

RESEARCH ARTICLE

Mediating Role of Social Anxiety in the Relationship between Social Media and Aggression among Adolescents

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Abstract: Adolescents often experience significant pressure to gain and maintain social media engagement because it is indicative of their status in society, importance, and worth to others. Adolescents who frequently engage with social media often exhibit signs of social anxiety and aggressive behavior. The objective of the current study is to investigate the mediating role of social anxiety in the association between social media and aggression in adolescents. The study employed a cross-sectional correlational research approach, with data acquired by surveys. A sample of 300 adolescents was selected from various educational institutions, aged 16 to 18 years, using a convenient sampling technique. Data was collected by using Social Media Engagement Questionnaire (Przybylski et al., 2013), the Social Interaction Anxiety Scale (Mattick & Clarke, 1998), and the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992). Research indicates a significant positive correlation between social media usage, social anxiety, and aggression among adolescents. This study investigated the relationship between social media usage and aggression, while assessing the mediating effect of social anxiety on these connections among adolescents. The findings of the multiple linear regression analysis indicate that social media positively predicts social anxiety ($R^2 = .10^*$) and aggression ($R^2 = .40^{***}$) in adolescents. The outcomes of the current study will enhance awareness of adolescents' aggression and social anxiety in connection with their social media usage.

Keywords: Adolescents, Aggressive Behavior, Aggression, Social Anxiety, Social Media

Introduction

Social media is type of platform which encourages user-to-user communication and promotes users generated content (Triyanto, 2022). People from all over the globe are now able to interact by reducing boundaries because of the spread of social media (Zhang et al., 2022). Currently, 4.74 billion people engage in social media all over the world, making up 58% of the world's residents, and it is currently estimated that the average global user of social media has nine accounts on each platform (Dean, 2020).

Adolescents nowadays have expectations for how much focus they ought to receive on social media, including viewpoints, feedback, and or prefers on whatever they share (Kusmanto et al., 2021). In addition, high levels of social media engagement can lead to alcohol dependence, negatively impact one's well-being result in poor learning outcomes (Chan et al., 2022), and reduce one's sense of fulfillment (Ismail, 2020). In 2018, only 35 million of Pakistan's 198.9 million people were engaged in social media usage across various social media platforms (Ayub, 2018). In Pakistan in January 2022, there were 82.90 million daily users of social media (Kemp, 2022).

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Social anxiety refers to a group of either physical or psychological symptoms that show excessive sensitivity, dread, and stress for social interaction with others (Jefferies & Ungar, 2020). Social anxiety is the feeling of unease and nervousness that an individual experiences when engaging in social interactions (Baltaci, 2019). Adolescents who use social media frequently experience social anxiety that can lead to difficulty sleeping, exhaustion from school, and symptoms of depression, which can be harmful to the growth of adolescents (Busch & McCarthy, 2021). The majority of social anxiety conditions start in adolescence or early childhood, and as they progressively worsen, they ultimately grow into a medical condition (Kalin, 2021).

Learning achievement, interaction with others and motivation in society and relationships abilities are all seriously impaired by social anxiety (Briot et al., 2020). Related factors that increase a person's susceptibility to social anxiety are major familial conflict, a poor quality of daily life, emotional management techniques, psychological awareness, and societal assistance are a few of these (Singh et al., 2020).

Aggression is characterized by intentional actions or behaviors that inflict harm, either physically or emotionally on others (Kjaervik & Bushman, 2021). Aggression is an action that aims to cause injury to another individual (Akay & Akacy, 2019). Adolescents are more likely to use aggression when using social media without parental supervision (Tommasel et al., 2018). Due to their higher degrees of anxiety and depression, those who experience cyber bullying may develop traits of aggression (Tosuntas et al., 2020). Overt aggression is defined by an outward and apparent reaction to stimulation, such as fights, damage to wealth, or hazards of injury to individuals (Connor et al., 2019). Aggression is an act that has a specific objective of hurting another person either physically or verbally or damaging their ownership (Labella et al., 2019). Aggression is the use of violence, either verbal or physical, against other people or things (Park et al., 2021). Physical, verbal, and detrimental actions are all examples of aggressive conduct (Budi et al., 2020). Aggressive behavior can sometimes manifest as criminal behavior, but under the adverse impact of a number of components, the action transforms into a crime with potentially fatal implications (Harahap et al., 2018).

Researchers found that teens who use social media are more likely to act aggressively (Okeke et al., 2019). According to research, students who are frequently exposed to violent social media engagement are more likely to act aggressively and defiantly (Odofin & Ofojebe, 2020). Previous research shows that internet addiction is a positive predictor of overall aggression and its types (Obeid et al., 2019). Studies have been little investigation into the relationship between social media engagement and social anxiety. Research has primarily focused on the link between social media non-suicidal self-injury and social anxiety in adolescents (Erliksson et al., 2020). Additionally, studies suggest that addiction to social media networking can exacerbate social anxiety, ultimately leading to impaired interpersonal relationships among young people (Baltaci, 2019).

High levels of social anxiety scores were significantly correlated with aggressive behavior such as anger and hostility had a stronger relationship with social anxiety among the four sub domains of aggression. The findings showed a correlation between higher levels of total aggression and a higher risk of social anxiety (Chungetal., 2019). According to the latest research with adolescents, aggression linked to depression, and aggression linked to social anxiety are all positively correlated with increased the incidence of cyber bullying (Tosuntas et al., 2020).

Rationale of Present Study

Present research was designed to evaluate the relationship between social media and aggression and the mediating role of social anxiety. The main purpose of conducting research on this topic is to raise awareness among adolescents of the detrimental outcomes of increased engagement of social media, which must be investigated to make people knowledgeable of the consequences and led in the direction of facts and information. The study's goal is to investigate the relationship between social media engagement, social anxiety and aggression among adolescents and to identify gender differences across all study variables among adolescents.

Method

Hypotheses

1. Social media use is positively correlated with aggression and social anxiety among adolescents.
2. Social anxiety mediates the relationship between social media and aggression among adolescents
3. Girls are more likely than boys to have social anxiety and less likely to be violent when they use social media.

Research Design

A cross-sectional correlational research design was used for this research. The study conducted through a survey method. The sample of the present study was consisted of 300 adolescents. The age of the participants ranges from 15 to 18 years. Convenient sampling technique was used for the data collection, those who are easily accessible are part of the study. The survey- based questionnaires were distributed to adolescents in schools and those who are easily approachable.

Instruments

Social Media Engagement Questionnaire (SMEQ). This scale is developed by Przybylski et al. (2013). It is a 5-items instrument used to measure the social media engagement. All items have 8- point likert scale ranging from 0 (Not one day) to 7 (every day). Individuals scores are calculated by adding up the answers given to each of the five items, and this yields a reliable determine ($\alpha = .82$ to $.89$).

Social Interaction Anxiety Scale (SIAS). The Social Interaction Anxiety Scale (Mattick & Clarke, 1998) is used to measure the social anxiety. This scale consisted of 20 items, having five point likert scale, with 0 (not at all) to 4 (extremely). The range of possible scores is 0 to 80. High social anxiety is shown by a score of 36 or higher. The Social Interaction Anxiety Scale's level has been determined to be very reliable ($\alpha = .92$).

Buss Perry Aggression Questionnaire (BPAQ). The Buss Perry Aggression Questionnaire (Buss & Perry, 1992) is a 29-item questionnaire designed to assess aggressive behavior, utilizing a 5-point likert scale ranging from 1 (very uncommon of me) to 5 (highly characteristic of me). This questionnaire comprises of 29 items in total: physical aggression subscale contains 9 items, verbal aggression subscale includes 5 items, anger subscale consists of 7 items, and hostility subscale has 8 items. The total of each scale's items represents the score for that scale. The two items (7 and 18) were reversed Scored. The scores are weighted on a scale from 0 to 1, with 1 referring to the most aggressive behavior. The BPAQ's test-retest reliability and internal consistency were ($\alpha = 0.80$).

Procedure

After taking informed consent from the participants, researcher explained the procedure to each participant. Participants were given an envelope and asked to complete the questions in the envelope to ensure the confidentiality of their responses. Each participant completed one questionnaire with three scales to measure a variable, which includes Social Media Engagement, Social Anxiety and Aggression. Participants were assured about the confidentiality and anonymity of their participation in study. They were allowed to quit the study at any stage of data collection.

Results

The foundation of the current study was to determine the mediating role of social anxiety in the relationship between social media and aggression among adolescents. To evaluate the proposed hypotheses and achieve the study objectives, a number of statistical analyses were conducted. The data was initially examined to find outliers and get descriptive statistics. The mean, standard deviation, alpha reliability estimates, and bivariate correlation were calculated to test the hypotheses. Statistical Package for Social Sciences (SPSS- 24) was used for this purpose.

Table 1
Descriptive Statistics and Pearson Correlation between Social Media Engagement, Social Anxiety and Aggression and their Subscales (N=300)

Variables	M	SD	α	1	2	3	4	5	6	7
1.SMEQ	16.55	9.03	.69	-						
2.SIAS	29.92	12.19	.83	.12*	-					
3.BPAQ	82.06	14.67	.80	.20**	.24**	-				
4.PA	26.07	5.38	.51	.13*	.18**	.75**	-			
5.VA	14.11	3.59	.43	.16**	.20**	.80**	.53**	-		
6.AN	19.70	4.15	.39	.19**	.21**	.76**	.35**	.51**	-	
7.HS	22.18	5.30	.60	.16**	.17**	.84**	.43**	.61**	.62**	-

**p<.01; *p <.05
Note. SMEQ= Social Media Engagement Questionnaire; SIAS= Social Interaction Anxiety Scale; BPAQ= Buss Perry Aggression Questionnaire; PA= Physical Aggression; VA= Verbal Aggression; AN= Anger; HS= Hostility.

Table 1 shows the alpha reliabilities of social media engagement, social anxiety and aggression and their subscales. Alpha reliability coefficient range from .69 to .85 indicates acceptable internal consistency of scales and from .39 to .60 indicating acceptable internal consistency of subscales. Values of mean, standard deviation indicate that data is normally distributed. Result reveals that there is a significant positive correlation between social media engagement, social anxiety, and aggression and their subscales among adolescents.

Table 2
Mediating Role of Social Anxiety in the relationship between Social Media Engagement and Aggression (N= 300)

Effect	B	SE	95% CI	
			LL	UL
Total	.32	.09	.13	.50
Direct	.27	.09	.09	.45
Indirect	.04	.02	-.00	.11

Table 2 shows the mediating effect of social anxiety between social media and aggression. The total effect is .32 ($p<.000$), of which .27 ($p<.002$) is the direct effect and .04 ($p<0.01$) is the indirect effect. Furthermore, there is statistical significance for both effects.

Table 3
Mean Differences across gender on study variables among adolescents (N=300)

Variables	Boys (n=150)		Girls (n=150)		95%CI				
	M	SD	M	SD	t (298)	p	LL	UL	Cohen's d
SME	17.44	10.32	15.65	7.42	1.71	.00***	-.26	3.83	.19
SIA	29.50	12.16	30.36	12.24	-.60	.40	-3.64	1.93	.07
AGG	82.89	14.40	81.23	14.94	.97	.28	-1.67	4.99	.11
PA	26.74	5.91	25.38	4.70	2.20	.00**	.14	2.57	.25
VA	14.45	3.61	13.77	3.55	1.65	.73	-.12	1.50	.18
AN	19.66	4.18	19.75	4.13	-.20	.41	-1.04	.84	.02
HS	22.04	4.96	22.33	5.64	-.47	.04*	1.49	.91	.05

***p<.000, **p<.01, *p<.05
Note. SME= Social Media Engagement; SIA= Social Interaction Anxiety; AGG= Aggression; PA= Physical Aggression; VA= Verbal Aggression; AN= Anger; HS= Hostility.

Table 3 shows mean difference between girls and boys on social media engagement, social anxiety and aggression and its subscales. In the current sample boys scored high on social media engagement, aggression and its subscales except anger and hostility than girls. On the other hand, the table also showed that girls scored high on social anxiety and subscale of aggression such as anger and hostility than boys. Mean differences on social media engagement and subscales of aggression i.e., physical aggression and hostility are significant ($p < 0.05$) except social anxiety and aggression and its subscales i.e., verbal aggression and anger are non-significant ($p > 0.05$). Cohen's d ranges between 0.2 to .25 across different variables and their subscales.

Discussion

The current study was performed to explore the relationship between social media and aggression and mediating role of social anxiety among adolescents. The main objective of research was to find out the relationship between social media engagement, social anxiety and aggression among adolescents. The study also aims to explore the effect of demographic variables on aggressive behavior, social media engagement and social anxiety. In this study, correlation analyses of three scales and subscales of aggression were conducted. The result of current study supported our first hypothesis that there is a positive correlation between social media engagement, social anxiety and aggression. According to findings, high level of social media engagement leads to an increase in social anxiety and aggression among adolescents.

Interestingly, the pattern of correlation showed that social media was significantly positively correlated with social anxiety. The goal of the research was to find relationships between social media, social anxiety, and aggression. According to the findings, social media engagement among undergraduates is positively correlated with both loneliness and social anxiety (Baltaco, 2019). Social anxiety and social media engagement is positively correlated (Gong et al., 2021). The current study's findings are in line with previous research's findings.

Based on the result of this study, a high level of social media engagement results in high level of aggression. The findings of literature show that aggressive people are more likely to display symptoms of harmful behaviors in social media sites (Wong et al., 2022). A study has shown that aggression (i.e., receiving rewards by participating in aggressive behaviors) contributed to social media engagement among adolescents (Wong et al., 2022). Previous studies also proved that there is a positive relationship between social media engagement and aggression. According to the findings of the current study, people who experience social anxiety tend to be aggressive. Previous literature gives consistent findings that social anxiety was positively related to trait aggression, anger rumination and reactive relational aggression (Brothers et al., 2018). So, the result of current study is in line with previous research. In this study, result shows that individual who engage in social media have high level of physical aggression, verbal aggression, hostility and anger.

Previous literature also gives consistent findings that aggressive characteristics such as anger, hostility, and verbal aggression positively correlated with virtual setting and might contribute to recurrent aggressive conduct in virtual settings among adolescents (Icelliglu & Ozden, 2014). As a result, the current study's findings are consistent with earlier research's findings.

The current study investigated social anxiety as a mediator between social media use and aggression among adolescents. Previous research has also shown that social anxiety levels mediate the relationship between internet addiction and aggression (Ozbay et al., 2024). However, there are few studies on the underlying topic. The findings supported the second hypothesis, indicating that social anxiety acts as a mediator in the relationship between social media and aggression.

T-test was used to determine the mean differences and see whether there were any gender differences across all variables. We also looked at the trend of differences across demographic categories,

especially gender. Several studies (Reiner et al., 2017) show that men use social media more often than women. According to a study, girls had more symptoms of social anxiety than boys (Asher et al., 2017). Many studies show that guys are more violent than girls (Froyland & von Soest, 2020). The third hypothesis is supported by previous research that shows girls are more socially anxious and less violent on social media than boys. A linear regression analysis of the predictor and outcome variables shows that using social media is a strong predictor of social anxiety and aggression.

Limitations and Suggestions

The present study faced several limitations. The study was conducted on a limited number of participants, that is ($N=300$). The generalizability of research findings is frequently limited by the use of specific samples in studies, such as adolescents from a particular geographic area, such as Rawalpindi. The present study used convenience sampling technique in selecting the participants. Future researches can be conducted on a larger scale with a greater number of respondents in order to make generalizations to a larger population. The present study's sample has been limited to Rawalpindi. Random sampling technique might be used in future studies to get a more representative sample.

Conclusion

In conclusion, the study found that social anxiety act as a mediator in the relationship between social media and aggression among adolescents. Specifically, the findings of this study demonstrate a significant positive correlation between the social media engagement, social anxiety and aggression. The findings indicates that that adequate education is necessary to promote effective social media use in communities and households as well as to educate learners about how excessive social media usage can contribute to mental health issues such as social anxiety and aggression.

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