

Nexus Between Body Image Perception, BMI, and Self-Esteem Among Indian Young Adults: A Quantitative Analysis

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Abstract

This study investigates the relationship between BMI, self-esteem and body image perceptions among young adults in India, with a focus on gender differences. Using a cross-sectional correlational methodology, data were collected from 101 participants from undergraduate University students in Andhra Pradesh, employing the “Multidimensional Body-Self Relations Questionnaire” (MBSRQ) and the “Rosenberg Self-Esteem Scale” (RSES). Descriptive statistics, correlational analysis, and regression analysis were used to examine the variables' associations. The results revealed a positive correlation between BMI and body image perceptions, particularly in subscales of Fitness Evaluation and Self-Classified Weight. However, the overall relationship between self-esteem and body image was weak, suggesting a limited impact of body image on self-esteem in this population. The regression model explained 13% of the variance in self-esteem, with Fitness Orientation emerging as a significant predictor. Contrary to expectations, there were no significant gender differences found in self-esteem or body image satisfaction. These findings highlight the influence of societal shifts towards body positivity and inclusivity in reducing the impact of body image concerns on self-esteem. The study underscores the need for promoting physical fitness and challenging traditional beauty standards to foster self-acceptance and well-being among Indian young adults.

Keywords: Body image, BMI, self-esteem, young adults, Indian context, gender dynamics, societal standards

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Concerns about body image and misconceptions about physical appearance often lead to dissatisfaction, feelings of inferiority, and heightened self-criticism, especially among young adults. These issues frequently result in lower self-esteem, influencing various health-related behaviours and overall psychological and physical well-being (Rodgers, 2016; McLean et al., 2019). It is observed that body dissatisfaction is strongly related to the development of depressive symptoms, anxiety, and eating disorders, underscoring the profound impact of negative body image on mental health (Grabe et al., 2008; Stice, 2002). Additionally, societal pressures and media representations of ideal body types exacerbate these issues, making it critical to address body image concerns through interventions that promote healthy self-esteem and body positivity (Fardouly et al., 2015; Perloff, 2014).

Body image is a biopsychosocial phenomenon involving an individual's perceptions, attitudes, and emotions about physical appearance. It encompasses both self-perception and how individuals believe others perceive them (Virk & Singh, 2020). Individuals with a positive body image are observed to maintain a healthy self-concept and engage in health-promoting behaviours. Conversely, excessive concern about body image can lead to negative behaviours, social withdrawal, and self-esteem issues (Qaisy, 2016).

“Self-esteem refers to an individual's overall evaluation of their worth and capabilities, encompassing both cognitive and emotional components” (Rosenberg, 1965). Research suggests that physical appearance and body image perceptions play crucial roles in determining self-esteem, particularly during adolescence and young adulthood (Clay, Vignoles, & Dittmar, 2005; Grogan, 2016). During these developmental stages, individuals are especially susceptible to societal and media influences that often propagate unrealistic beauty standards. These influences can lead to body dissatisfaction, impacting self-esteem and overall psychological well-being (Ricciardelli & McCabe, 2004; Tiggemann & Slater, 2014). Understanding the interplay between self-esteem and body image is important for

developing interventions that promote healthy self-perception and mental health among young people (Jones, 2004; Bearman et al., 2006).

Body Mass Index (BMI) is calculated by dividing a person's weight in kilograms by their height in meters squared (kg/m^2). This scale is further classified based on the results. Below $18.5 \text{ kg}/\text{m}^2$ is identified as underweight, $18.5 - 24.9 \text{ kg}/\text{m}^2$ as normal weight, $25.0 - 29.9 \text{ kg}/\text{m}^2$ as overweight, or $30.0 \text{ kg}/\text{m}^2$ or above as obese. Existing research has extensively explored the relationship between body dissatisfaction and BMI, revealing that BMI has a significant influence on body image perceptions and fear of negative evaluation (Kantanista et al., 2017; Dewey, 2014; Claes et al., 2012; Kaminsky & Seidman, 2013). Individuals dissatisfied with their BMI will probably exhibit negative behaviours and lower self-esteem (Griffiths et al., 2017; Jankauskiene & Baceviciene, 2019). This dissatisfaction can lead to unhealthy behaviours such as disordered eating, excessive exercise, and social withdrawal, significantly impacting one's mental health and quality of life (Jackson et al., 2015; Pereira & Alvarenga, 2007). The relationship between body dissatisfaction, BMI, and self-esteem underscores the need to study it to promote overall psychological well-being (Neumark-Sztainer et al., 2006; Vander Wal & Thomas, 2004).

Research questions

To understand the unique influences of BMI and body image perceptions on the self-esteem of Indian young adults, research questions were formulated in the following way:

1. How do perceptions of body image and BMI influence the self-esteem of young adults in the Indian context?
2. Does gender play a role in shaping body image, BMI and self-esteem among Indian young adults?

Based on the above mentioned research questions, the following research objectives were formulated:

1. To examine the relationship between body image perceptions, BMI, and self-esteem among young adults in the Indian context
2. To examine an influence of gender difference in body image perceptions, BMI, and self-esteem among young adults

Method

Study setting

A cross-sectional correlational methodology was selected to explore the relationship between body image and self-esteem among young Indian adults. This research was conducted with university undergraduate students in Andhra Pradesh using a convenience sampling method. Informed consent was obtained, and participants met the researcher at pre-arranged times. They completed a 15–20-minute questionnaire privately at individual desks. Participation was voluntary, with the option to withdraw at any time.

Procedure

Standardized scales were distributed to students at convenient times arranged by the researcher. After debriefing the instructions, students who agreed to participate signed an informed consent form outlining the study's purpose, objectives, procedures, demographic and data collection information, risks and benefits, and method of data collection. Participants were informed that the survey would take 15-20 minutes and assured of confidentiality and anonymity.

Participants

The sample included 51 boys and 50 girls between the age of 18 to 25 years, totalling 101 participants. Students from different cultural backgrounds (international students) were excluded.

Tools

Two instruments were used in the study: the “*Multidimensional Body-Self Relations Questionnaire*” (MBSRQ) and the “*Rosenberg Self-Esteem Scale*” (RSES). Demographic details were collected, including age, gender, and BMI calculation through height and weight.

- a) The “*Multidimensional Body-Self Relations Questionnaire*” (MBSRQ). Developed by Cash (2000), this is a widely used measure in psychology to assess various aspects of body image. This 69-item self-report instrument uses a 5-point Likert scale (1 = Definitely Disagree to 5 = Definitely Agree) to examine self-attitudes related to body image. For example, in the Self-Classified Weight (SCW) scale, participants are asked to classify their own weight from their own perspective and from the opinion of others; 2 items are rated between 1 (very underweight) and 5 (very overweight). Finally, item 23, which refers to the attempt to lose weight quickly through extreme diets, must be answered between 1 (never) and 5 (very often). To calculate the scores, the means of each scale must be calculated, after having inverted the score of 6 specific items (11, 14, 16, 18, 19 and 20).

The MBSRQ includes the following subscales:

Appearance Evaluation (AE): Assesses feelings of attractiveness or unattractiveness. High scorers are usually satisfied with their appearance, while low scorers are not. Example item: "I like the way clothes fit me."

Appearance Orientation (AO): Measures investment in appearance. High scorers prioritize their looks, while low scorers do not. Example item: "My body is sexually appealing."

Fitness Evaluation (FE): Assesses feelings of physical fitness or unfit. High scorers consider themselves fit, while low scorers do not. Example item: "It is important that I have superior physical strength."

Fitness Orientation (FO): Measures investment in physical fitness activities. High scorers actively engage in physical activity, while low scorers do not. Example item: "My physical endurance is good."

Health Evaluation (HE): Assesses overall physical health. High scorers feel healthy, while low scorers feel unhealthy. Example item: "Practicing in sports is unimportant to me."

Health Orientation (HO): Measures investment in a healthy lifestyle. High scorers strive for health, while low scorers do not. Example item: "I am always trying to improve my physical appearance."

Illness Orientation (IO): Assesses reaction to becoming or being unwell. High scorers are more likely to recognize signs of illness. Example item: "I constantly worry about being or becoming fat."

Additional subscales include:

Body Area Satisfaction Scale (BASS): Assesses satisfaction with specific aspects of one's appearance. Example item: "Face (facial features, complexion)."

Overweight Preoccupation (OP): Reflects fat anxiety, weight vigilance, dieting, and eating restraint. Example item: "I am on a weight-loss diet."

Self-Classified Weight (SCW): Assesses weight perception and labelling. Example item: "From looking at me, most other people would think I am."

The MBSRQ scales demonstrate high reliability, with Cronbach's alpha values ranging from 0.80 to 0.90, and confirm convergent validity (Cash & Pruzinsky, 2002).

b) *Rosenberg Self-Esteem Scale (RSES)*. Developed by Rosenberg (1979), self-esteem was evaluated using the RSES. This scale consists of ten statements about self-satisfaction, self-worth, and self-respect. Participants respond on a 1-4 scale (1 = Strongly Disagree to 4 = Strongly Agree), with possible scores ranging from 10 to 50. Example item: "I feel that I have a number of good qualities." The RSES shows good predictive validity, internal consistency,

and test-retest reliability, with a high Cronbach coefficient ($M = 0.81$) confirming the internal coherence of the scale (Schmitt & Allik, 2005; Torrey et al., 2000).

c) BMI was calculated through height and weight recorded of each participant.

Results

Descriptive statistics were used to explore the central frequency distribution, mean, and standard deviation of the data for each variable. Correlational analysis was followed up with regression analysis to understand the relationship between body image perceptions, BMI, and self-esteem in this sample. Independent samples *t* test was conducted to examine the differences between the boys and girls.

Table 1 summarizes the correlation between the variables.

Table 1. Summary of correlations between BMI, Self-esteem, Body Image Perception (MBSRQT) and its subscales

Variables	BMI	Self-Esteem
MBSRT (Total)	.27**	-.01
Appearance Evaluation	-.15	-.09
Appearance Orientation	.05	-.01
Fitness Evaluation	.25*	.00
Fitness Orientation	-.03	.14
Health Evaluation	-.11	-.03
Health Orientation	.06	-.027
Illness Orientation	.12	-.019
Body Area Satisfaction	.02	-.028
Overweight Preoccupation	.16	-.010
Self-weight Classification	.62**	.023

Note. ** $p < 0.01$; MBSRQT- Multidimensional body self-relations (total)

From Table 1, it is observed that there is a positive association between body image perception (MBSRT) and BMI ($r = .27$; $p < 0.01$). Amongst the subscales—Fitness evaluation ($r = .25$; $p < 0.01$) and self-weight classification ($r = .62$; $p < 0.01$) were found to correlate with BMI. Other variables did not correlate with each other.

Further to this, correlated variables were entered into a simultaneous regression model presented in Table 2 to test the influence of these variables on the criterion—self-esteem. The model was found to be significant ($F = 4.06$, $p < 0.01$), explaining 13% of the variance of self-

esteem (Adjusted $R^2 = .13$). The most significant predictor within this model was fitness orientation ($\beta = 2.61, p < 0.01$).

Table 2. Regression model showing prediction of self-esteem through correlated variables

Model		B	Std. Error	β	t	Adjusted R^2	R^2
1	(Constant)	6.64	1.88		3.528***	.13***	.17
	BMI	.09	.05	.170	1.716		
	Appearance Orientation	-.013	.50	-.003	-.025		
	Fitness Evaluation	.25	.39	.066	.632		
	Fitness Orientation	1.23	.47	.286***	2.610		
	Health Orientation	.39	.52	.080	.743		

Note. *** $p < 0.001$; C=Constant; B=Unstandardized beta coefficient; SE=Standard error; β =Standardized beta coefficient, t=t values of beta, R = variance

To pursue the second objective, an independent t-test analysis was performed between the boys and girls for all the variables of this study. No significant difference between the genders were found.

Discussion

The primary objective of this study was to explore the relationship between body image perceptions, BMI, and self-esteem among young adults in the Indian context, while also examining potential gender differences. The findings provide insightful nuances into the interplay between these variables, highlighting several key aspects.

Body Image Perceptions and BMI

A positive association between BMI and body image perception was found, indicating that individuals with higher BMI tend to have more negative perceptions of their body image. This is consistent with existing literature which suggests that higher BMI is often linked to body dissatisfaction (Kantanista et al., 2017; Neumark-Sztainer et al., 2006). Specifically, the

subscales of Fitness Evaluation and Self-Classified Weight were significantly correlated with BMI, underscoring the impact of self-assessed fitness and weight perceptions on overall body image. This finding is supported by Kaminsky and Seidman (2013), who emphasized the significance of fitness perceptions in body image assessments.

Interestingly, the study found a weak overall correlation between self-esteem and body image, suggesting that body image issues may not significantly impact self-esteem in this sample population. This could be attributed to the increasing emphasis on inclusivity and representation in today's Indian youth population. As Chiat (2020) notes, the growing celebration of diverse body types across media, advertising, and fashion platforms may reduce the pressure to abide by unrealistic beauty standards. This shift towards embracing diverse body shapes and sizes likely fosters greater self-acceptance and confidence, thereby mitigating the potential negative impact of one's body image concerns on self-esteem.

Regression Analysis and Self-Esteem

The regression analysis indicated that body image perceptions and BMI significantly predict self-esteem explaining 13% of the variance. Fitness Orientation was the most significant predictor highlighting the importance of awareness of physical fitness in enhancing self-esteem. This aligns with previous research demonstrating the positive effects of physical fitness on psychological well-being (Dakanalis et al., 2015; Tiggemann, 2004). These findings suggest that promoting physical fitness and healthy lifestyles could be effective strategies for improving self-esteem among young adults.

Gender Differences

Contrary to the initial hypothesis, the study found no significant gender differences in body image perceptions, BMI, and self-esteem. This result challenges previous research which often reports higher levels of body dissatisfaction among females because of the societal

pressures and media portrayals of thinness as the ideal (Holsen et al., 2001; Algars et al., 2009). However, the lack of significant gender differences in this study might reflect a positive shift towards greater body acceptance and breaking away from traditional norms in the Indian context. This finding supports the argument that both men and women are increasingly embracing diverse body types and focusing on health and self-acceptance over conforming to stereotypical beauty standards. The lack of significant gender differences in this study might also reflect cultural factors unique to the Indian context or the specific sample characteristics. It is possible that societal pressures and media influences are shifting, leading to more similar experiences of body image and self-esteem among young men and women in India. Typically it has been observed that men scored higher on such measures compared to women probably attributed to societal expectations around masculinity, which often emphasize physical strength and athleticism (Bergeron, 2007). Boys are socialized to value fitness and muscularity, while societal standards for female bodies typically promote thinness as the ideal, often leading to different body image goals between genders (Wong & Say, 2013).

Implications and Future Research

The findings of this study have several practical implications. The significant role of Fitness Orientation in predicting self-esteem highlights the need for interventions that encourage physical activity and healthy lifestyles. Additionally, the study's focus on an Indian sample particularly youth exposed to newer discourses of body image, addresses a notable gap in the literature which is providing a foundation for further research in this cultural context.

Future research should consider a larger and more diverse sample size to increase the generalizability and explore potential moderating factors such as socioeconomic status, urban versus rural settings, and media exposure. Longitudinal studies could also help establish causal relationships between body image, BMI, and self-esteem over the years.

Conclusion

In conclusion, this study contributes to our understanding of the complex relationships between body image perceptions, BMI, and self-esteem among young adults in India. The findings highlight the positive association between BMI and body image, the predictive value of Fitness Orientation for self-esteem, and the lack of significant gender differences. These insights underscore the importance of promoting physical fitness, challenging unrealistic body standards, and fostering an inclusive environment that embraces diverse body types to enhance self-esteem and overall well-being among young adults.

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