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Beyond Self-Esteem: Exploring Body Investment among University Students in Pakistan

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ABSTRACT

The present study examined associations between self-esteem and two dimensions of body investment—investment in appearance and investment in body integrity—among university students in District Vehari, Punjab, Pakistan. It also investigated gender differences, academic, and associations with cumulative grade point average (CGPA). A quantitative, cross-sectional correlational design was employed with a convenience sample of 100 university students (52 men and 48 women). Data were collected using the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and the Measure of Body Apperception, with appearance and body-integrity investment conceptualized as distinct dimensions of body-image concern (Carver et al., 1998). Pearson's correlation, independent-samples *t* tests, analyses of variance, and multiple regression analyses were conducted. Self-esteem was not significantly associated with investment in appearance ($r = -.12$, $p = .222$) or investment in body integrity ($r = -.15$, $p = .148$). However, investment in appearance was positively associated with investment in body integrity ($r = .39$, $p < .001$). No statistically significant gender differences were observed in self-esteem, appearance investment, or body-integrity investment. Departmental differences were also nonsignificant across all three variables. CGPA was not significantly associated with the study variables. Overall, the findings provide preliminary evidence that self-esteem and body investment may operate as distinct constructs in this sample, while the two dimensions of body investment are positively related. The study offers initial evidence from a Pakistani university context; however, its cross-sectional design, convenience sampling, and modest sample size limit causal inference and generalizability. Future research should employ larger, more diverse samples, verified scoring procedures, and longitudinal designs to clarify these relationships.

Introduction

Self-esteem, defined as an individual's overall evaluation of personal worth, is an important psychological factor associated with emotional adjustment, self-perception, and well-being. During university life, students encounter academic demands, social comparisons, and changing expectations concerning personal identity and physical appearance. These experiences may influence

how students evaluate themselves and perceive their bodies. Understanding the relationship between self-esteem and body-related attitudes is therefore important for identifying psychological factors that contribute to students' well-being.

Body image is a multidimensional construct encompassing individuals' perceptions, evaluations, and attitudes toward their physical appearance and bodies. Contemporary research emphasizes that body image should not be understood exclusively in terms of dissatisfaction or perceived physical shortcomings. Positive body image includes body acceptance, respect, and appreciation, whereas appearance investment reflects the degree of importance individuals attach to their physical appearance (Tylka & Wood-Barcalow, 2015). These constructs are related but conceptually distinct, making it important to examine specific dimensions of body image rather than treating them as interchangeable.

Empirical evidence supports a meaningful association between self-esteem and body-related evaluations. A systematic review and meta-analysis of 240 papers found that body appreciation was positively associated with self-esteem and other indicators of psychological well-being (Linardon et al., 2022). Similarly, research involving university students has identified body image as an important correlate of psychological health, while a recent systematic review highlighted the continuing relevance of body image in university populations (Abbas et al., 2024; Huguenin et al., 2024). More recent evidence from Chinese college students also demonstrated a negative association between self-esteem and appearance anxiety, with social media use and upward social comparison helping to explain this relationship (Shang & Bao, 2025). Although appearance anxiety and body appreciation represent different constructs, these findings collectively indicate that self-evaluations and appearance-related experiences are psychologically interconnected.

In addition to their overall association, self-esteem and body related attitudes may vary across demographic and academic characteristics. Gender may influence experiences of appearance related expectations, while academic environments and peer groups may expose students to different social norms and standards. Waite et al. (2024), for example, found that university students' experiences of appearance related concerns differed according to social identities and university courses. Academic characteristics such as semester, program of study, department, and cumulative grade point average (CGPA) may also be relevant to students' psychological experiences; however, their relationships with self-esteem and specific body-related dimensions require empirical examination rather than assumption.

Despite increasing interest in positive body image and student well-being, further research is needed to examine how self-esteem relates to distinct dimensions of body-related attitudes within specific educational and cultural contexts. Evidence from Pakistani university students is particularly relevant because appearance-related expectations and students' experiences may be shaped by local social and educational environments. Examining these relationships alongside gender and academic characteristics can provide a more differentiated understanding of student self-perception.

Accordingly, the present study examines the association between self-esteem and investment in appearance and body integrity among university students. It also investigates gender differences, variations across semesters, programs of study and academic departments, and associations between CGPA and the three study variables. By considering these relationships within a single investigation, the study aims to contribute context-specific evidence concerning the psychological and academic characteristics associated with self-evaluation and body-related attitudes among university students.

Background/Rationale: Self-esteem is an important component of psychological well-being, while body image encompasses not only perceptions of physical appearance but also the importance individuals attach to bodily integrity and functioning (Carver et al., 1998). Previous research has linked body-image perceptions and body investment with self-esteem and other indicators of psychological health, although these relationships may vary across populations and measurement approaches (Díaz-Milanes et al., 2024). Examining these constructs among university students in Pakistan may help clarify their associations within a context that remains underrepresented in this area of research.

Objectives

To examine the association between self-esteem and body apperception among university students.

Specific Objectives

1. To assess the levels of self-esteem, investment in appearance, and investment in body integrity among university students.
2. To examine the association between self-esteem and investment in appearance.

3. To examine the association between self-esteem and investment in body integrity.
4. To examine gender differences in self-esteem, investment in appearance, and investment in body integrity.
5. To examine differences in these variables across programs of study.
6. To examine the relationships between CGPA and self-esteem, investment in appearance, and investment in body integrity.

Hypotheses

H1: Self-esteem is significantly associated with investment in appearance among university students.

H2: Self-esteem is significantly associated with investment in body integrity among university students.

Secondary Hypotheses

H3: Self-esteem, investment in appearance, and investment in body integrity differ significantly by gender.

H4: Self-esteem, investment in appearance, and investment in body integrity differ significantly across academic departments.

H5: CGPA is significantly associated with self-esteem, investment in appearance, and investment in body integrity.

Literature Review

Self-Esteem and Body Investment

Self-esteem refers to an individual's overall evaluation of personal worth and self-acceptance. Body investment, in contrast, concerns the psychological significance attached to the body and the extent to which individuals value, care for, and emotionally invest in their physical selves. These constructs are related but distinct: global self-esteem reflects a broad self-evaluation, whereas body investment concerns more specific attitudes toward the body. Accordingly, examining their relationship may clarify whether students' overall sense of self-worth is associated with how they relate to their physical selves.

Recent evidence supports a close relationship between self-esteem and body-related perceptions. In a three-wave longitudinal study of 313 college students, Liu et al. (2025) found reciprocal associations between self-esteem and body image over time. Higher self-esteem predicted subsequent improvements in body image, while more positive body image also predicted later self-esteem. Psychological resilience mediated the prospective association between self-esteem and body image, suggesting that the relationship may involve broader psychological resources rather than simple contemporaneous correlations. Although body image is not synonymous with body investment, these findings provide a relevant basis for investigating their association.

Cross-cultural evidence further demonstrates the relevance of this relationship among university students. Abdoli et al. (2025), in a comparative study of 767 university students from India and Italy, reported differences between the samples in self-esteem and body-related experiences, with greater body uneasiness associated with poorer psychological well-being. In Pakistan, Abbas et al. (2024) found significant relationships among body image, self-esteem, psychological distress, and social adjustment in a sample of 300 university students from Faisalabad. These findings support the relevance of studying body-related attitudes within culturally specific student populations. Nevertheless, differences between body dissatisfaction, body appreciation, body image, and body investment should be recognized when interpreting the evidence.

Investment in Appearance and Body Integrity

Investment in appearance reflects the importance individuals attach to their physical appearance, whereas investment in body integrity concerns their psychological relationship with bodily wholeness and preservation. These dimensions should be considered separately because placing importance on appearance does not necessarily indicate dissatisfaction, and valuing bodily integrity does not necessarily imply concern with attractiveness. Their associations with global self-esteem may therefore differ in magnitude or direction.

Research on appearance-related concerns provides relevant, although indirect, evidence. Waite et al. (2024) found that appearance concerns affected university students' experiences and that these experiences varied across gender, racial or ethnic identities, and university courses. Similarly, research on social media appearance preoccupation among 939 undergraduate

students found that body surveillance and body shame helped explain associations between appearance-focused social media engagement and particular body ideals (Brasil et al., 2024). These findings indicate that appearance-related attitudes are multidimensional and may be shaped by social comparison and university environments. However, neither appearance concern nor body surveillance should be treated as equivalent to investment in appearance or body integrity.

Gender and Academic Characteristics

Gender differences in self-esteem and body-related attitudes may emerge through differences in appearance expectations, social comparison, and culturally shaped standards of attractiveness. However, such differences are not universal and may vary according to the population, the specific body-related construct, and the sociocultural setting. In a cross-sectional study of 654 Moroccan university students, self-esteem and body satisfaction were examined alongside demographic characteristics, with gender-related differences observed in desired body size and weight (Self-esteem, body image, and associated factors among female and male university students, 2025). In Pakistan, Shahid et al. (2024) also reported gender-related patterns in body consciousness and fear of negative appearance among university students. These studies support examining gender differences empirically rather than presuming that one gender necessarily reports higher self-esteem or body investment.

Academic characteristics warrant similar consideration. Semester progression may coincide with changes in academic pressure, peer relationships, independence, and exposure to different social environments. Programs and departments may also differ in their peer cultures, professional expectations, and emphasis on physical presentation. Waite et al. (2024) identified university-course context as relevant to students' experiences of appearance concerns, supporting the consideration of educational environments in body-image research. Nevertheless, direct evidence regarding semester, department, and program differences in the specific dimensions of body investment remains limited. These comparisons are therefore appropriately framed as empirical questions rather than established relationships.

CGPA and the Research Gap

Cumulative grade point average (CGPA) represents academic performance and may be associated with self-esteem through students' experiences of achievement, perceived competence, and academic feedback. However, academic performance and global self-worth are distinct constructs, and their association should not be assumed to be strong or uniform. Similarly, CGPA may have different relationships with investment in appearance and body integrity. Investigating these associations can help determine whether academic performance co-varies with students' broader self-evaluations and body-related attitudes.

Overall, recent evidence establishes the relevance of self-esteem and body-related perceptions to university students' psychological experiences (Abbas et al., 2024; Liu et al., 2025). However, much of the available literature focuses on body image satisfaction, dissatisfaction, appearance anxiety, or body appreciation rather than the distinct dimensions of investment in appearance and body integrity. Furthermore, evidence concerning the joint associations of these dimensions with gender, semester, academic program, department, and CGPA remains comparatively underdeveloped, particularly in Pakistani university settings. The present study addresses this gap by examining self-esteem in relation to investment in appearance and body integrity while assessing variation across selected demographic and academic characteristics. This multidimensional approach may contribute context-specific evidence to the literature on self-evaluation and body-related attitudes among university students.

Method

Research Design

The study employed a quantitative, cross-sectional correlational design to examine the associations between self-esteem and body investment among university students in District Vehari, Punjab, Pakistan. The study also investigated differences in self-esteem, investment in appearance, and investment in body integrity across selected demographic and academic characteristics, including gender, semester, academic program, and department. Additionally, associations between cumulative grade point average (CGPA) and the study variables were examined.

Participants and Sampling

The sample comprised 100 university students recruited from universities in District Vehari, Punjab, Pakistan, through convenience sampling. Of the participants, 52 (52%) were male and 48 (48%) were female. Participants were approached based

on their accessibility and willingness to participate. Data were collected using both in-person and online questionnaire administration. The study examined self-esteem, investment in appearance, and investment in body integrity alongside participants' demographic and academic characteristics.

Measures

Rosenberg Self-Esteem Scale (RSES)

Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES), developed by Rosenberg (1965). The scale comprises 10 items designed to assess global self-esteem, reflecting individuals' overall evaluations of their self-worth. Items are rated on a four-point response scale, with negatively worded items reverse-scored before computing the total score. Higher total scores indicate higher self-esteem.

Measure of Body Apperception (MBA)

Body apperception was assessed using the Measure of Body Apperception (MBA). The measure was examined in terms of two dimensions: investment in appearance and investment in body integrity. Investment in appearance reflects the importance individuals attach to their physical appearance, whereas investment in body integrity concerns the importance attached to maintaining bodily integrity and functioning (Carver et al., 1998). For the present study, items 1, 3, 6, and 8 were summed to calculate investment in appearance, while items 2, 4, 7, and 9 were summed to calculate investment in body integrity. Items 5 and 10 served as filler items and were excluded from the dimension scores. Higher scores indicate greater investment in the respective dimension.

Procedure

Data were collected from university students in District Vehari using convenience sampling. Questionnaires were administered in English through both in-person and online methods. Participants were provided with information about the study and invited to participate voluntarily.

Results

Participant Characteristics

The sample comprised 100 university students from District Vehari, Pakistan. As shown in Table 1, 52 participants (52.0%) were male and 48 (48.0%) were female. Regarding academic department, 60 participants (60.0%) were enrolled in Law, 15 (15.0%) in Economics, and 25 (25.0%) in Psychology. Semester data included 49 participants (49.0%) in semester 2, one (1.0%) in semester 3, 49 (49.0%) in semester 4 and one (1.0%) in semester 5.

Table 1; Demographic Characteristics of Participants (N = 100)

Characteristic	Category	n	%
Gender	Male	52	52.0
	Female	48	48.0
Semester	2	49	49.0
	3	1	1.0
	4	49	49.0
	5	1	1.0
Department	Law	60	60.0
	Economics	15	15.0
	Psychology	25	25.0

Descriptive Statistics

Table 2 presents the descriptive statistics for self-esteem, investment in appearance, and investment in body integrity. The mean self-esteem score was 22.93 ($SD = 4.14$). The mean scores for investment in appearance and investment in body integrity were 11.62 ($SD = 2.49$) and 10.28 ($SD = 2.32$), respectively.

Table 2; Descriptive Statistics for the Study Variables ($N = 100$)

Variable	M	SD
Self-esteem	22.93	4.14
Investment in appearance	11.62	2.49
Investment in body integrity	10.28	2.32

Note. M = mean; SD = standard deviation.

Correlations among Self-Esteem, Body Investment, and CGPA

Pearson product-moment correlations were used to examine the associations among self-esteem, the two body-investment dimensions, and cumulative grade point average (CGPA). As presented in Table 3, self-esteem was not significantly associated with investment in appearance, $r(98) = -.12$, $p = .222$, or investment in body integrity, $r(98) = -.15$, $p = .148$. Accordingly, Hypotheses 1 and 2 were not supported. Investment in appearance was positively associated with investment in body integrity, $r(98) = .39$, $p < .001$. CGPA was not significantly associated with self-esteem, investment in appearance, or investment in body integrity.

Table 3; Pearson Correlations among Study Variables ($N = 100$)

Variable pair	r	p
Self-esteem and investment in appearance	-.12	.222
Self-esteem and investment in body integrity	-.15	.148
Investment in appearance and investment in body integrity	.39	< .001
CGPA and self-esteem	-.16	.112
CGPA and investment in appearance	.06	.550
CGPA and investment in body integrity	-.02	.844

Note. r = Pearson correlation coefficient. Tests were two-tailed.

Gender Differences in Self-Esteem and Body Investment

Independent-samples t tests were conducted to examine gender differences in self-esteem, investment in appearance, and investment in body integrity. As shown in Table 4, none of the differences was statistically significant. The effect sizes were small, ranging from $d = -0.02$ to -0.15 . Therefore, Hypothesis 3 was not supported.

Table 4; Gender Differences in Self-Esteem and Body Investment

Variable	Male, M (SD)	Female, M (SD)	$t(98)$	p	Cohen's d
Self-esteem	22.88 (3.78)	22.98 (4.55)	-0.11	.910	-0.02
Investment in appearance	11.52 (2.52)	11.73 (2.47)	-0.42	.675	-0.08
Investment in body integrity	10.12 (2.39)	10.46 (2.26)	-0.74	.464	-0.15

Note. M = mean; SD = standard deviation. Tests were two-tailed.

Differences across Academic Departments

One-way analyses of variance (ANOVAs) were conducted to examine differences in self-esteem, investment in appearance, and investment in body integrity across Law, Economics, and Psychology departments. As reported in Table 5, none of the departmental differences was statistically significant. Hypothesis 6 was therefore not supported.

Table 5; Differences in Study Variables Across Academic Departments

Variable	<i>F</i> (2, 97)	<i>p</i>
Self-esteem	0.50	.606
Investment in appearance	0.26	.774
Investment in body integrity	0.21	.815

Note. The post hoc comparisons were also reported as nonsignificant.

Additional Analyses

The semester-based ANOVAs showed no statistically significant differences in self-esteem, $F(3, 96) = 0.82, p = .488, \eta^2 = .025$; investment in appearance, $F(3, 96) = 1.90, p = .135, \eta^2 = .056$; or investment in body integrity, $F(3, 96) = 1.69, p = .173, \eta^2 = .050$.

The qualification-group analyses were also nonsignificant for self-esteem, $F(2, 97) = 0.79, p = .458$; investment in appearance, $F(2, 97) = 2.05, p = .134$; and investment in body integrity, $F(2, 97) = 1.01, p = .367$.

The regression results indicated that CGPA was not a statistically significant independent predictor of investment in appearance ($B = 0.324, p = .684$) or investment in body integrity ($B = -0.267, p = .728$), after adjustment for the other included variables.

Summary of Findings

The results showed no statistically significant associations between self-esteem and either investment in appearance or investment in body integrity. However, the two body-investment dimensions were positively associated. No statistically significant gender or departmental differences were identified, and CGPA was not significantly associated with any of the three study variables.

Discussion

The present study examined associations between self-esteem and two dimensions of body investment among 100 university students in District Vehari, Pakistan. Neither investment in appearance nor investment in body integrity was significantly associated with self-esteem. Gender and departmental differences were also nonsignificant, and CGPA was not significantly associated with the study variables. However, investment in appearance was positively associated with investment in body integrity ($r = .39, p < .001$). These findings highlight the importance of distinguishing global self-esteem from specific attitudes toward the body.

The nonsignificant association between self-esteem and investment in appearance ($r = -.12, p = .222$) differs from evidence linking positive body image with psychological well-being. Linardon et al. (2022), in a systematic review and meta-analysis of 240 papers, found that body appreciation was positively associated with self-esteem. However, body appreciation involves accepting and respecting one's body, whereas investment in appearance concerns the importance attached to physical appearance. These constructs are conceptually distinct, and their relationships with self-esteem may therefore differ. Similarly, self-esteem was not significantly associated with investment in body integrity ($r = -.15, p = .148$). Although Wang et al. (2022) examined body investment, self-esteem, and psychological functioning among Chinese college students, their findings do not establish that all dimensions of body investment are necessarily associated with self-esteem. The present results therefore indicate insufficient evidence of these associations in the current sample, rather than demonstrating that the constructs are unrelated in other populations.

In contrast, investment in appearance was moderately and positively associated with investment in body integrity ($r = .39, p < .001$). Students who attached greater importance to their appearance tended to report greater investment in body integrity. This finding suggests that the two dimensions may share aspects of body-related attitudes while remaining conceptually distinct. Because both dimensions were assessed through self-report measures in a cross-sectional study, the association does not establish causality and may partly reflect shared measurement characteristics.

No statistically significant gender differences were found in self-esteem, investment in appearance, or investment in body integrity. Although female participants obtained slightly higher mean scores across all three variables, the effect sizes were small ($d = -0.02$ to -0.15). These findings differ from research highlighting the influence of sociocultural context on body image and self-esteem. Abdoli et al. (2025), for example, examined body image and self-esteem among university students in India and Italy, illustrating the relevance of cultural context to these constructs. However, differences in measures, populations, and cultural settings limit direct comparisons. The present findings suggest that gender differences were not detected in this sample; they do not establish that gender is irrelevant to body-related experiences.

The analyses also revealed no statistically significant departmental differences in self-esteem, investment in appearance, or investment in body integrity. Similarly, CGPA was not significantly associated with self-esteem ($r = -.16, p \approx .112$), investment in appearance ($r = .06, p \approx .550$), or investment in body integrity ($r = -.02, p \approx .844$).

The findings have implications for understanding body-related attitudes among university students. In particular, they suggest that self-esteem and body investment should be assessed as distinct constructs rather than assuming that global self-worth consistently predicts the importance individuals attach to their bodies. Research on university-based body-image interventions also highlights the need for appropriate measurement and context-sensitive approaches (Huguenin et al., 2024). However, the present study was observational and did not evaluate an intervention; therefore, no conclusions can be drawn about the effectiveness of strategies intended to change self-esteem or body investment.

Several limitations should be acknowledged. Convenience sampling and recruitment from a single district restrict generalizability, while the sample size of 100 may have limited statistical power. The cross-sectional design prevents causal conclusions, and self-report measures may introduce response and shared-method biases. Future research should use larger, more diverse samples from multiple Pakistani universities, establish the psychometric adequacy of the measures, and employ longitudinal designs to clarify relationships between self-esteem and body-investment dimensions.

In conclusion, neither investment in appearance nor investment in body integrity was significantly associated with self-esteem, whereas the two body-investment dimensions were positively correlated. No statistically significant gender or departmental differences were identified, and CGPA was not significantly associated with the study variables. These findings emphasize the value of examining body investment through its distinct dimensions.

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