

Problematic Social Media Use and Cyberbullying Perpetration Among Young Adults in Pakistan: Narcissistic Traits as a Mediator, Social Support and Empathy as Moderators

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Abstract

Social media has made our lives easier in many ways, such as in business, communication, and education; however, its problematic use can be detrimental to mental health. The objective of this study is to examine the effects of problematic social media use on cyberbullying perpetration, mediated by narcissistic traits and moderated by empathy and social support among young adults in Pakistan. The study adopted a cross-sectional correlational design and purposive sampling technique to collect data from 257 individuals aged 18 to 25 (M age = 22.18, SD age = 1.91), including 192 men and 65 women, who had been using social media for at least the past year. Five scales were utilized: the Bergen Social Media Addiction Scale, the perpetration subscale of the Cyber-bullying Perpetration and Victimization Questionnaire (to measure cyberbullying perpetration only), the Narcissism Short Form Scale (to measure narcissistic traits), the Basic Empathy Scale, and the Social Support Scale (Short Form). The correlational results indicate that problematic social media use has a positive and significant association with narcissistic traits and cyberbullying perpetration. In contrast, its association with social support and empathy is negative but insignificant. According to Hayes Process 4.1 (Model 1), narcissistic traits significantly and positively mediate the association between problematic social media use and cyberbullying perpetration.

Keywords: Problematic Social Media Use, Narcissistic Traits, Cyberbullying Perpetration.

Introduction

Social media is a blessing of modern technology, enabling people to share information, communicate, and utilize it for business and education (Alas et al., 2013; Spieler et al., 2021; Sapkota et al., 2018). However, excessive or problematic use of social media can have detrimental effects on mental health. Terms such as problematic social media use and social media addiction are often used interchangeably to describe maladaptive or excessive engagement with social media platforms (Batool et al., 2025; Carbonell & Panova, 2017; Fatima et al., 2025; Fareed et al., 2024; Lin et al., 2021; Shahid et al., 2024).

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Studies have shown a strong association between problematic social media use and cyberbullying, which involves sending, posting, or sharing negative, harmful, false, or mean content about someone else. It can also include sharing personal or private information, leading to embarrassment or humiliation. In some cases, cyberbullying crosses the line into unlawful or criminal behavior, particularly among young adults (Giumetti & Kowalski, 2022; Lee et al., 2023; Parmar et al., 2024). A study examining the direct and indirect associations between cyberbullying victimization, cyberbullying perpetration, and problematic social media use found that aggression plays a mediating role. The study involved 496 adolescents who completed surveys assessing these variables. Structural equation modeling revealed that cyberbullying victimization was directly and indirectly related to both cyberbullying perpetration and problematic social media use (Hussain et al., 2013).

Narcissistic traits are characterized by an unreasonably high sense of self-importance, a constant need for excessive admiration, and a belief in one's entitlement to special treatment. Individuals with these traits often exaggerate their achievements and expect recognition as superior, even without corresponding accomplishments (Di Pierro et al., 2019; Vaughn et al., 2007; Van Schie et al., 2020). Research has demonstrated a significant association between excessive social media use and narcissistic traits (Andreassen et al., 2017; Bailey, 2024; McCain & Campbell, 2018). A study exploring the relationship between vulnerable narcissism and problematic social networking site use (PSNSU) found that motives for using social networking sites (SNSs) mediate this association. The study involved 344 SNS users aged 18–30 years. Participants completed self-report questionnaires assessing vulnerable narcissism, motives for SNS use (coping, conformity, enhancement), and symptoms of PSNSU (e.g., preference for online social interactions, mood regulation, cognitive preoccupation, compulsive use, and adverse outcomes). Structural equation modeling revealed that both positive (enhancement) and negative (coping and conformity) motives partially mediated the relationship between vulnerable narcissism and PSNSU symptoms. The findings suggest that individuals with vulnerable narcissism may develop PSNSU as both a compensatory strategy to cope with psychosocial difficulties and a means of seeking gratification (Musetti et al., 2022). A previous study, based on the Uses and Gratifications Theory, explored personality traits and cyberbullying motives among 598 Turkish university students. Males are cyberbullied more than females. Moral disengagement and aggression were linked to revenge and harm, narcissism to dominance, and online disinhibition to entertainment. Findings emphasize early intervention and alternative activities to reduce cyberbullying behaviors (Tanrikulu & Erdur-Baker).

Social support can be defined as a network of family, friends, neighbors, and community members that is available in times of need to provide psychological, physical, and financial help (House et al., 2018; Schwarzer et al., 2004; Gottlieb & Bergen, 2010). Studies have shown that social support mitigates the detrimental effects of excessive social media and mobile phone use (Shahid et al., 2024; Zhang et al., 2023). Empathy is the ability to emotionally understand what other people feel, see things from their point of view, and imagine oneself in their place. Essentially, it involves putting oneself in someone else's position and feeling what they are feeling (Jami et al., 2024; Yavuz et al., 2024). Empathy has been shown to moderate the effect of problematic social media use on cyberbullying perpetration (Wang et al., 2022; Hood & Duffy, 2018).

There is minimal literature regarding problematic social media use and cyberbullying perpetration, particularly concerning the mediating role of narcissistic traits and the moderating roles of social support and empathy in Pakistan. Therefore, the objective of this study is to address this gap and provide implications for young adults by investigating the association between problematic social media use (predictor) and cyberbullying perpetration (outcome) via the mediator (narcissistic traits) and moderators (social support and empathy).

Hypotheses

1. Problematic social media use is likely to significantly and positively relate to narcissistic traits and cyberbullying perpetration among young adults in Pakistan.
2. Problematic social media use is likely to be negatively and significantly related to social support and empathy among young adults in Pakistan.
3. Narcissistic traits are likely to mediate the relationship between problematic social media use significantly (independent variable) and cyberbullying perpetration (dependent variable) among young adults in Pakistan.
4. Social support and empathy are likely to significantly moderate the association between problematic social media use (independent variable) and cyberbullying perpetration (dependent variable) among young adults in Pakistan.

Methodology

The study adopted a cross-sectional correlational design and utilized a purposive sampling technique to collect data from 257 individuals with a mean age of 22.18 (SD = 1.91), including 192 men and 65 women aged 18 to 25. Participants had been using social media for at least one year and possessed an intermediate level of education. The study employed five questionnaires: the Bergen Social Media Addiction Scale (BSMAS), the Narcissism shorter version 16-item scale (to measure narcissistic traits), the perpetration subscale of the Cyber-bullying Perpetration and Victimization Questionnaire (to measure cyberbullying perpetration), the Basic Empathy Scale (BES), and the Social Support Scale (Short Form).

The Bergen Social Media Addiction Scale (BSMAS), a six-item Likert scale (1–5) developed by Andreassen et al. (2016), demonstrated an internal consistency of 0.8. The Narcissism shorter version 16-item scale, developed by Ames et al. (2006), uses a Likert range from 0 to 1 and measures narcissistic traits with a Cronbach's alpha of 0.72. The Basic Empathy Scale (BES), introduced by Jolliffe and Farrington (2006), comprises 20 items on a 5-point Likert scale, with a Cronbach's alpha of 0.83. The Short Form Social Support Questionnaire, developed by Searson (1987), consists of 6 items rated on a 6-point Likert scale, with reliability ranging from 0.80 to 0.90. The cyberbullying perpetration subscale of the Cyber-bullying Perpetration and Victimization Questionnaire, comprising 20 items on a 5-point Likert scale, was used to measure cyberbullying perpetration and demonstrated an internal consistency of 0.93 (Lee et al., 2017).

The study adhered to APA 7 ethical standards. First, permission to use the questionnaires was obtained from the authors. A total of 300 participants were approached, of which 272 met the inclusion criteria and 257 completed the questionnaire. Before data collection, informed consent was obtained, clearly stating that participants could withdraw from the study at any point without facing adverse consequences. Participation was voluntary, and participants took approximately 25 minutes to complete the questionnaires. They were thanked upon completion. Data analysis was conducted using SPSS version 27.

Results

Table 1: Relationship of Study Variables (N= 257)

Variables	1	2	3	4	5
1.PSMU	-	.20**	-.005	-.06	.35**
2.Narcissitic Traits		-	-.10	-.22**	.42**
3.Social Support			-	.25**	.20**
4.Empathy				-	-.17**
3.Cyberbullying Perpetration					-

Note: * $p < .05$, ** $p < .01$, PMSU= Problematic Social Media Use

The above table depicts that problematic social media use is significantly and positively related to narcissistic traits and cyberbullying, while it is negatively but not significantly associated with social support and empathy. Moreover, narcissistic traits are negatively and significantly associated with empathy, positively and significantly associated with cyberbullying, and negatively but not significantly associated with social support. Social support is positively and significantly associated with empathy and cyberbullying perpetration. Empathy is negatively and significantly associated with cyberbullying.

Mediation Analysis

Table 2: Regression Coefficients for Study Variables In Study 257 Participants.

Antecedents	Consequences						
	Narcissistic Traits (M)			CP (Y)			
	β	SE	P	β	SE	P	
PSMU (X)	a	.12	.03	.001	c'	.60	.12 .001
Narcissistic Traits (M)	-			b	1.28	.19	.001
Constant	I	11.30	.64	.001	I	30.74	2.94 .001
$R^2=.04$ F(1, 255)=10.98 $P<.001$				$R^2=.25$ F(2, 254)=44.06 $P<.001$			

Note: *** $p<.001$, PSMU= Problematic Social Media Use, CP= Cyberbullying Perpetration

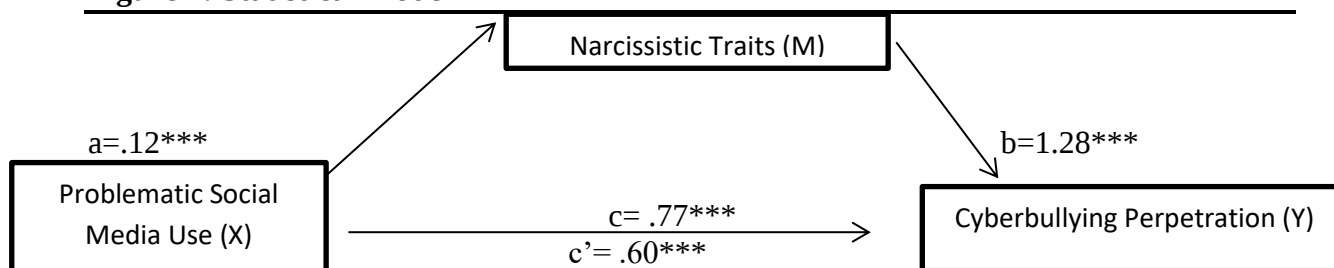
According to the table above, there is a positive significant direct effect of problematic social media use on narcissistic traits ($\beta = .12^{***}$, $SE = .03$, $p < .001$). Furthermore, direct effect of problematic social media use is significantly positive on cyberbullying perpetration ($\beta = .60^{***}$, $SE = .12$, $p < .001$). However, the effect of narcissistic traits on cyberbullying perpetration is also significantly positive ($\beta=1.28^{***}$, $SE=.19$, $p<.001$).

Table 3: Indirect Effect (N=257)

Indirect Path	β	B	LLCI	ULCI
Narcissistic Traits	.16	.07	.03	.12

Indirect effects depicts that narcissistic traits is significantly mediating the effect of problematic social media use and cyberbullying perpetration.

Figure 1: Statistical Model



Moderation Analysis

Table 4: Regression Coefficients for Problematic Social Media Use, Social Support and Cyberbullying Perpetration (N=257)

Variables	β	SE	P	R^2	F	LLCI	ULCI
				.19	20.40		
PSMU	-.13	.34	.69			-.81	.54
SS	-.63	.36	.08			-1.35	.08
PSMU X SS	.06	.02	.005			.01	1.20

Note: ** $p < .01$, PSMU= Problematic Social Media Use, SS=Social Support

Hayes' Process Model 1 was utilized to examine the moderating role of social support between problematic social media use and cyberbullying perpetration. According to the table above, there is a non-significant direct effect of problematic social media use on cyberbullying perpetration ($\beta = -.13$, $SE = .34$, $p > .05$). Furthermore, social support is not significantly cyberbullying perpetration ($\beta = -.63$, $SE = .36$, $p > .05$). The combined effect of problematic social media use and social support on cyberbullying perpetration is significant ($\beta = .06^{**}$, $SE = .02$, $p < .01$), indicating that social support significantly moderates the impact of problematic social media use on cyberbullying perpetration.

Table 5: Regression Coefficients for Problematic Social Media Use, Empathy and Cyberbullying Perpetration (N=257)

Variables	β	SE	P	R^2	F	LLCI	ULCI
				.20	21.49		
PSMU	-1.13	.47	.01			-2.06	-.21
Empathy	.76	.16	.001			-1.09	-.44
PSMU X Empathy	.04	.01	.001			.02	.06

Note: ** $p < .01$, PSMU= Problematic Social Media Use

Hayes' Process Model 1 was utilized to examine the moderating role of empathy between problematic social media use and cyberbullying perpetration. According to the table above, there is a significant direct effect of problematic social media use on cyberbullying perpetration ($\beta = -1.13^{**}$, $SE = .47$, $p < .01$). Furthermore, empathy is significantly effecting cyberbullying perpetration ($\beta = .76^{***}$, $SE = .16$, $p < .001$). The combined effect of problematic social media use and empathy on cyberbullying perpetration is also significant ($\beta = .04^{***}$, $SE = .01$, $p < .001$), indicating that empathy significantly moderates the impact of problematic social media use on cyberbullying perpetration.

Discussion

There is substantial literature regarding problematic social media use and cyberbullying among young adults; however, there is still a gap when it comes to the mediating role of narcissistic traits and the moderating role of social support and empathy, which has not been explored yet, specifically in Pakistan. Therefore, the objective of this study is to explore the mediating role of narcissistic traits and the moderating role of social support and empathy between the independent variable, problematic social media use and the outcome variable, cyberbullying perpetration among young adults in Pakistan.

The first hypothesis of the study is supported by Pearson product-moment correlational analysis, as a significant and positive association was found between problematic social media use, narcissistic traits, and cyberbullying perpetration among young adults in Pakistan. The

results of this study align with the findings of a previous study, which reported that problematic social media use was significantly and positively associated with cyberbullying perpetration among high school students (Kircaburun et al., 2020). Another study also aligns with the results of this study, revealing that among 208 youth participants, problematic social media use was found to be positively and significantly associated with narcissism (Giancola et al., 2025). The reason behind the positive and significant association of problematic social media use, narcissistic traits, and cyberbullying perpetration could be individuals seeking dominance using online social media platforms. The anonymity of online apps increases aggressive and narcissistic tendencies, particularly among those with pre-existing narcissistic traits, leading them to engage in cyberbullying due to these characteristics. Pakistan is a country with limited digital literacy, and awareness regarding manipulative variables like narcissistic traits and cyberbullying perpetration is limited, which could also explain the significant results of this study.

The second hypothesis of the study states that problematic social media use is likely to be negatively and significantly associated with empathy and social support among young adults in Pakistan. However, the correlational analysis supported the negative association of problematic social media use with empathy and social support, but these associations were not significant. The results of our study are similar to those of a recent study, which found that Ludo Star game addiction was negatively but not significantly associated with social support among Pakistani young adults (Mussawar et al., 2024). Previous and recent studies have shown that empathy and excessive social media use among adolescents and young adults are negatively associated (Dailey et al., 2020; Kleinbaum et al., 2015; Meral & Altan, 2025). The reason for the negative association of problematic social media use with empathy and social support could be the collectivistic society of Pakistan, where elders, particularly family members, are highly regarded. The empathetic characteristics of the participants may also contribute to this negative association. However, limited technological literacy and a lack of awareness are common in Pakistani culture, which might have diluted the association, explaining why the negative association is not significant among young adults in Pakistan.

The third hypothesis of the study is significantly supported by Hayes Process Model 4, as narcissistic traits significantly and positively mediate the association between the independent variable, problematic social media use and the dependent variable, cyberbullying perpetration among young adults in Pakistan. The results of our study align with those of previous studies, which indicate that problematic social media use leads to narcissistic traits, and these traits, in turn, lead to cyberbullying perpetration among adolescents and young adults (Xu & Zheng, 2022; Marengo et al., 2021; Craig et al., 2020; Casale & Banchi, 2020; Kircaburun & Griffiths, 2018; Fan et al., 2019; Tanrikulu & Erdur-Baker, 2021). The reason behind narcissistic traits being a significant mediator could be that narcissistic individuals often seek validation online, display dominance, and crave attention. The anonymity of social media platforms fosters these traits, making them more likely to engage in cyberbullying through threatening messages or texts, as they exploit the opportunities provided by online platforms.

The fourth hypothesis of the study is fully supported by Hayes Process Model 1, as empathy and social support significantly and positively moderate the association between problematic social media use and cyberbullying perpetration among young adults in Pakistan. The results of our study align with those of a recent similar study, which found that empathy acts as a significant moderator between Ludo game addiction and aggression among young adults in Pakistan (Mussawar et al., 2024). Previous and recent studies have shown that social support mitigates the effects of problematic social media use, and among young adults and adolescents, the social support of family, peers, and the environment protects them from both cyberbullying victimization and perpetration (Hellfeldt et al., 2020; Shahid et al., 2024; Mushtaq et al., 2020; Feng & Kwon, 2020). The reason for empathy being a significant moderator could be that high

levels of empathy serve as a protective factor, mitigating the effects of problematic social media use on harmful behaviors like cyberbullying perpetration, as individuals become more sensitive to others online. The reason behind social support being a significant moderator could be the collectivistic culture of Pakistan, where strong family support may reduce bullying perpetration behaviors online.

Conclusion

The objective of the study is affirmed by Hayes Process 4.1, which identifies narcissistic traits as a significant mediator and social support and empathy as significant moderators between problematic social media use and cyberbullying among young adults in Pakistan. The study provides valuable literature and fills a gap in previous research. Based on the findings, valuable implications can be provided for young adults in Pakistan.

Implications

The findings of this study affirm its objectives and highlight the need for actionable implications for young adults in Pakistan who struggle with problematic social media use and cyberbullying perpetration. First, it is essential to promote help-seeking behavior among young adults, encouraging them to seek psychological assistance from mental health professionals. Mental health professionals can facilitate this by organizing seminars, webinars, and workshops to spread awareness about mental health, digital literacy, and the negative and detrimental effects of problematic social media use, narcissistic traits, and cyberbullying perpetration. Workshops should also be arranged to train parents in fostering their children's social skills, such as time management, to help them overcome problematic social media use and cyberbullying. Additionally, parents should be encouraged to create a supportive environment for their children, ensuring they feel emotionally secure, as insecurity may give rise to narcissistic traits. Awareness programs should also educate parents on the importance of supporting their children for better academic performance, and the concept of empathy should be emphasized. The government also needs to take legal steps against cyberbullying, and the Federal Investigation Agency (FIA) must take serious notice of this matter while spreading awareness in society.

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