

ASSOCIATION BETWEEN SOCIAL MEDIA USE AND MENTAL HEALTH AMONG STUDENTS OF KMU INSTITUTE OF HEALTH SCIENCES, KURRAM

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Abstract

Background:

Social media has become an important part of daily life, particularly among university students. Platforms such as Facebook, Instagram, TikTok, Snapchat, and WhatsApp are widely used for communication, information sharing, and social interaction. Although social media provides several benefits, excessive or uncontrolled use may negatively affect mental health. Previous studies have shown that prolonged exposure to social media may contribute to psychological problems such as anxiety, depression, stress, loneliness, and sleep disturbances. University students, especially those in health sciences programs, may be more vulnerable due to academic workload and psychological stress. Despite increasing global attention, limited data are available from remote regions such as Kurram District.

Objective:

To assess the association between social media use and mental health among students of KMU Institute of Health Sciences (IHS) Kurram.

Materials and Methods:

A cross-sectional descriptive study was conducted among undergraduate students of KMU Institute of Health Sciences Kurram. A total of 272 participants were selected from a population of 929 students using a simple random sampling technique. Data were collected using a structured questionnaire consisting of two sections: demographic information and social media usage patterns, and mental health assessment based on questions related to depression, anxiety, and stress. Participation was voluntary and informed consent was obtained from all participants. Data were analyzed using SPSS version 24, and descriptive statistics including frequencies and percentages were used to summarize the data.

Results:

The findings showed that the majority of participants were aged 20–22 years (53.3%), and 58.1% were male. Most students reported using social media for 1–2 hours daily (43.4%). A large proportion of participants reported checking social media during study hours and experiencing difficulty limiting their social media use.

Many students also reported sleep disturbance, feelings of sadness or depression, anxiety due to negative online content, and reduced concentration associated with social media use. However, some participants also indicated that social media provides emotional support and increases social connection.

Conclusion:

The study concludes that social media plays an important role in students' daily lives and has both positive and negative effects on their mental health. Excessive or uncontrolled use of social media may contribute to psychological distress and reduced academic concentration among students. Promoting responsible and balanced social media use is essential to improve students' mental well-being and academic performance.

INTRODUCTION

Social media has become an integral component of modern life and is widely used by university students for communication, information sharing, academic collaboration, and entertainment. The rapid expansion of internet accessibility and smartphone ownership has significantly increased the use of social networking platforms such as Facebook, Instagram, WhatsApp, TikTok, and Snapchat among young adults. While these platforms offer numerous educational and social benefits, growing evidence suggests that excessive or uncontrolled social media use may adversely affect mental health and psychological well-being among students (1,2).

University students represent a particularly vulnerable population due to academic demands, social transitions, and psychological stressors associated with higher education. Previous studies have demonstrated that excessive social media use may contribute to anxiety, depression, stress, loneliness, and emotional instability among students (3,4). Continuous exposure to carefully curated online content often encourages social comparison and dissatisfaction with personal achievements, which may adversely affect self-esteem and psychological well-being (5,6).

Social media has become increasingly important in educational environments. Students frequently utilize social networking platforms to

communicate with classmates, share educational resources, participate in academic discussions, and access learning materials. These platforms can facilitate collaborative learning and improve access to information. However, excessive engagement may also interfere with academic responsibilities and reduce productivity. Research indicates that students who spend prolonged periods on social networking sites often experience difficulties in concentration, reduced academic performance, and decreased attention during study sessions (7,8). Another emerging concern is problematic social media use, which exhibits characteristics similar to behavioral addiction. Such behavior includes compulsive checking of notifications, inability to control usage time, and emotional discomfort when access to social media is restricted (9). Previous investigations have shown that problematic social media use is associated with increased levels of anxiety, depression, and psychological distress among university students (10–12). The addictive nature of social networking platforms may therefore negatively affect students' daily functioning and academic performance.

The relationship between social media use and mental health may also be explained through social comparison processes. Social networking sites frequently display idealized portrayals of individuals' lives, achievements, and appearance. Exposure to such content may encourage users to

compare themselves with others, resulting in feelings of inadequacy, reduced self-esteem, and emotional dissatisfaction (19). Similarly, fear of missing out (FoMO) has emerged as an important psychological phenomenon associated with excessive social media engagement. Individuals experiencing FoMO often feel compelled to remain constantly connected to online platforms in order to stay informed about the activities of others, which may contribute to stress and anxiety (20,21).

Sleep disturbance is another important consequence associated with excessive social media use. Many students use social networking platforms late at night, delaying sleep onset and reducing sleep quality. Poor sleep patterns have been linked to fatigue, emotional instability, impaired cognitive functioning, and increased vulnerability to psychological distress (22,23). Research has demonstrated that individuals who frequently engage with social media before bedtime are more likely to experience poor concentration and daytime sleepiness.

In addition, cyberbullying and negative online interactions have become significant psychosocial challenges in the digital era. Victims of cyberbullying frequently report increased levels of anxiety, depression, low self-esteem, and social withdrawal (24,25). Furthermore, the pressure to maintain a positive online image and gain social validation through likes, comments, and followers may create emotional strain and reinforce excessive social media use among young adults (26,27).

Despite these concerns, social media may also provide several positive benefits when used responsibly. Online platforms facilitate communication, peer support, information exchange, and mental health awareness. Previous studies have reported that social media can strengthen social connections and provide opportunities for emotional support among students facing academic and personal challenges (28,29). Therefore, the impact of social media largely depends on the duration, purpose, and pattern of its use.

In Pakistan, social media usage has increased substantially due to expanding internet coverage

and smartphone accessibility. University students constitute one of the most active groups of social media users and frequently rely on these platforms for academic communication, entertainment, and social interaction (32,33). However, evidence suggests that excessive social media use is associated with increased levels of stress, anxiety, depression, and psychological distress among Pakistani university students (12,34,35). Health sciences students may be particularly vulnerable because of demanding academic schedules, clinical training requirements, and professional expectations that contribute to elevated stress levels and emotional exhaustion (36–39).

Although numerous international studies have examined the relationship between social media use and mental health, limited evidence exists from remote regions of Pakistan such as District Kurram. Cultural context, educational environment, and technological accessibility may influence social media behavior and its psychological consequences (41,42). Therefore, investigating the association between social media use and mental health among students of KMU Institute of Health Sciences Kurram is important for generating local evidence that can guide interventions aimed at promoting healthy digital behavior and improving student well-being (43).

MATERIALS AND METHODS

Study Design

A descriptive cross-sectional study was conducted to assess the association between social media use and mental health among students of KMU Institute of Health Sciences Kurram.

Study Setting

The study was conducted at Khyber Medical University Institute of Health Sciences (KMU-IHS), Kurram Campus. Participants were recruited from different academic departments, including Allied Health Sciences, Nutrition, and Nursing.

Study Duration

The study was carried out over a period of four months from December 2025 to March 2026.

Sample Size

The sample size was calculated using the Raosoft sample size calculator with a 95% confidence level, 5% margin of error, and 50% response distribution. Based on a total student population of 929, the required sample size was determined to be 272 participants.

Sampling Technique

A simple random sampling technique was employed to select participants from various academic departments, ensuring representative participation of students.

Inclusion Criteria

- Students enrolled at KMU IHS Kurram.
- Students using at least one social media platform.
- Students willing to participate and provide informed consent.

Exclusion Criteria

- Students with diagnosed psychiatric disorders.
- Students unwilling to participate in the study.

Data Collection Procedure

Data were collected using a structured self-administered questionnaire consisting of demographic information, social media usage characteristics, and mental health-related questions. Participants were informed about the objectives of the study before data collection. Confidentiality and anonymity were maintained throughout the research process. Completed

questionnaires were checked for completeness, coded, and entered into SPSS version 24 for analysis.

Data Analysis

The collected data were analyzed using Statistical Package for Social Sciences (SPSS) version 24. Descriptive statistics were applied to summarize the data. Frequencies and percentages were calculated to describe demographic characteristics, social media usage behaviors, and perceived mental health effects associated with social media use. Findings were presented in tables and figures for better interpretation.

Ethical Considerations

Ethical approval was obtained from the relevant Ethical Review Committee of KMU. Participation was voluntary, and written informed consent was obtained from all participants before enrollment. Confidentiality, anonymity, and the right to withdraw from the study at any stage were ensured throughout the research process.

Based on the uploaded thesis, here are the **Results, Discussion, and Conclusion** sections in article format. The tables are kept exactly as provided, while the explanatory text has been rewritten.

RESULTS

A total of 272 undergraduate students from KMU Institute of Health Sciences Kurram participated in the study. The findings are presented below according to demographic characteristics, social media usage behavior, and perceived mental health effects associated with social media use.

Demographic Characteristics of Participants

Table 1: Demographic Characteristics of Participants (n = 272)

Variable	Category	Frequency (n)	Percentage (%)
Age	17-19 Years	16	5.9
	20-22 Years	145	53.3
	23-25 Years	100	36.8
	≥26 Years	11	4.0
Gender	Male	158	58.1
	Female	114	41.9

Variable	Category	Frequency (n)	Percentage (%)
Department	Allied Health Sciences	215	79.0
	Nutrition	29	10.7
	Nursing	28	10.3
Year of Study	1st Year	23	8.5
	2nd Year	94	34.6
	3rd Year	68	25.0
	4th Year	87	32.0
Daily Social Media Use	<1 Hour	30	11.0
	1–2 Hours	118	43.4
	3–4 Hours	105	38.6
	>4 Hours	19	7.0

The demographic profile showed that more than half of the participants were between 20 and 22 years of age, while approximately one-third belonged to the 23–25 years age group. Male students constituted a greater proportion of the study population than females. Most participants were enrolled in Allied Health Sciences programs.

Regarding academic year, second-year students represented the largest group, followed by fourth-year students. The majority of respondents reported spending between one and four hours daily on social media, highlighting the widespread use of digital platforms among university students.

Social Media Usage Behaviour

Table 2: Social Media Usage Behaviour among Students (n = 272)

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I use social media mainly for educational purposes	70	132	48	22	0
Percentage (%)	25.7	48.5	17.6	8.1	0
I often check social media during study hours	98	124	32	18	0
Percentage (%)	36.0	45.6	11.8	6.6	0
I feel anxious when I cannot access social media	60	120	60	32	0
Percentage (%)	22.1	44.1	22.1	11.8	0
I find it difficult to limit time on social media	85	115	40	32	0
Percentage (%)	31.3	42.3	14.7	11.8	0

Most students acknowledged using social media for educational and academic purposes, indicating that digital platforms have become important tools for learning and communication. Nevertheless, a substantial proportion reported frequently accessing social media during study hours, suggesting a tendency toward distraction during

academic activities. Many respondents also expressed feelings of anxiety when unable to access social networking platforms and reported difficulty controlling the amount of time spent online. These findings suggest that while social media serves educational functions, excessive

engagement and dependency may also be common among students.

Impact of Social Media Use on Mental Health

Table 3: Impact of Social Media Use on Mental Health of Students (n = 272)

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My sleep is disturbed due to social media	82	120	40	30	0
Percentage (%)	30.1	44.1	14.7	11.0	0
I feel sad or depressed after using social media	70	118	50	34	0
Percentage (%)	25.7	43.4	18.4	12.5	0
I compare myself with others online	92	118	32	30	0
Percentage (%)	33.8	43.4	11.8	11.0	0
Negative online content causes anxiety	84	110	44	34	0
Percentage (%)	30.9	40.4	16.2	12.5	0
I feel relaxed when away from social media	100	110	30	32	0
Percentage (%)	36.8	40.4	11.0	11.8	0
Social media affects my concentration	96	112	30	34	0
Percentage (%)	35.3	41.2	11.0	12.5	0
I feel isolated when not active online	88	110	40	34	0
Percentage (%)	32.4	40.4	14.7	12.5	0
Social media provides emotional support	76	130	40	26	0
Percentage (%)	27.9	47.8	14.7	9.6	0
Social media increases social connection	90	126	32	24	0
Percentage (%)	33.1	46.3	11.8	8.8	0
Social media negatively affects mental health	95	120	30	27	0
Percentage (%)	34.9	44.1	11.0	9.9	0

The findings indicate that social media use is strongly associated with several psychological and behavioral outcomes. A large proportion of participants reported sleep disturbances, depressive feelings, social comparison, anxiety resulting from negative online content, and impaired concentration. Many respondents also indicated feeling isolated when not connected to

social media platforms. Despite these concerns, a substantial number of students perceived social media as a source of emotional support and social connectedness. Overall, most participants believed that social media has a negative impact on mental health, suggesting a complex relationship involving both beneficial and harmful effects.

Table 1 – Daily Time Spent on Social Media

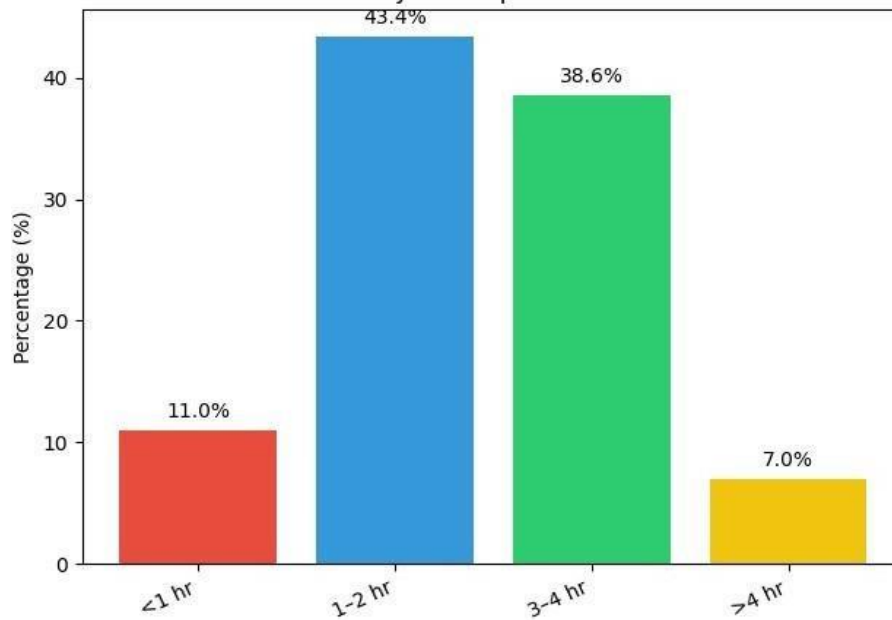
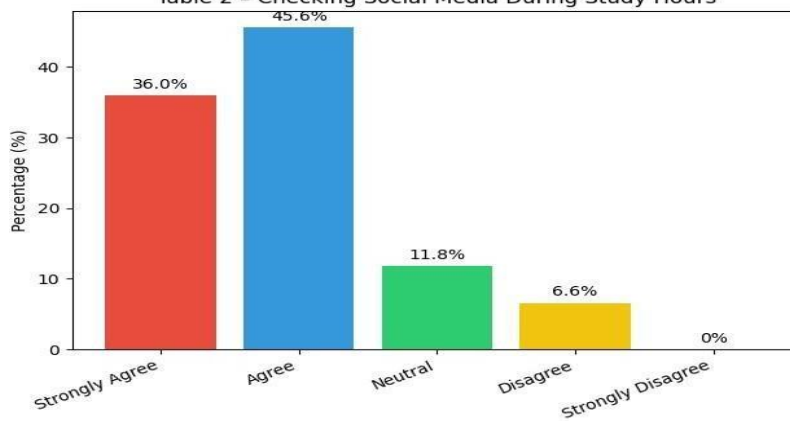


Table 2 – Checking Social Media During Study Hours



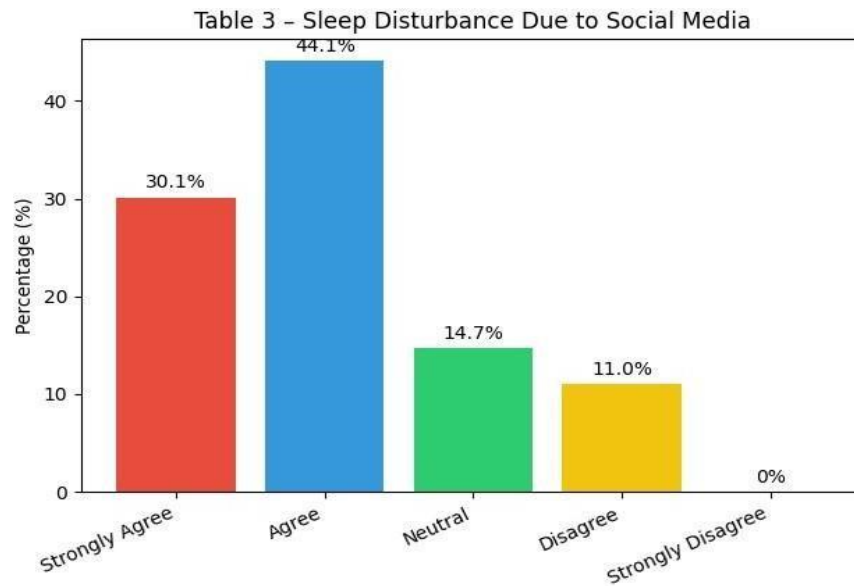


Figure 4.6: Sleep Disturbance Due to Social Media
Table 3 – Social Media Affecting Concentration

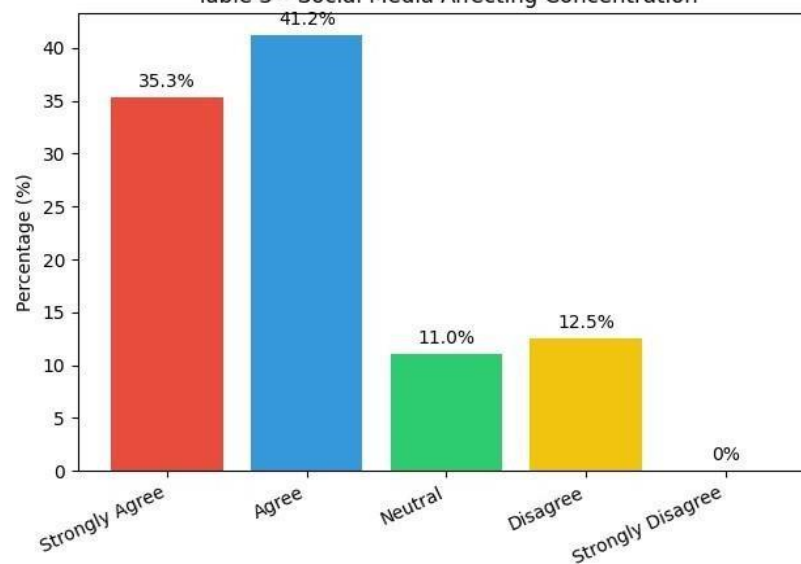


Figure 4.7: Social Media Affecting Concentration

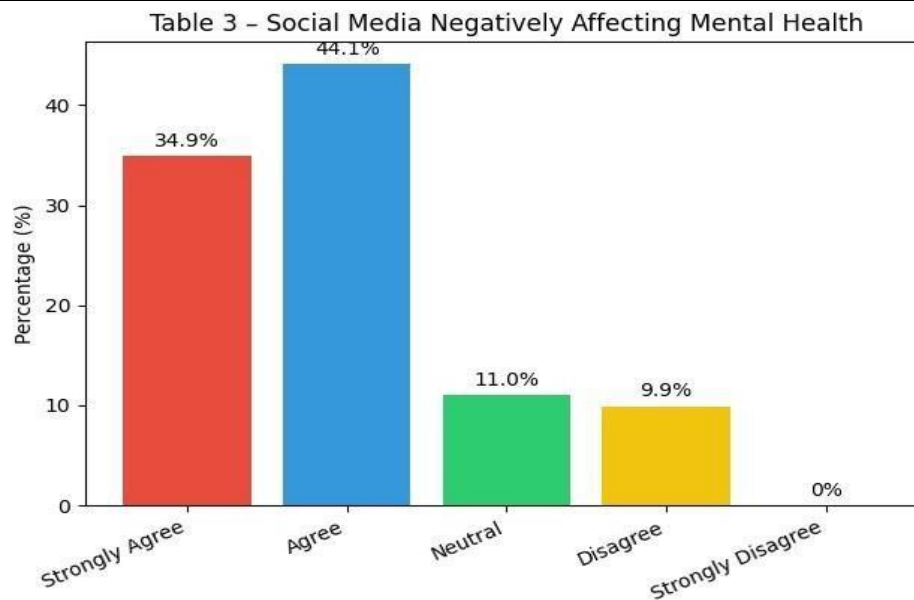


Figure 4.8: Social Media Negatively Affecting Mental Health

DISCUSSION

The present study assessed the association between social media use and mental health among students of KMU Institute of Health Sciences Kurram. The findings demonstrate that social media usage is highly prevalent among university students and significantly influences both academic behavior and psychological well-being. These findings are consistent with previous investigations reporting that social media has become a central component of students' daily lives and may affect various dimensions of mental health (1,2).

The majority of participants in the present study were between 20 and 22 years of age, representing the age group most actively engaged with digital technologies. Similar observations have been reported in previous studies, where young adults and university students were identified as the highest users of social networking platforms due to widespread smartphone ownership and internet accessibility (16,32). The predominance of male participants reflects the enrollment distribution of the institution and is comparable with studies conducted among university populations in Pakistan (12,13).

Regarding social media usage patterns, the present study revealed that most students spent one to four hours daily on social networking platforms.

These findings are in agreement with previous reports demonstrating that university students spend considerable portions of their day using social media for communication, entertainment, and educational purposes (7,33). The high frequency of social media engagement observed in this study indicates the growing dependence of students on digital communication platforms.

A notable finding of the present study was that a large proportion of participants reported using social media for educational purposes. This observation supports previous literature suggesting that social networking platforms can facilitate academic collaboration, information sharing, and communication among students (28,29). Educational use of social media may contribute positively to learning outcomes when utilized appropriately and within reasonable limits.

However, despite the perceived educational benefits, a substantial proportion of respondents reported frequently checking social media during study hours. Similar findings have been reported by Mukhtar et al. and Khan et al., who observed that excessive engagement with social networking platforms can interfere with concentration and academic productivity (7,35). Frequent interruptions associated with social media notifications may reduce students' ability to

maintain focus on academic tasks and contribute to decreased academic performance.

The study further demonstrated that many participants experienced difficulty limiting their social media usage and reported anxiety when unable to access social networking platforms. These findings are consistent with previous studies describing problematic social media use as a form of behavioral addiction characterized by compulsive checking, excessive engagement, and emotional dependence (9,17,18). Such addictive behaviors may negatively affect daily functioning and increase vulnerability to mental health problems.

An important finding of the present study is the strong association between social media use and sleep disturbances. More than two-thirds of respondents indicated that their sleep patterns were negatively affected by social media use. Similar results have been reported by Levenson et al. and Woods and Scott, who found that excessive social media use, particularly before bedtime, contributes to poor sleep quality, delayed sleep onset, and daytime fatigue (22,23). Sleep disruption is a recognized risk factor for psychological distress and impaired academic performance among university students.

The study also revealed that many students experienced feelings of sadness and depression following social media use. These findings correspond with previous research demonstrating a significant relationship between excessive social media engagement and depressive symptoms among young adults (3,4,12). One possible explanation for this relationship is social comparison, whereby individuals compare themselves with idealized portrayals presented by others on social networking platforms. In the present study, a substantial proportion of participants acknowledged comparing themselves with others online, supporting earlier findings by Vogel et al. that social comparison can negatively influence self-esteem and emotional well-being (19).

Another significant observation was that negative online content contributed to anxiety among many participants. Previous studies have similarly reported that exposure to cyberbullying, negative

interactions, and distressing online content can increase psychological distress among social media users (24,25). These findings suggest that the digital environment may act as a source of emotional stress for students.

Furthermore, most respondents reported that social media negatively affected their concentration and ability to focus on academic activities. Similar findings have been documented in earlier research, which demonstrated that excessive social media use may reduce attention span and impair cognitive performance among students (7,35). Frequent engagement with digital platforms may therefore compromise academic achievement and productivity.

Despite the negative outcomes identified, the present study also highlighted several positive aspects of social media use. Many participants reported that social media provides emotional support and strengthens social connections. These findings are supported by previous studies indicating that online communities can facilitate peer support, communication, and mental health awareness among students (28,29). Such benefits emphasize that social media is not inherently harmful and may contribute positively to psychological well-being when used appropriately. Overall, the findings of the present study suggest that social media exerts both positive and negative influences on university students. While it serves as a valuable tool for communication, learning, and emotional support, excessive and uncontrolled use may contribute to sleep disturbances, anxiety, depressive symptoms, impaired concentration, and psychological distress. These findings are consistent with previous national and international literature and highlight the importance of promoting balanced and responsible social media use among university students to protect mental health and academic performance (1,2,12,34).

CONCLUSION

The present study concluded that social media use is highly prevalent among students of KMU Institute of Health Sciences Kurram and plays an important role in their academic and social lives. While social media provides opportunities for

educational collaboration, emotional support, and social interaction, excessive engagement is associated with several adverse mental health outcomes.

The findings demonstrated that many students experience sleep disturbances, depressive feelings, anxiety, social comparison, reduced concentration, and emotional distress associated with social media use. Furthermore, a large proportion of participants reported difficulty controlling their social media usage and perceived a negative impact on their mental health.

Overall, the study highlights the need for promoting responsible and balanced social media use among university students. Awareness programs, mental health support services, and digital well-being initiatives may help reduce the negative consequences of excessive social media engagement while maximizing its educational and social benefits.

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