

# Body Image and Its Association with Depression, Anxiety, and Self-esteem among College going Students: A Study from Northeast India

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## Abstract

**Background:** Body image is conceptualized as a subjective perception of an individual one's own body and on how he/she is seen by others, and its distortion can lead to poor self-esteem and affect psychological adjustment among the youth. The objectives of the study were to assess body image and to see the association with depression, anxiety, and self-esteem among students. **Materials and Methods:** A cross-sectional correlational study was conducted among undergraduate students in Shillong, Meghalaya. The researcher used random sampling as for the selection of college. The Krejcie and Morgan (1970) sampling method was used to determine the sample size by a table using the sample size formula for the finite population. A total of 384 respondents were selected for the study, out of which 358 were included for the final analysis. Sociodemographic datasheet, Multidimensional Body-Self Relations Questionnaire–Appearance Scales, Rosenberg Self-Esteem Scale, Beck Depression Inventory-II, and Hamilton Anxiety Rating Scale were administered. **Results:** Regression analysis showed self-esteem and anxiety contribute significantly to the prediction of body image satisfaction among students ( $F[4353] = 3.816, P = 0.001$ ), accounting for a 15.1% variance. **Conclusion:** Significant proportion of students were dissatisfied with their body image. Furthermore, a study reported that body image influences psychological well-being. There is a need for preventive measures and making these young people aware of the importance of both physical and mental health.

**Keywords:** Anxiety, body image satisfaction, college-going students, depression, psychological adjustment

## INTRODUCTION

Body image is conceptualized as a subjective perception of an individual one's own body and on how he/she is seen by others. College students are especially vulnerable to social weight related to physical appearance, as these formative periods are basic for the arrangement of one's personality and self-esteem over various spaces, including physical self-assessment.<sup>[1]</sup> There is a strong association between feelings about the body and self-worth and well-being. Body dissatisfaction has also been linked to unhealthy behaviors and poor psychological functioning<sup>[2-6]</sup> and to various forms of psychopathology, including disordered eating, depression, and anxiety among younger (college-age through middle age) women.<sup>[3]</sup> Some studies have supported associations between body image dissatisfaction and internalizing problems such as depression, anxiety, hopelessness, and low self-esteem.<sup>[6]</sup>

When we see the finding from the Indian study, it was found that body image dissatisfaction was present among 77.6% of the girls, and depression was significantly associated with body image dissatisfaction.<sup>[7]</sup> In the male population, 34.44% had moderate to marked body image dissatisfaction.<sup>[8]</sup>

However, there are no data available in the northeast part of India regarding body image and its association with psychological adjustment among college students. Due to no representation of studies on the northeastern region in the

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body-image literature, the present research needs to focus on exploring body image among students in the northeast region, particularly among the tribal group. The study investigates the prevalence of body-image perception of the students through various domains, from their appearance evaluation, overweight preoccupation, appearance orientation, body area satisfaction, and self-classified weight. This research provides for understanding the relationship between body image and psychological adjustment. Furthermore, it identified the predictors of body image dissatisfaction among college students.

## MATERIALS AND METHODS

A cross-sectional correlational study design was used. Random sampling was used for the selection of the college. The study was conducted at an educational institute of the Congregation of Christian Brothers located in Shillong, Meghalaya. The Krejcie and Morgan<sup>[9]</sup> sampling method was used to determine the sample size by a table using the sample size formula for the finite population. The samples of this study were 1<sup>st</sup>-year college-going students were selected conveniently; from the age group of 18 to 24 years, willing to give consent was included for the analysis. Students below the age of 18 or above 24 years and those unwilling to consent were excluded. A total of 384 respondents were selected for the present study, out of which 358 were included for the final analysis. Permission from the college authority was obtained, and written informed consent was taken from the students. A sociodemographic datasheet was used for collecting details regarding age, sex, ethnicity, religion, body mass index (BMI) classification, etc. Multidimensional Body-Self Relations Questionnaire–Appearance Scales (MBSRQ-AS)<sup>[10]</sup> was used to assess the level of body image satisfaction or dissatisfaction, the 34 item MBSRQ-AS was used. This scale has five subscales: appearance evaluation, appearance orientation, overweight preoccupation, self-classified weight, and body areas satisfaction scale. Perceived self-worth and values were measured using the Rosenberg Self-Esteem Scale (RSES).<sup>[11]</sup> This scale contains ten items. Higher overall scores indicate higher self-esteem. The Beck Depression Inventory (BDI) Scale-II developed by Beck *et al.*<sup>[12]</sup> was used to measure the characteristics, attitudes, and symptoms of depression. This BDI-II is 21 item self-report screening for depression. The responses were made on a 4-point scale ranging from 0 to 3. Hamilton Anxiety Rating Scale (HAM-A)<sup>[13]</sup> was used to measure the severity of anxiety symptoms. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). BMI was calculated using an online standard BMI calculator provided by National Heart, Lung, and Blood Institute. According to the International World Health Organization, classification of BMI was used.

The study was carried out with the permission of the Institutional Ethics Committee, LGBRIMH, Tezpur. The descriptive and

inferential statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 25 (SPSS South Asia Pvt. Ltd., Bangalore, Karnataka, India).

## RESULTS

The mean age of the participants was 19.7 years (standard deviation = 1.19), majority of the respondents were female (56.1%) and 43.6% of the respondents were male. The tribal participant was among the majority with 61.2%, Christianity was the highest (55.6%) in religion with a little more than half of the total population.

Table 1 shows participants with a normal weight constituted 83.8%, 10.9% falls into the overweight category, 4.5% of the participant in the underweight category, and the least (.8%) belong to the obesity category. In the study, 1.1% of the participants only perceived themselves to be extremely thin, slightly thin (4.5%), and 3.6% to be moderately thin. Further, 34.9% perceived to have normal body weight and 44.1% assumed to be slightly overweight, 10.9% and 8% perceived to be moderately and extremely overweight. In terms of the fear of participants in gaining weight, the outcome reflects that 38.0% were not worried about their weight gain, whereas 21.2% of slightly and moderately scared of gaining weight, 12.3% were very tense and 7.3% were extremely worried. In the study, 18.20% were slightly fear of losing weight and

**Table 1: Distribution of body mass index and current weight status as perceived by the students**

Variables	Frequency, n (%)
BMI	
Underweight (<18.5)	16 (4.5)
Normal (18.5-24.9)	300 (83.8)
Overweight (25-29.9)	39 (10.9)
Obesity (≥30)	3 (0.8)
Current weight as perceived by students	
Extremely thin	4 (1.1)
Slightly thin	16 (4.5)
Moderately thin	13 (3.6)
Normal weight	125 (34.9)
Slightly overweight	158 (44.1)
Moderately overweight	39 (10.9)
Extremely overweight	3 (0.8)
Fear of gaining weight	
Not at all	136 (38.0)
Slightly	76 (21.2)
Moderately	76 (21.2)
Very much	44 (12.3)
Extremely	26 (7.3)
Fear of losing weight	
Not at all	240 (67)
Slightly	65 (18.2)
Moderately	30 (8.4)
Very much	17 (4.7)
Extremely	6 (1.7)

BMI: Body mass index

**Table 2: Prevalence of body image among the college students (n=358)**

Body image	Category	Frequency, n (%)
Appearance evaluation	Satisfaction	133 (37.2)
	Dissatisfaction	225 (62.8)
Appearance orientation	Importance of looks	252 (70.4)
	Insignificance of looks	106 (29.6)
Body area satisfaction	Satisfied with body parts	168 (46.9)
	Not satisfied with body parts	190 (53.1)
Overweight preoccupation	Preoccupied	212 (59.2)
	Unoccupied	146 (40.8)
Self-classified weight	Underweight	25 (7.0)
	Normal weight	125 (34.9)
	Overweight	208 (58.1)
Overall body image	High body image satisfaction	149 (41.6)
	Low body image dissatisfaction	209 (58.4)

8.4% of participants were moderately fear of losing weight, 4.7% were very much worried about losing weight, and 1.7% extremely fearful of losing weight [Table 1].

In the current study, the overall body area satisfaction was seen in 41.6% of the participants, while 58.4% of the participants were dissatisfied with their body image. The findings show that a maximum of 225 of the participants, which account for 62.8% of the total numbers, feel highly dissatisfied with their physical appearance. The findings also show 62.8% of the total numbers feel highly dissatisfied with their physical appearance. In appearance orientation, 70.4% of the participants give importance to their looks. The present study finding shows that 53.1% of participants were highly unhappy with the size or appearance of several body areas. The majority of participants (59.2%) were preoccupied with their own weight. In the study, it was found that 7.0% of the respondent perceived themselves as underweight, 34.9% normal weight, and 58.1% perceived themselves as overweight [Table 2].

Table 3 shows that overall body image score has significant positive relationship with self-esteem ( $r = 0.289$ ,  $P = 0.01$ ) and anxiety ( $r = 0.041$ ,  $P = 0.05$ ). Self-esteem has significant positive correlation with appearance evaluation ( $r = 0.241$ ,  $P = 0.01$ ), appearance orientation ( $r = 0.192$ ,  $P = 0.01$ ) body area satisfaction ( $r = 0.451$ ,  $P = 0.01$ ), and overall body image score, self-esteem has significant negative correlations with overweight preoccupation ( $r = -0.348$ ,  $P = 0.01$ ) and self-classified weight ( $r = -0.271$ ,  $P = 0.01$ ). Overweight preoccupation had a significant positive relationship with anxiety ( $r = 0.280$ ,  $P = 0.01$ ) and depression ( $r = 0.278$ ,  $P = 0.01$ ) and body area satisfaction had a significant negative correlation with anxiety ( $r = -0.138$ ,  $P = 0.01$ ) and depression ( $r = -0.148$ ,  $P = 0.01$ ). Self-classified weight had significant positive relationship with depression ( $r = 0.143$ ,  $P < 0.01$ ) and anxiety ( $r = 0.204$ ,  $P = 0.01$ ).

Multiple regression analysis was conducted to explore the predictors of body image. As shown in Table 4, self-esteem and anxiety contribute significantly to the prediction of body image

satisfaction among college-going youth, ( $F[4353] = 3.816$ ,  $P = 0.001$ ) accounting for 15.1% variance. The remaining 84.9% was attributed to a variable not included in the study. Self-esteem (Beta = 0.296,  $t = 5.040$ ,  $P = 0.001$ ) and anxiety (Beta = 0.211,  $t = 2.915$ ,  $P = 0.005$ ) contribute strongly to the body image variance.

## DISCUSSION

The finding from the study shows that in the domain of appearance evaluation, 62.8% of the respondents were dissatisfied; in the body area satisfaction domain, 53.1% of the respondents were not satisfied with body parts, 59.2% of respondents were preoccupied with their overweight. In self-classified weight, 58.1% perceived themselves as overweight. Studies have reported that college-going students are dissatisfied with their body image.<sup>[7,8]</sup> The finding of the study shows that overall body image has a significant positive correlation with self-esteem and anxiety. Johnson<sup>[14]</sup> stated that development of body image dissatisfaction may lead to unhealthy preoccupation, obsessions, and distorted perception of body image which can cause anxiety-related issue in the college students. Aydin *et al.*<sup>[15]</sup> also found that body image was positively correlated with anxiety. Yazdani *et al.*<sup>[16]</sup> also found body image and psychological well-being had a significant relationship between the total score of the body image being ( $r = 0.43$ ) ( $P < 0.001$ ). If the youths are more concerned about their body shape and image, they may develop inappropriate weight-control behaviors, emotional distress (anxiety, depressive symptoms, etc.,) and concerns about one's own body.<sup>[17]</sup>

In the present study, there was a significant positive correlation of self-esteem with the overall body image satisfaction, and in the subscale of body image satisfaction viz-a-viz appearance evaluation, appearance orientation, and body area satisfaction, it was found out that there is a significant positive correlation with self-esteem, whereas, in the domain of overweight preoccupation and self-classified weight, it was seen there is a significant negative correlation with self-esteem. A study

by hardwood<sup>[18]</sup> supported the current study in which there was a correlation between self-esteem (RSES) and body image (MBSRQ). The RSES was positively correlated with several MBSRQ subscales such as appearance evaluation, fitness evaluation, health evaluation, health orientation, and body assessment. Dissatisfaction with one's body image is highly associated with low self-esteem.<sup>[19,20]</sup> Previous studies also suggest that body-image concerns also define the level of self-esteem and emotional reactions to the environment and risk-taking behavior.<sup>[21]</sup> Findings from the present study show that overall body image scores and appearance orientation have a significant positive correlation with anxiety. On the other hand, appearance evaluation has a negative correlation with anxiety. Overweight preoccupation and self-classified found to have a significant positive correlation with anxiety. Likewise, the finding from the present study shows that anxiety has a negative correlation with appearance evaluation and a significantly negative association with body area satisfaction can be supported by an online study conducted among the youth whereby the finding indicates that there was an appearance has a negative relation with anxiety.<sup>[22]</sup> Archibald<sup>[23]</sup> inspection

on the connection between anxiety and body image found that negative connections were seen between the appearance evaluation and body areas satisfaction subscales with Social Anxiety Scale, proposing that a degree of social anxiety is associated with body dissatisfaction. The current finding shows a similar outcome where a significant negative correlation was found between the body area satisfaction scale and a negative correlation of appearance evaluation. In the current study, self-classified weight had a significant positive relationship with depression) and a significant negative correlation was found between body area satisfaction and depression. The result of the study was consistent with the previous study by hamilton<sup>[24]</sup> research on the relationship between perceived body image and depression, using MBSRQ and BDI found out that Pearson correlation showed no significant relationship between body image and depression; however, the subscale of MBSRQ showed a significant relationship with depression. Furthermore, studies also demonstrated that low body satisfaction substantially led to higher depression over time and greater perceived pressure to be thin.<sup>[25]</sup> Olivardia, Pope, Borowiecki, and Cohane<sup>[26]</sup> examined the interrelatedness of body image satisfaction with that of depression, their finding indicates that there was a significantly positive correlation ( $r = 0.30, p = 0.001$ ) between the two. The disappointment that young people have with regard to their weight and shape has an impact on how they feel and which further leads to severe mental health issues.<sup>[27,28]</sup>

In the present study, self-esteem and anxiety contribute significantly to the prediction of body image satisfaction among college-going youth. Self-esteem and anxiety contribute strongly to body image variance. A study on body image dissatisfaction from self-esteem also found out that self-esteem plays a central role in predicting body image dissatisfaction.<sup>[29]</sup> Arasa<sup>[30]</sup> found that self-esteem was a significant predictor of body image dissatisfaction using linear regression analysis. Anxiety in the current study was also a significant predictor of body image. A similar finding has been reported in other studies.<sup>[31,32]</sup>

**Table 3: Pearson correlation of overall body image Multidimensional Body-Self Relations Questionnaire - appearance evaluation score, Multidimensional Body-self Relations Questionnaire - appearance evaluation score, subscale score, and Rosenberg Self-Esteem Scale, anxiety, and depression among college-going students**

The domain of body image	RSES	HAM-A	BDI
Appearance evaluation	0.241**	-0.075	-0.023
Appearance orientation	0.192**	0.047	-0.052
Body area satisfaction	0.451**	-0.138**	-0.148**
Overweight preoccupation	-0.348**	0.280**	0.278**
Self-classified weight	-0.271**	0.204**	0.143**
Overall body image	0.289**	0.041*	0.005

\*P significant at  $P < 0.05$ , \*\* $P < 0.001$ . RSES: Rosenberg Self-Esteem Scale, HAM-A: Hamilton Anxiety Rating Scale, BDI: Beck depression inventory

**Table 4: Regression analysis of Multidimensional Body-self Relations Questionnaire - appearance evaluation score total score, Recovery Assessment Scale, Rosenberg Self-Esteem Scale, Hamilton Anxiety Rating Scale, Beck depression inventory (n=358)**

Multiple R	$R^2$		Adjusted	Standard	
0.389	0.151		0.142	12.17955	
ANOVA table	Df	Sum of square	Mean of square	F	Significant
Regression	4	9335.088	2333.772	15.732	0.001
Residual	353	52364.566	148.342		
Variables in the equations					
Variables	B	SE	Beta	T	Significant
Self-esteem	1.004	0.199	0.296	5.040	0.001**
Anxiety	0.382	0.131	0.211	2.915	0.004
Depression	0.041	0.127	0.023	0.321	0.749
Constant	67.228	4.164		16.147	0.001

P significant at  $P < 0.05$ , \*\* $P < 0.001$ . SE: Standard error

## Limitations

The study was cross-sectional in nature, and it can have different responses on further assessment, and scales used were self-reported. The gender difference can be studied in the future along with other psychosocial factors such as media, culture, and family factors.

## CONCLUSION

A significant proportion of students are dissatisfied with their body image leading to lower self-esteem, anxiety, and depression. Realizing the outcome of how the negative body image has negative repercussions on young people, an appropriate intervention approach should be an area of focus for mental health professionals.

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## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

- Crocker J, Wolfe CT. Contingencies of self-worth. *Psychol Rev* 2001;108:593-623.
- Forman M, Davis WN. Characteristics of middle-aged women in inpatient treatment for eating disorders. *Eat Disord* 2005;13:231-43.
- Tylka TL, Hill MS. Objectification theory as it relates to disordered eating among college women. *Sex Roles* 2004;51:719-30.
- Bedford JL, Johnson CS. Societal influences on body image dissatisfaction in younger and older women. *J Women Aging* 2006;18:41-55.
- Eremis S, Cetin N, Tamar M, Bukusoglu N, Akdeniz F, Goksen D. Is obesity a risk factor for psychopathology among adolescents? *Pediatr Int* 2004;46:296-301.
- Czeglédi E, Probst M, Babusa B. Body dissatisfaction, trait anxiety and self-esteem in young men. *Psihijatrija Danas* 2015;47:29-41.
- Johry A, Srivastava S. Mass media and body image self-esteem and eating disorder tendencies in college going girls. *Int J Appl Home Sci* 2016;3:66-86.
- Kumar KS, Akoijam BS. Depression, anxiety and stress among higher secondary school students of Imphal, Manipur. *Indian J Community Med* 2017;42:94-6.
- Krejcie RV, Morgan DW. Determining sample size for research activities. *Educ Psychol Meas* 1970;30:607-10.
- Cash TF. The Multidimensional Body-Self Relations Questionnaire. Unpublished Test Manual. Vol. 3. Norfolk, VA: Old Dominion University; 1990. p. 1-12.
- Rosenberg M. *Society and the Adolescent Self-Image*. Princeton: Princeton University Press; 2015.
- Beck AT, Steer RA, Brown G. Manual for the Beck depression inventory-II (BDI-II). San Antonio 1996;78:490-8.
- Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol* 1959;32:50-5.
- Johnson LL. Predicting young women's body dissatisfaction and disordered eating during the transition to university. ProQuest Information & Learning). Dissertation Abstracts International: Section B: The Sciences and Engineering, 2005;67:547.
- Aydin Y, Evrensel A, Ceylan ME. Body image, self-esteem and social anxiety levels in individuals with alcohol and substance abuse. *Int Med J* 2018;7:260-4.
- Yazdani N, Hosseini SV, Amini M, Sobhani Z, Sharif F, Khazraei H. Relationship between body image and psychological well-being in patients with morbid obesity. *Int J Community Based Nurs Midwifery* 2018;6:175-84.
- Ball K, Burton NW, Brown WJ. A prospective study of overweight, physical activity, and depressive symptoms in young women. *Obesity (Silver Spring)* 2009;17:66-71.
- Harwood PS. Correlational Study of Body Image and Self-Esteem in Asian and Caucasian Women. Master [Thesis]. The faculty of the School of Nursing: California State University, San Marcos; 2015.127p.
- Eitel BJ. Body image satisfaction, appearance importance, and self-esteem: A comparison of Caucasian and African-American women across the adult lifespan (Doctoral dissertation, Texas Woman's University).2003;63:5511.
- Abamara Nnaemeka C, Agu Solomon A, Gangopadhyay A, Sahni MY, Esther B. Relationship between Body Image and Self-esteem among female Undergraduate students of behavioural Sciences. *Hum Soc Sci* . 2014;19:1-5.
- Koronczai B, Kökönyei G, Urbán R, Kun B, Pápay O, Nagygyörgy K, *et al*. The mediating effect of self-esteem, depression and anxiety between satisfaction with body appearance and problematic internet use. *Am J Drug Alcohol Abuse* 2013;39:259-65.
- Michou M, Costarelli V. Disordered eating attitudes in relation to anxiety levels, self-esteem and body image in female basketball players. *J Exerc Sci Fit* 2011;9:109-15.
- Archibald K. The role of body image and social anxiety in problematic drinking behavior. *Undergrad Rev* 2010;6:15-20.
- Hamilton SR. A relationship between perceived body image and depression: How college women see themselves may affect depression. *Stud J Psychol* 2008;1:13-20.
- Sharpe H, Griffiths S, Choo TH, Eisenberg ME, Mitchison D, Wall M, *et al*. The relative importance of dissatisfaction, overvaluation and preoccupation with weight and shape for predicting onset of disordered eating behaviors and depressive symptoms over 15 years. *Int J Eat Disord* 2018;51:1168-75.
- Olivardia R, Pope HG Jr., Borowiecki JJ 3<sup>rd</sup>, Cohane GH. Biceps and body image: The relationship between muscularity and self-esteem, depression, and eating disorder symptoms. *Psychol Men Masc* 2004;5:112-20.
- Eidsdottir ST, Kristjansson AL, Sigfusdottir ID, Garber CE, Allegrante JP. Association between higher BMI and depressive symptoms in Icelandic adolescents: The mediational function of body image. *Eur J Public Health* 2014;24:888-92.
- Kaur S, Deepti SS, Lal M. Prevalence and correlates of depression among college going students of district Amritsar, India. *Int Res J Med Sci* 2014;2:5-9.
- Shahyad S, Pakdaman S, Shokri O. Prediction of body image dissatisfaction from self-esteem, thin-ideal internalization and appearance-related social comparison. *Int J Travel Med Glob Health* 2015;3:65-9.
- Arasa EK. The Predictors of Body Image Dissatisfaction among Undergraduate Students at the United States International University (USIU), Nairobi, Kenya (Doctoral dissertation, United States International University-Africa). 2017.107p.
- Argyrides M, Kkeli N. Predictive factors of disordered eating and body image satisfaction in Cyprus. *Int J Eat Disord* 2015;48:431-5.
- Kelsay K, Hazel NA, Wamboldt MZ. Predictors of body dissatisfaction in boys and girls with asthma. *J Pediatr Psychol* 2005;30:522-31.