

## The Role Of Social Media Addiction In The Development Of Depression In Teens

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### Abstract

**Background:** Adolescents are among the most active users of social media, yet excessive use has raised concerns about its association with depression and emotional well-being. Given the developmental sensitivity of this age group, understanding the relationship between social media addiction and depressive symptoms is essential for early intervention.

**Methods:** A cross-sectional survey was conducted among 415 adolescents aged 13–19 years using stratified random sampling. Data were collected using validated instruments: the Social Media Addiction Scale (SMAS), Beck Depression Inventory (BDI), and Emotional Well-Being Scale for Adolescents (EWBS-A). Statistical analysis included Pearson correlation, independent t-tests, and regression analysis to examine relationships between variables.

**Results:** Most participants reported using social media for 1–3 hours daily, with TikTok as the most commonly used platform. A significant positive correlation was found between social media addiction and depressive symptoms ( $r = 0.52$ ,  $p < 0.001$ ), indicating that higher levels of problematic usage were associated with increased depression. Additionally, social media addiction showed a significant negative correlation with emotional well-being ( $r = -0.47$ ,  $p < 0.001$ ). Regression analysis revealed that social media addiction significantly predicted depressive symptoms ( $\beta = 0.49$ ,  $p < 0.001$ ), accounting for approximately 26% of the variance ( $R^2 = 0.26$ ). Common behavioral patterns included late-night usage, anxiety when offline, and frequent social comparison. Although many participants perceived social media as beneficial, a substantial proportion reported negative emotional effects, including anxiety and loneliness.

### Author Details

**Keywords:** Social Media, Addiction, Depression, Teenagers, Anxiety, Social Networking Sites

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**Conclusion:** Social media use among adolescents demonstrates a dual impact, serving as both a source of engagement and a significant risk factor for depression and reduced emotional well-being. The findings emphasize the need for targeted interventions, digital literacy programs, and parental and institutional guidance to promote balanced and healthy usage.

## **Introduction**

Social media has become a central component of adolescents' daily lives, shaping how they communicate, interact, and construct their identities. With increasing access to smartphones and internet technologies, adolescents represent one of the most active groups of social media users worldwide. Studies consistently show that a large proportion of adolescents engage with social networking platforms for several hours daily, primarily for socialization, entertainment, and self-expression (Lenhart & Madden, 2007; OECD, 2018). Given that adolescence is a critical developmental stage characterized by identity formation and heightened sensitivity to peer influence (Erikson, 1950; Kroger, 2004), digital interactions play a significant role in influencing emotional and psychological well-being.

Existing literature highlights that social media use is not inherently harmful; rather, its impact depends on the nature and intensity of engagement. On one hand, social media facilitates social connectivity, peer support, and identity exploration, which may enhance self-esteem and strengthen relationships (Valkenburg et al., 2011). On the other hand, growing evidence suggests that excessive or problematic use is associated with negative mental health outcomes, including depression, anxiety, and reduced well-being (Marino et al., 2018; Best et al., 2014). This dual role has led researchers to conceptualize social media as a "double-edged sword," offering both benefits and risks depending on usage patterns.

Several theoretical and empirical explanations have been proposed to understand this relationship. Social comparison processes, for instance, suggest that adolescents may develop negative self-perceptions when comparing themselves with idealized online portrayals (Festinger, 1954; Appel et al., 2016). Similarly, excessive screen time and multitasking behaviors have been linked to increased psychological distress and reduced emotional regulation (Primack & Escobar-Viera, 2017). However, these findings are not entirely consistent. Some studies report strong associations between social media use and depression, while others find weak or non-significant relationships when factors such as quality of interaction, offline support, and individual differences are considered. This inconsistency indicates that the relationship is complex and influenced by multiple contextual and psychosocial factors rather than usage alone.

## **Research Gap**

Despite extensive global research, there are three key gaps in the existing literature. First, many studies focus primarily on the quantity of social media use, with limited attention to problematic or addictive patterns of engagement, which may have a stronger association with depression. Second, much of the evidence is derived from Western populations, limiting its applicability to developing contexts where cultural norms, family structures, and digital access differ significantly. Third, there is limited empirical research in Pakistan, particularly examining how social media addiction relates to depressive symptoms among adolescents. This lack of context-specific evidence restricts the development of targeted interventions and policies.

In Pakistan, the rapid expansion of internet access and smartphone use among adolescents has significantly increased exposure to social media platforms. However, the psychological implications of this shift remain underexplored. Adolescents in this context may face unique challenges, including academic pressure, limited mental

health resources, and cultural constraints on emotional expression, which may influence how social media affects their well-being.

Therefore, this study aims to examine the relationship between social media usage—particularly addictive patterns—and depressive symptoms among adolescents aged 13 to 19 years. By focusing on a local context and incorporating measures of both usage intensity and addiction, the study seeks to provide a more nuanced understanding of how social media influences adolescent mental health.

### **Objectives:**

To examine the relationship between social media usage patterns (including frequency and duration) and depressive symptoms among adolescents.

To analyze the relationship between social media addiction and depressive symptoms.

To assess the impact of problematic usage behaviors (e.g., late-night use, compulsive checking, social comparison) on adolescents' mental health.

(Added to strengthen conceptual depth beyond simple usage measures)

To explore differences in depressive symptoms across types of social media platforms, interpreted cautiously as exploratory rather than causal.

### **Hypotheses:**

**H1:** There is a significant positive relationship between social media usage patterns (frequency and duration combined) and depressive symptoms among adolescents.

**H2:** Adolescents with higher social media addiction scores will report higher levels of depressive symptoms.

**H3:** Problematic social media behaviors (e.g., excessive use, social comparison, late-night engagement) are positively associated with depressive symptoms.

**H4:** Differences in depressive symptoms may be observed across commonly used social media platforms; however, this relationship is exploratory and not based on strong theoretical prediction.

### **Rationale of the Study**

In recent years, social media has become deeply integrated into the daily lives of adolescents, transforming how they communicate, socialize, and express themselves. While these platforms offer opportunities for connection, learning, and entertainment, increasing concerns have emerged regarding their potential negative impact on mental health. In particular, excessive or problematic use of social media has been linked to psychological issues such as depression, anxiety, low self-esteem, and social isolation. Although a considerable body of international research has explored the relationship between social media use and adolescent mental health, findings remain inconsistent and context dependent. Some studies highlight positive outcomes such as enhanced social support and improved communication, while others emphasize harmful effects including increased depressive symptoms and psychological distress. Moreover, most existing studies have been conducted in Western or highly developed contexts, with limited evidence available from developing regions where patterns of internet access, cultural influences, and parental monitoring may differ significantly.

In the context of Pakistan, and particularly among adolescents, there is a lack of sufficient empirical evidence examining how social media addiction influences mental health outcomes such as depression. Given the rapid growth of internet access and smartphone usage among young people, understanding these relationships has become increasingly important. Adolescents represent a vulnerable developmental group, as they are actively forming their identities and are more susceptible to peer influence and emotional sensitivity.

Therefore, this study is justified on the basis that it seeks to fill an existing gap in the literature by examining the relationship between social media addiction and depression among adolescents in the local context. The findings are expected to

provide valuable insights for educators, parents, mental health professionals, and policymakers in developing targeted interventions, awareness programs, and preventive strategies to promote healthier social media use and improve adolescent mental well-being.

## **Methods & Materials**

### **Research Design**

This study employed a cross-sectional design to examine the relationship between social media usage and depressive symptoms among adolescents.

### **Sampling Technique**

A stratified random sampling technique was used to ensure diversity in terms of gender, age, and socio-economic background.

### **Sample Size**

A total of **415 participants** were targeted to achieve adequate statistical power. The study population consisted of teenagers aged **13 to 19 years**.

### **Inclusion Criteria**

Participants aged 13–19 years.

Reported using social media platforms (e.g., Instagram, TikTok, Facebook, Twitter) for at least 1 hour per day.

Exhibited some level of depressive symptoms as indicated by a validated screening tool (e.g., PHQ-9).

Provided informed consent (with guardian consent when applicable).

### **Exclusion Criteria**

Diagnosed with mental health conditions unrelated to depression (e.g., bipolar disorder, schizophrenia).

Participants below the age of consent without guardian approval.

Non-social media users or those using social media for less than 1 hour daily.

Adolescents currently undergoing active treatment for depression or other psychiatric conditions (e.g., medication, therapy).

### **Operational and Theoretical Definitions of Variables**

**Social Media Addiction:** Measured by daily time spent on social media, compulsive use behaviors (e.g., difficulty stopping, prioritizing over other tasks, distress when offline), using the Social Media Addiction Scale (Andreassen, 2015).

**Depression:** Assessed with the Beck Depression Inventory (BDI). Scores of 14 or higher indicate moderate to severe depression (Beck et al., 1996).

**Teens:** Defined as participants aged 13–19 enrolled in secondary or high school, categorized into groups (13–15, 16–17, 18–19).

### **Scales**

#### ***Social Media Addiction Scale (SMAS)***

The Social Media Addiction Scale (SMAS), developed by Gökhan S. in 2015, is a tool designed to measure social media addiction in adolescents and young adults. It consists of 12 items, such as "I feel restless or upset when I am not able to use social media," that assess the emotional and behavioral aspects of social media usage. The scale has shown a high level of internal consistency, with a Cronbach's alpha of 0.88, confirming its reliability. The SMAS is particularly useful for understanding the extent to which social media usage may affect the well-being of younger populations, and it has been validated specifically for adolescents and young adults.

### ***Beck Depression Inventory (BDI)***

The Beck Depression Inventory (BDI), created by Beck, A.T., and colleagues in 1961, is one of the most widely used tools for assessing the severity of depression. It consists of 21 items, including statements like "I feel sad or empty," which help to gauge the emotional state of individuals. The BDI has demonstrated strong validity, with a high correlation to clinical diagnoses of depression ( $r = 0.93$ ), making it a reliable instrument for both clinical and non-clinical populations. It is frequently used to assess depression symptoms in a variety of settings, including research, therapy, and clinical assessments, and it remains a gold standard for evaluating depressive symptoms.

### ***Emotional Well-Being Scale for Adolescents (EWBS-A)***

The Emotional Well-Being Scale for Adolescents (EWBS-A), developed by Cohen and Wills in 1985, is designed to measure the emotional well-being of adolescents. This scale contains 15 items, such as "I feel good about myself when I interact with others," which focus on various aspects of emotional health, including self-esteem and interpersonal relationships. The EWBS-A has demonstrated good construct validity ( $r = 0.84$ ), and it is well-established for assessing emotional well-being in adolescent populations. This scale is valuable for identifying factors that contribute to or detract from positive emotional states in young people, and it is often used in research on adolescent mental health.

### **Procedure**

At first permission from the authorities of institution was obtained. Then participants were recruited on the basis of screening tool and inclusion criteria based on the screening test and participant information sheet. They were informed about the basic purpose of the research and informed consent was signed for their volunteer participation. Strict exclusion criteria were followed to reduce the bias resulting from confounders. Self-reported instrument then handed over to participants to fill the form and their confidentiality was ensured. After the whole data collection, data was be analyzed using SPSS.

### **Ethical Considerations**

For the successful completion of the study, some of the major ethical considerations we kept in mind were:

A formal permission from concerned institutions and authorities for the data collection was taken.

The participants willingly provided their consents as well as the nature of study were communicated to them beforehand solving the surveys provided.

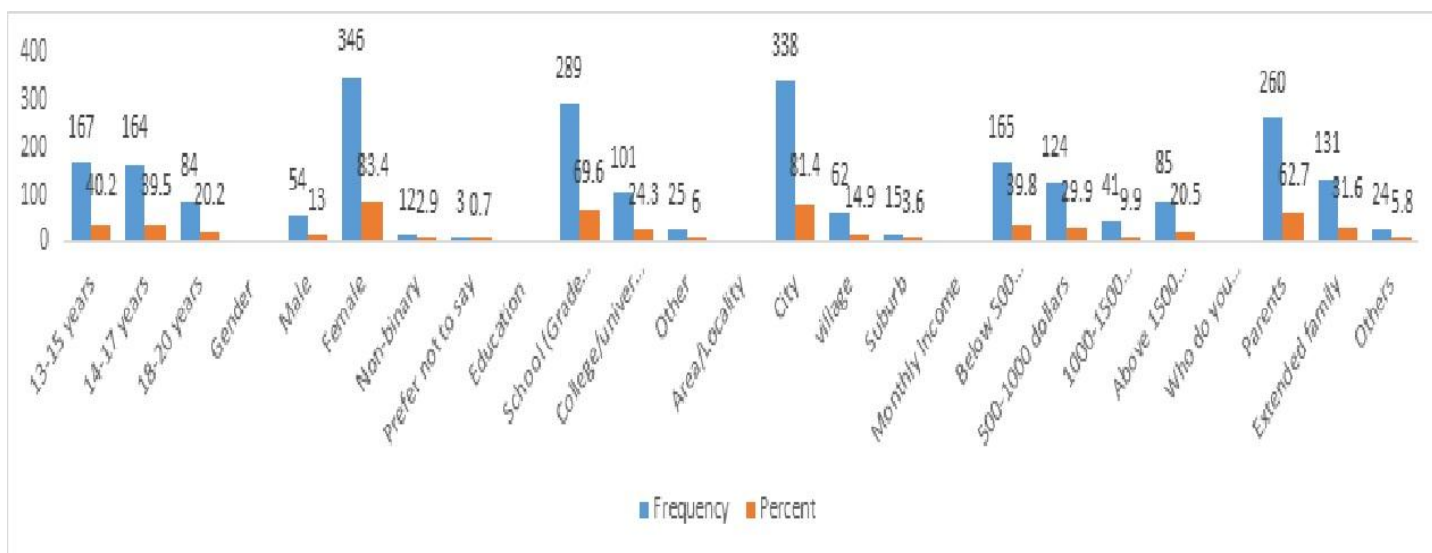
The respondents were given the right that they can withdraw from responding at any point of time if they felt uncomfortable.

The respondents were communicated that the information they provided was secure and will not be used in any other study violating their privacy.

### **Demographic Information**

<b>Item</b>	<b>Frequency</b>	<b>Percent</b>
13-15 years	167	40.2
14-17 years	164	39.5
18-20 years	84	20.2
<b>Gender</b>		
Male	54	13.0
Female	346	83.4
Non-binary	12	2.9

Prefer not to say	3	.7
<b>Education</b>		
School (Grade 9–12)	289	69.6
College/university	101	24.3
Other	25	6.0
<b>Area/Locality</b>		
City	338	81.4
village	62	14.9
Suburb	15	3.6
<b>Monthly Income</b>		
Below 500 dollars	165	39.8
500-1000 dollars	124	29.9
1000-1500 dollars	41	9.9
Above 1500 dollars	85	20.5
<b>Who do you live with ?</b>		
Parents	260	62.7
Extended family	131	31.6
Others	24	5.8



The demographic data showed that most of the respondents were young people, with 40.2% aged 13-15 years and 39.5% aged 14-17 years, with only 20.2% aged 18-20 years representing that the study was conducted mostly through younger demographics. Gender-wise, the sample was predominantly female: 83.4% were female to 13.0% males, 2.9% non-binary, and 0.7% who preferred not to identify with either of the two genders. Most of the respondents (69.6%) were attending school (grades 9-12) followed by 24.3% in college and university and 6.0% in other educational institutions, implying that most of the respondents were school going teenagers. In relation to locality, the sample was centered around urban locations with 81.4% of participants living in urban areas and 14.9% in villages and 3.6% in suburban areas. Distribution of monthly income provided indicated that 39.8 percent of respondents had a household income of less than 500 dollars, 29.9 percent had a household income less than 1000-1500 dollars, 9.9 percent had a household income less than 1500 dollars and 20.5 percent of the respondents had a household income greater than 1500 dollars which provided a diverse but slightly skewed representation of the respondents income distribution. Concerning living conditions, most (62.7) lived with their parents, 31.6% lived with extended families and only a small percentage (5.8) lived with other people, showing that the traditional family set up was the most prevalent among the respondents.

## SOCIAL MEDIA HABITS

#	Question	Item	Frequency	%
8	How much time do you spend on social media each day?	Less than 1hour	68	16.4
		1-3 hours	181	43.6
		3-5 hours	104	25.1
		More than 5 hours	62	14.9
9	Which social media platform do you use the most?	Facebook	17	4.1
		Instagram	106	25.5
		Tiktok	224	54.0
		Snapchat	50	12.0
		Twitter	13	3.1
		Others	5	1.2
10	What is the main purpose of your social media usage ?	Connected with friends	56	13.5
		News and information	108	26.0
		Videos memes etc	222	53.5
		For education purposes	29	7.0
11	When do you use social media the most ?	In Morning hours	36	8.7
		During afternoon	97	23.4
		Evening time	201	48.4
		Late night	81	19.5
12	Do you check social media right before going to sleep?	Yes always	286	68.9
		No	105	25.3
		Sometime	24	5.8
13	Do you feel anxious or uncomfortable when you can't use social media ?	Yes	267	64.3
		No	148	35.7
14	Have you ever tried to reduce your time on social media ?	Yes	281	67.7
		No	134	32.3
15	How often do you compare yourself to others on social media ?	Often	59	14.2
		Sometimes	220	53.0
		Rarely	58	14.0
		Always	6	1.4
		Never	72	17.3

The analysis of social media habits highlights notable patterns of usage, preferences, and associated behaviors among respondents. A substantial proportion (43.6%) reported spending between one and three hours on social media daily, followed by 25.1% spending three to five hours, while 14.9% used it for more than five hours, and only 16.4% restricted their use to less than one hour. TikTok emerged as the most frequently used platform (54.0%), followed by Instagram (25.5%), with Snapchat (12.0%), Facebook (4.1%), Twitter (3.1%), and other platforms (1.2%) being comparatively less popular. In terms of purpose, entertainment through videos and memes dominated (53.5%), while 26.0% used social media for news and information, 13.5% for connecting with friends, and only 7.0% for educational purposes.

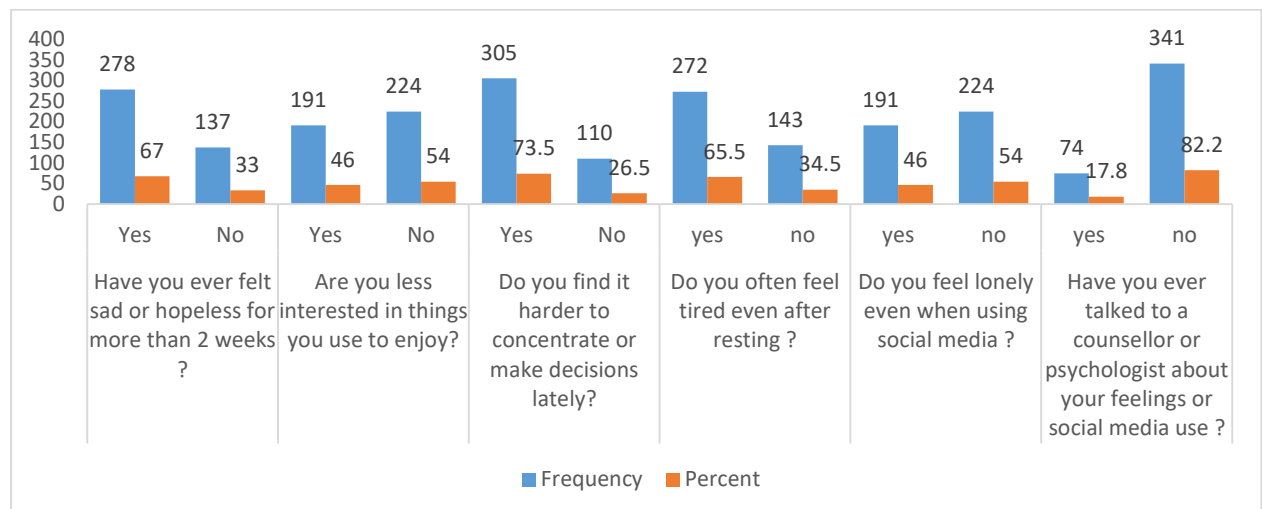
Temporal patterns revealed that nearly half of the respondents (48.4%) engaged with social media most frequently in the evening, followed by 23.4% in the afternoon, 19.5% at late night, and only 8.7% in the morning. A striking 68.9% reported consistently

checking social media before going to sleep, indicating its strong integration into daily routines. Psychological dependence was also evident, with 64.3% experiencing anxiety or discomfort when unable to access social media. Moreover, 67.7% had attempted to reduce their usage, suggesting awareness of potential overuse.

Social comparison emerged as a significant behavioral aspect, with 53.0% sometimes comparing themselves to others on social media, 14.2% doing so often, and 1.4% always engaging in such comparisons, while 17.3% reported never doing so. Collectively, these findings underscore that social media use among respondents is characterized by high daily engagement, a preference for entertainment-driven platforms such as TikTok, strong nighttime usage patterns, and psychosocial implications in terms of dependency and social comparison.

### Signs & Symptoms of Social Media Usage

	Question		Frequency	Percent
16	Have you ever felt sad or hopeless for more than 2 weeks ?	Yes	278	67.0
		No	137	33.0
17	Are you less interested in things you use to enjoy?	Yes	191	46.0
		No	224	54.0
18	Do you find it harder to concentrate or make decisions lately?	Yes	305	73.5
		No	110	26.5
19	Do you often feel tired even after resting ?	yes	272	65.5
		no	143	34.5
20	Do you feel lonely even when using social media ?	yes	191	46.0
		no	224	54.0
21	Have you ever talked to a counsellor or psychologist about your feelings or social media use ?	yes	74	17.8
		no	341	82.2



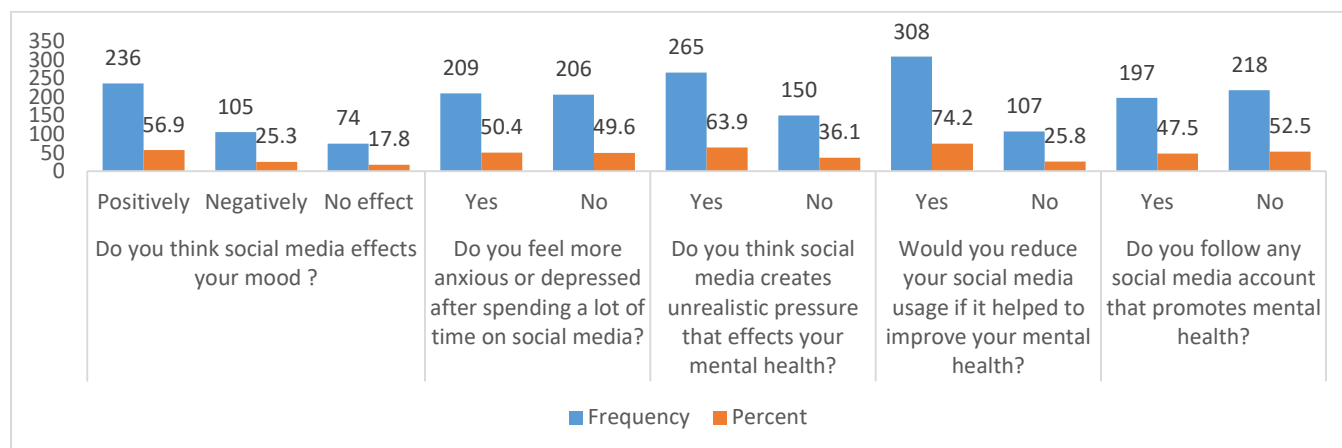
The findings on signs and symptoms associated with social media usage reveal concerning mental health patterns among respondents. A majority (67.0%) reported experiencing persistent sadness or hopelessness for more than two weeks, while 33.0% denied such experiences. Almost half of the participants (46.0%) indicated reduced interest in activities they previously enjoyed, whereas 54.0% did not report such loss of interest. Difficulties in cognitive functioning were prominent, with 73.5% admitting that they found it harder to concentrate or make decisions, compared to 26.5% who did not face such challenges.

Fatigue was also common, as 65.5% of respondents reported feeling tired despite adequate rest, while 34.5% denied this symptom. Experiences of loneliness were

reported by 46.0% of participants even when actively using social media, while 54.0% did not share this feeling. Despite the prevalence of these symptoms, only 17.8% had ever consulted a counselor or psychologist regarding their emotions or social media use, whereas a large majority (82.2%) had not sought professional help.

### Social media and mood

			Frequency	Percent
22	Do you think social media effects your mood ?	Positively	236	56.9
		Negatively	105	25.3
		No effect	74	17.8
23	Do you feel more anxious or depressed after spending a lot of time on social media?	Yes	209	50.4
		No	206	49.6
24	Do you think social media creates unrealistic pressure that effects your mental health?	Yes	265	63.9
		No	150	36.1
25	Would you reduce your social media usage if it helped to improve your mental health?	Yes	308	74.2
		No	107	25.8
26	Do you follow any social media account that promotes mental health?	Yes	197	47.5
		No	218	52.5



The results on the relationship between social media and mood demonstrate both positive and negative influences on users' mental health. More than half of the respondents (56.9%) believed that social media affected their mood positively, while 25.3% reported negative effects and 17.8% perceived no effect at all. Despite these positive perceptions, emotional consequences were evident, as 50.4% acknowledged feeling more anxious or depressed after prolonged use, whereas 49.6% did not report such experiences, reflecting a nearly even split. A significant proportion (63.9%) agreed that social media creates unrealistic pressures that negatively impact their mental health, while 36.1% did not share this view. Importantly, most respondents (74.2%) expressed willingness to reduce their social media usage if doing so could improve their mental health, while 25.8% were unwilling to make such changes. Additionally, engagement with mental health-related content was moderate, with 47.5% following accounts that promote mental well-being and 52.5% not following such accounts.

### Discussion

The demographic profile of this study highlights that the majority of respondents were adolescents aged 13–17 years, with a predominance of females and urban residents.

This demographic pattern is consistent with previous research showing that younger age groups, particularly adolescents, are the most active users of social media worldwide, with higher participation among females than males (Anderson & Jiang, 2018; Statista, 2023). The predominance of school-going participants suggests that the sample represents a population at a particularly vulnerable developmental stage, where social identity and peer influence are strongly shaped by digital interactions (Valkenburg & Piotrowski, 2017).

Findings related to social media habits indicate that most respondents engaged with social media for one to three hours daily, though a notable proportion reported use exceeding five hours. This aligns with previous studies that have documented similar high levels of social media engagement among adolescents and young adults (Twenge & Martin, 2020; Kuss & Griffiths, 2017). TikTok emerged as the dominant platform, surpassing Instagram, Snapchat, and Facebook. This trend reflects recent global shifts, with TikTok gaining popularity among adolescents due to its short-form video content and entertainment value (Montag et al., 2021). The predominant use of social media for entertainment, followed by news and peer connection, is also in line with prior studies that describe social media as a key source of leisure and information among youth (Auxier & Anderson, 2021). Importantly, the high prevalence of nighttime use and the tendency to check social media before sleep (68.9%) corroborates evidence linking late-night screen time with poor sleep quality and heightened psychological distress (Levenson et al., 2017; Scott et al., 2019).

The study also revealed psychosocial concerns, with 64.3% of respondents reporting anxiety or discomfort when unable to access social media, and 67.7% admitting attempts to reduce their usage. These findings resonate with literature on problematic social media use, which has been associated with withdrawal-like symptoms, impaired self-control, and heightened risk of behavioral addiction (Andreassen, 2015; Bányai et al., 2017). Social comparison was also common, with more than half of respondents sometimes comparing themselves to others online. Prior research indicates that frequent upward social comparisons on social media platforms significantly contribute to lower self-esteem and higher levels of depressive symptoms, particularly among adolescents and females (Feinstein et al., 2013; Fardouly et al., 2015).

In terms of signs and symptoms, the results showed that a considerable proportion of respondents reported persistent sadness, hopelessness, reduced interest in activities, cognitive difficulties, fatigue, and loneliness. These findings mirror previous research that has linked excessive social media use with depressive symptoms, impaired concentration, and increased fatigue among adolescents (Shensa et al., 2017; Lin et al., 2016). Interestingly, despite such symptoms, only 17.8% sought help from a counselor or psychologist, reflecting barriers to mental health service utilization, which is consistent with broader findings in low- and middle-income contexts where stigma, lack of access, and awareness gaps hinder professional help-seeking (Thornicroft et al., 2017).

With respect to social media and mood, more than half of the participants perceived social media as having a positive influence, though a significant proportion also reported increased anxiety and depressive feelings after prolonged use. This duality reflects previous studies that emphasize the complex role of social media: while it provides opportunities for connection and positive affect, it also increases risks of negative mood outcomes due to cyberbullying, exposure to unrealistic standards, and overuse (Best et al., 2014; Keles et al., 2020). The perception that social media creates unrealistic pressures (63.9%) is consistent with prior findings linking exposure to idealized online portrayals with body dissatisfaction, anxiety, and depressive symptoms (Perloff, 2014). Encouragingly, most respondents (74.2%) expressed willingness to reduce their social media usage for better mental health, and nearly half followed accounts promoting mental well-being. This reflects growing awareness

among adolescents about the potential harms of excessive use and suggests an avenue for targeted digital mental health interventions (Radovic et al., 2017).

## Conclusion

Based on the overall findings, it can be concluded that social media usage plays a significant role in shaping the daily lives, moods, and mental health of young individuals. The majority of participants reported spending several hours on social media each day, with platforms such as TikTok and Instagram dominating usage. Entertainment and social connectivity emerged as the main drivers of engagement, with evenings and late-night hours being peak usage times. However, this frequent use is not without consequences. A large proportion of respondents reported feelings of sadness, hopelessness, fatigue, loneliness, and difficulty concentrating, which are indicative of adverse psychological effects. Moreover, more than half acknowledged that social media negatively impacts their mood and creates unrealistic pressures, while a substantial number reported experiencing anxiety or depression linked to prolonged use.

Despite these challenges, the findings also highlight awareness among users, as many expressed willingness to reduce their social media usage if it improved their mental health, and nearly half follow accounts that promote mental well-being. Collectively, the results underscore the dual nature of social media—serving as a source of entertainment and connection, while simultaneously contributing to emotional distress and mental health concerns. This calls for awareness campaigns, digital literacy initiatives, and targeted interventions to promote balanced and mindful social media use, particularly among young populations.

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