Prevalence and correlates of body dissatisfaction and disordered eating patterns in Indian youth: The role of media

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ABSTRACT

Background: The current study aimed to assess how media internalization and pressure are associated with body mass index (BMI), disordered eating, and body image dissatisfaction in Indian adults and whether there exist gender differences within these variables. The study also aimed to examine whether BMI and media internalization and pressure predict body dissatisfaction and disordered eating.

Materials and Methods: The study utilized self-report measures that were administered to 262 men and women between the ages of 18–25 years (M = 21.64).

Results: The results indicated that BMI was significantly correlated with internalization athlete, body shape dissatisfaction, and disordered eating, but not internalization general or media pressure. Internalization general, internalization athlete, media pressure as well as body shape dissatisfaction, and disordered eating were found to be positively correlated. Men and women did not significantly differ on any variable, but internalization athlete. Overweight and obese men and women were found to be significantly more dissatisfied than underweight and normal-weight men and women; however, the difference was not significant for overweight and obese males and normal-weight and overweight females. In addition, media influence and BMI significantly predicted body dissatisfaction and disordered eating.

Conclusions: The present study contributes to a novel understanding of body image concerns and risk for clinical eating disorders in Indian youth and potential implications for future research.

Key words: Body image, body mass index, disordered eating, Indian youth, media internalization, media pressure

INTRODUCTION

Body image defined by Schilder as a mental image of one's bodily appearance is a multidimensional concept commonly agreed to have a “perceptual” and an “attitudinal” component. Body image plays a crucial role in an individual’s emotions, cognition, everyday behavior, and social and intimate relationships; thus, body dissatisfaction inevitably influences multiple facets of everyday life. In general, body dissatisfaction is defined as displeasure with one’s physical appearance, essentially the size of their body, body shape, and bodily esthetics. While body dissatisfaction in women is considered such a regular experience that it is labeled as “normative discontent,” a growing body of research highlights that body image dissatisfaction is prevalent in young men as well.
Sociocultural theory posits that the extent to which an individual is able to meet the prescribed ideal determines one’s body dissatisfaction and further cognitive behavioral consequences.\footnote{11} A widely accepted model based on sociocultural theory is the Tripartite Influence Model which proposes peers, family, and media as channels that propagate messages of body ideals. These influences directly impact body dissatisfaction, which is then expected to predict disordered eating symptomatology.\footnote{12} Media images are central to the appearance culture and serve as a powerful force in shaping beauty standards.\footnote{13} Today, when most young people have access to media and as they routinely surf internet, watch television programs, and read beauty and fitness magazines,\footnote{14} dissatisfaction and feelings of “shame” may emerge as a result of the discrepancy between the real and media stereotype.\footnote{9}

A study revealed that 80% of the men and women chose an ideal body that differs from their current body shape\footnote{18} and such a discrepancy between ideal and current body type has been associated with dieting behaviors.\footnote{16} Exposure to “thin and attractive media images” for as brief as 5 min results in greater body dissatisfaction in women,\footnote{17-19} and as women who have high levels of body dissatisfaction enter college, their disordered eating symptomatology gets worsened.\footnote{20} Sociocultural influence via magazines has also been associated with higher disordered eating tendencies in women.\footnote{21,22} However, it is not mere exposure to media, but rather the perceived pressure and its internalization that is damaging to positive body image.\footnote{17,23} While thin-ideal internalization is considered a risk factor for body dissatisfaction and eating pathology in women,\footnote{24,25} internalization of an athletic body predicts muscularity behaviors\footnote{26,27} and disordered eating\footnote{28} in men.

An emerging emphasis on muscularity and increased body dissatisfaction among males can be attributed to increased visibility\footnote{29} and propagation of idealized mesomorphic body\footnote{30} that if tried to attain healthily, is an unreachable goal for most men.\footnote{31} Men are being faced with greater pressure to attain an unrealistic societal ideal, which is expected to have an impact on their eating habits and minimize the disparity between men and women, in terms of body image and disordered eating.\footnote{32}

This concern is reflected in recent studies which indicate that as many as a quarter of the people with anorexia nervosa and bulimia are males.\footnote{31} Additionally, the notion that body image disturbances and disordered eating attitudes and behaviors are limited to upper-class white females has been challenged by recent studies that indicate similar risks for diversified ethnic and racial groups.\footnote{34,35}

Findings from Mumbai, India, reveal that media internalization in young girls is more similar than dissimilar to the West, indicating a need for possible prevention and intervention.\footnote{34} In another study in Chennai, nearly most women aspired to be smaller and have a thin physique and overestimated their current weight.\footnote{37} Disordered attitudes and behaviors toward eating were prevalent in 26.67% of college women from Allahabad, India.\footnote{38} Levels of dissatisfaction and fat-phobic attitudes in the Indian population have been found to be at levels similar to that of the Western population.\footnote{29} The homogenization of appearance culture\footnote{40} has influenced the accumulation of values and beliefs that were not preexisting and this is considered directly relevant in the development of eating pathology.\footnote{41}

The current study

Media’s influence on body image and eating disturbances has been widely studied, but research on South Asian ethnicity is scant. Recent evidence suggests that Indian youth may be increasingly dissatisfied with their bodies and at risk for disordered eating; therefore, it is important to direct body image research toward possible causes, consequences, and pathways. Moreover, men from ethnic minorities are largely underrepresented despite the recent focus of body image research on men. Finally, even though youth aged 18–25 years undergo marked transitions during this time period, health-related variables for them are largely understudied in comparison to adolescents.\footnote{42} To address these gaps, the present study aimed to examine whether there is an association between body mass index (BMI), body dissatisfaction, media internalization, and pressure and disordered eating in emerging Indian youth (research question 1). In line with previous research, it was hypothesized that a positive relationship would exist between these variables (Hypothesis 1). Next, it was examined whether media internalization and pressure, body dissatisfaction, and disordered eating attitudes and behaviors differ across male and females (Research question 2); it was hypothesized that females are likely to experience greater disordered eating attitudes, media pressure, and internalization general than males (Hypothesis 2a), whereas males are likely to experience greater internalization athlete (Hypothesis 2b). The study also aimed to examine whether there exist differences in body dissatisfaction as a function of BMI, in males and females (Research question 3). It was hypothesized that underweight men and women will have lower body dissatisfaction than overweight and obese men and women (Hypothesis 3). Finally, predictors for body dissatisfaction and disordered eating were examined (Research question 4), and it was hypothesized that BMI, media pressure, and internalization would predict body dissatisfaction and disordered eating (Hypothesis 4).

MATERIALS AND METHODS

Description of subjects

The inclusion criteria for the study were being male or female and between the ages of 18–25 years. Initially, a total number of 289 study participants were recruited,
online and offline. Online recruitment was conducted using advertising across university platforms. An online form was created to receive responses. To recruit young adults online, purposive and snowball sampling was done. Incomplete responses and outliers were identified and excluded from further analyses. The final sample consisted of 262 participants with the mean age of 21.64 years. The sample population was representative of the South Asian ethnic group comprising native Indians. The mean BMI was 22.31.

Measurers

Demographics
Using a sociodemographic form, participants were asked to self-report their age, gender, ethnicity, height, and weight. Data on filler items such as daily internet consumption, the highest level of education, and occupation were also collected.

Body dissatisfaction

Body dissatisfaction was assessed using the Body Shape Questionnaire-8C (BSQ-8C). It is a derived short form of the BSQ consisting of 8 items extracted from the 34-item long-form BSQ.[43] It is self-rated on a six-point Likert scale ranging from “always” to “never.” An added advantage to use BSQ-8C for this study is its applicability to a male population, yielding satisfactory results in previous studies.[44,45] BSQ-8C has excellent psychometric properties for use in clinical as well as nonclinical populations, with alpha values falling range of 0.87 to 0.92.[43] and reported Cronbach’s alpha of 0.94.[46]

Media internalization

Media pressure and internalization was assessed using pressure, internalization general, and internalization athlete subscales of the sociocultural attitudes toward Appearance Questionnaire-3 (SATQ-3).[47] The pressure subscale consists of seven items used to assess media prescribed pressure. Internalization general and internalization athlete assess acceptance and endorsement of general and athletic body ideal, using nine and five items, respectively. SATQ-3 has been reported to have excellent psychometric properties with high internal consistency falling in the range of 0.92–0.96.[47]

Eating attitudes and behaviors

The Eating Attitudes Test-26 (EAT-26)[48] was used to assess maladaptive eating attitudes. It is self-rated measure with twenty-six items, rated on a six-point Likert scale ranging from “always” to “never.” It is a screening tool used to identify individuals who present risk for developing eating disorders, with a cutoff score of 20 or greater. EAT-26 is reported to have Cronbach’s alpha of 0.89 and scores >20 as having 100% sensitivity and 97.8% specificity, thus being the best cutoff point for screening.[49]

Procedure

This study was approved by the Institutional Ethics Committee of the University of Hyderabad. Upon receiving approval, data collection was done during February 2019–April 2019. Participants volunteered to participate and provided written informed consent before responding to the questionnaires. Participants were asked to mandatorily indicate their age, gender, height, and weight. Information on the purpose and duration of the study, participation risk, and benefits as well as participant rights were made clear before administration. Keeping in mind the sensitivity of body image and disordered eating issues, participants experiencing distress were ensured referrals; however, none of the participants reverted with psychological or emotional distress. Participants were then asked to fill out the self-report measures. Prior to data analysis, identifying information was erased.

Data analysis

All the survey data (n = 262) were entered into Microsoft Excel and exported to SPSS 20.0 (IBM, New York, United States of America) for statistical analysis. Hypothesis 1 was tested using Pearson’s product-moment correlations. This process allowed for the identification of a positive or negative relationship between the variables and to substantiate the regression assumption. Hypotheses 2a and 2b were tested using an independent sample t-test, allowing the assessment of gender differences for the study variables. Hypothesis 3 was tested using one-way ANOVA for males and females, allowing the assessment of body dissatisfaction across BMI ranges. Hypothesis 4 was tested using a series of regression analyses.

RESULTS

Preliminary analysis

Prior to analysis, the data were examined for missing values and outliers. Box plots were used to identify outliers, and the data of seven participants were excluded from the final analysis. Assumptions for linearity and independent observations were met. Q-Q plots were used to assess normality of the variables. The scores for disordered eating attitudes and behaviors were transformed using log10, to achieve normality. Homoscedasticity was assessed using Levene’s test. Mean and standard deviation (SD) scores are presented in Table 1. The prevalence rates of body dissatisfaction and disordered eating are presented in Figures 1 and 2.

Hypothesis 1: Association between body mass index, body dissatisfaction, media internalization, and eating attitudes and behaviors

As summarized in Table 2, Pearson’s product moment-correlation was used to assess the associations between BMI, media internalization and pressure, eating attitudes and behaviors, and body shape dissatisfaction.
Body mass index was significantly correlated with internalization athlete \( (r (260) = 0.144, P < 0.05) \), body shape dissatisfaction \( (r (260) = 0.384, P < 0.01) \), and disordered eating \( (r (260) = 0.125, P < 0.05) \), but did not significantly correlate with internalization general \( (r (260) = 0.059, P > 0.05) \) or media pressure \( (r (260) = 0.109, P > 0.05) \). Internalization general was significantly correlated with internalization athlete \( (r (260) = 0.489, P < 0.01) \), body shape dissatisfaction \( (r (260) = 0.474, P < 0.01) \), and disordered eating \( (r (260) = 0.274, P < 0.01) \). Internalization athlete correlated significantly with media pressure \( (r (260) = 0.369, P < 0.01) \), body shape dissatisfaction \( (r (260) = 0.294, P < 0.01) \), and eating attitudes and behaviors \( (r (260) = 0.245, P < 0.01) \). Media pressure was significantly positively correlated with body shape dissatisfaction \( (r (260) = 0.595, P < 0.01) \) and disordered eating \( (r (260) = 0.265, P < 0.01) \). The largest correlation of disordered eating was, however, with body dissatisfaction \( (r (260) = 0.329, P < 0.01) \).

**Hypothesis 2a and 2b: Gender differences in media internalization and pressure, disordered eating, and body dissatisfaction**

Inconsistent with hypothesis 2a, males indicated greater internalization general \( (M = 23.24, SD = 8.22) \) than females \( (M = 22.12, SD = 7.92) \); confidence interval \( [CI] = -3.09–0.84 \). Consistent with the hypothesis 2b, males indicated greater internalization athlete \( (M = 16.10, SD = 4.90) \) than females \( (M = 14.57, SD = 5.16) \); \( CI = -2.74–-0.29 \). Males also reported lower media pressure \( (M = 15.69, SD = 6.26) \) than females \( (M = 17.03, SD = 6.25) \); \( CI = -0.18–2.86 \). Females had greater disordered eating \( (M = 0.86; SD = 0.35) \) than males \( (M = 0.78, SD = 0.39) \); \( CI = -0.01-0.17 \) and greater body dissatisfaction \( (M = 20.43, SD = 8.74) \) than males \( (M = 19.56, SD = 7.66) \); \( CI = 1.13-2.86 \). Significant gender difference was observed only for internalization athlete \( (t (260) = 0.015, P < 0.05) \).

**Hypothesis 3: Body mass index, gender, and body dissatisfaction**

One-way ANOVA examined the BMI ranges that experience the highest levels of body dissatisfaction in men and women. BMI ranges were defined in accordance with the World Health Organization (2012). For males, Levene’s statistic was nonsignificant, indicating equal variances. There was a significant effect of BMI on body dissatisfaction \( [F (3,131) = 4.58, P = 0.004, n^2 = 0.09] \). Tukey’s postanalysis indicated that there was no significant difference between underweight and normal-weight males. Overweight males were significantly more dissatisfied with their body \( (M = 22.52, SD = 8.04) \) than males in the normal-weight range \( (M = 18.13, SD = 7.33) \); \( CI = 0.52–8.24 \), but did not significantly differ from obese males \( (M = 27.50, SD = 7.72) \); \( CI = -15.11–5.44 \). For
Predictor variables & Body dissatisfaction & Disordered eating & Body dissatisfaction & Disordered eating

| Predictor variables | Body dissatisfaction | Disordered eating | Body dissatisfaction | Disordered eating |
|---------------------|----------------------|-------------------|----------------------|-------------------|
| B                  | SEB                  | β                  | B                  | SEB                  | β                  |
| I-G                | 107                  | 0.006              | 0.010               | 0.111               |
| I-A                | 926                  | 0.007              | 0.005               | 0.124               |
| Pressure           | 690                  | 0.008              | 0.006               | 0.085               |

**P<0.01; Numbers in parentheses indicate confidence interval for significant predictors. B – Unstandardized beta coefficient; SEB – Standardized error of beta; β – Standardized beta coefficient; BMI – Body mass index; C – Constant; I-G – Internalization general; I-A – Internalization athlete

regression analysis. Although the overall model was statistically significant and explained variance of 10.8% in disordered eating attitudes and behaviors ($R^2 = 0.108$, adjusted $R^2 = 0.094$, $F(4,257) = 7.498$, $P < 0.001$), individual variables did not significantly predict disordered eating. The results are presented in Table 3.

**DISCUSSION**

While many scientific studies have recognized the associations between body image, eating behaviors, and media, ethnic minorities are often underrepresented and categorized singularly as Asians living abroad, who inevitably have different sociocultural experiences and, thus, likely to experience body image concerns differently than the natives. This study, therefore, explored the associations and gender differences between body weight and dissatisfaction, eating attitudes, and media internalization and pressure in Indian men and women between the ages of 18–25 years.

Moderate to marked body dissatisfaction was reported by 31% of females and 22% of males. These findings are comparable to findings from Australian and American studies that report 33% and 13.4%–31.8% of women as being dissatisfied with their bodies, respectively.[90,51] Body dissatisfaction in men is, however, more pervasive in India than that in Australia or America, as the latter reports prevalence rates of 15.2% and 11.2–19.6%, respectively.[90,51] About 10% of the study participants scored $>20$ on EAT-26, indicating risk for the development of clinical eating disorder. These findings are surprising on two grounds. First, the risk for clinically disordered eating in Indian and American women is comparable in percentage.[52] Second, the prevalence rates of disordered eating in Indian men is greater than that of Western[52] or East Asian men.[53] Essentially, this could mean that disordered eating in India is existent, but often remains undiagnosed; however, due to small sample size and limited existing literature, generalization of these findings may not be plausible.

Consistent with Hypothesis 1, BMI was positively associated with body shape dissatisfaction and disordered eating attitudes. These findings are supported by previous studies that found higher levels of body dissatisfaction and disordered eating in men and women who had greater

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Body dissatisfaction had the largest correlation with media pressure, followed by internalization general and internalization athlete. Previous studies have found that pressure felt by an individual to be in accordance with the socially constructed ideals of beauty and attractiveness, and internalization of thin or toned-athletic bodies is associated with greater body dissatisfaction. The pressure from Indian media to meet the beauty ideal which at large is along the lines of Caucasian standards may pose a risk for the development of eating pathology and body image concerns. Most of the models that appear on popular media are of body weight approximately 20% lower than the normal body weight, and there has been a significant increase in the portrayal of athletic men in Indian advertisements, which could possibly induce such concerns. Previous research also reports that internalizing the media ideal or feeling the pressure to comply with the appearance standards set by various sources of media is associated with disordered eating. The effect of media on disordered eating is concerning and warrants further research since disordered eating presents itself differently in different cultural contexts. For a long time, nonwestern countries have been considered “immune” to eating disorders, though it is quite possible that with increasing access and influence of Western popular culture, disordered eating patterns may emerge. The strongest association of disordered eating was, however, with body dissatisfaction. This is not heavily contested in the West owing to a large body of research and is supported by a previous study on disordered eating in India.

The examination of mean values revealed that while females perceived greater pressure from media as well as disordered eating and body dissatisfaction, males scored greater on internalization general; these differences were however not significant. These findings are unexpected yet interesting. One explanation could be that the slow but steady rise in inclusive beauty campaigns such as Dove real beauty sketches for women, as opposed to increased visibility and objectification of men in media, has posed the latter at greater risk for internalization. These findings are contested by some but supported by a few studies. Males differed significantly from females, in terms of internalization athlete, indicating that their endorsement of athletic ideal is significantly greater than that of females. This finding can be understood within the Indian cultural context, wherein the patriarchal ideas of masculinity may make men more likely to internalize an athletic body, as opposed to females, who are often portrayed in the media as dainty and expected to conform to the same. Thus, the social conditioning coupled with media influence may result in body-related maladaptive thoughts and behaviors, in men. This could be a possible explanation for comparable levels of body dissatisfaction as well.

Third, these findings revealed that there is a significant effect of BMI of body dissatisfaction in males and females and are consistent with previous studies on BMI. The trend for females was almost linear, indicating the lowest levels of body dissatisfaction in underweight women and the highest in obese. The acceptance and endorsement of the thin ideal may explain this heightened dissatisfaction in women. Interestingly, the difference was not significant for normal-weight and overweight women. It is common for women to perceive their bodies as heavier than they actually are, so it may be possible that Indian women who fall within the normal BMI range have an inaccurate perception of their body weight, therefore experiencing similar levels of dissatisfaction as overweight women. Overweight males were found to be significantly more dissatisfied with their bodies than normal-weight males; however, dissatisfaction levels were almost the same in underweight and normal-weight males, a finding inconsistent with previous studies. A possible explanation for this could be that, since males are more concerned about masculinity than they are with weight and shape, dissatisfaction across both BMI ranges may stem from the desire for a mesomorphic body.

Finally, the findings revealed that media influence and BMI significantly predict body dissatisfaction and disordered eating.
In this model, media pressure and BMI were unique significant predictors, whereas internalization general and athlete were not. These findings are consistent with earlier studies on media pressure and BMI, but differ from a large body of research that considers internalization as a significant unique predictor. These results, therefore, caution against the overgeneralization of ways in which media affects diverse populations. It is possible that body dissatisfaction and disordered eating in Indian youth may not have as much to do with cognitively buying into the beauty standards as it does with the pressure they feel in a collectivist society from not just media, but possibly other sources that were not investigated in the current study.

The present study has several limitations that must be noted. The cross-sectional design of the study poses a limitation, as trajectories and causality cannot be determined. Another methodological limitation is the use of self-report techniques that may be prone to several biases. The sample did not appropriately represent the rural population of India, which now has greater access to media. Finally, subscales of EAT-26 were not analyzed, so it is not known whether the scores were higher for dieting, bulimia, or oral control. In future, a longitudinal research approach along with a diversified sample population can help provide useful insights into the trajectory of body and eating concerns. In addition, pathways and manifestations of dissatisfaction and disordered eating are important health concerns that must be prioritized.

CONCLUSIONS

In our knowledge, the present study is one of the first few that have attempted to demonstrate the body image experience of emerging adults and provide an empirical foundation for further research on body image, in India. In summary, body dissatisfaction, disordered eating, body mass, and media influence were found to be positively associated. Media internalization and pressure along with BMI were also found to be significant predictors of body dissatisfaction and disordered eating. Males and females were at comparable levels of dissatisfaction and maladaptive eating; however, males endorsed the athletic ideal at a significantly greater level than females. Finally, significant differences in body dissatisfaction were found in women and men, across the BMI ranges. The findings of this study, in addition to recent evidence, indicate that body image concerns are prevalent and likely to rise in India. It also points to the importance of targeting media pressures through literacy interventions and body positivity campaigns in colleges and workplaces, as a promising preventive measure.

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Conflicts of interest
There are no conflicts of interest.

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