SOCIAL MEDIA ADDICTION AND CYBERBULLYING PERPETRATION: A COMPARATIVE STUDY OF GENDER IN PAKISTAN

Original Article

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ABSTRACT

Background: The rapid growth of social media has transformed communication, education, and business interactions globally. However, its overuse is increasingly linked to maladaptive behaviors, particularly among youth. Cyberbullying perpetration, a rising concern, is strongly associated with problematic social media engagement. While international literature is extensive, studies focusing on the Pakistani population—particularly gender-based differences—remain limited. Understanding these dynamics is essential for developing culturally relevant interventions that promote digital well-being among university students.

Objective: This study aimed to examine the relationship between social media addiction and cyberbullying perpetration among young adults in Pakistan, with a particular focus on gender differences.

Methods: A cross-sectional correlational design was adopted. Using purposive sampling, data were collected from 156 university students (78 men and 78 women), aged 18–25 years, all of whom were enrolled in BS or MS programs at Higher Education Commission (HEC)-recognized universities and had used social media for at least one year. Two validated instruments were employed: the Bergen Social Media Addiction Scale (BSMAS; $\alpha = 0.80$) and the Cyberbullying Perpetration Subscale ($\alpha = 0.93$) of the Cyberbullying Perpetration and Victimization Questionnaire. Data were analyzed using SPSS v27.

Results: The mean age of participants was 22.30 ± 1.97 years. A strong positive correlation was found between social media addiction and cyberbullying perpetration ($r = .66$, $p < .01$). Men scored significantly higher than women on social media addiction ($M = 16.48 \pm 4.38$ vs. 14.06 ± 5.12; $t(154) = 3.13$, $p = .002$) and cyberbullying perpetration ($M = 58.88 \pm 10.99$ vs. 54.51 ± 11.36; $t(154) = 2.44$, $p = .01$).

Conclusion: The findings highlight a significant gender disparity in social media addiction and cyberbullying behavior among university students in Pakistan. Preventive strategies tailored to young men may be effective in reducing online aggression and fostering safer digital environments.

Keywords: Adolescent Behavior, Cyberbullying, Digital Media, Gender Differences, Pakistan, Social Media, University Students.

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INTRODUCTION

Social media has emerged as a defining feature of modern communication, transforming how individuals interact, share information, and engage in educational and commercial activities (1,2). While it offers immense benefits, concerns are increasingly being raised about its potential to foster compulsive usage behaviors. Terms such as "problematic social media use" and "social media addiction" have been used to describe persistent, maladaptive patterns of engagement with social networking platforms, often leading to psychological and behavioral disturbances (3). Among these, one of the most concerning is the link between excessive social media use and cyberbullying—deliberate and repetitive online behavior intended to harm or humiliate others. This includes the sharing of offensive or private information and, in more serious cases, can escalate into criminal acts, particularly among young adults (4–6). Evidence has consistently pointed to a positive association between social media addiction and cyberbullying behavior. A recent cross-sectional study conducted among 257 young adults in Pakistan identified a significant correlation between higher addiction scores and greater involvement in cyberbullying, highlighting a troubling pattern of online aggression linked to unregulated digital habits (7). Similarly, a study on medical students found that 13% admitted to engaging in cyberbullying, with males more frequently identified as both perpetrators and victims. Interestingly, social media addiction correlated with victimization but not directly with perpetration, suggesting gender-specific pathways in the development of such behaviors (8). Another investigation involving 496 adolescents further demonstrated that cyberbullying victimization could indirectly lead to perpetration, with aggression partially mediating this link across both male and female participants (9).

A broader meta-analysis covering over 99,000 individuals identified several psychological and behavioral predictors of cyberbullying perpetration, including risky use of information and communication technologies, moral disengagement, depression, and exposure to traditional bullying. Victimization was similarly associated with poor digital hygiene and offline bullying experiences. The study also found that these relationships varied depending on geographical context, age, and the social media platforms in use (10). Supporting this, research from Cameroon showed that although both genders accessed social media for education and commerce, male students experienced higher levels of cyberbullying, including harassment and account hacking (11). In Pakistan, a study observed that social media addiction strongly correlated with aggressive tendencies in young adults aged 18–25 years, with men showing significantly higher scores for both aggression and addiction. Gender differences persisted in subsequent work, where men again scored higher in addictive behaviors and aggression, although levels of social connectedness remained similar between genders (12). These findings are often interpreted through the lens of Social Role Theory, which suggests that societal expectations shape gendered behavior. Men are typically socialized to display assertiveness and dominance, potentially predisposing them to aggressive or risk-taking behaviors online, while women are more inclined toward emotional expression and relational communication (13).

Several studies have echoed these gendered patterns. Research found that males were more likely to perpetrate cyberbullying, while females were more inclined to report such experiences (14). A study similarly reported a higher prevalence of cyberbullying among male university students (15). Further analysis among Turkish university students confirmed that both social media addiction and exposure to conflict were significantly more prevalent in males and younger users (16). A meta-analysis of 39 studies supported this trend, finding that men are generally more involved in cyberbullying than women, though cultural and methodological variations influenced these outcomes (17). While international research has extensively explored gender disparities in social media addiction and cyberbullying, limited attention has been paid to this issue within the Pakistani context. Given the cultural, societal, and technological nuances of this region, further investigation is warranted. Therefore, the current study aims to assess gender differences in social media addiction and cyberbullying behavior among young adults in Pakistan, with the objective of informing targeted digital literacy and mental health interventions.

METHODS

The study employed a cross-sectional correlational research design to examine the relationship between social media addiction and cyberbullying perpetration among young adults in Pakistan. A purposive sampling strategy was adopted to recruit 156 participants, comprising an equal number of men (n = 76) and women (n = 76), aged between 18 and 25 years. All participants were students enrolled in BS or MS programs at Higher Education Commission (HEC)-recognized universities and had been using social media actively for a minimum duration of one year. Individuals who did not meet these criteria or failed to provide informed consent were excluded from the study. Data collection was conducted using two standardized self-report instruments. The first tool was the Bergen Social Media Addiction Scale (BSMAS), developed by Andreassen, which includes six items rated on a five-point Likert scale ranging from 1 (very

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rarely) to 5 (very often), measuring core addiction components such as salience, tolerance, mood modification, relapse, withdrawal, and conflict. This scale has demonstrated sound psychometric properties with a reported internal consistency of 0.80 (1). The second instrument was the Cyberbullying Perpetration Subscale of the Cyberbullying Perpetration and Victimization Questionnaire, consisting of 20 items scored on a five-point Likert scale. This subscale assesses the frequency of engagement in various forms of cyberbullying behaviors and exhibited high internal reliability, with a Cronbach's alpha of 0.93 in previous validation studies (2).

Ethical considerations were rigorously observed throughout the research process in alignment with the American Psychological Association's (APA) 7th edition guidelines. Ethical approval was secured from the institutional review board. Informed consent was obtained from all participants prior to data collection. The consent form clearly outlined the voluntary nature of participation, the right to withdraw at any point without penalty, and assurances regarding confidentiality and data protection. All participants were debriefed and thanked upon completion of the study, which required approximately 15 minutes per participant. Out of the 211 students initially approached for participation, only 156 provided complete and analyzable responses, resulting in a response rate of approximately 74%. Data were analyzed using IBM SPSS Statistics version 27. Descriptive statistics were computed to summarize demographic variables, and inferential statistics such as Pearson's correlation and independent sample t-tests were employed to examine relationships and gender differences in social media addiction and cyberbullying perpetration. Assumptions for parametric testing, including normality and homogeneity of variances, were assessed and met.

RESULTS

The socio-demographic data revealed that the sample included 156 participants, equally divided between men (n = 78, 50%) and women (n = 78, 50%), with a mean age of 22.30 years (SD = 1.97). A majority of participants were enrolled in bachelor's degree programs (n = 103, 66%), while the remaining were pursuing master's degrees (n = 53, 34%). Descriptive statistics showed that the mean score for social media addiction across the total sample was 15.27 (SD = 4.90), while the mean score for cyberbullying perpetration was 56.69 (SD = 11.35). Pearson's correlation analysis revealed a statistically significant and strong positive relationship between social media addiction and cyberbullying perpetration (r = .66, p < .01), indicating that participants with higher levels of social media addiction were more likely to engage in cyberbullying behaviors. To examine gender differences in study variables, an independent samples t-test was conducted. Results indicated that men reported significantly higher social media addiction scores (M = 16.48, SD = 4.38) compared to women (M = 14.06, SD = 5.12), with a statistically significant difference (t(154) = 3.13, p = .002, Cohen's d = 0.50), reflecting a medium effect size. Similarly, men also scored higher on cyberbullying perpetration (M = 58.88, SD = 10.99) than women (M = 54.51, SD = 11.36), with this difference also being statistically significant (t(154) = 2.44, p = .01, Cohen's d = 0.39), indicating a small to moderate effect size.

Further analysis was conducted to assess whether educational level had any influence on social media addiction and cyberbullying perpetration. Participants were divided into two groups based on their academic standing—bachelor's and master's students. The results revealed that bachelor's students reported a higher mean score for social media addiction (M = 15.53, SD = 0.59) compared to master's students (M = 14.05, SD = 0.46), and this difference was statistically significant (t(154) = 15.86, p = 0.000). Similarly, cyberbullying perpetration scores were higher among bachelor's students (M = 56.41, SD = 0.73) than master's students (M = 53.67, SD = 0.59), and this difference also reached statistical significance (t(154) = 23.69, p = 0.000). These findings suggest that academic level may play a meaningful role in influencing both addictive and aggressive online behaviors.

Table 1: Socio-demographic Characteristics of Participants (N= 156)

Sample Characteristics	f	%	M	SD
Age			22.30	1.97
Gender				
Male	78	50		
Female	78	50		
Educational Level				
Bachelor	103	66		
Master	53	34		

Note: f=frequency, %=Percentage, M=Mean, SD=Standard deviation

Table 2: Correlation among study variables(N=156).

Variables	1	2	M	SD
1. Social Media Addiction	-	.66**	15.27	4.90
2. Cyberbullying Perpetration		-	56.69	11.35

Note. *p<.05. **p<.01

Table 3: Gender Differences in Social Media Addiction and Cyberbullying Perpetration Among University Students (N = 156)

Variables	Men(n=78)		Women(n=78)				
	M	SD	M	SD	t(154)	p	Cohen's d
SMA	16.48	4.38	14.06	5.12	3.13	.002	.50
CBP	58.88	10.99	54.51	11.36	2.44	.01	.39

Note. **p<.01, ***p<.001, M= mean, SD= Standard Deviation, SMA= Social Media Addiction, CBP= Cyberbullying Perpetration

Table 4: Comparison of Social Media Addiction and Cyberbullying Perpetration by Educational Level (N = 156)

Variables	Bachelor Mean	Bachelor SD	Master Mean	Master SD	t(df = 154)	p-value
Social Media Addiction	15.53	0.59	14.05	0.46	15.86	0.000
Cyberbullying Perpetration	56.41	0.73	53.67	0.59	23.69	0.000

Note: All comparisons were significant at p < .001 level. Mean = M, Standard Deviation = SD.
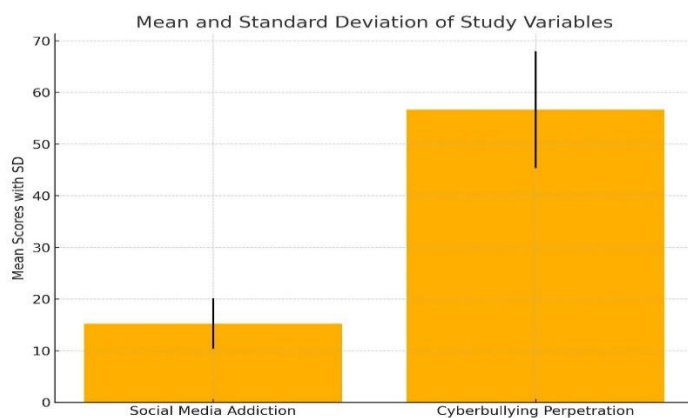

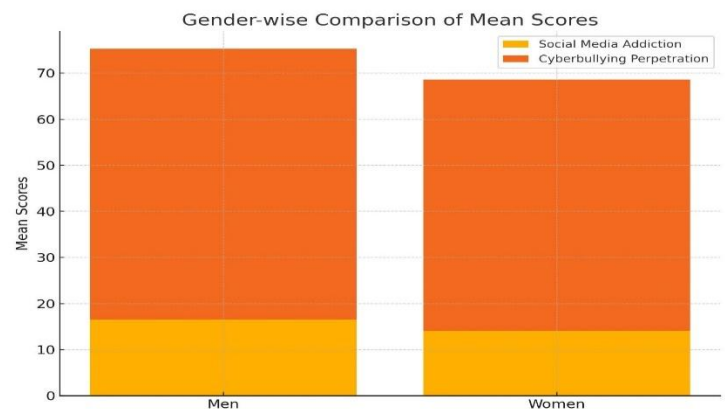*Figure 2 Mean and Standard Deviation of study Variables*

Figure 1 Gender-wise Comparison of Mean Scores

DISCUSSION

The findings of the present study provide meaningful insight into the gendered patterns of social media addiction and cyberbullying perpetration among university students in Pakistan. A significant positive correlation between the two variables was identified, suggesting that increased engagement with social media is linked to a higher likelihood of engaging in cyberbullying behaviors. Moreover, male participants scored notably higher on both social media addiction and cyberbullying perpetration than their female counterparts, highlighting a gender-based vulnerability that warrants attention in both academic research and policy development (18,19). These outcomes align with existing literature, where male students have consistently been shown to exhibit greater involvement in problematic digital behaviors, including both excessive use of online platforms and aggressive interactions (20). For instance, studies in different cultural settings have similarly demonstrated higher cyberbullying perpetration rates among males, frequently attributed to behavioral patterns such as risk-taking, prior victimization, and less emotional regulation (21,22). Excessive use of social networking platforms has often been a contributing factor to this association. Protective mechanisms like cognitive empathy have been noted to mitigate the risk, yet their influence appears less pronounced among male participants. This may point toward a complex interplay of social norms and biological predispositions, where societal expectations permit or even reinforce aggressive tendencies among men. In contexts like Pakistan, where patriarchal structures remain dominant, men tend to experience fewer restrictions in digital spaces, which

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may normalize their prolonged and unregulated use of social media. Furthermore, biological factors such as elevated testosterone levels have been associated with impulsivity and aggression, potentially intensifying such behavioral outcomes in males (23).

A notable strength of the study lies in its use of standardized, psychometrically validated tools to assess both variables, which enhances the credibility of the results. Additionally, the inclusion of equal numbers of male and female participants allowed for a balanced gender-based comparison, contributing to the reliability of the gender findings. The significant correlation identified between addiction and aggression behaviors adds empirical support to ongoing concerns around the psychosocial consequences of digital overuse in youth populations. Nonetheless, several limitations warrant careful consideration. The modest sample size of 156 participants may limit the generalizability of the findings beyond the university context, particularly in a culturally diverse country like Pakistan. Future studies should aim to incorporate larger and more demographically varied populations to strengthen external validity. The purposive sampling technique, while practical, also limits representativeness and may introduce selection bias. A stratified or probability-based sampling method could yield more generalizable results by ensuring that all relevant subgroups are proportionately included. Furthermore, the sample was confined to university students, excluding individuals from non-academic backgrounds such as employed or unemployed youth, whose online behaviors may differ due to varying daily routines, responsibilities, and social exposures.

Another limitation pertains to the educational imbalance within the sample, with a larger proportion of participants enrolled in bachelor's programs. Although subgroup analysis later revealed significant differences in both addiction and perpetration scores by education level, this was not initially accounted for in the design phase. Ensuring a more balanced academic representation in future studies and incorporating educational level as a planned variable of analysis from the outset could enhance the depth of interpretation. The study's implications are of particular relevance for the development of evidence-based interventions within academic institutions. The gender disparity observed underscores the need for tailored approaches that address the specific vulnerabilities of male students. University mental health services, digital literacy campaigns, and peer-led support programs can play a critical role in reducing the prevalence of problematic online behaviors. Emphasis should be placed on educating students about the risks associated with excessive social media use, promoting emotional regulation skills, and encouraging positive peer interactions in digital spaces. Considering the sociocultural context is essential when designing these interventions to ensure they are both effective and culturally sensitive. In sum, the findings contribute to the broader discourse on digital well-being, particularly in under-researched populations such as university students in South Asia. The observed link between social media addiction and cyberbullying perpetration, moderated by gender and educational level, provides a compelling basis for future inquiries aimed at mitigating digital harms and promoting healthier online environments.

CONCLUSION

This study concluded that male university students in Pakistan are more prone to social media addiction and cyberbullying perpetration, with a significant positive relationship observed between the two behaviors. These findings underscore the urgent need for gender-responsive strategies and institutional support systems to address the psychosocial impact of excessive digital engagement. Universities hold a vital role in promoting digital responsibility through workshops, curriculum integration, and structured routines that balance online and offline life. Equipping educators, counselors, and student affairs departments with early identification tools and intervention protocols can help mitigate risks and foster healthier online behaviors. In culturally collectivistic societies, collaborative efforts involving families can further reinforce responsible technology use. Overall, the study contributes to the growing body of evidence advocating for comprehensive, culturally sensitive interventions to safeguard students' mental and emotional well-being in the digital age.

AUTHOR CONTRIBUTION

Author	Contribution
Andleeb Awan*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Saira Jabeen	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Sana Tabassum	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published

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Author	Contribution
Jahangir Ashraf	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Aasia Sameer Arif	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Shah Jahan Ashraf	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Zeeshan Mehfooz Sindhu	Contributed to study concept and Data collection Has given Final Approval of the version to be published
Ahmed Javed	Writing - Review & Editing, Assistance with Data Curation

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