

# Body Image in Students: Relationship with Eating, Media Influence, and Self-esteem

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## ABSTRACT

**Introduction:** This study was carried to examine the body image satisfaction and its relationship with self-esteem, body mass index (BMI), and influence of media on body image. Another objective was to observe any existing relationship between gender and body image dissatisfaction.

**Materials and methods:** Exploration of relationship of body image satisfaction with BMI, media influence, self-esteem, and other variables like socioeconomic demographic data, overall satisfaction in life (academic/professional), and current health status was carried out via a cross-sectional study using 5-item-based Likert scale in 303 participants.

**Results:** Males showed less concern about body image. Significant relationship of body mass was seen with BMI ( $p < 0.001$ ), eating attitude ( $p < 0.001$ ), influence of media ( $p < 0.001$ ), and self-esteem ( $p < 0.001$ ). Overweight students had a significantly higher prevalence of dissatisfaction ( $p < 0.001$ ) than students with low weight who reported a higher body image satisfaction.

**Conclusion:** To conclude, this study proves that there exists a significant relationship between eating attitude, media influence, and self-esteem with body image. Adequate anticipatory measures are required for improvement in individuality, self-acknowledgment, and individual contrasts while keeping up ideal weight and dynamic lifestyle.

**Keywords:** Body image, Body mass index, Media, Self-esteem.

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## INTRODUCTION

Body image is significantly influenced by the ever-changing interaction with the social environment<sup>1</sup> and

is also affected by sociocultural as well as biological and psychological factors.<sup>2</sup>

Body image dissatisfaction is a frequently cited term in public health and psychology.<sup>3,4</sup> According to literature, body image is affected by several factors, such as personal characteristics of the individual (age, gender, BMI, and weight), the cultural ideal of beauty (communicated through the mass media, marketing, and advertising), and social and cultural norms of the society.<sup>5</sup>

A very important determinant of eating and weight loss behavior as reported in various studies is perceived weight status<sup>6-10</sup>; on the contrary, the actual weight status is not always reflected by the true BMI.<sup>8</sup>

Many young adults, especially women, perceive themselves as overweight despite having low weight<sup>8,11-13</sup> and as reported by one study, faulty weight may result in unhealthy eating attitudes.<sup>8</sup>

In today's world, there is increasing pressure during the young adult period for males and females to desire an ideal body which is reinforced by the mass media and popular cultural icons.<sup>14</sup> Additionally, shape- and weight-based self-esteem is now considered as a central substrate of body image and global self-esteem.<sup>15</sup> The relationship between body image and self-esteem among youth has been well documented in several studies,<sup>16-18</sup> and it is present regardless of age and sex.<sup>19</sup> Furthermore, the association between body image and self-esteem is more prominent in comparison with those between self-esteem and other domains of life experience across age groups and countries.<sup>15</sup> Individuals with negative perception of their bodies with regard to culturally valued features may have low self-esteem.<sup>20</sup>

There is a scarcity of literature on this issue and the studies which have been carried out concentrate mainly on females. This article looks at the relationship of body image with BMI, influence of media, and self-esteem as a step toward an empirical exploration of their potential value in predicting body image among college students.

## MATERIALS AND METHODS

### Study Design

A cross-sectional study was conducted in four different professional colleges over 4 weeks.

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The protocol for the study was approved by the review board of the authors' institution.

Participants belonging to male and female genders aged from 17 to 32 were selected by convenience sampling method. Participants not willing to give consent, having known psychiatric illnesses, with endocrinological abnormalities, suffering from metabolic disorders, malignancies, impairing digestion, or chronic infective conditions were excluded from the study. Each one of the individuals who consented to take part was clarified on the motivation behind the study and a written informed consent was obtained. Anonymity was ensured as participants remained free to mention or not mention their names. Participants were requested to sit at some separation to keep up secrecy and anonymity. A self-response questionnaire was directed throughout a standard 50-minute class period under the direct supervision of one of the authors of the study.

The questionnaire embodied three segments: The first managed demographics, the second with eating attitude, body shape, media impact, and self-esteem (Fig. 1), and the third with inquiries focused around the exclusion criteria.

The first page of the survey consisted of demographic questions related to age, gender, qualifications, weight, and height.

### Eating Attitude Test

The Eating Attitude Test (EAT-26) is a widely used instrument for measuring symptoms and concerns characteristic of eating disorders.<sup>21</sup> The EAT-26 items form three subscales: (1) Dieting, (2) bulimia and food preoccupation, and (3) oral control. The EAT-26 is a continuous measure of disordered eating with total scores ranging from 0 to 78. The clinical cut-off point of eating disturbances is 20. Score above 20 indicates serious eating or weight concerns, or eating disorder. Score less than 20 indicates that participants have no symptoms or attitudes characteristic of an eating disorder. The coefficient of internal consistency, mean, and standard deviation (SD) were 0.899, 13.75, and 12.37 respectively, in this study.

### The Body Mass Index

The EAT-26 is used to compute BMI for determining whether the participant is at risk for an eating. The BMI can be calculated by dividing each participant's weight (in kilograms) by height (in meters) squared.<sup>21</sup> The BMI is a fairly reliable indicator of body fatness for most people. With the metric system, the formula for BMI is weight in kilograms divided by height in meters squared. Volunteers self-reported body weight to the nearest kilograms and height to the nearest inch. As per Indian standards, normal BMI is 18 to 22.9 kg/m<sup>2</sup>. From 23 to 24.9 kg/m<sup>2</sup> is considered overweight and 25 kg/m<sup>2</sup> is obese.<sup>22</sup> The mean and SD were 22.39 and 4.23 respectively, in this study.

### Body Shape Questionnaire

The Body Shape Questionnaire (BSQ) was used in its 34-question original version of Cooper et al.<sup>23</sup> It is used to evaluate fear of putting on weight and feelings of low self-esteem.<sup>6,8</sup> The coefficient of internal consistency, mean, and SD were 0.959, 73.86, and 31.09 respectively, in this study.

### The Multidimensional Media Influence Scale

It is an instrument used to assess participants' recognition of societal/cultural standards of appearance. Item scoring is done by the participants on a 5-grade Likert-type scale ranging from 1 ("strongly agree") to 5 ("strongly disagree") to obtain the results for 1 to 14 items of the scale. The 14 items were subdivided into four components of media influence: Internalization, importance, comparison, and awareness.<sup>24</sup> The coefficient of internal consistency, mean, and SD were 0.919, 39.13 and 11.58 respectively, in this study.

### State Self-esteem Scale

This is a 20-item scale that measures a participant's self-esteem at a particular period of time. The 20 items are subdivided into three components of self-esteem: Perfor-

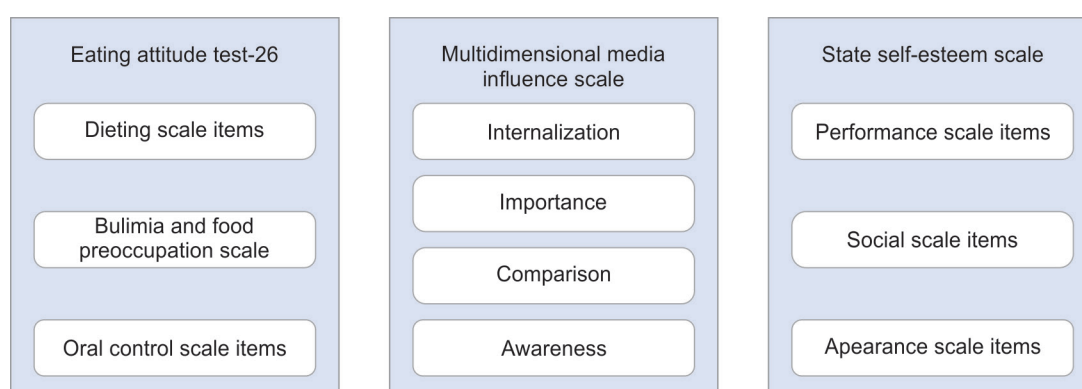


Fig. 1: Subscales of EAS-26, multidimensional media influence scale, state self-esteem scale

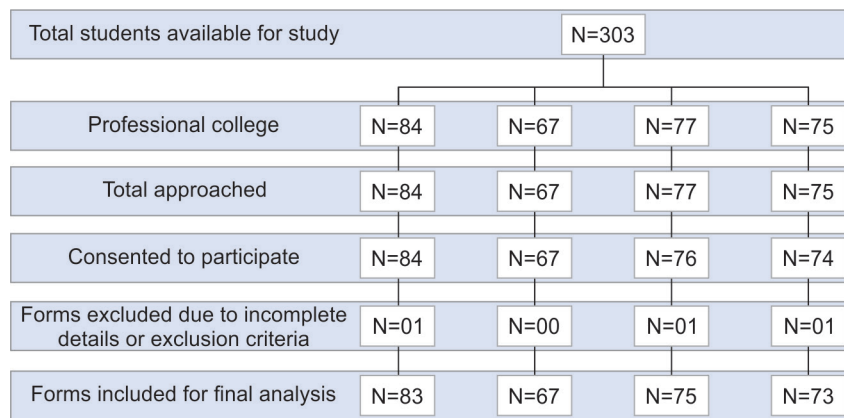


Fig. 2: Distribution of sample across different professional years

mance, social, and appearance self-esteem items.<sup>25</sup> The coefficient of internal consistency, mean, and SD were 0.856, 69.43 and 10.96 respectively, in this study.

### Statistical Analysis

Normality of distribution was tested with the help of Kolmogorov–Smirnov test. The data were directly entered into a Statistical Package for Social Sciences 20 data file. Proper transformations were done to the above items requiring reverse coding. Total scores were computed for each scale and subscale parameters. Internal consistency of composite scales was measured by using the reliability analysis model. The data were analyzed using descriptive statistics. Independent sample t-test was used to compare scores across different variables. Pearson correlation coefficient among all variables was utilized to explore bivariate relationships among the variables. Body image was a dependent variable of primary interest in this study.

Remaining variables were treated as independent variables thought to be predictive of scores on the BSQ scale. Stepwise multiple linear regression was used to identify the extent of variation in the scores on the BSQ scale. Regression coefficients were used to assess the contribution of each independent variable.

### RESULTS

Out of 354 students, 303 (85.5%) participated in the study; 298 students qualified for the study after fulfilling the exclusion and inclusion criteria. Of these, 149 (50%) were males and 149 (50%) were females (Fig. 2).

Table 1 displays the demographic characteristics and anthropometric profile of the participants. The sample had equal gender distribution. These balanced percentages allowed us to compare the variables in both genders. The mean age of participants was 21.31 (SD = 2.59).

Table 2 displays the gender-based distribution of mean, t-value, and p-value of the subscale of the examined

Table 1: Anthropometric profile and related parameters of participants (N = 298)

	Minimum	Maximum	Mean	SD
Age (years)	17.00	32.00	21.31	2.59
Height (m)	1.47	1.99	1.69	0.10
Weight (kg)	40.00	109.00	64.01	13.32
BMI	15.53	34.93	22.39	4.23
EAT-26 score	0.00	62.00	13.75	12.38
BSQ score	34.00	187.00	73.86	31.09
MMIS score	14.00	69.00	39.13	11.59
SSES score	28.00	99.00	69.43	10.96

MMIS: Multidimensional media influence scale; SSES: State self-esteem scale

variables. Females showed more internalizations of the thin ideal and media mindfulness as contrasted with males. Although it was statistically insignificant, females were found to have somewhat higher disordered eating attitude (e.g., counting calories) and lower self-esteem as contrasted with males.

Table 3 compares the cut-off value of eating attitude score, BSQ, and BMI based on gender; 37.6% of the participants were found to be worried over body shape, and 27.5% were found to have BMI more than normal with a marginally higher percentage of males as contrasted with females.

Table 4 demonstrates the correlation between body image, attitudes toward eating, the media influence, and self-esteem. It was ascertained that eating attitude, media influence, and self-esteem were significantly interrelated to body image. Participants who had maladaptive eating attitude and more inspired by the media were found to have low self-esteem and higher body image dissatisfaction.

Table 5 presents regression coefficients to evaluate the relative contribution of gender, eating attitudes, BMI, influence of media, and self-esteem. Demographic, anthropometric, and psychological variables helped an aggregate of 54.6% variance in body image. Among the psychological variables, the following helped altogether the variance in satisfaction with body image of the sample

Table 2: Gender-based distribution of the subscales of the examined variables

Gender distribution, t and p value	EAS			Multidimensional media influence scale				State self-esteem scale		
	Bulimia and preoccupation scale	Dieting scale	Awareness scale	Comparison scale	Internalization scale	Importance of media as information scale	Performance scale	Social scale	Appearance scale	
Males	2.05 (2.99)	7.34 (7.25)	4.67 (2.17)	14.26 (4.90)	4.67 (2.17)	14.64 (4.99)	24.87 (4.62)	20.9 (3.95)	20.74 (4.29)	
Females	2.44 (3.34)	7.65 (7.14)	5.29 (2.29)	14.34 (4.38)	5.29 (2.29)	14.89 (4.45)	24.43 (7.25)	20.44 (4.08)	19.99 (4.34)	
t-value	-1.05	-0.37	-2.38	-0.13	-2.38	-0.45	0.80	0.94	1.51	
p-value	0.29	0.70	<b>0.001*</b>	0.89	<b>0.001*</b>	0.65	0.42	0.32	0.13	

0.001\* implies t-test (t), \*p &lt; 0.05

Table 3: Cutoff value of eating attitude test, BSQ, and BMI on the basis of gender

Test	Number of students (n = 298)	
	Males (%)	Females (%)
EAT-26 score		
≤20	118 (39.60)	115 (38.60)
≥20	31 (10.40)	34 (11.40)
BSQ score		
Not worried about body shape (<81)	102 (34.22)	88 (29.53)
Slightly worried (81–110)	35 (11.74)	35 (11.74)
Moderately worried (111–140)	10 (3.3)	21 (7.04)
Severely worried (>140)	2 (0.67)	5 (1.67)
BMI (kg/m <sup>2</sup> )		
Severely underweight (<17.0)	2 (0.67)	12 (4.02)
Underweight (17.0–19.9)	28 (9.39)	56 (18.79)
Normal (20.0–24.9)	70 (2.34)	48 (16.10)
Overweight (25.0–29.9)	35 (11.74)	26 (8.72)
Moderate obesity (30.0–39.9)	14 (4.69)	7 (2.34)

Table 4: Correlation between body image, eating attitude, influence of media, and self-esteem

Variable correlation	Pearson correlation	p-value
Gender with		
BMI	-2.626	0.000
EAT-26	0.034	0.559
BSQ	0.143	0.013
MMIS	-0.012	0.842
SSES	-0.079	0.175
BMI with		
EAT-26	0.197	0.001
BSQ	0.328	0.000
MMIS	0.087	0.136
SSES	-0.162	0.005
EAT-26 with		
BSQ	0.499	0.000
MMIS	0.169	0.003
SSES	-0.232	0.000
BSQ with		
MMIS	0.336	0.000
SSES	-0.444	0.000
MMIS with		
SSES	-0.228	0.000

MMIS: Multidimensional media influence scale; SSES: State self-esteem scale

studied: "Dieting subscale" of Eating Attitude Scale-26, "Social Subscale" of State Self-Esteem Scale, "Appearance Subscale" of State Self-Esteem Scale, and "Importance of Media as Information Subscale" of Multidimensional Media Influence Scale helped 35, 10.7, 2.8, 2.4% respectively, of difference to body shape independently. Among demographic and anthropometric variables, sex (1.9%) and BMI (1.5%) individually were indicators of body image.

**Table 5:** Regression coefficients to evaluate the predictors of body image on linear regression

Model	Predictors of BSQ	t-value	Sig.	Adjusted R <sup>2</sup>	f-value	p-value
	(Constant)	4.327	0.000			
	Dieting scale—EAT-26	10.429	0.000			
	Social subscale—EAT-26	-5.666	0.000			
	Appearance subscale—SSES	-3.212	0.001	0.543	59.839	0.000
	Importance of media as information—MMIS	3.874	0.000			
	BMI	4.177	0.000			
	Gender	3.636	0.000			

MMIS: Multidimensional media influence scale; SSES: State self-esteem scale

## DISCUSSION

There is a paucity of Indian literature regarding issues related to body image,<sup>22</sup> and this is the first such effort to study body image and its relationship with BMI, media influence, and self-esteem of college students in an Indian set-up. According to our study, overall, the participants had more concern toward body image, along with a more or less neutral stance insofar as their attitude toward eating, media influence, and self-esteem is concerned. The cultural context in India has changed in the past few years<sup>26</sup> and a shift toward the concept of a thin body image is occurring among both genders of our country through mass media. Presently, Indian culture appears to be undergoing through a transition due to globalization.<sup>27</sup> It is relatively known how much importance previous literature gives to body image and similar related issues in a country like India.<sup>22</sup>

### Body Image and Gender

Females were more concerned about body image in contrast to males. Moreover, females showed more internalizations of the thin ideal and media mindfulness as contrasted with males. This supported the findings of previous studies conducted all over the world.<sup>28-30</sup>

### Body Image and Eating Attitude

Dieting' behaviors like avoidance of fat food, involvement with dieting techniques, concern with the calories consumed, etc., emerge as the strongest predictor of body image in both sexes in this study. This could be due to the culturally imposed slimness model, and indicates that disturbed eating attitude is a risk factor of body image dissatisfaction. Probably, enhancing knowledge may help in reducing the prejudice and stigmatization experienced by the individuals with dissatisfied body image.<sup>29</sup> Previous studies replicated the similar finding of the correlation.<sup>28,30</sup> It is important to incorporate information and education about eating patterns in the teaching programs, and teach students regarding alternative views of body image, question their values and beliefs, and celebrate diversity.<sup>31</sup>

### Body Image and Influence of Media

The current study shows that in a developing country, the media can cause a significant negative effect on body image dissatisfaction among college-going students. Moreover, participants of both genders who took the media as a source of information regarding the appearance like how to look attractive or improve appearance by watching TV and movies, and reading magazines were found to be influenced by the media. Despite the fact that no such study has been carried out in India, which has taken into account the various dimensions of media influence in relation to body image, which makes difficult for us to compare, previous studies replicated the similar finding of the correlation.<sup>32-35</sup> Although the research is inconclusive, further exploration is required, and various studies have suggested that media involvement can play an important role in addressing body dissatisfaction.<sup>36</sup> Media literacy programs can make people realize that media images are often manipulated.<sup>36</sup>

Media literacy, such as mass media messages can encourage students to think rationally about the body and can save young people from becoming a passive victims of media influence.<sup>36</sup>

### Body Image and Self-esteem

Several correlation studies have shown that there exists a significant relationship between positive body image and self-esteem among adolescents,<sup>16-18</sup> and it is not dependent on age and gender.<sup>19</sup> In our study, participants with more body image dissatisfaction showed low self-esteem in both genders. A study done on Korean population and other previous studies<sup>37-39</sup> replicated the findings of the current study. Proactive preventive measures like self-esteem improvement programs are needed to include body image-related sessions to reach new goals of body image satisfaction. Resilience shown by young people can be increased by enhancing their ability to resist against sociocultural pressures glamorizing thinness.<sup>40</sup> Several current programs include protective factors that protect its participants from the causes of body dissatisfaction.<sup>40</sup>

## LIMITATIONS

Firstly, it was a cross-sectional study, so it was unrealistic to discover causal heading. Secondly, since the study was performed in a solitary city, it may not be suitable to extrapolate its findings to the entire nation. Also, the measure of body image distress included body weight, stature, facial appearance, but does not evaluate potential distress connected with extra body attributes, for example, skin, hair, musculature, etc.

## CONCLUSION

This study gives a preparatory understanding into the components identified with body image. A multisite study, including researchers from distinctive areas, is needed. Elevated body image satisfaction is accounted for in this study and discovered to be altogether identified with anthropometric estimations. Our study concludes that the attitude toward eating, media impact, and self-esteem is determinedly related to the body image.

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