



An assessment of the mediating role of self-esteem in the relationship between body image disturbance and psychological distress among undergraduates

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ABSTRACT

Psychological distress is a common mental health concern among university students and may be influenced by body image difficulties and low self-esteem. However, limited research has examined how self-esteem explains the relationship between body image disturbance and psychological distress among Nigerian undergraduates. This study investigated whether self-esteem mediates the relationship between body image disturbance and psychological distress among undergraduates in selected universities in Nigeria. A cross-sectional survey was conducted among 401 undergraduates from three universities in Osun State, Nigeria. Standardised measures of body image disturbance, self-esteem, and psychological distress were administered, and the data were analysed using correlation, regression, and mediation analyses. Findings showed that higher body image disturbance was associated with lower self-esteem and greater psychological distress, while higher self-esteem was linked to lower psychological distress. Self-esteem partially explained the relationship between body image disturbance and psychological distress, suggesting that students with negative body image may experience greater distress partly because of reduced self-worth. The study highlights the importance of addressing self-esteem in university

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mental health interventions and contributes to the limited literature on body image and psychological well-being among Nigerian undergraduates.

KEY WORDS:

body image; self-esteem; psychological distress; university students; Nigeria



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Introduction

Psychological distress among undergraduate students has become an increasing mental health concern due to the interaction of academic demands, social pressures, financial challenges, and identity-related insecurities. Psychological distress is characterised by emotional suffering manifested through symptoms such as anxiety, depressive mood, emotional exhaustion, and social withdrawal when individuals perceive environmental demands as exceeding their coping resources (Roy et al., 2025). Among university students, these challenges are often intensified by the transition to higher education, pressure to achieve academically, and difficulties adjusting to new social environments (Chemagosi, 2024). Evidence across different contexts indicates that university students experience substantial levels of psychological distress, with anxiety and depressive symptoms being among the most frequently reported mental health problems (Limone & Toto, 2022). In Nigeria, studies similarly suggest that many undergraduates experience moderate to severe psychological distress related to body image disturbances, yet institutional mental health support remains limited (Akinboro et al., 2019).

One psychological factor increasingly associated with psychological distress among young adults is body image disturbance. Body image disturbance refers to excessive preoccupation with perceived defects or flaws in physical appearance that are often unnoticeable to others (Veale & Bewley, 2015; Torres et al., 2025). Individuals experiencing body image disturbance commonly engage in repetitive appearance-related thoughts and behaviours, which may contribute to anxiety, depressive symptoms, social isolation, and reduced quality of life (Cerea et al., 2018; Tort-Nasarre et al., 2021). Existing studies consistently demonstrate that body image disturbance is associated with poorer psychological adjustment and emotional well-being among university students (Hakim et al., 2021; Diengdoh & Ali, 2022; Merino et al., 2024). However, findings

across studies also suggest that the intensity of psychological distress associated with body image disturbance may depend on certain psychological factors.

One such factor is self-esteem. Self-esteem refers to an individual's overall evaluation of personal worth and self-acceptance. Studies have shown that individuals with high self-esteem are more likely to demonstrate emotional resilience and adaptive coping, whereas those with low self-esteem are more vulnerable to anxiety, depressive symptoms, and body dissatisfaction (Collins et al., 2014; Tort-Nasarre et al., 2021). Research further indicates that body image concerns are strongly associated with diminished self-esteem, which may in turn increase vulnerability to psychological distress (Hakim et al., 2021; Merino et al., 2024). Most studies on body image concerns have focused on Western populations, while African university research remains underexplored despite differences in social and cultural standards, beauty norms, and social pressures (Akinboro et al., 2019). Body image concerns among undergraduates may increase as they navigate social media environments that frequently promote idealized beauty standards and appearance expectations. Exposure to appearance-related content and social comparison processes has been associated with body dissatisfaction and adverse psychological outcomes among university students (Huguenin et al., 2024). Although evidence on body image disturbance exists, research among Nigerian undergraduates remains limited. Existing studies have largely focused on the prevalence of mental health problems and associated outcomes, with less attention given to the psychological mechanisms underlying these relationships. Evidence suggests that self-esteem is an important psychological factor linked to body image experiences and emotional well-being (Abdoli et al., 2025). However, studies examining the mediating role of self-esteem in the relationship between body image disturbance and psychological distress among Nigerian university students remain scarce. This gap limits the development of targeted interventions and mental health programs addressing body image concerns among students.

Using the transactional model of stress and coping, which proposes that psychological stress is influenced by individuals' appraisal of stressors and their perceived coping resources (Lazarus & Folkman, 1984), this study indicate that students experiencing body image disturbance may report greater psychological distress when appearance-related concerns are perceived as threatening and difficult to manage. Self-esteem may also function as an important psychological resource that shapes responses to appearance concerns. Research indicates that lower self-esteem is associated with negative body perceptions and increased emotional difficulties, whereas higher self-esteem may strengthen adaptive

coping and reduce vulnerability to psychological distress (Abdoli et al., 2025). Therefore, the theory provides a basis for understanding the mediating role of self-esteem in the relationship between body image disturbance and psychological distress among undergraduate students. Hence, the present study investigates how self-esteem serves as a mediator between body image disturbance and psychological distress among Nigerian undergraduate students. The study examines a Nigerian university population to provide evidence which supports existing research about body image and mental health while investigating the psychological processes that cause body image disturbance in African environments. The study results will help develop mental health programs which respect cultural differences and support students in achieving better psychological health.

Method

Study Design

A cross-sectional survey design was employed to examine the mediating role of self-esteem in the relationship between body image disturbance and psychological distress among university students in Osun State, southwestern Nigeria. Participants were recruited from three purposively selected universities: two public institutions, Obafemi Awolowo University and Osun State University, and one private institution, Redeemer's University. Collectively, these universities enroll approximately 31,200 undergraduate students, providing a diverse population from which the study sample was

Sample and Sampling Procedure

The sample size was determined using the Yamane formula for finite populations. The required sample size is represented by n , N denotes the total number of people in the population, and e denotes the margin of error set at 0.05. The minimum sample size of 395 for the study was calculated based on the estimated undergraduate population which consists of 31,200 students. The target sample size was 435 participants, with 10% added to account for potential non-response and incomplete questionnaires. The study distributed 410 questionnaires to participants, and 401 were completed and analysed for the research. A priori power analysis using G*Power indicated that a minimum sample of approximately 350 participants was required to detect a medium effect size at 95% power and $\alpha = .05$ for the mediation analysis. The final sample of 401 participants, therefore, exceeded the recommended threshold.

A multistage sampling method was used for the study. First stage: stratified

sampling was used to select one federal, one state (making two public universities), and one private university. Three faculties were purposively selected from each university because their academic structures matched those of other universities; hence, the faculties of Social Sciences, Humanities, and Basic Medical Sciences were selected across the selected universities. Simple random sampling was then used to select two departments from each selected faculty. Then, a proportionate sampling method was used to distribute participants among the selected departments based on student population sizes, after which they used departmental class lists to select students through systematic sampling. The departmental student rep. was approached from each selected department, and every student whose name fell on an odd number on the list was approached for participation until the required sample size for each department was attained.

Instruments

Data were collected using standardized self-report measures assessing psychological distress, self-esteem, and body image disturbance. All instruments have been widely used in previous research and demonstrated satisfactory psychometric properties. Internal consistency was assessed using McDonald's omega reliability coefficient for the current sample.

First, Psychological distress was assessed using the 10-item Kessler Psychological Distress Scale (Kessler & Mroczek, 1994). The scale measures symptoms of anxiety and depressive affect experienced within the previous four weeks. Responses were rated on a five-point scale ranging from 0 (*none of the time*) to 4 (*all of the time*). Higher scores indicated higher levels of psychological distress. Previous studies have demonstrated good psychometric properties of the K10 among African and Nigerian populations. In the present study, the scale demonstrated strong internal consistency with an omega coefficient of .87.

Second, Self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale developed by Rosenberg (1965). The scale assesses individuals' global feelings of self-worth and self-acceptance. Items were rated on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Negatively worded items were reverse-scored, with higher scores indicating higher self-esteem. The scale has previously been validated among Nigerian undergraduate samples and demonstrated satisfactory reliability in prior studies. In the current study, the omega reliability coefficient was .83.

Third, Body image disturbance was assessed using the 7-item Body Image

Disturbance Questionnaire developed by Cash et al. (2004). The instrument evaluates concerns about physical appearance, emotional distress associated with body image, and the extent to which such concerns interfere with daily functioning. Responses were rated on a five-point scale ranging from 1 (*not at all*) to 5 (*extremely*). Previous studies involving university populations have reported satisfactory reliability and validity for the instrument. In this study, the omega reliability coefficient for the BIDQ was .89.

Data Collection Procedure

Ethical approval for the study was obtained from the Department of Psychology Research Ethics Committee, Redeemer's University, Ede, Nigeria. Permission was subsequently sought from relevant faculty authorities within the participating universities before data collection commenced. Participants were informed about the purpose of the study, confidentiality of responses, voluntary participation, and their right to withdraw at any point without penalty. Written informed consent was obtained from all participants before questionnaire administration.

Data were collected in lecture halls with the assistance of trained research assistants. Participants completed the questionnaires independently, and completion time ranged from 15 to 20 minutes. Returned questionnaires were screened for completeness immediately after collection. Of the 410 questionnaires distributed, 401 were sufficiently completed and included in the final analysis, while questionnaires with substantial missing responses were excluded. Cases with minor missing values were treated using mean substitution because the proportion of missing data was less than 5%, indicating minimal risk of systematic bias.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics Version 23. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise participants' socio-demographic characteristics and study variables. Pearson product-moment correlation analysis was conducted to examine relationships among body image disturbance, self-esteem, and psychological distress. Hierarchical multiple regression analysis was used to determine the predictive effects of body image disturbance and self-esteem on psychological distress while controlling for demographic variables such as age and gender.

The mediation hypothesis was tested using Hayes' PROCESS macro (Model

4) with 5,000 bootstrap samples and 95% confidence intervals. Self-esteem was entered as the mediator between body image disturbance and psychological distress. An indirect effect was considered statistically significant when the confidence interval did not include zero.

Ethical Considerations

The study adhered to the ethical principles outlined in the Declaration of Helsinki. Participation was voluntary, informed consent was obtained, and anonymity and confidentiality of responses were assured throughout the study. Participants were informed that the study was strictly for research purposes and that no identifying information would be linked to their responses.

Result

This section presents the findings of the study, including participants' socio-demographic characteristics, prevalence of psychological distress, relationships among the study variables, predictors of psychological distress, and the mediating role of self-esteem in the relationship between body image disturbance and psychological distress.

The socio-demographic characteristics of the participants are presented in Table 1. The respondents had a mean age of 18.74 years ($SD = 1.96$). Of the 401 participants, 52.4% were female and 47.6% were male. Most participants were in 200 level (34.9%), followed by 400 level (19.7%), 300 level (17.5%), 100 level (14.5%), and 500 level (13.5%).

Table 1

Frequency Distribution of Respondents' Socio-Demographic Characteristics (N = 401)

Variables	Categories	Frequency	Percentage (%)
Age	Range = 16–29 years M = 18.74, SD = 1.96		
Sex	Male	191	47.6
	Female	210	52.4
	Total	401	100.0
Level	100	58	14.5
	200	140	34.9
	300	70	17.5
	400	79	19.7
	500	54	13.5

Variables	Categories	Frequency	Percentage (%)
	Total	401	100.0

The prevalence of psychological distress among the participants is presented in Table 2. The mean psychological distress score was 26.85 (SD = 8.96). Based on the scoring guideline of the psychological distress scale, scores between 10–19 indicate absence of symptoms, 20–24 indicate mild psychological distress, 25–29 indicate moderate psychological distress, and scores of 30 and above indicate severe psychological distress. Accordingly, 14.0% of the participants reported absence of symptoms, 41.1% reported mild psychological distress, 27.7% reported moderate psychological distress, and 17.2% reported severe psychological distress.

Table 2*Prevalence of Psychological Distress among Undergraduates (N = 401)*

Psychological Distress Category	Frequency	Percentage (%)
Absence of Symptoms	56	14.0
Mild Psychological Distress	165	41.1
Moderate Psychological Distress	111	27.7
Severe Psychological Distress	69	17.2
Total	401	100.0

Table 3*Correlation Matrix Showing Relationships among Study Variables (N = 401)*

Variables	M (SD)	1	2	3	4
1. Age	18.74 (1.95)	1			
2. Body image disturbance	13.87 (6.17)	-.21**	1		
3. Self-Esteem	18.38 (7.83)	.15**	-.28**	1	
4. Psychological Distress	26.85 (8.96)	-.26**	.22**	-.30**	1

Note. $p < .01$.

Table 3 presents the correlations among the study variables. Age was negatively associated with body image disturbance and psychological distress, but positively associated with self-esteem. Body image disturbance showed a significant positive relationship with psychological distress and a negative relationship with self-esteem. Self-esteem was negatively associated with psychological distress. All correlations were statistically significant at $p < .01$.

Table 4
Multiple Regression Analysis Predicting Psychological Distress

Predictor	B	SE B	β	t	95% CI
Constant	41.26	4.71	—	8.76**	[32.01, 50.51]
Age	-0.88	0.22	-.19	-3.92**	[-1.32, -0.44]
Gender	2.01	0.81	.12	2.47*	[0.41, 3.61]
Body image disturbance	0.15	0.07	.10	2.06*	[0.01, 0.29]
Self-Esteem	-0.25	0.06	-.22	-4.46**	[-0.36, -0.14]
Model Summary					
R	R ²	Adjusted R ²	F(df)	Cohen's f ²	
.40	.16	.15	19.01 (4, 396)**	.19	

Note. $p < .05^*$, $p < .01$. Gender coded as 0 = male, 1 = female.

Table 4 shows the multiple regression analysis examining the predictive effects of age, gender, body image disturbance, and self-esteem on psychological distress. The overall regression model was statistically significant, $F(4, 396) = 19.01$, $p < .001$, explaining 16% of the variance in psychological distress ($R^2 = .16$). The effect size was moderate (Cohen's $f^2 = .19$).

Age significantly predicted psychological distress, such that younger undergraduates reported higher levels of distress ($\beta = -.19$, $p < .01$). Gender also significantly predicted psychological distress, with female students reporting higher distress levels than males ($\beta = .12$, $p < .05$). Body image disturbance positively predicted psychological distress ($\beta = .10$, $p < .05$), whereas self-esteem negatively predicted psychological distress ($\beta = -.22$, $p < .01$).

Table 5a
Mediation Analysis Showing the Indirect Effect of Body image disturbance on Psychological Distress through Self-Esteem

Variables	β	SE	t	p	95% CI
Outcome Variable: Self-Esteem					
Age	0.26	0.20	1.31	.190	[-0.13, 0.65]
Sex	-3.01	0.75	-3.99	< .001	[-4.49, -1.53]

Variables	β	SE	t	p	95% CI
Body image disturbance (Path a)	-0.30	0.06	-4.88	< .001	[-0.42, -0.18]
Outcome Variable: Psychological Distress					
Age	-0.85	0.22	-3.87	< .001	[-1.28, -0.42]
Sex	1.79	0.86	2.08	.042	[0.10, 3.48]
Body image disturbance (Path c')	0.16	0.07	2.20	.037	[0.02, 0.30]
Self-Esteem (Path b)	-0.26	0.06	-4.54	< .001	[-0.37, -0.14]

Table 5b*Bootstrapping Analysis of the Mediating Effect of Self-Esteem*

Effect	β	SE	LLCI	ULCI	Proportion Mediated
Total Effect	.23	.07	.08	.36	—
Direct Effect	.15	.07	.02	.30	63.6%
Indirect Effect	.08	.02	.03	.11	36.4%

The mediation analysis revealed that body image disturbance significantly negatively predicted self-esteem ($\beta = -0.30$, $p < .001$), indicating that increased body image disturbance was associated with lower self-esteem. Body image disturbance also positively predicted psychological distress ($\beta = 0.16$, $p < .05$), while self-esteem negatively predicted psychological distress ($\beta = -0.26$, $p < .001$).

Bootstrapping analysis further demonstrated a significant indirect effect of body image disturbance on psychological distress through self-esteem ($\beta = 0.08$, 95% CI [0.03, 0.11]). Because the confidence interval did not include zero, the mediation effect was significant. The direct effect remained significant ($\beta = 0.15$, 95% CI [0.02, 0.30]), indicating partial mediation. Approximately 36.4% of the total effect of body image disturbance on psychological distress was explained through self-esteem.

Discussion

The primary aim of this study was to examine whether self-esteem mediates the relationship between body image disturbance and psychological distress among Nigerian undergraduate students. The findings highlight the importance of self-esteem in understanding how appearance-related concerns contribute to

psychological difficulties within this population. The study also provides context-specific evidence from Nigeria, where social expectations regarding appearance, academic pressures, and increased exposure to social media may intensify concerns about body image and emotional well-being. Although similar mediation models have been examined in Western populations, limited empirical attention has been given to this relationship among Nigerian undergraduates.

A high proportion of participants reported symptoms of psychological distress, suggesting that emotional difficulties remain a significant concern among university students. Rather than simply reflecting statistical prevalence, this finding may indicate the cumulative burden of academic demands, financial instability, social comparison, and uncertainty about future opportunities experienced by undergraduates while navigating the university years (Wijaya, 2024). Previous Africa and Nigerian studies have similarly associated university life with heightened psychological strain (Uwadiae & Osasona, 2013; Seun-Fadipe & Mosaku, 2017; Rweyemamu et al. 2024; Ogunsemi, 2025). The prevalence observed in the present study may likely be as a result of the increasing influence of appearance-based social media culture and changing societal expectations among young people (Uwadiae & Osasona, 2013; Wagan et al., 2021; Tort-Nassarre et al., 2021).

The study further demonstrated that body image disturbance was significantly associated with lower self-esteem. This finding supports existing evidence that persistent dissatisfaction with physical appearance can negatively shape self-worth and self-evaluation. Students who constantly scrutinise perceived physical flaws may internalise negative self-perceptions, thereby weakening confidence and emotional stability. Earlier studies have reported similar associations between body dissatisfaction and reduced self-esteem (Olatona et al., 2023; Nnamchi et al., 2024). Nevertheless, not all previous findings are consistent. For example, Dotse and Asumeng (2014) and Bagherina et al. (2023) suggested that some individuals maintain stable self-esteem despite body image concerns, particularly when supported by adaptive coping strategies or strong peer relationships. This inconsistency implies that the relationship between body image disturbance and self-esteem may depend on broader psychosocial factors rather than functioning as a direct or universal pathway.

Body image disturbance was also positively associated with psychological distress, indicating that students with stronger appearance-related concerns were more likely to report emotional difficulties. This relationship may reflect the

emotional consequences of excessive appearance monitoring, fear of negative evaluation, and social comparison processes common within university environments. The finding is consistent with studies linking body image dissatisfaction to anxiety, depression, and emotional distress among young people (Akinboro et al., 2019; Adebowale & Ogunnaike, 2018). However, evidence suggests that body image disturbance does not invariably lead to psychological distress, as its effects are often influenced by protective psychosocial factors. Research indicates that social support, coping resources, and personality-related factors can buffer the negative emotional impact of body dissatisfaction (Rogers et al., 2023). Similarly, higher self-esteem and adaptive coping strategies have been shown to reduce vulnerability to distress associated with body image concerns (Abdoli et al., 2025). It can be said then that while body image disturbance increases risk for psychological distress, outcomes vary depending on individual and contextual protective factors.

The mediation analysis showed that self-esteem partially explained the relationship between body image disturbance and psychological distress. This suggests that appearance-related concerns may contribute to emotional distress both directly and indirectly through diminished self-worth (Aflakseir, 2021; Mopa-Egbunu, 2024). The findings support the idea that low self-esteem reduces ability to adjust to emotional distress and increases susceptibility to psychological disorders (Bajcar & Babiak, 2021). At the same time, the mediation was partial, indicating that self-esteem alone does not fully account for the association between body image disturbance and distress. The proportion of the relationship explained by self-esteem indicates that a substantial part of the association remains attributable to other factors not examined in this study. This highlights the multidimensional nature of psychological distress and reinforces the need for broader explanatory models. Previous studies have similarly emphasised the importance of other psychosocial variables, including peer influence, family support, perfectionism, and social comparison tendencies (Koronczai et al., 2013; Chemagosi, 2024; Ogunsemi, 2025). The study additionally found an inverse relationship between self-esteem and psychological distress. Students with stronger self-esteem were less likely to report emotional difficulties, suggesting that positive self-worth may function as a protective psychological resource. This aligns with prior evidence indicating that self-esteem contributes to emotional resilience and adaptive coping (Abiodun, 2016; Dachew et al., 2019; Duchesne et al., 2016). However, some researchers have argued that the protective effect of self-esteem may weaken under severe external stressors, such as financial hardship and academic burden

(Britt et al., 2016; Dachew et al., 2019; Bagheria & Saghebi, 2023). This suggests that self-esteem may operate alongside different environmental and institutional factors instead of being an independently determining mental health outcomes.

Implications

The findings suggest that interventions targeting self-esteem and body image concerns may help reduce psychological distress among undergraduates. University counselling services may benefit from integrating body image psychoeducation, cognitive-behavioural strategies, and peer-support interventions into existing mental health programmes. Routine psychological screening could also assist in identifying students who may be vulnerable to emotional distress associated with body image disturbance. Particular attention may be required for younger students and female undergraduates, who appeared more vulnerable within the present study.

At the institutional level, universities may consider incorporating mental health awareness and body image education into orientation and student support services. Such approaches could strengthen early identification, improve access to psychological care, and encourage help-seeking behaviour among students experiencing appearance-related distress. In practice, the findings support integrating body image assessment and self-esteem enhancement strategies into campus mental health programmes. Counsellors and psychologists may consider interventions focused on cognitive restructuring, emotional resilience, and supportive peer engagement to help students manage appearance-related concerns and psychological distress more effectively.

Limitations

Several limitations should be considered when interpreting the findings of this study. First, the use of self-report measures increases the possibility of response bias, including social desirability and inaccurate self-perception. Second, the cross-sectional design limits causal interpretation, making it impossible to determine the temporal direction of the relationships observed. Third, the study focused on undergraduate students within a specific context, which may limit the generalisability of the findings to other populations or cultural settings. Future studies should adopt longitudinal and multi-site designs to clarify causal pathways and improve external validity.

Conclusion

This study examined the mediating role of self-esteem in the relationship

between body image disturbance and psychological distress among Nigerian undergraduates. The findings indicate that body image disturbance is associated with increased psychological distress both directly and indirectly through reduced self-esteem. The study further suggests that self-esteem may function as an important psychological mechanism linking appearance concerns to emotional well-being. Overall, the findings contribute to the growing literature on body image and mental health among African university students and underscore the importance of addressing self-esteem within student mental health interventions.

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