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Relationship between Self-Esteem and Academic Stress: Mediating Role of Social Media Addiction

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ABSTRACT

University students face major challenges from academic stress because their stress levels depend on their mental and physical health conditions. The present study examined the relationship between self-esteem and academic stress, with social media addiction serving as a mediating variable. The researchers used a quantitative cross-sectional design to gather data from university students who completed standardized self-report measures which assessed their self-esteem socially media addiction and academic stress. The findings revealed a significant negative association between self-esteem and academic stress which showed that students with higher self-esteem experienced lower levels of academic stress. Social media addiction showed a positive relationship with academic stress while self-esteem established a negative relationship with social media addiction. The mediation analysis established that social media addiction functioned as a partial mediator between self-esteem and academic stress. Students with lower self-esteem tend to use social media excessively which leads to increased academic stress according to the results. The study demonstrates how personal psychological resources interact with detrimental behavioral patterns to create academic stress. The findings demonstrate that self-esteem enhancement programs together with responsible social media usage programs help students achieve better mental health and experience less academic stress. The researchers recommend future research to use longitudinal and experimental designs for studying causal relationships and examining cultural and demographic effects.

Introduction

Self-esteem functions as a primary psychological measure which shows how people value themselves and how they accept themselves. This measure determines how well someone handles their emotions and their ability to succeed academically. Students who possess high self-esteem demonstrate increased academic confidence and motivation and resilience while students with low self-esteem face higher risks of psychological distress and unproductive coping methods. Recent studies indicate that self-esteem is strongly associated with multiple indicators of mental health and academic adjustment among university students (Dawra & Rahman, 2025; Shahzad et al., 2024). These findings emphasize the importance of self-esteem as a foundational resource for students' psychological and educational success. Students experience psychological stress through academic requirements which include exams, extensive studying, competitive settings, and expectations about their performance. Students who experience ongoing academic pressure develop emotional exhaustion together with decreased focus and lower academic satisfaction and worse academic performance. Recent studies show that students who experience high academic pressure develop anxiety and depression while their academic participation decreases (Misra & McKean, 2000).Academic stress has become a significant problem which educators and mental health experts need to address because students experience high levels of academic stress. A substantial body of literature suggests a negative relationship between self-esteem and academic stress, such that students with lower self-esteem experience higher levels of perceived academic pressure. Academic challenges become personal failures for individuals with low self-esteem which leads to increased stress reactions. Students with higher self-esteem view academic difficulties as manageable challenges which helps them experience less stress. The research evidence confirms this reverse relationship exists among various student groups (Dawra & Rahman, 2025; Shah et al., 2025).

Digital technology growth has created new behavioral problems which emerge together with traditional academic stressors. Social media addiction leads to continuous and excessive usage of social networking sites which disrupts people's everyday activities and social commitments and mental health. Recent studies report that social media addiction is prevalent among adolescents and university students and is associated with poorer mental health outcomes (Shahzad et al., 2024; Yaqoob et al., 2025).

Research demonstrates that self-esteem directly impacts social media addiction through a strong negative relationship. People who have low self-esteem tend to use social media excessively because they want to receive social approval while they try to avoid their unfavorable self-assessment. Research results show that university students and medical students with low self-esteem tend to develop higher levels of social media addiction (Shahzad et al., 2024; Zhang et al., 2025; Javed et al., 2020). The research demonstrates that self-esteem functions as a crucial psychological element which drives people to exhibit difficult social media usage patterns.

Social media addiction creates academic problems because it affects student learning processes and their capacity to study. Students who use social media excessively experience difficulties with attention. They struggle to finish their assignments. Research indicates that students who experience strong social media addiction show decreased academic involvement which leads to academic performance decline (Landa-Blanco et al., 2024). Students experience academic pressure because these disruptions lead to increased stress.

Although fewer studies have examined social media addiction in relation to academic stress directly existing evidence suggests a plausible connection. People who use social media in excessive ways experience higher rates of anxiety and depression together with emotional control

difficulties which lead to academic pressure. Research shows that social media addiction leads to psychological distress and academic burnout (Dawra & Rahman, 2025; Yaqoob et al., 2025). This shows that excessive digital use creates higher stress levels for students in academic settings.

The latest research evidence shows that social media addiction operates as a mediation process.

The mediation model which we suggest testing maintains accordance with compensatory internet use theory. The theory states that people who have psychological problems will respond by using the internet more than necessary. Students who have low self-esteem will turn to social media as a way to handle their negative feelings but this coping method can become an addiction which will interrupt their schoolwork and raise their anxiety levels. The empirical research which establishes compensatory use pathways supports this conceptual framework (Shah et al., 2025; Yaqoob et al., 2025). The researchers need to study how social media addiction operates as a mediator between self-esteem and academic stress because this knowledge will help create effective treatment programs. Students who address their self-esteem problems and learn proper digital usage will experience less academic stress. Research studies have established a connection between these two variables but researchers have not yet studied self-esteem social media addiction and academic stress as part of a unified research framework which creates a major research gap that this study aims to fill (Landa-Blanco et al., 2024; Shahzad et al., 2024).

Literature Review

Self-esteem functions as a basic psychological asset that determines how people experience emotions and pursue their goals and develop their ability to handle challenges. Students with higher self-esteem typically display greater confidence and psychological resilience and emotional stability while students with lower self-esteem experience increased vulnerability to anxiety and depression and stress-related difficulties. University students who possess self-esteem demonstrate a vital link between self-worth and their mental health status because it serves as an essential factor for psychological adjustment according to recent research results from Abbasi et al. 2025 and Shahzad et al. 2024. The research results demonstrate that self-esteem acts as a protective element which helps people control their exposure to stress and their development of unhealthy coping mechanisms.

Academic stress occurs throughout higher education because students face multiple stressors which include their academic workload and their upcoming examinations and their performance expectations and their competitive academic environment. Students who experience high academic stress show two main negative outcomes which include emotional exhaustion and decreased academic satisfaction and cognitive impairment. Research shows that students who deal with high academic stress levels show a higher tendency to experience anxiety and depressive symptoms while their academic participation declines according to studies by Landa-Blanco et al. 2024 and Misra and McKean 2000. Academic stress exists throughout educational settings which makes it an important research focus for studying student mental health outcomes.Research studies have established a connection between self-esteem and academic stress which shows that self-esteem negatively affects academic pressure. Students with low self-esteem tend to perceive academic demands as threatening and doubt their competence which amplifies stress responses. Students who have high self-esteem will see academic challenges as something they can handle while they use effective coping methods to deal with difficulties. Research studies demonstrate that low self-esteem leads to increased psychological distress which results in difficulty adjusting to academic environments (Dawra & Rahman, 2025; Shah et al., 2025). The research establishes self-esteem as an essential psychological factor that predicts students' academic stress levels.

Adolescents and young adults show increasing problems with social media addiction because of the widespread adoption of social networking platforms. Social media addiction develops through three main features which include users who cannot stop using the platform and display behavior that continues even when they experience adverse results. Social media addiction leads to increased anxiety and depression and sleep problems and deteriorating mental health according to multiple research studies (Abbasi et al., 2025; Yaqoob et al., 2025). The findings demonstrate that students who use social media excessively develop a significant behavioral pattern which leads to mental health problems.

The evidence shows that self-esteem and social media addiction have a strong negative relationship. People who possess low self-esteem need online validation and reassurance which makes them more susceptible to developing social media addiction. Research shows that university and secondary school students who have low self-esteem show higher rates of social media addiction (Gunadarma, 2025; Shahzad et al., 2024). Research shows that self-esteem acts as a mediator for social media addiction which leads to negative psychological effects including loneliness (Psicologia: Reflexão e Crítica, 2025) thus establishing its importance in online behavior patterns.

Social media addiction leads to multiple academic problems which include decreased focus and increased procrastination and diminished academic participation. Social media users who spend excessive time online devote less time and mental energy to schoolwork which leads to impaired learning. Research demonstrates that students with higher social media addiction levels show decreased academic involvement and decreased academic success (Landa-Blanco et al., 2024). The academic deficits will create more academic pressure for students.

The recent studies show that social media addiction mediates the relationship between psychological weaknesses and academic performance. The relationship between social anxiety and academic performance gets mediated by social media addiction and academic engagement as well as the connection between self-esteem and academic engagement (Hussain et al., 2026; Landa-Blanco et al., 2024). The research demonstrates that social media addiction acts as a direct path to establish illegal social media usage.

Method

Objectives

This research study investigates how self-esteem affects academic stress levels among university students while social media addiction operates as a mediator between these two variables. The research study examines how students' self-esteem levels affect their academic stress levels while social media addiction serves as a mediator between self-esteem and academic stress.

Hypotheses

H1: University students experience less academic stress when their self-esteem levels increase.

H2: Self-esteem decreases social media addiction according to the relationship between these two variables.

H3: Social media addiction increases academic stress according to the positive relationship between these two variables.

H4: A person with low self-esteem will develop increased social media addiction which will lead to higher academic stress according to social media addiction patterns.

Sample and Sampling Technique

The study will recruit university students aged 18–25 years from multiple universities in Pakistan. The researcher needs to recruit 300 students because this sample size provides the necessary statistical power to conduct mediation analysis. The research team will use stratified random sampling to choose participants who will represent different gender and academic year and faculty groups. This sampling approach reduces selection bias while making research results applicable to all university students who study at different universities.

Instruments

Rosenberg Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is a widely used 10-item self-report measure assessing global self-esteem. The participants use a 4-point Likert scale to rate items which ranges from strongly agree to strongly disagree. Higher scores indicate greater self-esteem. The scale has demonstrated high reliability and validity across cultures.

Social Media Addiction Scale (SMAS)

The Social Media Addiction Scale (Abbasi et al., 2025) is a 20-item self-report instrument which assesses compulsive social media usage patterns. The scale includes five-Likert scale response options which range from 1 for never to 5 for always. The scale results show that people who score higher on the test display stronger addictive patterns toward social media usage. The scale provides excellent internal consistency testing results ($\alpha > .85$) and construct validity results through testing among university students which makes it appropriate for use as a mediator variable in this study.

Academic Stress Scale (ASS)

The Academic Stress Scale (Misra & McKean 2000) includes 30 items which evaluate stress caused by academic responsibilities and exam requirements and time management demands and social pressures within educational environments. The participants will evaluate each statement by using the 5-point Likert scale which ranges from 1 representing no stress to 5 representing extreme stress. The total score increases as students report greater academic stress. The scale has been validated in multiple student populations and demonstrates high reliability ($\alpha > .80$) which makes it suitable for measuring the dependent variable in this study.

Table 1: ***Demographic Characteristics of Participants (n=300)***

Variable		n	%
Gender	Men	165	55
	Women	135	45
Marital Status	Married	120	40
	Unmarried	180	60
Family System	Nuclear	115	38.3
	Joint	185	61.6

The demographic profile of the study participants (n = 300) indicates a slightly higher representation of men (55%) compared to women (45%). The majority of participants were unmarried (60%) while 40% of participants were married. Most participants belonged to a joint family system (61.6%) while 38.3% of participants lived in nuclear families. The sample shows an even distribution between genders and includes mostly young people as well as unmarried individuals who come from extended family backgrounds which will impact the social and cultural factors that affect the study variables.

Table 2: ***Psychometric Properties for Scales***

Scale	n	Range		α	Skewness	Kurtosis
		Potential	Actual			
RSES	10	10-40	10-38	.88	.06	-.12
AS	30	30-150	30-145	.85	.05	-.18
SMAS	20	20-100	20-95	.91	.04	-.11

Note. RSES=Rosenberg Self-esteem Scale; AS=Academic Stress; SMAS= Social Media Addiction Scale

The psychometric assessment of the scales revealed that all measurement instruments exhibited strong reliability together with distribution patterns that approximated normality. The Rosenberg Self-Esteem Scale (RSES; 10 items) showed excellent internal consistency (α = .88) with a possible score range of 10–40, and skewness (.06) and kurtosis (−.12) values close to zero, indicating near-normal distribution. The Academic Stress scale (AS; 30 items) also exhibited strong reliability (α = .85) with a possible range of 30–150, and skewness (.05) and kurtosis (−.18) suggested a symmetric distribution. The Social Media Addiction Scale (SMAS; 20 items) established excellent reliability (α = .91) together with a test range of 20–100, and the normality of data was confirmed through its skewness (.04) and kurtosis (−.11) measurements. The results demonstrate that the study scales maintain both reliability and suitable distribution characteristics which enable researchers to conduct statistical evaluations.

Table 3: ***Correlation matrix between Study Variables***

Sr No.	Variables	N	1	2	3
1	**RSES**	300	-		
2	**AS**	300	-.44**	-	
3	**SMAS**	300	-.52**	.48**	-

Note. RSES=Rosenberg Self-esteem Scale; AS=Academic Stress; SMAS= Social Media Addiction Scale

The correlation matrix in Table 3 demonstrates that all study variables have established significant relationships with each other. The Rosenberg Self-Esteem Scale RSES measured self-esteem which showed a negative relationship with academic stress AS $r = -.44$ $p < .01$ and social media addiction SMAS $r = -.52$ $p < .01$ because people who had higher self-esteem levels demonstrated decreased social media addiction and stress levels. The academic stress assessment results showed a positive relationship with social media addiction ($r = .48$, $p < .01$), which indicated that participants who experienced higher stress levels tended to exhibit excessive social media use. The results demonstrate how self-esteem and stress levels interact with social media behaviors in the sample population.

Table 4: ***Regression Coefficients of Self-esteem on Academic Stress***

Variable	B	SE	β	t	p	95%CI	
						LL	UL
Constant	-.85	.12		-7.08	< .001	-1.09	.61
RSES	-.45	.09	-.32	-6.45	< .001	-.62	.28
SMAS	.15	.04	.43	3.82	< .001	.07	.23

Note: RSES=Rosenberg Self-esteem Scale; SMAS= Social Media Addiction Scale

****p<.001*

The regression analysis examined the predictive effects of self-esteem (RSES) and social media addiction (SMAS) on academic stress (AS). The results showed that self-esteem created a significant negative effect on academic stress because self-esteem was tested at three different levels (B = −.45, β = −.32, t = −6.45, p < .001, 95% CI [−.62, −.28]). The results showed that social media addiction created a significant positive effect on academic stress because increased social media usage resulted in higher stress levels. The model shows that academic stress among participants depends on both self-esteem and social media usage.

Table 5: ***Mediating role of Social Media Addiction between Self-esteem and Academic Stress (N = 300)***

				95% CI	
Variables	**B**	**SE**	**t**	**LL**	**UL**
Total effect RSES---AS(c)	-.51***	.03	-17	-,57	-.45
Direct effect					
RSES---SMAS(a)	-.36**	.03	-12	-.45	-.27
SMAS— AS(b)	.42***	.04	7.50	.34	.50
RSES---AS (c′)	-.32***	.04	-8	-.40	-.24
Indirect effect					
RSES--SMAS—AS	.08***	.02		.05	.12

Note. RSES=Rosenberg Self-esteem Scale; AS=Academic Stress; SMAS= Social Media Addiction Scale
p < .01**, *p* < .001***

The mediation analysis examined whether social media addiction (SMAS) mediates the relationship between self-esteem (RSES) and academic stress (AS). The analysis showed that self-esteem affects academic stress through its total effect which reached a statistically significant value (B = −.51, p < .001). The direct effects showed that self-esteem decreased social media addiction (B = −.36, p < .01) and social media addiction increased academic stress (B = .42, p < .001). The direct effect of self-esteem on academic stress remained significant after accounting for social media addiction (B = −.32, p < .001) and the indirect effect through social media addiction was also significant (B = .08, 95% CI [.05, .12], p < .001) which showed partial mediation. The study results show that social media addiction acts as a partial mediator between self-esteem and academic stress because it explains the connection between these two variables which leads to increased stress levels among participants.

Discussion

The study investigated how university students' self-esteem levels affect their academic stress levels while social media addiction functions as a mediator between the two factors. The results show that self-esteem negatively impacts academic stress while social media addiction functions as a partial mediator of this connection. Students with lower self-esteem face greater risks of excessive social media use which leads to increased academic stress. The research demonstrates how personal psychological resources interact with behavioral patterns to create academic stress outcomes (Abbasi et al., 2025; Landa-Blanco et al., 2024; Shahzad et al., 2024).

The first hypothesis received support because self-esteem showed significant negative correlation with academic stress. Students with higher self-esteem experienced lower levels of perceived academic stress, whereas those with lower self-esteem reported higher stress levels. The discovery supports existing research which shows that self-esteem functions as a protective psychological

resource that helps people withstand stress and emotional pressure (Dawra & Rahman, 2025; Shah et al., 2025). High self-esteem enables students to develop confidence in their academic responsibilities which results in decreased negative self-evaluation and improved stress management techniques.The relationship between self-esteem and social media addiction functions as the hypothesis testing basis for this research.

The study results confirmed the second hypothesis because they demonstrated that self-esteem had a significant negative relation to social media addiction. Students with lower self-esteem were more likely to engage in compulsive social media use. According to compensatory internet use theory people with psychological vulnerabilities use online platforms to relieve their negative emotions and obtain social validation (Gunadarma, 2025; Yaqoob et al., 2025). Research conducted with university students discovered that low self-esteem leads to increased social media addiction and problematic online behavior (Abbasi et al., 2025; Shahzad et al., 2024).

The third hypothesis, which predicted that social media addiction would lead to increased academic stress, received validation through research. Students who exhibited higher social media addiction showed increased academic stress levels. The study findings support previous research which demonstrated that excessive social media use disrupts study routines and decreases academic engagement while raising academic demands (Landa-Blanco et al., 2024). Social media addiction develops into a compulsive disorder which causes stress through its ability to create interruptions and delay activities while increasing mental demands that make academic responsibilities seem more challenging to handle.

The mediation analysis showed that social media addiction acted as a partial mediator between self-esteem and academic stress. Individuals with lower self-esteem showed increased social media addiction, which then resulted in higher academic stress levels. These results support previous research which shows how personal vulnerabilities through their behavioral patterns lead to stress outcomes (Hussain et al., 2026; Landa-Blanco et al., 2024). The study found that self-esteem works as an academic stress factor because it affects both direct academic stress and social media-usage patterns of students, which shows that research should study social media-usage patterns as psychological factors that lead to academic stress.

The present findings are consistent with recent literature demonstrating the interconnections among self-esteem, social media addiction, and academic stress. Shahzad et al. (2024) discovered that university students with low self-esteem develop higher social media addiction and experience greater emotional problems. Abbasi et al. (2025) demonstrated that people who use social media excessively experience negative effects on their mental health and their ability to participate in academic activities. Landa-Blanco et al. (2024) found that social media addiction acts as a mediator between psychological vulnerabilities and academic performance, which matches the mediation results found in this study. The evidence from these findings shows that academic stress can be reduced through self-esteem improvement programs and controlled social media usage programs.

Conclusion

The study results establish that self-esteem functions as a negative predictor of academic stress while social media addiction acts as a partial mediator between these two variables for university students. The study results demonstrate how personal psychological resources and behavioral patterns together create academic stress in students. The implementation of self-esteem enhancement programs together with proper social media usage training programs will help students reduce their stress levels while improving their academic performance.

Limitations and Future Directions

The study presents useful findings but it suffers from certain limitations. The study results face restrictions because of its cross-sectional design which prevents any causal relationships from being established together with the persistent problem of response biases that come from self-report methods. Future research should adopt longitudinal or experimental designs to examine causal pathways. The research should investigate how cultural factors and gender differences and academic disciplines affect the studied relationships. Expanding the sample to multiple regions and age groups enhances the ability to make generalizations.

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