
Social Comparison and Disordered Eating Behavior in University Students: Mediating Role of Body Image Dissatisfaction

Saba Riaz^{1*}, Raheela Nazeer², Aqsa Muzaffar²**Abstract**

Disordered eating behaviors are more prevalent than eating disorders. Therefore, this study aims to investigate the link between social comparison, dissatisfaction with one's body image and disordered eating, and whether body image dissatisfaction explains the mechanisms relating social comparison and disordered eating behavior. A quantitative cross-sectional research design was implemented to enlist 200 university students (80 males and 120 females) aged between 18 to 26 years, using a non-probability convenient sampling technique. Standardized assessment tools such as Iowa-Netherlands Comparison Orientation Scale, Body Shape Questionnaire-16B, and Eating Attitude Test were administered to collect data from study sample. SPSS ver.26 and Hayes Macro Process ver.4 were utilized to statistically analyze the collected data. Results revealed that social comparison are significantly positively correlated to body image dissatisfaction and disordered eating behaviors. Similarly, body image dissatisfaction significantly mediated the link between social comparison and disordered eating behaviors. Findings suggests an increased understanding of social factors affecting an individual's thoughts, emotions and behaviors related to body image dissatisfaction and disordered eating behavior.

Keywords: Body Image Dissatisfaction, Disordered Eating Behaviors, Social Comparison, University Students

Received: 08 May 2024; Revised Received: 26 June 2024; Accepted: 27 June 2024

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Introduction

Media portray idealistic female or male figures (Ricciardelli & Yager, 2016) causing adolescent at high risk of appearance related comparisons in physical and virtual world (Ho et al., 2016). Such figures are usually considered as a representative of social desirability, success and health (Van

Vonderen & Kinnally, 2012). According to the theory of social comparisons, individuals often compare themselves with others to evaluate themselves when they lack objectives measures of self-evaluation (Festinger, 1954). They often engage in downward and upward comparisons, with the later one involved comparison with someone considered as better off (Myers et al., 2012). The term "better off" can relate to different aspects, such as physical appearance. Both general and body related social comparisons (Gibbons & Buunk, 1999; Thompson et al., 1999) are linked to body image dissatisfaction (BID) and disordered eating behavior (DEBs) like dietary restriction and binge eating (Fitzsimmons-Craft, 2011; Halliwell, 2012; Hildebrandt et al., 2012; Rodgers et al., 2011).

Body satisfaction is a component of body image that mainly refers to how content one is with their appearance (Jarman et al., 2021).

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Body dissatisfaction is the feeling of dissonance between one's ideal and actual body images (Liu et al., 2020). Dissatisfaction with body image significantly contributed to DEBs in different cultures (Chen et al., 2020), which may eventually cause eating disorders. Furthermore, individuals with negative body image are at high risk for the onset and persistence of disorders related to eating (Andersen & Swami, 2021) and psychological distress (Ihsan et al., 2023). Body image dissatisfaction (BID) may cause individuals to experience negative emotions about their appearance (Ahadzadeh et al., 2018). This experience of negative emotions can lead to DEBs such as unhealthy eating habits, dieting, and practices to control weight (Mohapatra et al., 2024). Research has shown that male students often desire larger silhouettes, while women tend to exhibit higher dissatisfaction and a desire for smaller silhouettes (Pinto et al., 2019).

Eating is crucial for our survival, as well as for our mental and physical well-being (Zaman et al., 2019). Disordered eating behaviors (DEBs) refer to patterns of altering food intake, such as restrictive diets, use of laxatives, binge eating, excessive exercise and self-induced vomiting. These practices don't qualify for the diagnostic criteria of eating disorders and its main aim is to lose weight (Tokatly et al., 2020). Restrained eating is highly prevalent in a population of adolescents and early adults (Nagata et al., 2018). The national survey in 2015 in mainland China reported an estimated 7.04% prevalence of screen detected disordered eating (Yao et al., 2021). Despite of their less severity and frequency as compare to eating disorders, DEBs have harmful consequences such as high risk of eating disorders, weight gain and intake of insufficient nutrition (Nagata et al., 2018). Furthermore, these behaviors can lead to psychopathology, negatively influencing both mental and

physical health (Jin et al., 2023; Khraisat et al., 2022). There was 78.87% prevalence of DEBS in female athletes (Fatima et al., 2018). Several studies reported that body image dissatisfaction cause DEBS (Hill et al., 2013; Wendell et al., 2012). Body dissatisfaction begins in early life and can persist up to age 30. Wang et al. (2019) analyzed data from 1,455 participants who completed surveys every five years between the ages of 15 and 30 about their eating habits, weight, mental health, and overall well-being. The study revealed that both men and women experienced a slight increase in body dissatisfaction over time. Studies report 21.8% to 11.2 % prevalence of DEBs during the previous month in American female and male high schools' students respectively (Pisetsky et al., 2008). Similarly, there was 31% prevalence of DEBs reported in university students of United states (Barrack et al., 2019). At-risk eating attitudes were prevalent up to 2.5% in young Chinese adults (Liao et al., 2010).

The alteration of social environment due to transition from high school to university, students organize their lifestyles independently. Such an increase in freedom and lack of parental supervision made it difficult for university students to maintain a good and healthy lifestyle (Muñoz-Rodríguez et al., 2021). At the same time, their adaptation to academic pressures and increased independence, made them vulnerable for psychosocial problems (Uri et al., 2021). Despite increased awareness and knowledge related to eating disorders, disordered eating behavior is still an unresolved and neglected issue in Pakistan. Individuals with disordered eating behaviors are rarely reported in health care settings, increasing its prevalence. Pakistani gastroenterologists and dentists identify most of disordered eating behavior cases in people having complaints of indigestion, acidity, nausea, burning, loss of dental enamel and

calcium deficiency in teeth etc (Muazzam & Khalid, 2008). Therefore, the current study aims to investigate potential relationship between social comparison, BID and DEBs and to examine that whether the association between social comparison and disordered eating behavior is mediated by body image dissatisfaction in Pakistani university students.

Method

This study utilized a quantitative cross-sectional research design to recruit 200 university students aged between 18-26 years through non-probability convenient sampling technique. Using G* Power analysis, the pre study sample size was calculated as 171. The remaining 29 students were recruited to eliminate the attrition and response set. University students who were currently enrolled and have a body mass index (BMI) below 18.5 or above 24.9 were recruited only. Participants who are below 18 years of age or above 26 years and have already completed their university education were excluded from this study.

Measures

The Iowa-Netherlands Comparison Orientation Scale (NCOM-11)

INCOM-11 (Gibbons & Buunk, 1999) consists of 11 items having a 5-point Likert response format was utilized to assess level of social comparison of university students. The Cronbach's alpha values of the original scale ranges from 0.78 to 0.85. After reverse scoring items 5 and 11, the total score of the scale was generated by summing up all the responses. The INCOM-11 reliability index in this study was 0.70.

Body Shape Questionnaire (BSQ-16B)

Body Image dissatisfaction was assessed through body shape questionnaire (16B) (Evans & Dolan, 1993). This tool is comprised of 16 items having a 6-point Likert response format, demonstrating reliability index ranges from 0.94 to 0.97. The potential score of BSQ-16B ranges from 34-204. This

tool is scored up by summing up all the responses. Participants having BSQ scores less than 80 and >140 scores indicate no to marked body shape concerns respectively. The Cronbach's alpha value of BSQ-16B in this study was .87.

The Eating Attitude Test (EAT-26)

Eating attitude test-26 (Garner et al., 1982), comprised of 26 items having 6-points Likert response format ranging from 0 (never) to 3 (always) was administered to measure disordered eating behaviors, indicating a reliability index of 0.90. This scale is scored up by rescoring items 1-25 to a 4-point Likert format and reverse scoring item 24. A suggested cut-off score of 20 indicates problematic attitudes and behaviors towards eating. The reliability index of EAT-26 in this study was 0.77.

Procedure

After obtaining approval of the study from the Institutional Review Board (IRB) of the Department of Allied Health Sciences at Khawaja Fareed University of Engineering and Technology, the researchers sought permission from the respective authors of the assessment measures used in this study. A questionnaire booklet including demographics, as well as standardized versions of the Body Shape Questionnaire (BSQ-16B), the Iowa-Netherlands Comparison Orientation Scale, and the Eating Attitude Test, was provided to each participant in order to collect data. All participants were recruited after providing an informed consent. Using the weight (kg)/height (m²), the body mass index of participants was calculated. Each participant was given ample time to complete the questionnaire booklet. After completing the questionnaires, the researcher debriefed each participant to express gratitude for their participation in the study.

Statistical Analysis

Descriptive and inferential statistics were carried out using SPSS ver.26 and Hays's

Macro Process ver.4.0. Descriptive statistics were used to draw a general picture of participant’s demographics. The inferential

statistics used were Pearson product moment correlation and mediation analysis.

Results

Table 1

Correlation between Social Comparison, Body Image Dissatisfaction and Disordered Eating Behavior (N = 200)

| Variables | M | SD | 1 | 2 | 3 |
|-----------------------------|-------|-------|---|-------|-------|
| Social Comparison | 37.57 | 7.14 | - | .57** | .48** |
| Body Image Dissatisfaction | 50.98 | 15.53 | | - | .39* |
| Disordered Eating Behaviors | 33.96 | 8.91 | | | - |

Note: M = Mean, SD = Standard Deviation

* $p < .05$, ** $p < .01$

Table 1 revealed that social comparison is significantly associated with body image dissatisfaction ($r(200) = .57^{**}$, $p < .01$) and disordered eating behaviors ($r(200) = .48^{**}$,

$p < .01$). Furthermore, body image dissatisfaction was significantly positively linked with disordered eating behavior ($r(200) = .39^{**}$, $p < 0.01$).

Figure 1

Mediation Model of Disordered Eating Behavior

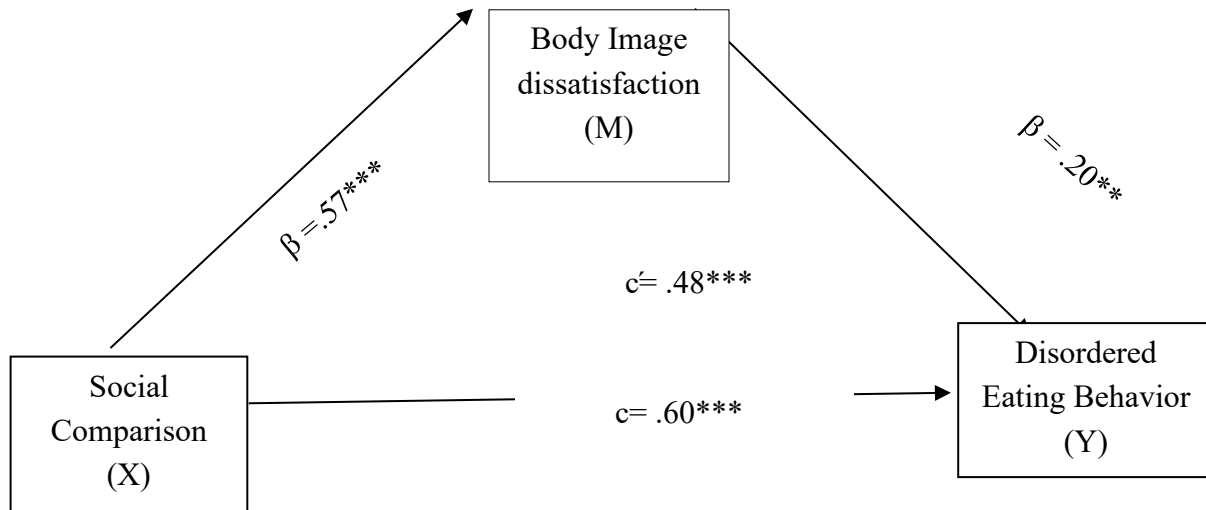


Table 2*Results of Mediation Analysis (with Process ver. 3.4) (N=200)*

| Effect | Coefficients | <i>t</i> | <i>p</i> | SE | 95%CI <i>LL</i> | 95%CI <i>UL</i> |
|-----------------------|--------------|----------|----------|-----|--------------------|--------------------|
| a(predictor-mediator) | .57 | 4.38 | 0.00 | .13 | .75 | 1.2 |
| b(mediator-outcome) | .20 | 5.00 | 0.00 | .04 | .04 | .11 |
| (predictor-outcome) | .48 | 5.33 | 0.00 | .09 | .54 | .89 |
| c(DE) | .48 | 5.33 | 0.00 | .09 | .54 | .89 |
| ab(IE) | .13 | | | .06 | .02 | .24 |

Note: *LL*=Lower Limit, *UL*= Upper Limit, Predictor= Social Comparison, Mediator= Body Image Dissatisfaction, Outcome= Disordered Eating Behavior

Table 2 indicates significant total effects of social comparisons on disordered eating behaviors ($\beta = .60$, $SE = .07$, $p < 0.001$). Furthermore, Table 3 indicates significant effects of social comparison on body image dissatisfaction ($\beta = .57$, $SE = .13$, $p < 0.001$) and BID on DEBs ($\beta = .20$, $SE = .04$, $p < 0.001$). BID partially mediated the association between SC and DEBs as after

controlling BID, the direct effects of SC on DEB are reduced ($\beta = .48$, $SE = .09$, $p > 0.05$) while *c'* path is significant. Indirect effects were also checked over 5000 bootstrap samples by estimating at a 95% confidence interval. Results depict that the total indirect effect of SC via BID on DEBs is statistically significant.

Discussion

This study revealed a significant positive association between social comparison, BID and DEBs reinforcing the findings of earlier studies (Hildebrandt et al., 2012; Fitzsimmons-Craft, 2011; Rodgers et al., 2011). The sociocultural attractiveness norms influence individuals to assess their bodies (Ricciardelli & Yager, 2016). The societal standards of thinness and physical beauty pertaining to female gender influence their identity while attributes such as strength, muscularity, attractiveness, physical height and functional aspects of body determine the social competence of males. Individuals internalize the appearance of an ideal body for the sake of social prestige and acceptance through the process of social comparison (Ricciardelli & Yager, 2016). The internalization of societal ideals and social comparison related to appearance develop body image dissatisfaction (Paterna et al., 2021). Social comparison in terms of general

and social appearance are related to DEBs in undergraduates (Green et al., 2009).

Furthermore, the current research study found a significant positive relationship between body image dissatisfaction and disordered eating behavior in university students, supported by the findings of the study conducted by (Hildebrandt et al., 2012; Fitzsimmons-Craft, 2011; Rodgers et al., 2011). Individuals with an elevated level of dissatisfaction with their body image are more prone to DEBs (Chen et al., 2020), and frequently engage in weight control practices and unhealthy eating (Goldfield et al., 2010). This study revealed that body image dissatisfaction was significantly mediating a link between social comparison and DEBs. Social comparison framework suggests that humans possess a natural drive to compare themselves to standards and ideals of society (Festinger, 1954). If an individual compare himself/herself to someone else who are considered better than them, are more likely to appraise himself/herself as worst, leading

to negative emotions and body image dissatisfaction (Fitzsimmons-Craft, 2011). Social comparison influences human experiences and conducts and is considered as a key mechanism leading to body image dissatisfaction (Suls, 2003). The meta-analysis summarizing 156 study's findings conclude that appearance related social comparison is linked with body dissatisfaction-a prominent risk factor for DEBs (Myers & Crowther, 2009).

Limitations & Recommendations

The cross-sectional research design implemented in this study does not explain cause-and-effect relationship between the study variables. Furthermore, majority of participants were recruited from Rahim Yar Khan city limiting the generalizability of the study's findings. Researchers in future should adopt longitudinal study design to track the changes related to BID and DEBs and to determine the causative factors in development of eating disorders. Other variables like social support, social acceptance and bullying must be include to determine the possible trajectories of body image dissatisfaction and disturbed eating behaviors. Population with diverse age ranges must be included in order to identify the population who are at high risks for social comparison.

Implications

This study suggests to reduce the usage of social media platforms that are perpetuating the unrealistic standards of beauty. It also necessitates to educate caregivers and parents regarding the importance of promoting positive body image in adolescents and children. This study further encourages the social media platforms to promote diverse representation of humans in order to break the unattainable body standards. Adolescents are required to develop media literacy for the critical evaluation of messages portrayed by social media and promote diverse beauty representations.

Conclusions

This research study indicates that students who are enrolled in universities are at increased risk of SC, BID and DEBs. Furthermore, body image dissatisfaction explaining the potential mechanism between social comparison and DEBs. There is a need of awareness campaigns related to the negative effects of social comparison resulting from exposure to ideal body figures in order to improve both mental and physical health of university students.

Contribution of Authors

Saba Riaz: Conceptualization, Methodology, Writing - Reviewing & Editing, Supervision
Raheela Nazeer: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft
Aqsa Muzaffar: Conceptualization, Formal Analysis, Writing – Original Draft

Conflict of Interest

There is no conflict of interest declared by the authors.

Source of Funding

The authors declared no source of funding.

Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [S.R.] upon the reasonable request.

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