

Bisma Jamil¹, Asma Mukhtar², Fozia Bibi^{1*}**Abstract**

Social media serves as a communication platform that fosters connections in the digital space. However, problematic interactions with these platforms can negatively impact psychological well-being. Numerous studies indicate that too much social media use leads to several mental health problems. The objective of the study was to investigate the mediating role of online networking in the relationship between social media addiction and aggression among young adults. In this study, the purposive sampling and correlation research design were used. A number of $N=270$ participants (158 men, 112 women) aged 18 to 30 years, ($M=22.79$, $SD=2.26$) participated in the study. Three assessment tools were utilized: The Bergen Social Media Addiction Scale, Buss and Perry Aggression Questionnaire Short Form and the Revised Social Connectedness Scale. Results show a non-significant positive relationship between social media addiction and online networking. However, the aggression is significantly correlated with both social media addiction and online networking in young adults. Using Hayes' Model 4, the results reveal a partially significant influence of social media addiction on aggression mediated by online networking, with direct and total effects being significantly positive, while the indirect effect is not significant. The results show in gender comparison that men had significant higher levels of addiction of social media, and although, their scores for online networking and aggression were higher than those of women, these differences were not statistically significant. The study discusses its findings in the context of existing literature and concludes with recommendations and limitations, along with suggestions for improving youth welfare.

Keywords: Aggression, Mediating Role, Online Networking, Social Media Addiction, Young Adults

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Introduction

The Social media purposes as a platform for the exchange of concepts, information, interests and ideas through virtual interactions (Khan et al., 2014; Reid & Weigle, 2014). It

provides notable advantages in sectors such as education, business, and international relations (Jiang et al., 2023). However, overuse can result in social media addiction, adversely affecting professional, educational, and social functioning (Tarafdar et al., 2020). This addiction spans various platforms, including Facebook, YouTube, Instagram, Twitter, and WhatsApp, leading to detrimental emotional and social behaviors (Shi et al., 2020).

Mental health can be defined as the ability to manage life's stresses and contribute positively to one's community. This definition presents specific challenges for adolescents, who experience significant behavioral and identity transformations during these years, potentially leading to broader developmental issues (Michaud & Fombonne, 2005). Recent

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reviews indicate an increase in serious mental health problems among university students, along with barriers to seeking help (Storrie et al., 2010).

A study during the COVID-19 pandemic with 709 students in Indonesia found that greater social media addiction was linked to higher levels of depression, while strong family ties and religiosity were associated with better mental health (Sujarwoto et al., 2023). Focus group discussions with 54 adolescents highlighted concerns that social media might contribute to mood disorders, cyberbullying, and addictive behaviors (O'Reilly et al., 2018). Additionally, research involving 603 young adults revealed a strong association between excessive use of depression, anxiety, stress and social media use. This highlights the need to understand how technology impacts mental health (Ergün et al., 2023).

This study operationalizes mental health issues through aggression, which is defined as feelings of animosity or anger expressed in violent or hostile actions towards others or property (Buss & Perry, 1992). Aggression includes various manifestations, such as verbal aggression, physical aggression, hostility, and anger (McCauley, 2017). Online networking refers to the sense of belonging and psychological connection that individuals experience through online platforms (Jordan, 2014; Notley, 2009; Pantic, 2014). This contrasts with isolation and includes the deep, intimate relationships formed in online spaces (Kasavana et al., 2010; Subrahmanyam et al., 2008).

Social media addiction is on the rise, particularly among young people and Pakistani youth, with excessive use linked to smartphone dependency (Khan et al., 2024). During the pandemic, younger adults felt more loneliness than older individuals; potentially due to the excessive engagement with social media (Bonsaksen et al., 2021; Mumtaz et al., 2021). Additionally, a positive correlation has been found among aggressive behaviour and digital gaming addiction, with males showing slightly higher average scores than females

(Shahid et al., 2024). Previous research reported in young adults that aggressive behaviour and online networking are significantly influences with each other (Reed et al., 2016).

Despite changes in societal norms, issues of violence and aggression persist (Cockburn, 2004; Magnani, 2011; Spierenburg, 2001). Social media platforms can foster an aggressive culture by exposing users to violent content, which may encourage aggressive behaviors, especially among students (Patton et al., 2014; Peterson & Densely, 2017; Slater et al., 2003). Studies since the early 2000s indicate that digital media—such as texting, gaming, and social media—has largely supplanted traditional forms of media like newspapers and television (Twenge et al., 2019). Recent study depicts social media addiction has a strong influence over aggression (Shahid et al., 2024), with significant associations reported in Asian countries, including South Korea and China. While the literature indicates a strong association among aggression and social media addiction, there is limited research on the mediating role of online networking in Asia, particularly in Pakistan. The aim of the study to explore in young adults online networking as a moderator among aggression social media addiction.

Objectives

1. To find out the mediating role of online networking in the relationship among social media addiction and aggression among young adults.
2. To find out the relation between online networking, aggression and media addiction.

Hypotheses

H1: It was hypothesized that there would be a significant relation between online networking, aggression and media addiction.

H2: It was hypothesized that the social online networking would mediate the relationship between social media addiction and aggression in young adults.

H3: It was hypothesized that there would be significant gender differences are expected in

online networking, aggression and social media addiction, among young adults, a significant gender differences are expected.

Method

Research Design

In this study, the correlational research design was used.

Sample Selection

In this study data collected by using a purposive sampling method. The sample contained *N*=270 participants, containing both employed and unemployed persons, all of whom had at least an intermediate level of education. The age range selected for this study was 18 to 30 years.

Inclusion and Exclusion Criteria

Participants included in the study were Pakistani citizens aged 18 to 30 who owned smartphones and used social media, and who had at least an intermediate level of education.

Measures

Demographic Questionnaire

This questionnaire gathered information regarding participant’s demographic characteristics. The demographic consists of age, gender, employment status and education.

Bergen Social Media Addiction Scale (BSMAS)

BSMAS was introduced by Andreassen et al. (2017). This scale contained six items, rated on

a scale from 1 (very rarely) to 5 (very often). The reliability coefficient of 0.88 was reported on original scale.

Social Connectedness Scale Revised (SCS-R)

The SCS-R, developed by Lee et al. (2001). The social connectedness scale revised 20 items with answers ranging from 1 (strongly disagree) to 6 (strongly agree). The original scale reported a reliability of 0.92. The use of this scale in this study is to measure online networking.

Buss and Perry Aggression Questionnaire Shorter Form (BPAQ-SF)

This 29 items questionnaire was designed by Buss and Perry in 1992. The items range from 1 (extremely uncharacteristic) to 5 (extremely characteristic). A revised version, featuring 12 items, was updated by Bryant and Smith in 2001 and will be used in this study to measure aggression in young adults.

Ethical Considerations

In compliance with the APA ethical code of conduct, researchers warranted there is no psychological and physical harm arose to the population. Each participant's secrecy was strictly and inform consent given to the participant to complete the questionnaire make sure. Furthermore, methods were applied to maintain the integrity of the data collection and to prevent any deception

Result

Table 1

Demographic Characteristics of Young Adults (N=270)

Sample Characteristics	F	%	M	SD
Gender				
Men	158	59		
Women	112	41		
Age			22.8	2.26
Qualification				
Intermediate	139	51		
Bachelor	115	42		
Master	18	7		
Employment Status				

Employed	60	22
Unemployed	210	78

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

This indicates that the study included a total of 158 men (59%) and women 112 (41%) with a mean age of 22.8 and 2.26 standard deviation in years. In terms of educational qualifications, most participants were intermediate graduates (139, 51%), followed by those with bachelor's

degrees (115, 42%), and a smaller group with master's degrees (18, 7%). Regarding employment status, the majority of participants were unemployed (210, 78%), while a smaller proportion were employed (60, 22%).

Table 2
Correlation among Study Variables (N=270)

Variables	1	2	3	<i>M</i>	<i>SD</i>
1.Social Media Addiction	-	.11	.13*	23.16	4.35
2.Online networking			.14*	67.46	12.6
3. Aggression				33.21	8.13

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

The above table depicts the non-significant but positive association between online networking and social media addiction. In contrast, the relationship between aggression

and online networking is significantly positive. The relationship among aggression and social media addiction is significantly positive.

Table 3
Regression Coefficients for Study Variables in Young Adults (N=270)

Antecedent	Consequent							
	ON (<i>M</i>)			A (<i>Y</i>)				
		<i>B</i>	<i>SE</i>	<i>P</i>		<i>B</i>	<i>SE</i>	<i>P</i>
SMA (<i>X</i>)	<i>A</i>	.31	.17	.08	<i>c'</i>	.22	.11	<.05
ON (<i>M</i>)					<i>B</i>	.08	.03	<.05
Constant	<i>I</i>	60.26	4.17	<.001	<i>I</i>	22.22	3.53	<.001
		R ² =.01				R ² =.03		
		F=3.08, <i>p</i> =.08				F=4.95, <i>p</i> =.007		

p*<.05, *p*<.01, ****p*<.001

Note. SMA= Social Media Addiction, ON= Online Networking, A= Aggression

The Table 3 depicts the outcomes of the mediation analysis which shows a non-significant total direct influence of social media addiction on online networking ($\beta = .31, SE = .17, p >.05$). Additionally, the findings reveal a significant direct influence of

social media addiction on aggression ($\beta = .22^*, SE = .11, p < .05$). Furthermore, online networking significantly affects aggression through a direct path ($\beta = .08^*, SE = .03, p < .05$).

Table 4
Indirect Effect (N=270)

Indirect Path	Effect	Standardized Estimate	Lower Level	Upper Level
Online Networking	.02	.01	-.001	.04

The indirect effects indicate that the total indirect effect of social media addiction is statistically insignificant on aggression through online networking.

Table 5
Gender Differences in Study Variables (N=270)

Variables	Male(n=158)		Female(n=112)		t(160)	P	Cohen's d
	M	SD	M	SD			
SMA	23.82	4.31	22.23	4.26	3	<.01	0.37
Online networking	68.59	13.51	65.86	11.29	1.74	.08	0.21
Aggression	33.34	8.05	33.04	8.3	.29	.76	0.03

p*<.05. *p*<.01, ****p*<.001

Note. *M*= Mean, *SD*= Standard Deviation, SMA= social media addiction

The Table 5 depicts that male scored significantly higher on social media addiction than their women counterparts. Additionally, men's scores on online networking and

aggression are also higher than those of women, although this difference is not significant.

Discussion

This research aimed to explore the mediating influence of online networking between aggression and social media addiction, to address gaps in previous studies, particularly in the Asian country of Pakistan.

The first assumption of study is considerably proved as correlation analysis revealed that social media addiction is linked to online networking positively but not significant. In contrast, aggression shows a significantly positive association with both online working and social media addiction among young adults. Online networking may not mediate the relationship between predictor social media addiction and outcome aggression due non or less aggressive networking between individuals.: The other factor that may contributes to non-significant results could be self-reported data and defense mechanism by participants while filling the data. The study

findings are congruent to recent studies indicating that the addiction of social media can lead to depression and aggression (Fareed et al., 2024). According to Khan et al. (2024), the addiction of smartphone addiction and online social connectedness are strongly linked to each other. ; Bashir et al., 2024 reported in a study that in cyber psychology supports these results, demonstrating a strong positive link between social connectedness and aggression while playing games like PUBG and Ludo Star game The non-significant yet positive association between social media addiction and online networking may stem from participants engaging in other activities, such as watching videos and posting pictures, rather than solely connecting and chatting.

The second proposition of the study is also considerably proved as mediation analysis using Hayes Process 4.1 demonstrated that

online networking partially mediates the association between aggression and social media addiction. This study shows significantly positive and direct effect of aggression and addiction of social media. Although the indirect effect remained insignificant. This finding is consistent with studies indicating that Ludo Star game addiction is significantly associated with aggression through the mediator of social connectedness (Bashir et al., 2024)., however, Shahid et al. (2024) concluded that in Pakistan young adults, social connectedness moderates the link between social media addiction and aggression. It is crucial to differentiate between online social connectedness and physical social connectedness, as online networking may elevate aggression, whereas physical social connectedness tends to reduce it.

Furthermore, mean differences for gender shows that in men social media addiction was significantly higher than women, while on online networking and aggression, though these differences were not statistically significant. Our findings are consistent with research indicating a higher prevalence of the addiction internet gaming and social media among males in university settings (Burén et al., 2021; Fareed et al., 2024). Additionally, our results align with meta-analytic studies suggesting that men tend to exhibit more aggression than women, both online and offline, influenced by cultural norms, societal expectations, and biological factors like testosterone levels (Archer, 2004). Conducting the study in Pakistan may explain that in men indicates higher scores in aggression, addiction of social media and online networking, as the men are considered superior to women and have better access to technology than women being considered as inferior beings.

Recommendations and Limitations

Only sample size of 270, is a first limitation of the study, which limit the generalization of the findings. The future research should aim for a larger sample size to better represent the

broader population and achieve a more balanced distribution in terms of education and employment status to avoid biased conclusions. Additionally, the imbalance among subgroups regarding education and employment hindered us to find the differences between groups' categories, so maintaining balance among demographic subgroups would facilitate more robust analyses. The length of the scale measuring online networking may have also led to participant fatigue; thus, future studies should consider using shorter versions of these scales or breaking up the questionnaire to alleviate this issue. Pre-testing or piloting the questionnaire to assess response quality could be beneficial as well. Furthermore, this study did not specifically investigate various social media platforms, which could provide insights into which platforms are more addictive and likely to lead to aggression. Future research should consider examining specific social media apps as variables.

Implications

This study aims to raise awareness among Pakistani young populations about the risks associated with excessive usage of social media, highlighting the importance of seeking support from parents and mental health professionals if they struggle with social media addiction. It is essential for the government to recognize the detrimental impact of excessive social media use on youth and to make informed decisions regarding regulation. Parents are encouraged to spend quality time with their children and provide emotional support, as loneliness can contribute to social media addiction. Seminars will be conducted to spread awareness regarding adverse effects of problematic social media use and to inform individuals about available support options, such as psychotherapy, for those struggling with excessive use. The primary goal is to enhance mental health awareness in Pakistan. Furthermore, promoting physical activities, including exercise, meditation, and yoga, will be

emphasized for their positive impacts on both physical and mental well-being.

Ethics Statement

All the ethical standards of APA were met. Informed consent was taken in written form from all the respondents to participate in this study.

Contribution of Authors

Bisma Jamil: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft
Asma Mukhtar: Methodology, Writing - Reviewing & Editing
Fozia Bibi: Methodology, Writing - Reviewing & Editing

Conflict of Interest

There is no conflict of interest declared by the authors.

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Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [F.B.] upon the reasonable request.

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