



Impact of Social Media Addiction on Mental Health and Academic Performance Among University Students

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Abstract

Social media has become an integral part of university students' everyday lives, but excessive and uncontrolled engagement may interfere with psychological well-being and academic functioning. The present study examined the relationship between social media addiction, mental health, and academic performance among undergraduate students in Peshawar, Pakistan. A cross-sectional quantitative design was employed with 200 undergraduate students aged 18–26 years, including 100 males and 100 females, recruited from Iqra National University, the University of Peshawar, and Islamia College University Peshawar. Participants completed the Bergen Social Media Addiction Scale (BSMAS), the Depression Anxiety Stress Scale-21 (DASS-21), and an Academic Performance Scale (APS) adapted from previous academic-functioning measures. Descriptive statistics, Pearson correlations, regression analyses, independent-samples t-tests, and one-way ANOVAs were conducted. The mean BSMAS score was 18.42 (SD = 4.76), indicating a moderate level of problematic social media use in the sample. Mean DASS-21 and APS scores were 42.18 (SD = 13.24) and 31.47 (SD = 7.83), respectively. Social media addiction was positively associated with psychological distress, $r(198) = .54$, $p < .001$, and negatively associated with academic performance, $r(198) = -.47$, $p < .001$. Regression analysis showed that social media addiction explained 29% of the variance in mental-health difficulties and 22% of the variance in academic performance. Males reported significantly higher BSMAS scores than females, whereas gender differences in mental health and academic performance were not significant. Age-group differences were significant for social media addiction and academic performance, but not for mental health. The findings support the relevance of Uses and Gratifications Theory and Social Comparison Theory and highlight the need for university-based screening, digital-wellness education, counseling, and focused interventions for students at elevated risk.

Key Words: Social media addiction; mental health; academic performance; university students; BSMAS; DASS-21; Peshawar; Pakistan



1. Introduction

1.1 Background

Social media platforms such as Facebook, Instagram, TikTok, Snapchat, and YouTube have transformed how young adults communicate, maintain relationships, seek information, entertain themselves, and present their identities. University students are particularly intensive users because social networking is embedded in peer interaction, academic communication, entertainment, and everyday routines. The developmental period from late adolescence to emerging adulthood is also characterized by identity development, sensitivity to peer feedback, and increasing independence, making digital environments especially salient.

The psychological concern is not ordinary social-media use itself but patterns of excessive, compulsive, and difficult-to-control use that interfere with functioning. Griffiths' components model conceptualizes behavioral addiction through salience, mood modification, tolerance, withdrawal, conflict, and relapse. The Bergen Social Media Addiction Scale (BSMAS) operationalizes these components in relation to social-media use. When social-media engagement becomes a dominant activity, is used to regulate mood, escalates over time, produces distress when restricted, creates interpersonal or academic conflict, and repeatedly returns after attempts to reduce it, the behavior can be understood as problematic or addictive social-media use.

The Pakistani context is particularly important because rapid smartphone and mobile-internet adoption has expanded social-media access among young adults. The thesis on which this article is based focused on university students in Peshawar and emphasized the need for locally grounded evidence concerning both psychological and academic consequences. The study included three universities, thereby moving beyond a single-institution sample and providing a broader picture of undergraduate students in the local setting.

Mental health in the present study was operationalized through depression, anxiety, and stress symptoms measured by the DASS-21. These forms of psychological distress are important in university populations because students commonly face academic pressure, family expectations, financial concerns, social adjustment, and uncertainty about the future. Excessive social-media engagement may add another layer of vulnerability through social comparison, disrupted sleep, emotional dependence on online feedback, and displacement of offline activities.

Academic performance can likewise be affected by excessive social-media use. Social-media engagement during study periods can displace study time, fragment attention, encourage procrastination, and interfere with sleep. These mechanisms may be particularly consequential in university education, where students are expected to manage their own schedules and sustain prolonged attention to reading, assignments, examinations, and independent learning.

1.2 Problem Statement

Although social media provides communication and educational benefits, compulsive use may become a behavioral risk for university students. Previous research has associated problematic social-media use with depression, anxiety, stress, loneliness, lower self-esteem, and academic difficulties. However, evidence from Pakistan, particularly Khyber Pakhtunkhwa, remains comparatively limited. The thesis identified a need for multi-institutional research using



established measures and for systematic examination of whether demographic characteristics such as gender and age are associated with different patterns of social-media addiction and its outcomes.

The present article therefore examines three related questions: whether social-media addiction is associated with mental-health difficulties; whether it is associated with academic performance; and whether social-media addiction, mental health, and academic performance differ across gender and age groups. By examining these relationships simultaneously, the study provides a more integrated account of the consequences of problematic social-media use among university students in Peshawar.

1.3 Research Objectives

- To assess the level of social media addiction and examine its associations with mental health and academic performance among undergraduate students.
- To determine whether social media addiction significantly predicts mental-health outcomes and academic performance.
- To compare social media addiction, mental health, and academic performance across gender and age groups.

1.4 Hypotheses

- H₁: Social media addiction is significantly positively related to mental-health problems among university students.
- H₂: Social media addiction is significantly negatively related to academic performance.
- H₃: Social media addiction significantly predicts mental-health outcomes.
- H₄: Social media addiction significantly predicts academic performance.
- H₅: Males and females differ significantly in social media addiction.
- H₆: Males and females differ significantly in mental health.
- H₇: Males and females differ significantly in academic performance.
- H₈: Social media addiction differs significantly across age groups.
- H₉: Mental health differs significantly across age groups.
- H₁₀: Academic performance differs significantly across age groups.

2. Literature Review

2.1 Social Media Addiction

Social media addiction refers to excessive and compulsive engagement with social-networking platforms to a degree that disrupts psychological, social, academic, or other areas of functioning. The concept is grounded in behavioral-addiction theory rather than the assumption that all frequent use is pathological. Griffiths (2005) proposed six core components: salience, mood modification, tolerance, withdrawal, conflict, and relapse. Andreassen et al. (2016) translated these principles into the BSMAS, a six-item measure applicable across social-media platforms.



The BSMAS has demonstrated acceptable to good psychometric properties across cultural settings. Research summarized in the thesis reports unidimensional structures and acceptable internal consistency in several countries and South Asian samples. In the present sample, the BSMAS demonstrated Cronbach's alpha of .81, supporting its internal consistency for use with university students in Peshawar.

2.2 Social Media Addiction Among University Students

University students represent a population with substantial exposure to digital media. Meta-analytic evidence has suggested that problematic social-media use is particularly common among younger users and student populations. The literature reviewed in the thesis indicates that prevalence estimates vary depending on measurement criteria, population, and cultural context. This variability reinforces the importance of using validated measures and interpreting scores within the characteristics of a specific sample.

Within Pakistan, studies cited in the thesis have reported substantial levels of problematic social-media use among university students. The thesis also notes that students in Khyber Pakhtunkhwa may spend considerable time on digital media. Such patterns need to be understood in relation to local social environments, availability of recreational opportunities, academic demands, and family expectations rather than being interpreted solely as an individual behavioral problem.

2.3 Mental Health and Social Media Addiction

Mental health encompasses emotional well-being and the ability to cope with ordinary stresses, function productively, and participate in social life. For research purposes, the present study operationalized psychological distress through depression, anxiety, and stress symptoms. The DASS-21 is widely used to assess these three dimensions and was selected because it provides a concise measure suitable for university research.

A systematic review by Keles et al. (2020) found consistent associations between social-media use and depression, anxiety, and psychological distress among adolescents and young adults. Potential pathways include social comparison, cyberbullying, sleep displacement, reduced physical activity, and repeated reinforcement through likes, comments, and notifications. Valkenburg et al. (2022) further emphasized that the effects of social media are heterogeneous: the pattern and quality of use, social feedback, and individual differences matter.

The relationship can also be understood as reciprocal. Students experiencing loneliness, anxiety, or stress may turn to social media for immediate distraction, validation, or emotional relief. This can temporarily reduce discomfort but may reinforce repeated use. Over time, compulsive use may increase sleep disruption, social comparison, and withdrawal from offline activities, potentially contributing to further distress. A cross-sectional study cannot establish this direction of causality, but it can identify meaningful associations that warrant longitudinal investigation.

2.4 Social Media Addiction and Academic Performance

Academic performance reflects achievement and academic functioning, including attendance, attention, assignment completion, examination preparation, time management, and satisfaction with academic outcomes. Junco (2012) reported a negative association between aspects of Facebook



use and academic performance, particularly when social-media activity occurred during academic work. The thesis similarly proposes time displacement and attention fragmentation as central mechanisms.

Time displacement occurs when time that could be spent studying is allocated to social-media browsing. Attention fragmentation occurs when notifications, checking behavior, and rapid shifts between academic and social content interrupt sustained cognitive processing. Nighttime social-media use may further compromise sleep, which can influence memory consolidation, executive functioning, mood, and next-day academic engagement. These mechanisms provide plausible explanations for the negative relationship between BSMAS scores and APS scores observed in the present study.

2.5 Gender and Age Differences

International findings on gender differences are mixed. Some studies have reported greater problematic social-media use among females, whereas the Pakistani studies cited in the thesis reported higher BSMAS scores among male university students. Cultural expectations, differential monitoring, platform preferences, and opportunities for online engagement may contribute to these differences. Consequently, gender should not be assumed to have the same relationship with social-media addiction across cultures.

Age may also influence social-media behavior. Early adulthood involves identity formation, peer affiliation, and sensitivity to social evaluation. Younger university students may have less developed self-regulatory routines and may therefore be more vulnerable to compulsive use. As students gain academic experience and develop stronger routines, social-media use may become more regulated. The present study therefore compared students aged 18–20, 21–23, and 24–26 years.

2.6 Theoretical Framework

Uses and Gratifications Theory (UGT) proposes that media users are active participants who select media to satisfy particular needs, including social interaction, entertainment, information, self-expression, and emotional regulation. Social media can therefore become especially reinforcing when it reliably provides immediate gratification. A student who repeatedly uses social media to cope with loneliness, stress, or academic pressure may gradually develop a habitual pattern in which the platform becomes a preferred method of mood regulation.

Social Comparison Theory provides a complementary explanation for the psychological consequences of social-media use. Festinger (1954) proposed that people evaluate themselves partly by comparing their abilities, achievements, and social status with others. Social-media environments frequently present highly selected and idealized information about other people's lives. Repeated upward comparisons may contribute to dissatisfaction, lower self-evaluation, and psychological distress. Vogel et al. (2014) and subsequent work have applied these principles to social-media environments.

Together, UGT and Social Comparison Theory provide a useful conceptual framework for the present study. UGT helps explain why students repeatedly engage with social media and why use may become reinforcing; Social Comparison Theory helps explain one pathway through which



intensive engagement may be associated with psychological distress. Academic consequences can additionally emerge through time displacement, attention fragmentation, and sleep disruption.

3. Method

3.1 Research Design

A cross-sectional quantitative research design was used. The design was appropriate for examining relationships among social-media addiction, mental-health difficulties, and academic performance at a single point in time. A deductive approach was adopted: hypotheses were derived from established theoretical perspectives and prior empirical literature and were then tested using standardized measures and inferential statistics.

3.2 Participants and Sampling

The target population consisted of undergraduate students aged 18–26 years enrolled during the 2024–2025 academic year at three universities in Peshawar: Iqra National University, the University of Peshawar, and Islamia College University Peshawar. The final analytic sample consisted of 200 students, with equal numbers of males and females. The institutional distribution was 80 students from Iqra National University, 70 from the University of Peshawar, and 50 from Islamia College University Peshawar. Participants represented disciplines including Psychology, Business Administration, Computer Science, Education, and Social Sciences.

Purposive sampling was used to obtain the intended gender distribution across institutions. Eligibility required participants to be full-time undergraduate students aged 18–26 years who possessed a personal cell phone and social-media profiles. Students who did not use social media, could not complete the questionnaire independently, or did not provide consent were excluded. A total of 218 questionnaires were returned; 18 were excluded because they were incomplete or outside the age criteria, leaving 200 complete cases.

3.3 Measures

3.3.1 Bergen Social Media Addiction Scale

The BSMAS developed by Andreassen et al. (2016) consists of six items representing salience, mood modification, tolerance, withdrawal, conflict, and relapse. Each item is rated from 1 (very rarely) to 5 (very often), producing a total score from 6 to 30. Higher scores indicate more problematic social-media use. The thesis used the established problematic-use threshold of 24 or higher, or endorsement of a score of 3 or above on at least four items. The present sample demonstrated Cronbach's alpha of .81.

3.3.2 Depression Anxiety Stress Scale-21

The DASS-21 developed by Lovibond and Lovibond (1995) contains 21 items divided into Depression, Anxiety, and Stress subscales, each containing seven items. Responses range from 0 to 3 and refer to the previous week. Subscale totals may be multiplied by two for comparison with the original 42-item DASS severity norms. The current sample showed good internal consistency, with overall alpha reported as .86.

3.3.3 Academic Performance Scale



The APS used in the study was a 10-item self-report measure adapted from Junco (2012) and Iqbal et al. (2023). Items assess attendance, attention, assignment completion, examination preparation, time management, and perceived academic achievement. Items are rated from 1 (strongly disagree) to 5 (strongly agree), producing a total from 10 to 50; higher scores represent better self-reported academic performance. A pilot test with 30 students produced Cronbach's alpha of .83.

3.4 Reliability

Instrument	Items	Original α	Present α
BSMAS	6	.83	.81
DASS-21	21	.81-.84	.86
APS	10	.78-.83	.83

The reliability coefficients indicate satisfactory to good internal consistency for all three instruments. These values supported the use of the measures for the present sample and were consistent with reliability evidence reported in the thesis and cited validation literature.

3.5 Procedure and Ethics

Ethical clearance was obtained from the relevant institutional research authority before data collection. Participants received information about the study purpose, voluntary participation, confidentiality, and the right to withdraw. Printed questionnaires were administered in person with informed consent, while an equivalent Google Form was distributed through student groups and departmental communication channels. No names, identification numbers, or email addresses were collected. Data were stored securely and were accessible only to the researcher and supervisor. Participants were informed about the availability of university counseling services if completion of the mental-health questions caused distress.

3.6 Data Analysis

Data were analyzed using IBM SPSS Statistics Version 27. Data screening included inspection of missing values, outliers, and normality. Means, standard deviations, minimums, and maximums were calculated for continuous variables, while frequencies and percentages were calculated for demographic characteristics. Pearson product-moment correlations were used to test associations among social-media addiction, mental health, and academic performance. Simple linear regression models examined the predictive contribution of BSMAS scores to DASS-21 and APS scores. Independent-samples t-tests examined gender differences, and one-way ANOVAs compared the three age groups, followed by Tukey's HSD post-hoc comparisons where the omnibus test was significant. The significance level was set at $p < .05$.

4. Results



4.1 Descriptive Statistics

Variable	M	SD	Minimum	Maximum
BSMAS total	18.42	4.76	6	30
DASS-21 total	42.18	13.24	0	63
Depression	14.63	5.12	0	21
Anxiety	13.87	4.93	0	21
Stress	13.68	4.89	0	21
APS total	31.47	7.83	10	50

The mean BSMAS score of 18.42 was below the problematic-use cutoff of 24, indicating a moderate overall level of social-media addiction in the sample. Among the six BSMAS components, salience had the highest mean ($M = 3.14$, $SD = 0.97$), followed by withdrawal ($M = 3.12$, $SD = 0.91$). The mean DASS-21 total score was 42.18, with depression showing the highest subscale mean. The APS mean of 31.47 indicated moderate self-reported academic functioning.

4.2 Participant Characteristics

Characteristic	n	%
Male	100	50.0
Female	100	50.0
Iqra National University	80	40.0
University of Peshawar	70	35.0
Islamia College University Peshawar	50	25.0
1st year	55	27.5
2nd year	62	31.0
3rd year	54	27.0
4th year	29	14.5
Home residence	122	61.0
Hostel	48	24.0
Rented accommodation	30	15.0
Family income < PKR 30,000	60	30.0



PKR 30,000–60,000	92	46.0
Family income > PKR 60,000	48	24.0

The sample was evenly divided by gender. The largest academic-year group was second-year students. Forty percent of participants were from Iqra National University, 35% from the University of Peshawar, and 25% from Islamia College University Peshawar. Most participants lived at home, and the largest income category was PKR 30,000–60,000 per month.

4.3 Age-Group Differences

Outcome	18–20 years M(SD)	21–23 years M(SD)	24–26 years M(SD)	F	p
BSMAS	19.83 (4.62)	18.14 (4.81)	16.74 (4.73)	5.34	.006
DASS-21	44.37 (13.12)	41.63 (13.18)	39.84 (13.29)	2.47	.087
APS	28.84 (7.93)	31.88 (7.76)	33.62 (7.64)	4.17	.017

Social-media addiction differed significantly by age, $F(2, 197) = 5.34$, $p = .006$. The youngest group had the highest BSMAS mean and the oldest group the lowest. Tukey's HSD indicated a significant difference between the 18–20 and 24–26 groups ($p = .004$). Mental-health scores did not differ significantly by age, $F(2, 197) = 2.47$, $p = .087$. Academic performance differed significantly, $F(2, 197) = 4.17$, $p = .017$, with a significant post-hoc difference between the youngest and oldest groups ($p = .014$).

4.4 Gender Differences

Outcome	Male M(SD)	Female M(SD)	t(198)	p
BSMAS	19.14 (4.83)	17.70 (4.61)	2.14	.034
DASS-21	40.83 (12.97)	43.53 (13.42)	-1.41	.159
APS	30.92 (7.94)	32.02 (7.71)	-0.97	.333

Males reported significantly higher BSMAS scores than females, $t(198) = 2.14$, $p = .034$. However, the gender difference in DASS-21 scores was not significant, $t(198) = -1.41$, $p = .159$, and the difference in APS scores was also not significant, $t(198) = -0.97$, $p = .333$.

4.5 Correlations

Variable	BSMAS	DASS-21	Depression	APS
BSMAS	1.00	.54**	.51**	-.47**



DASS-21	.54**	1.00	.89**	-.43**
Depression	.51**	.89**	1.00	-.39**
APS	-.47**	-.43**	-.39**	1.00

Social-media addiction was significantly and positively correlated with overall psychological distress, $r(198) = .54$, $p < .001$. It was also significantly and negatively correlated with academic performance, $r(198) = -.47$, $p < .001$. DASS-21 scores were negatively correlated with academic performance, $r = -.43$, $p < .001$. The depression subscale correlated .51 with BSMAS scores.

4.6 Regression Analyses

Criterion	Predictor	B	SE	β	R^2	F	p
DASS-21	BSMAS	1.28	.18	.54	.29	50.57	<.001
APS	BSMAS	-.77	.15	-.47	.22	26.29	<.001

Social-media addiction significantly predicted mental-health difficulties, $F(1, 198) = 50.57$, $p < .001$, explaining 29% of the variance in DASS-21 scores. The standardized coefficient was $\beta = .54$. Social-media addiction also significantly predicted academic performance, $F(1, 198) = 26.29$, $p < .001$, explaining 22% of the variance in APS scores, with $\beta = -.47$. These findings indicate substantial associations but should not be interpreted as evidence of causation because of the cross-sectional design.

5. Discussion

The present study examined social-media addiction in relation to psychological distress and academic performance among 200 university students in Peshawar. Overall, the findings provide consistent evidence that higher levels of problematic social-media use are associated with poorer psychological and academic outcomes. The magnitude and direction of the correlations were theoretically coherent: BSMAS scores increased alongside DASS-21 distress and decreased alongside APS performance.

5.1 Social Media Addiction and Mental Health

The first major finding was a moderate-to-large positive relationship between social-media addiction and psychological distress, $r = .54$, $p < .001$. The regression model showed that BSMAS scores explained 29% of the variance in DASS-21 scores. This result is consistent with the systematic review by Keles et al. (2020) and with the Pakistani evidence cited in the thesis. It also supports the view that the psychological consequences of social-media engagement depend strongly on patterns of use rather than merely on access to social media.

Uses and Gratifications Theory provides one explanation for this association. Students may use social media to satisfy needs for companionship, entertainment, validation, distraction, or



emotional regulation. If a student experiences immediate relief after checking social media during stress or loneliness, the behavior may be reinforced. Over time, repeated use can become more automatic and difficult to control. When social media begins to interfere with sleep, academic tasks, or offline relationships, the same behavior that initially provided relief may become a source of additional stress.

Social Comparison Theory offers another mechanism. Social-media feeds commonly contain selective and idealized presentations of achievement, appearance, relationships, and lifestyle. Repeated exposure may encourage upward comparisons, especially among students who are already uncertain about their identity or academic standing. The resulting discrepancy between one's own perceived circumstances and the idealized lives of others may contribute to negative self-evaluation and distress. This mechanism is compatible with the present finding that depression was strongly associated with BSMAS scores.

5.2 Social Media Addiction and Academic Performance

The second major finding was a significant negative association between social-media addiction and academic performance, $r = -.47$, $p < .001$. Regression analysis showed that BSMAS scores explained 22% of the variance in APS scores. The finding is consistent with Junco (2012) and the academic-performance literature summarized in the thesis. It suggests that problematic use is associated with meaningful disruption of academic functioning, although social-media addiction is clearly not the only determinant of academic success.

Time displacement is one plausible mechanism. Every period spent compulsively scrolling or checking platforms reduces the amount of time available for reading, assignments, revision, or rest. Attention fragmentation may compound this effect: repeated checking interrupts sustained concentration and makes it more difficult to engage deeply with academic material. A further mechanism is sleep disruption, especially when social media is used late at night. Reduced sleep may affect attention, memory, executive functioning, and emotional regulation, all of which are relevant to learning.

The result also has implications for academic advising. Students who show sudden declines in attendance, assignment completion, or study time may benefit from discussion of their digital routines as one component of a broader academic assessment. The findings do not justify assuming that social media is the sole cause of poor performance; rather, they support considering problematic use as a modifiable behavioral factor.

5.3 Gender Differences

The study found significantly higher social-media addiction scores among male students than female students. This finding agrees with the Pakistani studies cited in the thesis but differs from some international studies reporting higher problematic use among females. Cultural context may be relevant. In the local setting, male students may experience fewer restrictions on mobile and social-media use, while female students may experience stronger family monitoring. Platform preferences and patterns of use may also differ.

Importantly, gender differences were not significant for mental health or academic performance. Female students had slightly higher mean DASS-21 scores and APS scores than males, but neither



difference was statistically significant. This suggests that gender may be related to the level or pattern of social-media use without necessarily producing different psychological or academic consequences once the level of problematic use is considered.

5.4 Age Differences

Age-group analyses showed significant differences in social-media addiction and academic performance. Students aged 18–20 had the highest BSMAS scores and lowest APS scores, whereas students aged 24–26 had the lowest BSMAS scores and highest APS scores. The significant difference between the youngest and oldest groups is compatible with the idea that self-regulation and academic routines strengthen across university years.

Mental health did not differ significantly across age groups. Although younger students reported somewhat higher distress, the omnibus difference did not reach statistical significance. This finding is important because it cautions against a simple developmental explanation for psychological distress. Students may experience academic, financial, family, interpersonal, or other pressures at different stages of university life. Thus, age may be associated more clearly with patterns of digital behavior and academic functioning than with overall psychological distress.

5.5 Theoretical Interpretation

Taken together, the findings provide support for the complementary use of Uses and Gratifications Theory and Social Comparison Theory. The former helps explain the reinforcing motivations that maintain social-media engagement, while the latter provides a pathway through which social-media environments may contribute to psychological dissatisfaction. The academic findings extend this framework by emphasizing behavioral mechanisms such as time displacement, attention fragmentation, and sleep disruption.

The results should nevertheless be interpreted cautiously. The cross-sectional design cannot determine whether social-media addiction produces mental-health and academic problems, whether distress and academic difficulty increase social-media use, or whether reciprocal processes occur. The findings are therefore best described as evidence of association and statistical prediction rather than causal effects.

6. Implications

6.1 Clinical and Counseling Implications

University counseling services can incorporate brief screening for problematic social-media use into routine student well-being assessments. The BSMAS is short and demonstrated satisfactory reliability in the present sample. Screening should not be treated as a diagnostic procedure; rather, it can identify students who may benefit from further assessment of digital habits, sleep, mood, anxiety, stress, academic functioning, and coping strategies.

Counseling interventions may focus on self-monitoring, stimulus control, time management, sleep hygiene, cognitive restructuring of unrealistic social comparisons, and development of alternative coping strategies. Students should be helped to identify the situations that trigger excessive checking—for example, boredom, loneliness, academic stress, or fear of missing out—and to develop healthier responses.



6.2 Educational and Institutional Implications

Universities can provide digital-wellness education during student orientation, particularly for first-year students, who showed the highest social-media addiction and lowest academic-performance means. Psychoeducation can cover attention management, notification control, planned social-media breaks, study routines, and the consequences of late-night use. Libraries and study areas may also provide designated periods or spaces for focused, device-minimized study.

Academic advisors can consider digital behavior when students report declining concentration, missed deadlines, or reduced study time. Institutional policy should emphasize responsible use rather than simply prohibiting social media, because social platforms also have legitimate educational and social functions. The goal should be balanced, intentional use.

6.3 Policy Implications

At institutional and provincial levels, digital-literacy initiatives can be integrated with student mental-health services. Universities may develop digital-wellness policies, awareness campaigns, and referral pathways for students showing signs of problematic use. The thesis also highlights the importance of considering how platform design and engagement-promoting features may encourage compulsive use. Policy discussions should therefore address both individual self-regulation and the broader digital environment.

7. Limitations and Future Research

Several limitations should be considered. First, the cross-sectional design prevents causal inference. Second, all three measures were self-report instruments and may be affected by recall and social-desirability bias. Third, the sample was limited to three universities in Peshawar and may not represent all university students in Khyber Pakhtunkhwa or Pakistan, particularly students in rural settings, professional programs, or other institutional contexts. Fourth, potentially important confounding variables such as family conflict, academic self-efficacy, social support, sleep quality, and prior mental-health difficulties were not included in the regression models.

Future research should use longitudinal designs to determine temporal relationships among social-media addiction, mental health, and academic performance. Following students from their first year through graduation could clarify whether problematic use precedes later difficulties or whether psychological and academic problems lead students to use social media as a coping mechanism. Objective indicators, such as smartphone usage records and official CGPA data, should be incorporated where ethical and feasible.

Future studies should also investigate mediating mechanisms, including sleep disruption, study time, academic self-efficacy, attention, and emotional regulation. Platform-specific analyses could determine whether short-form video environments such as TikTok, Instagram Reels, and YouTube Shorts are associated with different patterns of problematic use. Ecological momentary assessment could capture changes in social-media behavior, mood, and academic engagement throughout the day. Finally, randomized controlled trials are needed to test cognitive-behavioral interventions, digital-detox programs, time-management interventions, and university psychoeducation programs.



8. Conclusion

This study provides evidence that social-media addiction is meaningfully associated with both psychological distress and academic functioning among undergraduate students in Peshawar. Students with higher BSMAS scores reported greater depression, anxiety, and stress symptoms and lower academic performance. Social-media addiction explained 29% of the variance in DASS-21 scores and 22% of the variance in APS scores. Male students reported higher social-media addiction than females, while age differences were evident for social-media addiction and academic performance but not for mental health.

The findings support the relevance of Uses and Gratifications Theory and Social Comparison Theory while also highlighting behavioral pathways such as time displacement, attention fragmentation, and sleep disruption. From a practical perspective, problematic social-media use represents a potentially modifiable behavior that can be incorporated into university counseling, academic advising, and student-wellness programs. However, the findings should not be interpreted causally. Stronger conclusions will require longitudinal and intervention research using larger and more diverse Pakistani samples.

Overall, the study emphasizes the need for a balanced approach to social media in higher education: students should not be discouraged from beneficial digital communication, but they should be supported in developing intentional, self-regulated, and psychologically healthy patterns of use.

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