

Associations among Body Attitude, Body Satisfaction, Stress, Depression, and Anxiety in University Students: A Multilevel Moderating Model

Saliha Yaseen & Dr. Saadia Fatima

Abstract

Background: Cultural models of attractiveness have moved to develop more impractical for the ordinary individual, making body dissatisfaction an important problem for several individuals in western, industrialized cultures. Body dissatisfaction focuses affect individuals of every age, sexual orientations, gender, and ethnicities /races. The effects of body attitude and satisfactions have already been studied in adolescent and adults females, but there is scarcity of studies in Pakistani university students. However, this study was examined the relationship among body attitude, body satisfaction, psychological distress, stress, anxiety and depression in university students. Moreover, it also investigated the moderating role body satisfaction on the relationship among body attitude, stress, anxiety and depression in university students.

Methods: A purposive sampling and cross-sectional design were used in present study. Three standardized psychological instruments were used to examine body attitude, body satisfaction, psychological distress, stress, anxiety and depression in university students. Three hundred participants (Females, $n=150$; Males, $n=150$) age ranged between 18 to 25 years ($M = 20.12$ years, $SD = 13.03$) were included from the different universities of Rawalpindi and Islamabad, Pakistan, from January 2020 to August 2020.

Results: The results of the present study demonstrated that body attitude was positively associated with body satisfaction in university students but it was negatively associated with psychological distress, stress, anxiety, and depression. Further, body satisfaction was positively associated with psychological distress, anxiety and depression. Moreover, this study's results revealed that body satisfaction was playing role of moderator among body attitude and psychological distress, stress, anxiety, and depression in university students. A multiple moderation models illustrated that body attitude was associated with higher level of psychological distress, stress, depression, and anxiety since it favors of lower level of body satisfaction in university students.

Conclusions: This study suggested that body attitude and body satisfaction were stimulated mental health problems including psychological distress, stress, depression, and anxiety university students. These mental health concerns instigate from a complicated interaction of body attitude and body satisfaction influence. It has important implications for physical and mental health in university students.

Keywords: Body attitude, body satisfaction, psychological distress.

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Background

Nowadays, body dissatisfaction is considered a very important risk factor for mental health problems in young adolescents globally (Carrard et al., 2021; Rekkers et al., 2021; Sarfraz et al., 2021; Scheffers et al., 2019; Stice, 2002; Stice et al., 2017). It is also linked prospectively to eating disorders and unhealthy weight control behaviors in young female adolescents (Neumark-Sztainer et al., 2006; Rekkers et al., 2021; Scheffers et al., 2019). Further, it has been associated with other features of psychological problems, including low self-esteem and depression, stress, anxiety, and mood swings (Paxton et al., 2006). A similar study also revealed that body dissatisfaction was considered a stronger risk factor for psychological distress in young adolescents and adults university students (Johnson & Wardle, 2005; Saif et al., 2021). However, body dissatisfaction and its associations have been broadly investigated in young female populations, but there is scarcity of research on university student in Pakistani context (Aqeel et al., 2022).

Body attitude has been recognized as a multidisciplinary concept that comprises the internalized view about one's body (McLean & Paxton, 2019; Thompson et al., 1999). It comprises thoughts, perceptions, attitudes, and feelings about to physical appearances of the body like shape and weight, muscularity and slimness, sexual attractiveness, physical function, aging and athleticism (McLean & Paxton, 2019; Rohde et al., 2015). Body satisfaction has been well-known the degree of satisfaction with physical appearance as well as the body's functionality (Rekkers et al., 2021; Scheffers et al., 2019). The idea about the body image is extensive and there has been conducted a lot of researches on self-perceptions about physical appearance, feelings, attitudes and thoughts due to these traits have been generally associated with negative mental health consequences. For example, while perception of body image lies on a range from optimistic feelings and thoughts of gratitude and satisfaction to adverse thoughts of hate and psychological distress. Adverse perception about body image comprises dissatisfaction with physical look, loss of girlishness, poorer wellness behaviors and less sexual attraction that leads toward mental health problems including stress, anxiety, depression, and eating disorder (Kogure et al., 2019; Rashid et al., 2021; Rekkers et al., 2021; Saif et al., 2021).

There have been conducted many studies on the relationship between body dissatisfaction and mental health problems with women in mid-life which primarily focused on the association among body dissatisfaction, anxiety, depression, stress, and eating disorder (Ahmed et al., 2021; Jaffri et al., 2021; Mangweth-Matzek et al., 2014; Naeem et al., 2021; Slevic & Tiggemann, 2011). Since a young and thin body is correlated with social acceptance and success especially for young people, problems in tackling with differentiating oneself from beauty criteria can also drag young people particularly to loss of self-esteem, anxiety, and depression (Hafsa et al., 2021; Mangweth-Matzek et al., 2014; Naeem et al., 2021). A similar study conducted by Kilpela et al. (2015), it studied the association between depressed mood and body dissatisfaction in young women (Kilpela et al., 2015; Shahzad et al., 2021; Tahira & Jami, 2021; Toqeer et al., 2021). Another study demonstrated that women age ranged from 42 to 52 years who found "unattractive" had higher levels of depressive symptoms with

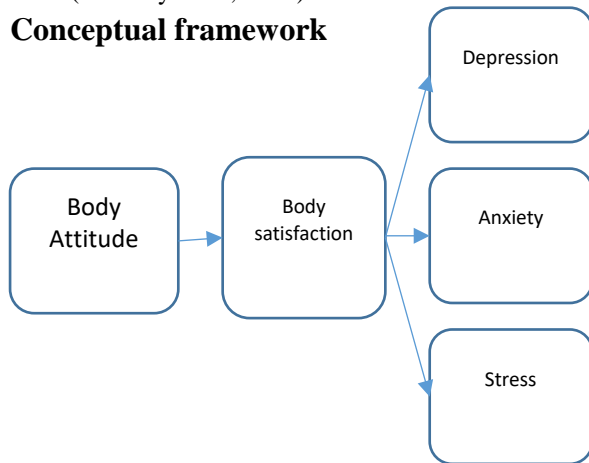
controlling for body mass index (BMI). Many previous studies illustrated that there was positive association among body dissatisfaction and importance of physical appearance in young students. This study was mainly interested in assessing the correlation among body attitude, body dissatisfaction, stress, anxiety, and depression in university students. Moreover, this study was also investigated the moderating role of body satisfaction among body attitude, stress, anxiety, depression, and psychological distress in university students. This study supposed that body dissatisfaction would be positively associated with psychological distress, stress, anxiety, and depression. Body attitude was considered as independent variables in present study, due to their possible effects on body dissatisfaction and mental health problems (Webster & Tiggemann, 2003). Moreover, patients with depression commonly experienced symptoms of body related problems including negative evaluation of the body, loss of sexual interest, low level of energy, and physiological complaints such as limb pain, stomach problems, backache pain, and long joint pain (Rekkers et al., 2021; Scheffers et al., 2019).

Additionally, several similar studies have revealed a positive association between symptoms of depression as well as psychomotor hindrance (Aqeel et al., 2019; Aqeel & Akhtar, 2017; Aqeel & Rehna, 2020; Bennabi et al., 2013; Lecrubier, 2006; Scheffers et al., 2019). Further, it was also associated with decreased gait (Fuchs & Schlimme, 2009), restricted sensorimotor space (Michalak et al., 2009; Scheffers et al., 2019). A similar study conducted by Doerr-Zegers et al. (2017), it found that symptoms of depression not only through the changes in cognition and mood, however also in variation in the personal knowledge of one's own physical appearance, like these variations mostly result in daily working and enhance distress (Doerr-Zegers et al., 2017). Symptoms of body-related problems are common traits of depression disorder in all over the world (Bhugra & Mastrogianni, 2004). According to Papadopoulos and Röhrich et al. (2014), recommended that patients with depression often experienced body related problems and used body-oriented psychological interventions to tackle these symptoms of depression (Röhrich et al., 2014). Many studies have also been carried in normal populations (Gillen, 2015; Scheffers et al., 2019), which revealed those patients who have depression disorder, they were found higher body dissatisfaction in comparison of normal population.

Based on the literature reviewed above, the purpose of the present study was to examine the association among body attitude, body satisfaction, psychological distress, stress, depression, and anxiety in university student sample. Body image is term that can used to describe how we think and feel about our bodies because these thoughts and feelings can be complex, approaches to define and understand body image are varied and can include: how we view our bodies and how accurate this perception is, how satisfied we are with our bodies and appearance, how much we valued what other people think about our bodies and appearance, and how much other people's opinions about our appearance affect our feelings about ourselves. The empirical evidence demonstrated that negative body attitude is a risk factor for a variety of psychological disorders. Body attitude also seems to play a strong role in self-esteem and mood. Most of the studies and empirical evidence have demonstrated

relationship between body attitude and depression, moreover previous research has recommended a bidirectional relationship between elevated weight and depression (Kamody et al., 2018). On the other hand there is also increasing literature suggesting that there is positive association between anxiety symptomatology and weight status (Kamody et al., 2018).

Conceptual framework



Method

Objectives

1. To investigate the association among body attitude, body satisfaction, psychological distress, depression, anxiety and stress in university students.
2. To examine the moderating role body satisfaction on the relationship among body attitude, stress, anxiety and depression in university students.

Hypotheses

1. Body attitude is positively associated with body satisfaction, psychological distress, depression, anxiety, and stress in university students.
2. Body satisfaction is negatively associated with psychological distress, depression, anxiety, and stress in university students.

Research design

A purposive sampling technique and cross-sectional design were used to perform this present study. This study was approved by Research Ethics Committee of the Department of Psychology, Foundation University Islamabad, Pakistan.

Sample

A purposive sampling technique and cross-sectional design were used to perform this present study. The sample consisted three hundred university students, with 150 females and 150 males aged between 18 to 25 years ($M = 20.12$ years, $SD = 13.03$). Three hundred participants were included from the different departments of BS program in Rawalpindi and Islamabad, Pakistan, in 2020. The following inclusion criteria was set for enrolment of regular university students 1) only those students who were not diagnosed any mental health illness including stress, anxiety, and depression as per the Diagnostic and Statistical Manual of Mental Disorders criteria (DSM-IV-TR, APA, 2000). It was screened out by psychologists through performing formal clinical interviews, standardize instruments such as depression anxiety stress scale and critically evaluating school and family history. The following exclusion criteria

was set for exclusion of those students who were diagnosed in any mental health and physiological problems, they were excluded from present study.

Measures

Three standardized psychological instruments were applied to measure body attitude, body satisfaction, depression, anxiety, and stress in university students.

Dresden Body Image Questionnaire (DBIQ, Bachner-Melman et al., 2021). Body dissatisfaction with physical appearance was examined by Dresden body image questionnaire (Bachner-Melman et al., 2021), it was designed to evaluate body dissatisfaction in adolescents and adults. It includes four subscales including vitality, physical contact, sexual fulfilment and self-aggrandizement. It comprises of thirty five items (e.g. I wish I had a different body) rated on a five point Likert scale ranging between 1 (*not at all*) to 5 (*fully agree*). Alpha coefficient reliability and validity was satisfactory in present study sample. The mean of above subscales provides a standardized score of body satisfaction. Higher scores on four subscales are revealed higher level of body satisfaction and lower scores on four subscales are illustrated body dissatisfaction and unhappiness.

The Body cathexis scale (BCS; Rekkers et al., 2021). Body satisfaction was evaluated by the body cathexis questionnaire (Rekkers et al., 2021), this scale was designed to examine body satisfaction including satisfaction with the body or to bodily functions, for instance: hands, vitality, eyes, coordination, health and weight in adults. It comprises of forty items which is rated on a five point Likert scale ranging between 1 (*very dissatisfied*) to 5 (*very satisfied*). Alpha coefficient reliability and validity was satisfactory in present study sample. The mean of above subscales provides a standardized score of body satisfaction. Higher scores on four subscales are revealed higher level of body satisfaction and lower scores on four subscales are illustrated body dissatisfaction and unhappiness.

Depression Anxiety Stress Scale. Psychological distress and symptoms of depression, anxiety, and stress was assessed through depression anxiety stress scale (Lovibond & Lovibond, 1995). It was devised to examine symptoms of depression, anxiety and stress in adults and adolescents. It includes three subscales such as stress, anxiety, and depression. It comprises of forty two items which is rated on a four point Likert scale ranging between 0 (*did not apply to them at all*) to 3 (*apply to them very much, or most of the time*). Alpha coefficient reliability and validity was satisfactory in present study sample. The mean of above subscales provides a standardized score of body satisfaction. Higher scores on above subscales are revealed higher symptoms of stress, anxiety and depression and lower scores on above subscales are reflected lower symptoms of stress, anxiety and depression.

Procedure

This present research was approved by the Institutional Ethical Review Board of Foundation University Islamabad, Rawalpindi Campus, and Pakistan. Three hundred participants (Females, $n = 150$; Males, $n = 150$) age ranged between 18 to 25 years ($M = 20.12$ years, $SD = 13.03$) were included from the different departments of BS

program in Rawalpindi and Islamabad, Pakistan, from January 2020 to August 2020. Permission to perform present study was obtained from the higher authorities of different universities after clarification the study aims as well as providing guarantee that this study data would be kept secret. In the present research, only participants who articulated willingness to contribute this study, they were included. Written and verbal inform consent were obtained by all study participants. All students underwent standardized psychological examination such as Dresden body image questionnaire, the body cathexis scale, and depression anxiety stress scales. These psychological evaluation was done by two independent professional's psychologist. These three instruments were applied to measure body attitude, body satisfaction, depression, anxiety, and stress in university students. Correlational and moderation analysis were performed on SPSS (version-21).

Analysis plan

First of all, Imputation technique was used to deal missing values on all study variables through statistical software SPSS (version-21). Secondly, correlational analysis was used to examine the association among body attitude, body satisfaction, psychological distress, depression, anxiety and stress in university students (Field, 2013). Finally, moderation analysis was performed to examine the moderating role body satisfaction on the relationship among body attitude, stress, anxiety and depression in university students (Baron, & Kenny, 1986).

Results

In Table 1, the results of the present study demonstrated that body attitude was statistically positively significantly correlated with body satisfaction and along its subscales in university students. Further, it was statistically negatively significantly correlated with psychological distress, stress, anxiety, and depression in university students. However, body satisfaction was statistically positively linked to psychological distress, anxiety and depression in university students. The result of present study was confirmed hypotheses and objective of this study.

In model 1, findings of present study revealed that body attitude was statistically positively significant predicting to psychological distress in university students. Further, this model also demonstrated that body satisfaction was statistically negatively significant predicting to psychological distress. However, interaction between body attitude and body satisfaction was statistically positively significant predicting to psychological distress in university students. The findings of present study illustrated that body satisfaction was playing role of moderator between body attitude and psychological distress in university students. A multiple moderation analysis revealed that body attitude was correlated with higher prevalence of psychological distress since it favors of lower level of body satisfaction in university students.

In model 2, this study's results demonstrated that body attitude was statistically positively significant predicting to stress in university students. Further, this model also demonstrated that body satisfaction was statistically negatively significant predicting to stress. However, interaction between body attitude and body satisfaction was

statistically positively significant predicting to stress in university students. The findings of present study illustrated that body satisfaction was playing role of moderator between body attitude and stress in university students. A multiple moderation analysis revealed that body attitude was correlated with higher prevalence of stress since it favors of lower level of body satisfaction in university students.

In model 3, the results of current study demonstrated that body attitude was statistically positively significant predicting to depression in university students. Further, this model also demonstrated that body satisfaction was statistically negatively significant predicting to depression. However, interaction between body attitude and body satisfaction was statistically positively significant predicting to depression in university students. The findings of present study illustrated that body satisfaction was playing role of moderator between body attitude and depression in university students. A multiple moderation analysis revealed that body attitude was correlated with higher prevalence of depression since it favors of lower level of body satisfaction in university students.

In model 4, finding of this study shown that body attitude was statistically positively significant predicting to anxiety in university students. Further, this model also demonstrated that body satisfaction was statistically negatively significant predicting to anxiety. However, interaction between body attitude and body satisfaction was statistically positively significant predicting to anxiety in university students. The findings of present study illustrated that body satisfaction was playing role of moderator between body attitude and anxiety in university students. A multiple moderation analysis revealed that body attitude was correlated with higher prevalence of anxiety since it favors of lower level of body satisfaction in university students.

Discussion

Nowadays, mental health problems are considered a very important leading factor to development of global burden of disease in all over the world. It can rapidly enhance the risk of unhealthy lifestyle in young people and can lead to substantial disability, social problems, poor health and suicidal ideation. The purpose of the present study was to examine association among body attitude, body satisfaction, psychological distress, depression, anxiety and stress in university students. Moreover, this study was also examined the moderating role body satisfaction on the relationship among body attitude, stress, anxiety and depression in university students.

The results of the present study demonstrated that body attitude was positively associated with body satisfaction in university students but it was negatively associated with psychological distress, stress, anxiety, and depression. Further, body satisfaction was positively associated with psychological distress, anxiety and depression. Moreover, this study's results revealed that body satisfaction was playing role of moderator among body attitude and psychological distress, stress, anxiety, and depression in university students.

Results

Table 1

Alpha reliability coefficient, mean standard deviation and correlation matrix of body attitude, body satisfaction and depression, anxiety, stress along their subscales in university students (N=300).

Variables	M	SD	α	1	2	3	4	5	6	7	8	9	10	11
1. Body attitude	154.4	32.7	.92	—	.05	.15**	.07	-.12*	-.02	.05	.25**	-.79*	.78**	-.24*
2. Body satisfaction	101.4	20.91	.78		—	.54**	.71**	.66**	.67**	.56**	.19**	.18**	.08	.19**
3. Body acceptance	90.4	21.9	.75			—	.24**	.17**	.07	.05	.13*	.14*	.09	.09
4. Vitality	87.1	11.2	.74				—	.40**	.31**	.24**	.67*	.08	.01	.08
5. Physical contact	84.4	10.2	.65					—	.05**	.23**	.09	.06	-.01	.16**
6 Self-aggrandizement	83.9	4.20	.79						—	.46**	.14*	.15**	.04	.16**
7. Sexual fulfilment	81.2	9.21	.60							—	.16**	.15**	.10	.12*
8. Psychological distress	30.4	10.0	.82								—	.76**	.83**	.79**
9. Anxiety	25.1	9.0	.78									—	.45**	.38**
10. Stress	24.1	7.0	.79										—	.52**
11. Depression	21.0	4.0	.80											—

Note. * $p < .05$, ** $p < .01$, *** $p < .000$.

Table 2

The moderating role body satisfaction on the relationship among body attitude, stress, anxiety and depression in university students (N=300)

Variables								
Models	DV	IV	B	SD	β	p	R ²	F ²
1	Psychological distress	Body attitude	.34	.037	.54	.01	.073	8.21**
		Body Satisfaction	-.092	.027	-.192	.00		
		BA*BS	-.077	.017	-.25	.00		
		Constant	1.046	.365		.00		
2	Stress	Body attitude	.21	.02	.12	.01	.061	6.04*
		Body Satisfaction	-.14	.03	-.20	.00		
		BA*BS	-.06	.017	-.21	.00		
		Constant	1.046	.365		.00		
3	Depression	Body attitude	.10	.23	.13	.01	.065	7.89*
		Body Satisfaction	-.13	.03	-.32	.00		
		BA*BS	-.06	.01	-.31	.00		
		Constant	1.1	.03		.00		
4	Anxiety	Body attitude	.03	.01	.21	.01	.072	6.11*
		Body Satisfaction	-.092	.027	-.13	.00		
		BA*BS	-.04	.01	-.32	.00		
		Constant	1.013	.31		.00		

Note. BA*BS=Interaction between body attitude and body satisfaction, * $p < .05$, ** $p < .01$, *** $p < .001$

A multiple moderation models illustrated that body attitude was associated with higher level of psychological distress, stress, depression, and anxiety since it favours of lower level of body satisfaction in university students. This study's findings consistent with present study first objective and hypotheses. Many earlier studies illustrated that body satisfaction was negative associated with mental health problems including stress, anxiety, depression symptoms in young women (Carrard et al., 2021; Rekkers et al., 2021; Sarfraz et al., 2021; Scheffers et al., 2019; Stice, 2002; Stice et al., 2017).

A similar study conducted by Kilpela et al. (2015), it studied the association between depressed mood and body dissatisfaction in young women (Kilpela et al., 2015; Shahzad et al., 2021; Tahira & Jami, 2021; Toqeer et al., 2021). Another study demonstrated that women age ranged from 42 to 52 years who found "unattractive" had higher levels of depressive symptoms with controlling for body mass index (BMI). Many previous studies illustrated that there was positive association among body dissatisfaction and importance of physical appearance in young students. This study was mainly interested in assessing the correlation among body attitude, body dissatisfaction, stress, anxiety, and depression in university students. Moreover, this study was also investigated the moderating role of body satisfaction among body attitude, stress, anxiety, depression, and psychological distress in university students. This study supposed that body dissatisfaction would be positively associated with psychological distress, stress, anxiety, and depression. Body attitude was considered as independent variables in present study, due to their possible effects on body dissatisfaction and mental health problems (Webster & Tiggemann, 2003). Moreover, patients with depression commonly experienced symptoms of body related problems including negative evaluation of the body, loss of sexual interest, low level of energy, and physiological complaints such as limb pain, stomach problems, backache pain, and long joint pain (Rekkers et al., 2021; Scheffers et al., 2019). Additionally, several a similar studies have revealed a positive association between symptoms of depression as well as psychomotor hindrance (Aqeel et al., 2019; Aqeel & Akhtar, 2017; Aqeel & Rehna, 2020; Bennabi et al., 2013; Lecrubier, 2006; Scheffers et al., 2019). Further, it was also associated with decreased gait (Fuchs & Schlimme, 2009), restricted sensorimotor space (Michalak et al., 2009; Scheffers et al., 2019). A similar study conducted by Doerr-Zegers et al. (2017), it found that symptoms of depression not only through the changes in cognition and mood, however also in variation in the personal knowledge of one's own physical appearance, like these variations mostly result in daily working and enhance distress (Doerr-Zegers et al., 2017). Symptoms of body-related problems are common traits of depression disorder in all over the world (Bhugra & Mastrogianni, 2004). According to Papadopoulos and Röhrich et al. (2014), recommended that patients with depression often experienced body related problems and used body-oriented psychological interventions to tackle these symptoms of depression (Röhrich et al., 2014). Many Studies have also been carried in normal populations (Gillen, 2015; Scheffers et al., 2019), which revealed those patients who have depression disorder, they were found higher body dissatisfaction in comparison of normal population.

Limitations and Recommendations

It is very crucial to report and address a few possible limitations of this study. Data related to variables of the current study was gathered with self-report instruments that can be considered a potential source of different biases and errors. Additionally, this study was carried out through a cross-sectional design and purposive sampling technique, this cross-sectional study cannot draw causal inferences through relationship among body attitude, body satisfaction, psychological distress, depression, anxiety and stress in university students. Finally, university students were not earlier diagnosed with any mental health problems including depression, stress, anxiety but data was gathered from normal university students. So, this study's results could not be applied on students with mental health problems.

Conclusions

This study suggested that body attitude and body satisfaction were stimulated mental health problems including psychological distress, stress, depression, and anxiety university students. These mental health concerns instigate from a complicated interaction of body attitude and body satisfaction influence. It has important implications for physical and mental health in university students. Body satisfaction and attitude are a complex ideas different from adverse body image and its associates with positive and negative indices of physical and mental health. Choices to improve body image naturally include, cognitive behavioral, ecological approaches, and psycho-educational. Body dissatisfaction problems are a serious issues that require effective responses for university students.

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Ethical Consideration

The study was approved by the Department of Psychology, Foundation University Islamabad, Pakistan. Consent Form was taken before taking data and participants were asked to take voluntary participation

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Availability of data and materials

The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.

Authors' contributions/Author details

Saliha yaseen performed the main study under the supervision of Dr. Saadia Fatima. Dr. Saadia Fatima wrote the article under the guidelines of Nature-Nurture Journal of Psychology.

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Ethics declarations

Ethics approval and consent to participate

This study was approved by the Institutional Review Board (Department of Psychology, Foundation University Islamabad, Pakistan). A written informed consent was obtained from all participants.

Consent for publication

Not applicable.

Competing interests

The authors declare to have no competing interests.

Additional Information

Not applicable.

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