well-being. The findings support the importance of gender-sensitive approaches that address healthy growth, realistic perceptions of body shape, appearance-related pressures and prevention of unhealthy weight-control practices.

Conclusion

The study demonstrates significant gender differences in both nutritional status and body shape concerns among adolescents aged 16–18 years. Girls were more represented in the severe thinness and thinness/underweight categories and reported significantly higher BSQ-34 body shape concern scores, whereas boys had a significantly higher mean BMI and were more represented in the normal and obese categories. BMI was significantly associated with body shape concern categories among both genders, although the positive correlation between BMI and BSQ-34 score was significant only among girls.

Gender, BMI and socioeconomic status emerged as significant statistical predictors of BSQ-34 scores, together explaining 28.0 per cent of the variance. Importantly, body shape concerns were observed across different nutritional-status categories, including among adolescents with normal BMI. These findings suggest that assessment of adolescent health should incorporate both objective nutritional assessment and screening for body shape concerns. Gender-sensitive counselling and health education may help adolescents develop realistic and healthy perceptions of body shape and weight. The findings are specific to the adolescents included in the present study and should not automatically be generalized to all adolescents.

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