

Exploring the Relationship of Social Media Addiction, Depression and Cyberbullying Perpetration Among University Students

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Abstract

Extensive research has examined social media addiction, depression, and cyberbullying perpetration among young adults; however, such investigations remain limited in the context of Pakistani university students. This study aimed to explore the relationship between social media addiction and cyberbullying perpetration, as well as the mediating role of depression. Using a cross-sectional correlational design and purposive sampling, data were collected from 235 university students in Pakistan, aged 18 to 30 years, representing both genders. The study employed the Bergen Social Media Addiction Scale (BSMAS), the depression subscale of the DASS-21, and the Perpetration Subscale of the Cyberbullying Perpetration and Victimization Questionnaire. The findings indicated that social media addiction was significantly and positively correlated with both depression and cyberbullying perpetration. Further analysis using Hayes PROCESS Macro 4.2 (Model 4) revealed that depression partially mediated the relationship between social media addiction and cyberbullying perpetration, as the direct effect of social media addiction on cyberbullying perpetration remained significant. These results underscore the importance of addressing emotional distress in interventions. The study highlights practical implications for developing targeted strategies to reduce excessive social media use and mitigate cyberbullying behaviours among university students in Pakistan.

Keywords: Social Media Addiction, Depression, Cyberbullying Perpetration.

Introduction

The world is becoming increasingly technologized day by day. The advent of the smartphone has been a tremendous invention, making communication more convenient and easier. People also form online relationships across the globe (Astapova et al., 2016; Khan et al., 2024). Smartphone use is closely associated with the use of social media apps, which serve purposes such as communication, business, and education—for example, WhatsApp, Instagram, Facebook, TikTok, YouTube, and many more (Carrier, 2018). Although there are countless advantages, there are also disadvantages when individuals become addicted to these platforms, i.e., their lives may become miserable, daily routines are disrupted, and functioning is impaired. In addition, studies have shown a significant relationship between social media use, depression, and cyberbullying perpetration among young adults, particularly university students (Chen et al., 2024; Muhtar, 2025; Kuss & Griffiths, 2017; Pahariya et al., 2025).

Depression can be defined as a persistent low mood experienced most of the day, nearly every day, accompanied by negative thoughts, loneliness, indecisiveness, fatigue, loss of interest in pleasurable activities, suicidal thoughts, hopelessness, feelings of worthlessness, appetite

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disturbances, and sleep problems (insomnia or hypersomnia). These symptoms last for at least two weeks, cause clinical distress, and impair daily functioning (Bizzozero-Peroni et al., 2025; Yasugaki et al., 2025). An earlier study examined the relationship between social media addiction and depression among 384 students from three Afghan universities. Using Kimberly Young's Internet Addiction Test and the Centre for Epidemiologic Studies Depression Scale, analyses revealed a significant positive correlation (Haand & Shuwang, 2020). Another study examined the effects of social media addiction on depression among 419 Turkish adults aged 18–62. Using the *Social Media Dependence Scale* and *Beck Depression Inventory*, results showed a significant positive relationship between social media addiction and depression (Aydin et al., 2021). Similarly, a cross-sectional study investigated social media addiction and depression among 603 undergraduate pharmacy students in Mosul, Iraq, during November–December 2021. Using the *Social Media Addiction Questionnaire* and the *Patient Health Questionnaire (PHQ-9)*, findings showed that 38% were at risk of addiction, with a significant positive correlation between addiction and depression. Moreover, using social media for more than four hours daily was identified as a predictor of depression (Shanshal et al., 2024).

Cyberbullying perpetration can be defined as sending, posting, or sharing negative, harmful, false, or mean content about someone else. It involves the aggressive, repeated, and intentional use of electronic platforms to harm, harass, or humiliate a victim (Barlett & Bibi, 2025; Khan & Bibi, 2025). A recent study explored the relationship between social media addiction and cyberbullying perpetration among 156 Pakistani university students (aged 18–25 years; 78 men, 78 women). Results showed a strong positive correlation (Awan et al., 2025). Another study examined this relationship among 496 adolescents in Pakistan and found a strong positive association between the two variables. These findings highlight the prevalence of problematic digital behaviours in this population and emphasise the need for preventive strategies to reduce cyberbullying and excessive social media use (Hussain et al., 2023).

According to the General Aggression Model, repeated exposure to media and online interactions, when accompanied by depressive symptoms, can contribute to cyberbullying and aggressive behaviour (Bushman & Anderson, 2002). This theory is supported by a study conducted on young Pakistani adults, particularly students, which revealed that social media addiction affects aggression through the mediating role of depression. The study emphasised the importance of mental health awareness programs in educational sectors (Shahid et al., 2024). Another similar study reported that problematic social media use is significantly associated with depression and cyberbullying perpetration among Pakistani university students (Anwar et al., 2025).

Rationale

Literature depicts that social media addiction is linked with harmful online behaviours, i.e., cyberbullying perpetration. However, research exploring this relationship in Pakistan remains limited, especially regarding the mediating role of depression. This study examines how social media addiction predicts cyberbullying perpetration, aiming to bridge this gap and provide implications for reducing problematic digital behaviours among university students in Pakistan.

Objectives

1. To examine the relationship between social media addiction, depression, and cyberbullying perpetration among university students.
2. To investigate the mediating role of depression in the relationship between social media addiction (predictor) and cyberbullying perpetration (outcome) among university students.

Hypotheses

1. Social media addiction will be positively and significantly associated with depression and cyberbullying perpetration among university students.
2. Depression will significantly mediate the relationship between social media addiction (predictor) and cyberbullying perpetration (outcome) among university students.

Methodology

Research Design and Sampling

The study adopted a cross-sectional correlational design and employed a purposive sampling technique to collect data from 235 university students in Pakistan. Participants were aged 18 years or older and had been using social media for at least one year.

Instruments

Data were gathered using four standardized instruments: the *Bergen Social Media Addiction Scale (BSMAS)*, the *Depression Subscale of the Depression Anxiety Stress Scale (DASS)*, the *Perpetration Subscale of the Cyberbullying Perpetration and Victimization Questionnaire*, and the *Basic Empathy Scale (BES)*. The BSMAS, a six-item Likert scale (1–5) developed by Andreassen et al. (2016), demonstrated an internal consistency of 0.80. The DASS, a 21-item shorter version with a four-point Likert scale (ranging from "Did not apply to me [0]" to "Applied to me most of the time [4]"), was used to measure depression, anxiety, and stress. Developed by Dr. Sydney Lovibond and Dr. Peter F. Lovibond in 1995, the scale has Cronbach's alpha values of 0.88 for depression, 0.82 for anxiety, and 0.90 for stress, with higher scores indicating higher levels of these conditions. This study utilized only the depression subscale to measure depression. The *Cyberbullying Perpetration Subscale of the Cyberbullying Perpetration and Victimization Questionnaire*, comprising 20 items on a 5-point Likert scale, measured cyberbullying perpetration and demonstrated an internal consistency of 0.93 (Lee et al., 2017).

Ethical Considerations and Procedures of the Study

The study adhered to APA 7 ethical standards. Permission to use the questionnaires was obtained from the respective authors. Prior to data Collection, informed consent was secured, and participants were informed that they could withdraw at any stage without consequences. Participation was voluntary, and completing the questionnaires took approximately 20 to 35 minutes. Participants were thanked for their time and contribution.

Results

Table 1: Demographic Characteristics of Participants (N=235)

Characteristics	<i>F</i>	%	<i>Mean</i>	<i>SD</i>
Gender				
Men	162	69		
Women	73	31		
Age			23.28	3.28
Educational Level				
Bachelor	117	50		
Master	76	32		
PhD	42	18		
Socioeconomic Status				
Lower Class	123	52		
Middle Class	66	28		
Upper Class	46	20		

Note: *f*= Frequency, % = Percentage, *SD*= Standard Deviation

The results indicate that most participants were men (69%, $n = 162$), while women comprised 31% ($n = 73$) of the sample. The average age of the respondents was 23.28 years ($SD = 3.28$). With respect to education, half of the participants were bachelor's students (50%, $n = 117$), followed by master's students (32%, $n = 76$) and PhD students (18%, $n = 42$). In terms of socioeconomic status, the largest proportion of respondents belonged to the lower class (52%, $n = 123$), whereas 28% ($n = 66$) were from the middle class and 20% ($n = 46$) from the upper class.

Table 2: Correlational Analysis (N=235)

Characteristics	1	2	3
Social media addiction	-	.13*	.59**
Depression		-	.36**
Cyberbullying Perpetration			

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

The above table depicts that social media addiction has significant relationship with depression and cyberbullying perpetration. Furthermore, depression has significant and positive relationship with cyber bullying perpetration.

Table 3: Mediation Analysis Using Hayes Process Macro 4.2, Model 4 (N=235)

		Consequences						
		Depression (M)			CP (Y)			
Antecedents		β	SE	P		β	SE	P
Social Media Addiction (X)	a	.11	.05	.03	c'	1.39	.12	<.001
Depression (M)	-				b	.87	.14	<.001
Constant	I	5.48	.91	<.001	I			
		$R^2 = .01$, $F(1, 233) = 4.41$			$R^2 = .66$, $F(2, 232) = 90.83$			
		* $p < .05$			*** $p < .001$			

Note: * $p < .05$, *** $p < .001$, CP= Cyberbullying Perpetration

The results indicate that social media addiction has a significant positive effect on depression ($\beta = .11^*$, $SE = .05$, * $p < .05$). Furthermore, social media addiction directly and significantly predicts cyberbullying perpetration ($\beta = 1.39^{***}$, $SE = .12$, *** $p < .001$). In addition, depression also has a significant positive effect on cyberbullying perpetration ($\beta = .87^{***}$, $SE = .14$, *** $p < .001$).

Table 4: Indirect Effect (N=235)

Indirect Path	Standardized Effect	SE	LLCI	ULCI
Depression	.09	.05	.01	.22

Note: SE= Standardized Error, LLCI= Lower Level Confidence Interval, ULCI= Upper Level Confidence Interval

The indirect effect results indicate that depression significantly mediates the relationship between social media addiction (predictor) and cyberbullying perpetration (outcome). The standardised indirect effect was .09 ($SE = .05$), with a 95% confidence interval ranging from .01 to .22, not including zero, which confirms the significance of the mediation effect.

Discussion

There is substantial literature regarding social media addiction and cyberbullying among young adults; however, a gap remains in understanding the mediating role of depression among university students in Pakistan. Excessive social media use may increase vulnerability to negative emotions and contribute to greater involvement in cyberbullying behaviours. Therefore, the present study aimed to examine these mechanisms among university students to address this gap in the literature and provide relevant implications for the Pakistani context, where online social interactions are rapidly expanding among youth.

The first hypothesis of the study was supported by Pearson product-moment correlation analysis, which revealed that social media addiction was significantly associated with depression and cyberbullying perpetration. These results align with previous findings showing that social media addiction is significantly and positively associated with cyberbullying perpetration among high school students (Kircaburun et al., 2020). The present findings also correspond with Shahid et al. (2024), who reported a positive association between social media addiction and depression among young adults, particularly students. Similarly, Shahid et al. (2025) found that online gaming addiction significantly relates to cyberbullying perpetration among young adults. In the Pakistani context, Shahid et al. (2024) reported that social media addiction among young adults is significantly associated with aggression. Additionally, Zahra et al. (2025) found that problematic or excessive social media use among Pakistani university students is linked with cyberbullying perpetration. These findings suggest that the cultural emphasis on social reputation and peer validation in Pakistan may amplify the risks associated with excessive online engagement, leading to higher emotional distress and aggressive online behaviours.

The second hypothesis proposed that depression would mediate the relationship between social media addiction and cyberbullying perpetration among university students. The mediation analysis using Hayes PROCESS Macro 4.2 (Model 4) indicated that social media addiction had a significant direct effect on cyberbullying perpetration. Although the indirect effect of social media addiction on cyberbullying perpetration via depression was also significant, the overall model is considered partially significant due to the strong direct effect. This finding aligns with Shahid et al. (2024), who reported that depression partially mediated the relationship between social media addiction and aggression among young adults, particularly students. Conversely, Shahid et al. (2024) found that negative emotions, including depression, tension, and anxiety, did not significantly mediate the relationship between online Ludo game addiction and aggression, which is inconsistent with the current study. Similarly, Anwar et al. (2025) reported that depression did not mediate the relationship between problematic social media use and cyberbullying perpetration among students.

One possible explanation for the partial mediation of depression observed in this study is that, among Pakistani university students, the pathway from social media addiction to cyberbullying may be influenced by emotional distress such as sadness, loneliness, or frustration. In the Pakistani cultural context, where peer approval and social comparison are highly valued, excessive engagement with social media may amplify emotional vulnerability, thereby increasing the likelihood of engaging in aggressive online behaviours.

Conclusion

The present correlational quantitative study concluded that social media addiction was significantly and positively associated with both depression and cyberbullying perpetration among university students. Mediation analysis using Hayes PROCESS Macro 4.2 (Model 4) indicated that while depression significantly mediated the relationship between social media addiction and cyberbullying perpetration, the mediation was partial. This is because social media addiction also has a substantial direct effect on cyberbullying perpetration. Thus, the

study addresses a gap in the previous literature, highlighting that depression partially explains the pathway from social media addiction to cyberbullying, and provides a basis for targeted interventions and practical implications.

Limitations and Recommendations

The first limitation of the study is the relatively small sample size of 235 participants, which restricts the generalizability of the findings. Future research should employ larger and more representative samples. Second, the study's cross-sectional design limits the ability to draw causal inferences; therefore, longitudinal studies are recommended to track changes over time. Third, there was an imbalance in gender distribution and among students at the bachelor's, master's, and PhD levels and socioeconomic status, i.e. lower class, middle class and upper class. This imbalance prevented meaningful analysis of demographic differences. Future studies should ensure balanced representation across these groups.

Implications

A key strength of this study is that it addresses a gap in the literature by investigating the mediating role of depression in the relationship between social media addiction (predictor) and cyberbullying perpetration (outcome) among university students in Pakistan. This focus allows for the development of evidence-based implications tailored to this population. The findings have important practical implications for addressing social media addiction, depression, and cyberbullying perpetration among university students. Universities should implement targeted programs that promote healthy online behaviour, digital literacy, and self-regulation skills. Mental health professionals can support students by providing counselling, workshops, and awareness campaigns that emphasise the adverse effects of excessive social media use and cyberbullying. Parents should be encouraged to foster supportive home environments that nurture empathy and resilience, while government law enforcement agencies should strengthen legal measures and awareness initiatives against cyberbullying. Additionally, the government should facilitate employment opportunities for university students, such as paid internships, to help them utilise their time productively and reduce excessive engagement with social media.

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