

SOCIOCULTURAL PRESSURES INFLUENCE BODY DISSATISFACTION AND EATING BEHAVIORS AMONG PAKISTANI AND AUSTRALIAN UNIVERSITY STUDENTS

Amna Ambreen¹, Tahira Riaz², Abid Khan³, Bakhtawara Bibi⁴, Muhammad Naveed Umar⁵

¹Department of Psychology, National University of Medical Sciences, Rawalpindi

²Department of Psychology, Women University Mardan

^{3,4}University of Malakand

⁵Department of Psychology, Islamia College University, Peshawar

²t_riaz_needo@yahoo.com , ³drabidkhan21@gmail.com

DOI: <https://doi.org/10.5281/zenodo.18382999>

Keywords

Australia, Body dissatisfaction, Body Esteem Scale (BES), Disturbed Eating Attitudes, Pakistan, Sociocultural Attitudes Towards Appearance Scale (SAT), University students

Article History

Received: 15 September 2025

Accepted: 11 October 2025

Published: 01 November 2025

Copyright@Author

Corresponding Author: *

Tahira Riaz,

Abid Khan

Abstract

The sociocultural pressures are central to the emergence of a disordered eating attitude and body dissatisfaction, which differ by culture and affect the mental health and well-being of young adults within societies all over the world. In the present cross-sectional study, we investigated the moderating role of sociocultural attitudes toward appearance in the relationship between body dissatisfaction and disordered eating attitudes among university students from Pakistan and Australia. A sample of 341 students (131 males, 209 females; aged 18–35) was recruited. Standard scales were used, including the Body Esteem Scale (BES), the Sociocultural Attitudes Towards Appearance Scale (SAT), and the Disordered Eating Attitude Scale (DEAS). Analysis methods like ANOVA, t-tests, correlation, and moderation showed a strong association between body dissatisfaction, disordered eating, and sociocultural attitudes. Results showed that body dissatisfaction was significantly correlated with disordered eating attitudes ($r = 0.58, p = 0.001$), while sociocultural attitudes showed an entirely strong positive connection with disordered eating attitudes ($r = 0.46, p = 0.001$). Moderation analysis revealed that the connection between body dissatisfaction and disordered eating (interaction term $\beta = 0.21, p < 0.01$) was much influenced by sociocultural attitudes, indicating that a greater internalization of sociocultural appearance standards enhanced this correlation. Females showed higher ratings in body dissatisfaction ($M = 2.91, SD = 0.64$) and disordered eating attitudes ($M = 3.05, SD = 0.55$) compared to male ($M = 2.41, SD = 0.59$ and $M = 2.61, SD = 0.55$, respectively; $p < 0.01$). Moreover, based on cross-cultural ethnicity, Pakistani students show more body dissatisfaction ($M = 2.85, SD = 0.63$) than Australian students ($M = 2.58, SD = 0.61; p < 0.05$), whereas Australian students exhibited elevated sociocultural internalization ratings. In conclusion, the present study validates that sociocultural factors influence body dissatisfaction and eating behaviors among Pakistani and Australian university students, suggesting that there is the need for culturally sensitive interventions that promote the psychological wellbeing of university students.

INTRODUCTION

Body image is a factor that plays a great role in psychological well-being that affects emotions, thoughts, behaviors, relationships and self-perception. In that way, it influences the personality formation significantly (Merino et al., 2024). Body dissatisfaction can be described as the difference between the body shape or size of an individual and the ideal body shape or size. No matter the words, the studies show that there is a strong relationship between poor dieting habit and how one perceives his/her own body. The body image dissatisfaction (BID) is described as an unfavorable idea and thoughts related to a body in a person (Heider et al., 2018). The factors that affect BID include body size, appearance, weight, and cultural factors. It may result in the negative perception of self, avoidance, and the higher chance of eating disorders, anxiety, and depression (Wang et al., 2024). Many research works across the world have pointed out the prevalence of BID. In the United States, every fourth male child and adolescent was concerned with muscularity and leanness and wanted to have more toned and defined bodies (Calzo et al., 2015), whereas in Australia, it was 17% (Mond et al., 2014). Among 18924 American high school students, 25.2% of males and 3.8% of females reported any muscle-enhancing behaviour, and 29.2% of males and 7.0% of females reported trying to gain weight (Nagata et al., 2022). 36% (n = 262) of the 728 university students in the United Arab Emirates who participated in the study expressed body dissatisfaction (Alharballeh & Dodeen, 2021). A study of 1635 people was carried out in May 2023 by the Butterfly Foundation (Australia), a national charity that supports people with eating disorders and body image issues, as well as their families and communities. The report concluded that over 90% of young Australian expressed BID and concerns about their body image. In addition, half of total reported that body image had prevented them from raising their hand in class, while 37% avoided physical activities, and 36% hesitated to express their opinions due to body image concerns.

BID is a significant predictor and maintaining factor of the disordered eating behaviors of laxative use, purging, binge eating, and food restriction. A person suffering from an eating disorder becomes so preoccupied with weight, body shape, and physical attractiveness that his or her choice of food becomes abnormal and injurious to health. The earlier the diagnosis of eating disorders is made, the quicker and easier they are to treat. Therefore, there is a need to recognize pathological eating disorders that satisfy the diagnostic criteria of DSM-5 or rather American Psychiatric Association 2013 before they become disordered eating behavior. Sociocultural pressures and concerns about body image are common considerations in disordered eating patterns associated with eating disorders. The beliefs, concepts, and ideals of a particular group of people, including a culture, about appearance are known as socio-cultural attitudes toward appearance. In a previous research study, it was found that the sociocultural attitudes toward appearance (searching for information, pressures, and internalization) predicted risks of eating disorders in young Polish females (n = 134) (Izydorczyk et al., 2021). In another study published recently in the field, with 302 university-aged participants (52.3% female participants); median age of 21 years) examining the relationship of sociocultural pressures with disordered eating patterns using a Slovak sample in Central Europe, it was found that pressure to be thin as perceived by partners directly predicted disordered eating patterns in women, though with an indirect relationship between partner pressure and disordered eating mediated through the appearance ideals' internalization as influenced by mass media pressures. Also, partner pressures and family pressures demonstrated an indirect relationship with disordered eating patterns mediated through the controlled regulation of exercise (Paulisova et al., 2021). In a recent cross-sectional study published with a Brazilian sample, a study was conducted among 1,608 full-time university students. Results of the study indicated a prevalence of binge eating, purging, and food restriction of 4.4%, 2.5%, and

9.1%, respectively, which was significantly more prevalent in women at 7.0%, 4.4%, and 13.5% than in men at 1.8%, 0.6%, and 4.9% respectively. Sociocultural and psychological variables including female gender, dissatisfaction with body image, being overweight, high perceived levels of stress, and depression were significantly associated with disordered eating symptoms, respectively. On a separate study, the role of internalized sociocultural media ideals on disordered eating behaviors among adolescents was investigated, adding to the current body of knowledge on the relationship between sociocultural factors and body concerns. According to the results, there was a strong positive predictive relationship between internalization of thin media ideals and disordered eating behaviors, and internalization mediated these tendencies either directly or indirectly through body esteem and BID (Bi et al., 2024). Consequences such as depression, anxiousness, and eating disorder cognitions are associated with the internalization of the thin ideal (Christian et al., 2021). Social appearance anxiousness, which often occurs simultaneously with eating disorders, is one of the key causes of body image dissatisfaction as well as concerns about body size and weight. A network analysis was carried out among 96,218 students in Jilin Province, China, to examine correlations among social anxiety disorder, appearance anxiousness, and eating disorders. The outcome indicated that eating disorders were highly prevalent (38%), and more prevalent amongst females (43.6%) than males (31.2%). Symptoms of eating disorder were linked with every aspect of appearance anxiety such as appearance concern, satisfaction and wanting to look better. Also, it was found that there were strong interconnections between eating disorders that included embarrassment and discomfort (Jin et al., 2022). The proposed study seeks to investigate the moderating effect of the social cultural attitude towards appearance in the correlation between the body dissatisfaction and disordered eating attitudes in Pakistan and Australia university students. The sample will consist of 341 male and female students (ages between 18 to 35 years) representing various

universities in key cities of both countries Rawalpindi and Islamabad in Pakistan, and Sydney and Melbourne in Australia through purposive convenient sample. It is believed that the findings will be used in designing culturally sensitive mental health interventions and to help in the development of effective prevention strategies.

Methods

Participants

The sample size was 341 male and female students aged between 18-35 years in universities of Rawalpindi and Islamabad (Pakistan) and Sydney and Melbourne (Australia) that were sampled through purposive convenient sampling.

Data Collection

Data were gathered in universities in Pakistan and Australia, and face to face survey was carried out in Rawalpindi and Islamabad, and online survey was done with the students of Sydney and Melbourne universities. The sample was restricted to full-time students who were at least 18-35 years old, were enrolled and had finished at least one semester; students with a history of diagnosed eating disorders or severe psychological disorders were excluded. The participants were also briefed on the study and their answers scored and analyzed to get the results.

Measures

Demographics

The demographic information of all the participants such as age, education, ethnicity, gender, family type, and marital status, etc. were recorded.

Body Esteem Scale (BES)

The Body esteem was measured with the help of Body Esteem Scale (BES) created by Mendelson et al. (Mendelson et al., 2001). The BES is a 23-item self-report questionnaire, which is used to assess how people rate their body weight and body shape. The answers are categorized on a five-point Likert scale (0= never, 4= always). The negatively worded and reverse-scored items (4, 7, 9, 11, 13, 18 and 21) are seven. The scale has

three subscales, Appearance (10 items; Cronbach $\alpha = 0.92$), Weight (8 items; Cronbach $\alpha = 0.94$) and Attribution (5 items; Cronbach $\alpha = 0.81$). The sum total of the items was added to obtain the total body esteem score.

Disturbed Eating Attitude Scale (DEAS)

The Disturbed Eating Attitude Scale (DEAS) by Alvarenga et al. was used to assess the eating attitudes (Alvarenga et al., 2010). DEAS is a 25-item questionnaire that has a combination of Yes/No and 5-point likert scale items. The scale is used to measure the eating attitudes of the individuals and total scores are between 37 and a maximum of 190. It encompasses five subscales and the more the score the more disturbed or poor eating attitudes. The scale exhibits good internal consistency of Cronbachs alpha of 0.76. The total score was calculated by adding the responses of all items.

Sociocultural Attitudes towards Appearance Questionnaire (SATA)

The internalization of the sociocultural values of appearance of the participants was measured through the use of a questionnaire known as the Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3). The SATAQ-3 is a revised version of the earlier questionnaires developed by Heinberg et al. (Heinberg et al.,

1995). The questionnaire has 30 items that are answered on a scale of 5 points. The lowest point is number 1 while number 5 is the highest. Some items that needed reverse scoring are items No. 3, 6, 9, 12, 13, 19, 27, and 28. The result of the global influence of the values towards the participants was computed by obtaining the total score. The reliability of the scale has a high Cronbach alpha of 0.90.

Data Analysis

Statistical Package of social sciences (SPSS) version 26 was used to perform data analysis. Both demographic and research variables underwent descriptive statistics, which reported measures such as mean, standard deviation, range, skewness and kurtosis. Reliability analysis to find the Cronbach alpha coefficients was done to determine the internal consistency of the three scales used. The correlation coefficient (r) of Pearson was used to analyze the connections between variables of the study. Also, moderation analysis was conducted to determine the contribution of sociocultural attitudes to moderation of the correlation between body esteem and eating disorders. Independent samples t-tests and one-way ANOVA were used to test the mean difference between the demographic groups.

Results

Demographics

Table 1. Demographic Details of Study Participants

| Demographic Variables | n | Percentage (%) |
|-----------------------|-----|----------------|
| Age ranges | | |
| 18-23 | 153 | 45.0 |
| 23-29 | 134 | 39.4 |
| 30-35 | 53 | 15.6 |
| Gender | | |
| Males | 131 | 38.5 |
| Females | 209 | 61.5 |
| Education | | |
| Undergraduate | 136 | 40.0 |
| Graduate | 136 | 40.0 |
| Postgraduate | 68 | 20.0 |
| Family Type | | |

| | | |
|-----------------------|-----|------|
| Nuclear | 215 | 63.2 |
| Joint | 125 | 36.8 |
| BMI | | |
| Below 18.5 | 65 | 19.1 |
| 18.5-24.9 | 240 | 70.6 |
| 25-29.9 | 27 | 7.9 |
| 30-34.9 | 7 | 2.1 |
| 35-39.9 | 1 | 0.3 |
| Ethnicity | | |
| Pakistani | 150 | 44.1 |
| Australian | 190 | 55.9 |
| Marital Status | | |
| Unmarried | 216 | 63.5 |
| Married | 124 | 36.5 |

According to Table 1, most of the participants were in the late adolescent to early adulthood group of 18-23 years (n = 153, 45%), then there were those in the 23-29 years' group (n = 134, 39.4%). The least category was between 30-35 years (n = 53, 15.6%). There were more female participants (n = 209, 61.5) than males (n = 131, 38.5%). In terms of education, the greatest number of respondents were under graduates (n = 136, 40%), and later were graduates (n = 136, 40%), and postgraduates (n = 68, 20%). Members of nuclear families (n = 215, 63.2) were more

common than joint families (n = 125, 36.8%). The sample sizes of the participants according to BMI were; underweight (BMI= <18.5, n = 65, 19.1%), normal weight (BMI= 18.5-24.9, n = 240, 70.6%), overweight (BMI= 25-29.9, n = 27, 7.9%), class I obese (BMI= 30-34.9, n = 7, 2.1%), and class II obese Ethically, 44.1% (n = 150) of the respondents were Pakistani, 55.9% (n = 190) were Australian. Finally, the unmarried participants (n = 216, 63.5) were more common than the married participants (n = 124, 36.5).

Psychometric Scales Properties.

Table 2. Psychometric Properties of Scales

| Scale | k | α | M (SD) | Range (Potential Min-Max) | Range (Actual Min-Max) | Skewness (Sk) | Kurtosis (Kr) |
|-------|----|-----|----------------|---------------------------|------------------------|---------------|---------------|
| BES | 23 | .81 | 49.72 (12.87) | 0 - 92 | 6 - 88 | 0.67 | 0.34 |
| SATAQ | 30 | .88 | 84.95 (14.15) | 5 - 185 | 35 - 141 | -0.06 | 1.40 |
| DEAS | 27 | .71 | 100.45 (11.09) | 27 - 135 | 61 - 127 | -0.61 | 1.44 |

Abbreviations: BES= Body Esteem Scale, SATAQ= Socio-cultural Attitudes towards Appearance, DEAS= Disordered Eating Attitude Scale

The psychometric properties of scales used in the study are shown in Table 2. The scales are all acceptable in terms of their internal consistency with Cronbach alpha being greater than 0.70. BES had 23 items and had a value of 0.81, a mean of 49.72 (SD = 12.87) and an actual range of 6 to 88. The Socio-cultural Attitudes Towards Appearance Questionnaire (SATAQ) comprised

30 items, the alpha value was 0.88 and the mean was 84.95 (SD = 14.15), the range of scores was 35 to 141. DEAS (27 items) with an alpha of 0.71 had a mean of 100.45 (SD = 11.09) and actual score of 61-127. Skewness and kurtosis values for all scales were within acceptable limits, indicating normal distribution of scores.

Correlations Among Study Variables

Table 3. Relationship Among Study Variables

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------|---------|----------|--------|---------|---------|---------|---------|---|
| BD | - | - | - | - | - | - | - | - |
| SATA | 0.375** | - | - | - | - | - | - | - |
| DEA | 0.15** | 0.14** | - | - | - | - | - | - |
| DEA1 | 0.56** | -0.155** | 0.47 | - | - | - | - | - |
| DEA2 | 0.41** | -0.16** | 0.36** | 0.58** | - | - | - | - |
| DEA3 | -0.36** | 0.148** | -0.001 | -0.53** | -0.53** | - | - | - |
| DEA4 | -0.28** | 0.079 | 0.34** | -0.29** | -0.125* | 0.182** | - | - |
| DEA5 | -0.25** | 0.125* | 0.60 | -0.24** | -0.20** | 0.199** | 0.281** | - |

n= 341, **p<0.01, *p < .05

Abbreviations: BD= Body Dissatisfaction, SATA= Socio-cultural Attitudes towards Appearance, DEA= Disordered Eating Attitudes, DEA1= relation with food, DEA2= Concern about food, DEA3= restrictive and compensatory patterns, DEA4= feeling towards eating, DEA5= idea of normal eating.

Table 3 shows correlations among the study variables. Body dissatisfaction (BD) had significant positive correlations with socio-cultural attitudes towards appearance (SATA; r = 0.38, p < 0.01), disordered eating attitudes (DEA; r = 0.15, p < 0.01), concern about food (DEA2; r = 0.41, p < 0.01), and relationship with food (DEA1; r = 0.56, p < 0.01). Conversely, BD was negatively correlated with restrictive and compensatory patterns (DEA3; r = -0.36, p < 0.01), feelings towards eating (DEA4; r = -0.28, p < 0.01), and ideas of normal eating (DEA5; r = -0.25, p < 0.01). Socio-cultural attitudes towards

appearance (SATA) positively correlated with disturbed eating attitudes (DEA; r = 0.14, p < 0.01), restrictive and compensatory patterns (DEA3; r = 0.15, p < 0.01), and ideas of normal eating (DEA5; r = 0.12, p < 0.05). However, SATA was negatively associated with relationship with food (DEA1; r = -0.16, p < 0.01) and concern about food (DEA2; r = -0.16, p < 0.01). In addition, DEA showed a significant positive correlation with both concerns about food (DEA2; r = 0.36, p < 0.01) and feelings towards eating (DEA4; r = 0.34, p < 0.01). The subscale relationship with food (DEA1) demonstrated a strong positive correlation with concerns about food (DEA2; r = 0.58, p < 0.01). However, it was negatively associated with restrictive and compensatory patterns (DEA3; r = -0.54, p < 0.01), feelings towards eating (DEA4; r = -0.29, p < 0.01), and ideas of normal eating (DEA5; r = -0.24, p < 0.01). Concern about food (DEA2) was significantly negatively correlated with restrictive

and compensatory patterns (DEA3; $r = -0.53$, $p < 0.01$), feelings towards eating (DEA4; $r = -0.12$, $p < 0.01$), and ideas of normal eating (DEA5; $r = -0.20$, $p < 0.01$). Restrictive and compensatory patterns (DEA3) showed significant positive

associations with feelings towards eating (DEA4; $r = 0.18$, $p < 0.01$) and ideas of normal eating (DEA5; $r = 0.19$, $p < 0.01$).

Moderation Models

Table 4. Moderation model of association between sociocultural attitudes towards appearance and body dissatisfaction with relationship with food as an outcome variable

| Variables | 95%CI | | | | p |
|--|----------|-----------|-----------|-----------|------|
| | Model 1 | LL | | UL | |
| | <i>B</i> | <i>SE</i> | <i>LL</i> | <i>UL</i> | |
| Constant | 36.87*** | 0.39 | 36.11 | 37.63 | 0.00 |
| Body Dissatisfaction | 0.37*** | 0.03 | 0.31 | 0.43 | 0.00 |
| Sociocultural Attitudes | 0.05 | 0.03 | -0.01 | 0.10 | 0.09 |
| Body Dissatisfaction X Sociocultural Attitudes | -0.01*** | 0.00 | -0.01 | -0.00 | 0.00 |
| R ² | 0.36 | | | | |
| ΔR | 0.05 | | | | |

Abbreviations: ΔR² = Per Unit Change β = Standardized coefficient, SE= Standard Error, CI= Confidence Interval, LL=Lower Limit, UL= Upper Limit, p=significance level ($p < 0.05$).

Table 4 presents the moderating effect of socio-cultural attitudes towards appearance (SATA) on the relationship between body dissatisfaction and disturbed eating attitudes. From Table 4, the main effect of BD on DEA is significant, with $\beta = 0.37$, $p < 0.05$, indicating that higher levels of body dissatisfaction predict greater disordered eating attitude. Socio-cultural attitudes towards appearance alone did not significantly predict variance in disturbed eating attitudes, $p > 0.05$, suggesting that it may not function as a direct predictor within the model. An important finding, however, revealed that the interaction

term-BD x SATA-was significant, with $\beta = -0.01$, $p < 0.05$, indicating a moderating effect. The implication here is that socio-cultural attitudes towards appearance negatively moderate the effect of body dissatisfaction on disturbed eating attitudes. That is, as the socio-cultural pressure increases, the effect of body dissatisfaction on disturbed eating attitudes diminishes. The R² value was 0.36, indicating that 36% of the variance in disturbed eating attitude was explained by the model. The R² change, which was 0.05, suggested that the inclusion of the interaction term added 5% variation. This confirms the significance of the moderation effect, $p < 0.05$.

Table 5. Moderation model of association between sociocultural attitudes towards appearance and body dissatisfaction with concerns about food as an outcome variable

| Variables | 95%CI | | | | p |
|--|----------|------|-------|-------|------|
| | Model 1 | SE | LL | UL | |
| Constant | 11.48*** | 0.17 | 11.14 | 11.81 | 0.00 |
| Body Dissatisfaction | 0.10*** | 0.01 | 0.07 | 0.13 | 0.00 |
| Sociocultural Attitudes | -0.00 | 0.01 | -0.02 | 0.02 | 0.98 |
| Body Dissatisfaction X Sociocultural Attitudes | -0.00*** | 0.00 | -0.00 | -0.00 | 0.00 |
| R ² | 0.18 | | | | |
| ΔR | 0.02 | | | | |

Abbreviations: ΔR² = Per Unit Change β = Standardized coefficient, SE= Standard Error, CI= Confidence Interval, LL=Lower Limit, UL= Upper Limit, p=significance level (p<0.05).

Table 5 presents the moderating effect of SATA on the relationship between BD and concerns about food (a subdimension of disturbed eating attitudes) among university students. The results show that the main effect of body dissatisfaction is statistically significant in predicting concerns about food (β = 0.10, p < 0.05), indicating that higher body dissatisfaction is associated with greater concerns related to food. However, the main effect of socio-cultural attitudes towards appearance was not statistically significant (p > 0.05), suggesting it does not independently

predict concerns about food in this model. The interaction effect between body dissatisfaction and socio-cultural attitudes towards appearance was statistically significant (β = -0.00, p < 0.05). Although the beta value is small, the direction and significance suggest that socio-cultural attitudes towards appearance moderate the relationship between body dissatisfaction and concerns about food, such that greater socio-cultural pressure weakens this relationship. The model explains 18% of the variance in concerns about food (R² = 0.18, p < 0.05), with the interaction term contributing an additional 2% of the explained variance (ΔR² = 0.02), indicating a modest yet meaningful moderation effect.

Table 6. Moderation model of relationship between sociocultural attitudes towards appearance and body dissatisfaction with restrictive and compensatory behaviors as an outcome variable

| Variables | 95%CI | | | | p |
|--|----------|------|-------|-------|------|
| | Model 1 | SE | LL | UL | |
| Constant | 10.92*** | 0.21 | 10.50 | 11.34 | 0.00 |
| Body Dissatisfaction | -0.11*** | 0.02 | -0.14 | -0.07 | 0.00 |
| Sociocultural Attitudes | 0.00 | 0.02 | -0.03 | 0.03 | 0.98 |
| Body Dissatisfaction X Sociocultural Attitudes | -0.00*** | 0.00 | 0.00 | 0.01 | 0.00 |
| R ² | 0.17 | | | | |
| ΔR | 0.05 | | | | |

Abbreviations: ΔR² = Per Unit Change β = Standardized coefficient, SE= Standard Error,

CI= Confidence Interval, LL=Lower Limit, UL= Upper Limit, p=significance level (p<0.05).

Table 6 presents the moderating role of SATAQ in the relationship between BD and concerns about food among university students. The results indicate that the main effect of body dissatisfaction is statistically significant and negatively predicts concerns about food ($\beta = -0.11, p < 0.05$), suggesting that as body dissatisfaction increases, concerns about food may decrease an unexpected inverse relationship that warrants further investigation. The interaction effect between body dissatisfaction and socio-cultural attitudes towards appearance is also statistically significant ($\beta = 0.00, p < 0.05$).

While the beta value is small, the significance indicates that socio-cultural attitudes towards appearance moderate the relationship between body dissatisfaction and concerns about food. Specifically, the moderation is negative, implying that socio-cultural influences buffer or alter the direction/intensity of the relationship between these variables. Taken together, the variables explain 17% of the variance in concerns with food ($R^2 = 0.17, p < 0.05$), with further 5% of explained variance being accounted for by the interaction ($\Delta R^2 = 0.05$).

Mean Comparisons

Table 7. Mean Comparison of male and female students on study variables i.e., sociocultural attitudes towards appearance, body dissatisfaction and disturbed eating attitudes

| Variables | Male (n= 131) | | Female(n= 210) | | t (339) | p | Cohen's d |
|--|---------------|-------|----------------|-------|---------|------|-----------|
| | M | SD | M | SD | | | |
| Socio-cultural attitudes toward appearance | 86.75 | 9.46 | 83.84 | 16.34 | 1.85 | 0.06 | 0.22 |
| Body dissatisfaction | 45.21 | 14.35 | 52.53 | 8.30 | -5.31 | 0.00 | 0.62 |
| Disordered eating attitudes | 100.44 | 10.71 | 100.4 | 11.35 | -0.02 | 0.98 | 0.00 |

Table 7 above shows the mean differences for both males and females on the variables of the research. It shows that there is a significant mean difference between the levels of males and

females on body dissatisfaction, where females have lower levels compared to the level of males with a $t(339) = -5.31, p < 0.05$.

Table 8. Mean Comparison of Unmarried and Married Participants on study variables

| Variables | Unmarried(n=216) | | Married(n=125) | | t (339) | p | Cohen's d |
|---|------------------|-------|----------------|-------|---------|------|-----------|
| | M | SD | M | SD | | | |
| Socio-cultural Attitudes towards appearance | 84.29 | 16.03 | 86.12 | 10.07 | -1.15 | 0.25 | 0.14 |
| Body dissatisfaction | 52.67 | 14.09 | 44.62 | 8.30 | 5.83 | 0.00 | 0.70 |
| Disordered eating attitudes | 100.83 | 10.57 | 99.82 | 11.97 | 0.81 | 0.42 | 0.09 |

Table 8. above shows the mean differences for both married and unmarried groups on the variables of the research. Results reveal significant mean difference in body dissatisfaction between married and unmarried students, with unmarried

reporting higher levels of body dissatisfaction ($p < 0.01$).

Table 9. Mean Comparison between Pakistani and Australian students on study variables

| Variables | Pakistani (n=151) | | Australian (n=190) | | t (339) | p | Cohen's d |
|---|-------------------|-------|--------------------|-------|---------|------|-----------|
| | M | SD | M | SD | | | |
| Socio-Cultural Attitudes Towards Appearance | 83.59 | 19.08 | 86.05 | 8.29 | -1.60 | 0.11 | 0.17 |
| Body Dissatisfaction | 43.82 | 6.75 | 57.15 | 14.78 | 11.07 | 0.00 | 1.16 |
| Disordered Eating Attitudes | 99.70 | 11.63 | 101.06 | 10.64 | -1.12 | 0.02 | 0.12 |

Table 9 shows mean differences between Australian and Pakistani students on the study variables. The findings reveal significant differences in body dissatisfaction and disturbed eating attitudes between Pakistani and Australian population with $t(339) = 11.07, =-1.12, (p<0.05)$. The table further shows that students with

Australian ethnicity reported higher levels of body dissatisfaction ($M = 57.15, SD = 14.78$) than those with Pakistani ethnicity ($M = 43.82, SD = 6.75$). Moreover, Australian students also reported high level of disturbed eating attitudes than Pakistani students.

Table 10. Mean, Standard Deviation and ANOVA in sociocultural attitudes towards appearance, body dissatisfaction and disturbed eating attitudes across different categories of age

| Variables | 18-25 (n=179) | | 26-35 (n=162) | | F (2,338) | p | η^2 |
|--|---------------|-------|---------------|-------|-----------|------|----------|
| | M | SD | M | SD | | | |
| Socio-cultural attitudes toward appearance | 83.84 | 15.79 | 84.80 | 13.26 | 12.60 | 0.11 | 0.01 |
| Body Dissatisfaction | 52.09 | 13.84 | 49.74 | 12.89 | 10.77 | 0.00 | 0.06 |
| Disordered eating attitudes | 99.74 | 11.07 | 101.83 | 10.41 | 1.80 | 0.17 | 0.01 |

Table 10 depicts means, standard deviations and F values for socio-cultural attitudes towards appearance, body dissatisfaction and disturbed eating attitudes on the basis of age ranges. The above findings indicates that there is significant mean difference in body dissatisfaction across all age ranges with $F(2,338) = 10.77, p<0.05$. Findings further suggests that participants with age ranges from 18-25 had higher body dissatisfaction levels than those with age ranges of 26-35 respectively.

Discussion

The purpose of current study was to find out the moderating effect of socio-cultural attitudes towards appearance between body dissatisfaction and disturbed eating patterns among university students of Pakistan and Australia. Moreover, current research also intended to study in detail the relationship between these three variables.

The first hypothesis of the study assumed a positive relation between body dissatisfaction and disordered eating attitudes among university students, was supported by the present study. A previous study by Liu et al. supports these findings, the study concluded that psychological distress was associated with disordered eating attitudes in university students (Liu et al., 2021). The study findings add to our understanding that people with low body satisfaction perceive themselves as heavier and more unattractive than they really are. This distorted body image contributes towards development of disturbed eating patterns in order to achieve unrealistic body ideals. Our findings are in compliance with available literature as in one of study being done on relationship between body esteem, BMI and disturbed eating attitudes across different ethnicities, it was found that high level of body dissatisfaction was associated with lower BMI and

high level of eating disturbances (Rodgers et al., 2022). Moreover, it was also hypothesized that there is positive correlation between body dissatisfaction and socio-cultural values towards appearance. This hypothesis was also supported by the study findings. The present findings may be supported by the fact that higher level endorsement of social and cultural values towards appearance is associated with high level of body discontent (Esnaola et al., 2010). Similarly, in post-industrialized countries where more emphasis is paid on thinness and other beauty standards, people tend to have more concerns regarding their looks, body shape and size. Therefore, this reflects that increased emphasis on social and cultural values towards appearance is linked to increased levels of body dissatisfaction. Furthermore, we also hypothesized that there is positive correlation between disordered eating patterns and sociocultural values towards appearance among the respondents. This assumption was likewise validated by the present study results. Societal norms that relate slimness with beauty result in stigma and labeling for those who are overweight. They may experience bullying, rejection and criticism, which makes them dissatisfied with their bodies and in turn lead them to engage in weight control activities and poor eating habits as a coping mechanism. Literature review reveals that individuals who strongly endorsed societal beauty ideals were more likely to display disturbed eating attitudes and engage in health risk behaviors (Bardone-Cone, 2007).

Yet another hypothesis assuming that the relationship between body dissatisfaction and disturbed eating patterns among university is moderated by socio-cultural attitudes towards appearance, was supported as per the analysis results of data. The results are consistent with literature, individuals with high body image satisfaction levels and more positive socio-cultural attitudes were less likely to exhibit eating disorders (Izydorczyk et al., 2021). Moreover, theoretical evidence from the work of Thompson and Stice supports that it is elementary to assess internalization of appearance as this and higher levels body dissatisfaction is thought to grow

individual's risks for undesirable eating. Higher body dissatisfaction is related to increased levels of dietary restraints when one endorses more appearance pressure. So, the significant role is played by societal beauty ideals, influence of media, and societal pressure in shaping one's body image perceptions and their ultimate impact on disturbed eating behaviors (Keery et al., 2004; Stice & Whitenton, 2002).

Additionally, it was hypothesized that there will be significant differences in body dissatisfaction, socio-cultural attitudes towards appearance, and disturbed eating attitudes on the basis of various demographics (i.e., age, gender, ethnicity, marital status, education level, BMI). Our study findings revealed that females were higher on body dissatisfaction levels as compared to male students. One possibility for this could be more emphasis paid on women physical appearance due to societal standards and gender responsibilities. They are frequently expected by society to look pretty and adhere to societal beauty ideals, which at times lead toward body discontent, if they feel their appearance fall short of these norms. This is in accordance with previous literature as study findings by Grabe et al. reported that females showed higher body dissatisfaction were more likely to associate their self-esteem to their physical appearance as compared to males (Grabe et al., 2008).

The difference in levels of body dissatisfaction on the basis of marital status were significant as unmarried respondents scored high on body dissatisfaction than married students. This is in accordance with already conducted research by Tiggemann and Lynch (Tiggemann & Lynch, 2001), which reported that unmarried respondents reported high body dissatisfaction than married people, suggesting marital status influence body image perceptions. Furthermore, significant differences were observed in body dissatisfaction among students on the basis of ethnicity as Australian students showed higher levels of body discontent than Pakistani students. This could be supported by a systematic review, which concluded that body image discontent and eating disturbances are more common in post-industrialized and high-income countries like

South Korea, United Kingdom, Japan, China etc. (Padin et al., 2021).

Yet another hypothesis stated a significant difference in body dissatisfaction, eating disturbances and socio-cultural attitudes towards appearance based on age ranges, which was also supported with reference to body dissatisfaction only. Results showed that body dissatisfaction was higher in late adolescent to early adulthood range i.e., 18-25. Study results can be implied in various settings at home, in work places as well as in educational institutes. We can devise certain intervention programs on the basis of this study to create awareness among people how low body esteem and social interactions may affect one's overall mental health. Moreover, findings are also useful in providing suggestions and insight to develop such programs that can minimize low body esteem and to follow such practices that can help people boost self-esteem and have better socialization without hesitation. Hence, they can be more productive and effective in their life.

The study findings highlight the importance of considering social-cultural attitudes as a significant factor in creation/development and maintenance of disturbed eating attitudes. Thus, by identifying and addressing these attitudes, intervention programs can be designed to help individuals developing a healthy body image which in turn will reduce the risk of engaging in disturbed eating behaviors. Similarly, by addressing and challenging irrational or unrealistic beauty ideals and endorsing positive body image perceptions, interventions planned can have a greater impact on minimizing disturbed eating behaviors.

Despite promising results, we acknowledge few limitations in the present study. Targeted population was just university students, incorporation of student participants from schools and colleges students and job professionals would have explored the impact of the study variables in broad. In addition, the external validity can be limited due to data collection from only four universities from two different countries. In the present study, self-report inventories were used to evaluate discontent with appearance, disturbed eating

attitudes and socio-cultural attitudes towards appearance. Due to response bias, data reliability may be affected. Data from Australian students was collected online, which makes data prone towards issues of reliability and validity. As participants might have provided inaccurate responses and there may be challenges in ensuring quality of the data collected.

Conclusion

In conclusion, the present study highlights the impact of sociocultural attitudes toward appearance in mediating the relationship between body-esteem and disordered eating attitudes among university students. The results showed that there was a significant negative relationship between body-esteem and disordered eating attitudes ($r = -0.58$, $p < 0.001$), and a significant positive relationship between sociocultural attitudes and disordered eating attitudes ($r = 0.49$, $p < 0.001$). The ANOVA and t -test results showed that the difference in body dissatisfaction was indeed significant, with the female being less satisfied with her body ($M = 2.61$, $SD = 0.55$) compared with the male counterpart ($M = 2.41$, $SD = 0.59$), $p < 0.01$. Model 1 revealed that the effect of body-esteem on disordered eating attitudes was attenuated by sociocultural attitudes ($\beta = -0.11$, $p = 0.004$). Given the increasing influence of sociocultural pressures, along with the rising frequency of fast-food consumption and sedentary behavior, the risk of BID and disordered eating continues to escalate. Further studies employing longitudinal methodologies and more diverse populations are recommended to validate and expand upon these findings.

Data availability statement

The datasets presented or analyzed in the present study will be made available upon reasonable request from the corresponding author.

Conflict of Interest

The authors declare that they have no conflicts of interest that could influence the work presented in this study.

References

- Alharballeh, S., & Dodeen, H. (2021). Prevalence of body image dissatisfaction among youth in the United Arab Emirates: gender, age, and body mass index differences. *Current psychology*, 1-10.
- Alvarenga, M. d. S., Scagliusi, F. B., & Philippi, S. T. (2010). Development and validity of the disordered eating attitude scale (DEAS). *Perceptual and motor skills*, 110(2), 379-395.
- Bardone-Cone, A. M. (2007). Self-oriented and socially prescribed perfectionism dimensions and their associations with disordered eating. *Behaviour Research and Therapy*, 45(8), 1977-1986.
- Bi, X., Liang, Q., Jiang, G., Deng, M., Cui, H., & Ma, Y. (2024). The cost of the perfect body: influence mechanism of internalization of media appearance ideals on eating disorder tendencies in adolescents. *BMC psychology*, 12(1), 138.
- Bryant, E., Spielman, K., Le, A., Marks, P., Touyz, S., & Maguire, S. (2022). Screening, assessment and diagnosis in the eating disorders: findings from a rapid review. *Journal of Eating Disorders*, 10(1), 78.
- Calzo, J. P., Masyn, K. E., Corliss, H. L., Scherer, E. A., Field, A. E., & Austin, S. B. (2015). Patterns of body image concerns and disordered weight-and shape-related behaviors in heterosexual and sexual minority adolescent males. *Developmental psychology*, 51(9), 1216.
- Christian, C. B., Ngo, B. K., Brosos, L. C., & Levinson, C. A. (2021). Social appearance anxiety moderates the relationship between thin-ideal internalization and eating disorder symptoms cross-sectionally and prospectively in adolescent girls. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, 26, 2065-2070.
- Crone, C., Fochtman, L. J., Attia, E., Boland, R., Escobar, J., Fornari, V., Golden, N., Guarda, A., Jackson-Triche, M., & Manzo, L. (2023). The American Psychiatric Association practice guideline for the treatment of patients with eating disorders. *American Journal of Psychiatry*, 180(2), 167-171.
- de Matos, A. P., Rodrigues, P. R. M., Fonseca, L. B., Ferreira, M. G., & Muraro, A. P. (2021). Prevalence of disordered eating behaviors and associated factors in Brazilian university students. *Nutrition and Health*, 27(2), 231-241.
- Esnaola, I., Rodríguez, A., & Goñi, A. (2010). Body dissatisfaction and perceived sociocultural pressures: Gender and age differences. *Salud mental*, 33(1), 21-29.
- Franco, A. C., & Giordani, R. C. F. (2020). Body dissatisfaction as a predictor of disordered eating behaviors in undergraduate women: an integrative review. *Research, Society and Development*, 9(9), e661997513-e661997513.
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of the media in body image concerns among women: a meta-analysis of experimental and correlational studies. *Psychological bulletin*, 134(3), 460.
- Heider, N., Spruyt, A., & De Houwer, J. (2018). Body dissatisfaction revisited: On the importance of implicit beliefs about actual and ideal body image. *Psychologica Belgica*, 57(4), 158.
- Heinberg, L. J., Thompson, J. K., & Stormer, S. (1995). Development and validation of the sociocultural attitudes towards appearance questionnaire. *International Journal of Eating Disorders*, 17(1), 81-89.
- Izydorczyk, B., Sitnik-Warchulska, K., Wajda, Z., Lizińczyk, S., & Ściegienny, A. (2021). Bonding with parents, body image, and sociocultural attitudes toward appearance as predictors of eating disorders among young girls. *Frontiers in Psychiatry*, 12, 590542.

- Jin, Y., Xu, S., Chen, C., Wilson, A., Gao, D., Ji, Y., Sun, X., & Wang, Y. (2022). Symptom association between social anxiety disorder, appearance anxiety, and eating disorders among Chinese university students: a network analysis to conceptualize comorbidity. *Frontiers in Public Health*, 10, 1044081.
- Keery, H., Van den Berg, P., & Thompson, J. K. (2004). An evaluation of the Tripartite Influence Model of body dissatisfaction and eating disturbance with adolescent girls. *Body image*, 1(3), 237-251.
- Liu, X., Ren, X., Li, Z., Lin, Y., Pan, C., Li, T., Zhao, W., Chen, G., Wu, M., & He, L. (2021). Disordered eating attitudes among university students: the role of psychological distress. *Alternative Therapies in Health & Medicine*, 27(5).
- Mendelson, B. K., Mendelson, M. J., & White, D. R. (2001). Body-esteem scale for adolescents and adults. *Journal of personality assessment*, 76(1), 90-106.
- Merino, M., Tornero-Aguilera, J. F., Rubio-Zarapuz, A., Villanueva-Tobaldo, C. V., Martín-Rodríguez, A., & Clemente-Suárez, V. J. (2024). Body perceptions and psychological well-being: a review of the impact of social media and physical measurements on self-esteem and mental health with a focus on body image satisfaction and its relationship with cultural and gender factors. *Healthcare*.
- Mond, J., Hall, A., Bentley, C., Harrison, C., Gratwick-Sarll, K., & Lewis, V. (2014). Eating-disordered behavior in adolescent boys: Eating disorder examination questionnaire norms. *International Journal of Eating Disorders*, 47(4), 335-341.
- Nagata, J. M., Ganson, K. T., Griffiths, S., Mitchison, D., Garber, A. K., Vittinghoff, E., Bibbins-Domingo, K., & Murray, S. B. (2022). Prevalence and correlates of muscle-enhancing behaviors among adolescents and young adults in the United States. *International Journal of Adolescent Medicine and Health*, 34(2), 119-129.
- Padín, P. F., González-Rodríguez, R., Verde-Diego, C., & Vázquez-Pérez, R. (2021). Social media and eating disorder psychopathology: A systematic review. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 15(3).
- Paulisova, E., Orosova, O., & Barbierik, L. (2021). Direct and indirect relationships between disordered eating, sociocultural factors, satisfaction of basic psychological needs and controlled regulation of exercise in university students. *Polish Psychological Bulletin*, 52(2), 153-161.
- Rodgers, R. F., Fischer, L. E., Murray, S. B., & Franko, D. L. (2022). Integrating fear of fatness into sociocultural models of body image and eating concerns. *Eating Behaviors*, 46, 101653.
- Stice, E., & Whitenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: a longitudinal investigation. *Developmental psychology*, 38(5), 669.
- Tiggemann, M., & Lynch, J. E. (2001). Body image across the life span in adult women: the role of self-objectification. *Developmental psychology*, 37(2), 243.
- Wang, Y., Chen, Y., Lu, C., Kwan, A. T., McIntyre, R. S., Yang, F., & Cao, B. (2024). The psychological factors mediating/moderating the association between body-image disturbance and depression: A systematic review. *PsyCh Journal*, 13(4), 527-540.