

Social Media Use and Its Impact on Mental Health and Social Relationships among Pakistani Youth

Tony T Williams¹, Dr. Moazzam Naseer², Dr. Memoona Gul³, Dr. Arbab Alam Khan⁴

¹MHA, Ed.S., PhD(h.c.), Department of Health and Human Services, Ashford University-UAGC

²Associate Professor, Riphah International University.

³Assistant Professor, Department of Communication and Media Studies, Gomal University Dera Ismail Khan, KP, Pakistan

⁴Lecturer, Department of Communication and Media Studies, Gomal University, Dera Ismail Khan, Email: arbab.alam.7798@gmail.com

Abstract

Social media has become an integral part of young people's daily lives, offering opportunities for communication, education, and social interaction while raising concerns about its effects on mental health and interpersonal relationships. This study examined the impact of social media use on the mental health and social relationships of youth in Pakistan and explored the roles of social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying. A quantitative cross-sectional design was employed, and data were collected from 420 social media users aged 15–30 years through a structured questionnaire. The measurement model demonstrated satisfactory reliability and validity, with Cronbach's alpha values ranging from 0.81 to 0.91, Composite Reliability values from 0.84 to 0.93, and a Kaiser–Meyer–Olkin value of 0.914. Data were analyzed using descriptive statistics, Structural Equation Modeling (SEM), and bootstrapped mediation analysis. The findings showed that 92.1% of respondents used WhatsApp, 88.3% used YouTube, and 81.2% used Instagram, while 41.9% spent 2–4 hours and 46.4% spent more than 5 hours daily on social media. SEM results indicated that social media use had a significant positive effect on mental health problems ($\beta = 0.51$, $p < 0.001$) and social relationships ($\beta = 0.29$, $p < 0.001$). Social comparison ($\beta = 0.22$), FoMO ($\beta = 0.27$), and cyberbullying ($\beta = 0.26$) significantly increased psychological distress, whereas self-esteem ($\beta = -0.24$) and sleep quality ($\beta = -0.31$) were associated with better mental health (all $p < 0.001$). Bootstrapping confirmed a significant indirect effect ($\beta = 0.184$, $p < 0.001$), indicating partial mediation. The study concludes that while social media enhances communication and social connectedness, excessive use is associated with adverse psychological outcomes, highlighting the need for digital literacy, responsible online behavior, and targeted mental health interventions for Pakistani youth.

Keywords: Social Media, Pakistani Youth; Mental Health, Self-Esteem; Sleep Quality, Cyberbullying

Introduction

The rapid expansion of digital technologies has transformed the way individuals communicate, learn, and interact, with social media becoming one of the most influential aspects of contempo-

Received 04 March 2026; Revised 03 April 2026; Accepted 12 April 2026; Published (online) 18 April 2026



Attribution 4.0 International ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/))

Corresponding Author Email: arbab.alam.7798@gmail.com

DOI: <https://doi.org/10.69671/socialprism.3.2.2026.123>

rary life (Azzaakiyyah et al., 2023). Platforms such as WhatsApp, Facebook, Instagram, YouTube, TikTok, Snapchat, and X (formerly Twitter) have become deeply integrated into the daily routines of young people, serving as important channels for communication, entertainment, education, information sharing, and social networking (Bengtsson et al., 2024). The widespread availability of smartphones and affordable internet access has further accelerated social media adoption, making online engagement an essential component of modern youth culture. Consequently, social media has become a significant social environment that shapes how young people build relationships, express themselves, and access information. Although social media offers numerous benefits, including enhanced communication, educational opportunities, professional networking, and access to online support communities, increasing concerns have emerged regarding its potential effects on mental health and social relationships (Gazi et al., 2024). Excessive or problematic social media use has been associated with anxiety, depression, stress, sleep disturbances, cyberbullying, low self-esteem, and emotional distress. Young users are frequently exposed to carefully curated online content that encourages social comparison and unrealistic expectations, which may negatively influence psychological well-being. Moreover, prolonged engagement with digital platforms may reduce face-to-face interactions, weaken family communication, and affect the quality of interpersonal relationships.

At the same time, social media can also contribute positively to the lives of young people when used responsibly. Digital platforms facilitate communication across geographical boundaries, strengthen friendships, provide opportunities for collaborative learning, promote civic engagement, and offer emotional and informational support (Liu et al., 2025). Online communities have become valuable spaces for sharing experiences, accessing educational resources, and maintaining social connectedness, particularly during periods of social disruption such as the COVID-19 pandemic (Cairns et al., 2020). These contrasting findings suggest that the effects of social media are multidimensional and depend not only on the amount of use but also on individual psychological characteristics and patterns of online engagement. Several theoretical perspectives provide insight into these complex relationships. Uses and Gratifications Theory proposes that individuals actively use social media to satisfy needs related to communication, entertainment, information seeking, and social interaction (Urista et al., 2009). Social Comparison Theory explains how continuous exposure to idealized online content encourages individuals to compare themselves with others, potentially leading to reduced self-esteem and poorer psychological well-being. Social Cognitive Theory suggests that online behaviours and attitudes are influenced through observation and interaction with peers, influencers, and digital communities, while Ecological Systems Theory highlights the interaction between individual, family, school, and digital environments in shaping youth development (Zhu et al., 2024). Together, these theories provide a comprehensive framework for understanding how social media may influence mental health and interpersonal relationships.

Despite the growing body of literature, evidence regarding the overall impact of social media remains inconsistent (Best et al., 204). While some studies report adverse psychological outcomes associated with excessive social media use, others emphasize its role in enhancing communication, social support, and relationship maintenance. Furthermore, much of the existing evidence has been generated in high-income countries, with comparatively limited empirical research conducted in developing countries such as Pakistan, where cultural values, family structures, internet accessibility, and digital literacy differ substantially. Existing studies have also tended to examine mental health or social relationships independently, whereas relatively few

have investigated these outcomes simultaneously while considering important psychosocial mechanisms such as social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying (Fuhrer et al., 199).

To address these gaps, the present study investigates the impact of social media use on youth mental health and social relationships among young people in Pakistan using a quantitative cross-sectional survey design. The study examines patterns of social media use and evaluates how social media engagement is associated with mental health and interpersonal relationships. It further explores the roles of social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying as factors influencing these relationships. A structured questionnaire was administered to 420 young social media users, and the collected data were analyzed using descriptive statistics, reliability and validity analyses, Structural Equation Modeling (SEM), and bootstrapped mediation analysis. By providing empirical evidence from the Pakistani context, this study contributes to a better understanding of both the positive and negative consequences of social media use and offers evidence that may inform policies and interventions aimed at promoting healthier and more responsible digital engagement among young people.

Literature Review

Social Media Use Among Youth

Social media has become one of the most widely used communication technologies worldwide, fundamentally changing how young people interact, learn, and access information (Greenhow et al., 2011). Platforms such as WhatsApp, Instagram, Facebook, YouTube, TikTok, Snapchat, and X (formerly Twitter) provide opportunities for communication, entertainment, education, and social networking (Meikle et al., 2024). Young people are among the most active users because these platforms support identity formation, peer interaction, and information exchange (Davis et al., 2012). Increasing smartphone ownership and improved internet accessibility have further expanded social media engagement, making digital communication an integral part of daily life. The intensity and pattern of social media use vary considerably among individuals. While moderate use may facilitate learning, collaboration, and relationship maintenance, excessive engagement has raised concerns regarding its effects on psychological well-being and social functioning. Previous studies suggest that both the frequency and duration of social media use are important predictors of users' psychological and behavioural outcomes. Consequently, understanding how young people engage with social media is essential for evaluating its broader influence on mental health and social relationships.

Social Media and Mental Health

Mental health encompasses emotional, psychological, and social well-being and influences how individuals think, feel, and behave (Huppert et al., 2009). A growing body of research has examined the relationship between social media use and mental health among adolescents and young adults. Numerous studies have reported that excessive social media use is associated with increased symptoms of anxiety, depression, stress, loneliness, and psychological distress. Continuous exposure to online content, frequent notifications, and prolonged screen time may contribute to emotional exhaustion and reduced psychological well-being (Lopes et al., 2022). Several mechanisms have been proposed to explain these associations. Excessive engagement with social networking platforms may encourage compulsive checking behaviours, reduce opportunities for

offline activities, and increase dependence on online interactions (Andreassen et al., 2015). Furthermore, prolonged social media use has been linked to difficulties in emotional regulation and increased vulnerability to negative emotional experiences. However, evidence also suggests that responsible and purposeful use of social media can provide emotional support, facilitate access to mental health information, and reduce feelings of isolation by connecting individuals with supportive online communities. These contrasting findings indicate that the relationship between social media use and mental health is complex and influenced by multiple psychological and behavioural factors.

Social Media and Social Relationships

Social relationships play a fundamental role in psychological well-being and healthy development. Social media has transformed interpersonal communication by enabling instant interaction regardless of geographical distance (Shamsie et al., 2024). Previous research indicates that digital platforms strengthen existing friendships, facilitate family communication, and help individuals maintain long-distance relationships (Abel et al., 2021). Online communities also provide opportunities for collaborative learning, professional networking, and participation in social and civic activities. Despite these benefits, concerns have been raised regarding the quality of relationships developed through online communication. Excessive reliance on digital interaction may reduce face-to-face communication, weaken interpersonal skills, and contribute to emotional detachment within families and peer groups. Some studies suggest that superficial online interactions may replace meaningful personal relationships, thereby reducing social connectedness and relationship satisfaction (Sbarra et al., 2019). These findings demonstrate that the effects of social media on interpersonal relationships depend largely on how individuals use these platforms rather than the technology itself.

Social Comparison and Fear of Missing Out (FoMO)

Social Comparison Theory suggests that individuals evaluate themselves by comparing their achievements, appearance, and lifestyles with those of others (Caliskan et al., 2024). Social media platforms intensify this process because users frequently present idealized versions of their lives through carefully selected photographs, videos, and personal achievements. Repeated exposure to such content has been associated with dissatisfaction, reduced self-esteem, anxiety, and depressive symptoms. Closely related to social comparison is the concept of Fear of Missing Out (FoMO), defined as the apprehension that others may be experiencing rewarding activities without one's participation. Individuals experiencing FoMO often feel compelled to check social media repeatedly to remain informed about social events and peer activities. Research has consistently shown that higher levels of FoMO are associated with problematic social media use, increased psychological distress, anxiety, and reduced life satisfaction (Soraci et al., 2026). Consequently, both social comparison and FoMO have been identified as important psychological mechanisms linking social media engagement with mental health outcomes.

Self-Esteem and Sleep Quality

Self-esteem refers to an individual's overall evaluation of personal worth and competence. Several studies have reported that intensive social media use may negatively influence self-esteem because users frequently compare themselves with idealized online images and seek social validation through likes, comments, and followers. Individuals with lower self-esteem are generally

more susceptible to anxiety, depression, and emotional distress, whereas higher self-esteem serves as a protective factor that enhances psychological resilience and emotional well-being (Saiphoo et al., 2020). Sleep quality has also emerged as an important factor associated with social media use. Excessive nighttime use of smartphones and social networking applications can delay sleep onset, reduce sleep duration, and disrupt normal sleep patterns. Poor sleep quality has been associated with impaired cognitive functioning, emotional instability, reduced academic performance, and increased symptoms of anxiety and depression. These findings suggest that self-esteem and sleep quality may influence the relationship between social media use and psychological well-being.

Cyberbullying and Youth Well-Being

Cyberbullying has become one of the most significant challenges associated with social media use among adolescents and young adults (Ademiluyi et al., 2022). Unlike traditional bullying, cyberbullying can occur continuously through digital platforms, exposing victims to harassment, threats, humiliation, and social exclusion at any time. Research consistently demonstrates that victims of cyberbullying experience higher levels of anxiety, depression, stress, loneliness, and reduced self-esteem than their peers. Beyond its effects on mental health, cyberbullying may also damage interpersonal relationships by reducing trust, increasing social withdrawal, and weakening social connectedness. Educational institutions, parents, policymakers, and technology companies have therefore emphasized the importance of digital citizenship education, online safety awareness, and effective reporting mechanisms to reduce cyberbullying and create safer online environments (Frau-Meigs et al., 2017).

Theoretical Framework

This study is underpinned by four complementary theoretical perspectives. Uses and Gratifications Theory proposes that individuals actively select social media platforms to satisfy needs related to communication, entertainment, information seeking, and social interaction (Whiting et al., 2013). Social Comparison Theory explains how comparisons with idealized online content may influence self-esteem and psychological well-being. Social Cognitive Theory suggests that individuals learn behaviours, attitudes, and emotional responses through observing others within digital environments (Lim et al., 2020). Ecological Systems Theory further emphasizes that youth development is influenced by interactions among individual, family, educational, community, and digital contexts. Together, these theories provide a comprehensive framework for understanding how social media influences both mental health and social relationships.

Research Gap

Although considerable research has examined the effects of social media on young people, several important gaps remain. First, previous studies have often focused exclusively on mental health or social relationships, with relatively few examining both outcomes simultaneously within a single analytical framework. Second, many investigations have concentrated primarily on the direct effects of social media use, while giving limited attention to psychosocial mechanisms such as social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying that may explain these relationships. Third, much of the existing evidence has been generated in high-income countries, whereas empirical evidence from developing countries, including Pakistan, remains comparatively limited despite substantial growth in social media use

among young people. Finally, few studies have applied Structural Equation Modeling (SEM) to examine the complex relationships among these constructs simultaneously. To address these gaps, the present study investigates the impact of social media use on youth mental health and social relationships among young people in Pakistan. It further examines the roles of social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying within a unified conceptual framework using Structural Equation Modeling (SEM), thereby providing empirical evidence to support healthier and more responsible social media engagement.

Aims of the Study

The primary aim of this study is to examine the impact of social media use on the mental health and social relationships of young people in Pakistan. Specifically, the study seeks to investigate how patterns of social media use are associated with psychological well-being and interpersonal relationships, while exploring the roles of social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying in shaping these relationships.

Objectives of the Study

The study was designed to achieve the following objectives:

- To examine the patterns and extent of social media use among young people in Pakistan.
- To assess the relationship between social media use and mental health outcomes, including anxiety, depression, and stress.
- To evaluate the influence of social media use on social relationships, including family interaction, friendships, and social connectedness.
- To examine the effect of social comparison on the relationship between social media use and mental health.
- To investigate the mediating role of Fear of Missing Out (FoMO) in the relationship between social media use and mental health.
- To determine the influence of self-esteem on the relationship between social media use and mental health.
- To examine the role of sleep quality in the association between social media use and mental health.
- To investigate the impact of cyberbullying on mental health and social relationships among youth.
- To provide recommendations for promoting responsible social media use and improving the psychological and social well-being of young people.

Research Questions

The study seeks to answer the following research questions:

- i. What are the patterns of social media use among young people in Pakistan?
- ii. What is the relationship between social media use and mental health among youth?
- iii. How does social media use influence social relationships among young people?
- iv. Does social comparison affect the relationship between social media use and mental health?

- v. Does Fear of Missing Out (FoMO) mediate the relationship between social media use and mental health?
- vi. What is the role of self-esteem in the relationship between social media use and mental health?
- vii. How does sleep quality influence the relationship between social media use and mental health?
- viii. What effect does cyberbullying have on the mental health and social relationships of young people?
- ix. What strategies can promote healthier and more responsible social media use among youth?

Methodology

Research Design

This study employed a quantitative cross-sectional research design to examine the impact of social media use on youth mental health and social relationships among young people in Pakistan (Taddi et al., 2024). A quantitative approach was selected because it enables the collection of standardized data from a large number of respondents and allows statistical analysis of relationships among the study variables. The cross-sectional design facilitated the collection of data at a single point in time, providing a comprehensive overview of current social media usage patterns and their association with psychological well-being and interpersonal relationships.

Study Population and Sampling

The target population comprised young people aged 15–30 years who actively used at least one social media platform, including WhatsApp, Facebook, Instagram, TikTok, YouTube, Snapchat, and X (formerly Twitter). Participants were recruited from universities, colleges, and local communities located in both urban and rural areas of Pakistan. Individuals outside the specified age range, those who did not use social media, and respondents who submitted incomplete questionnaires were excluded from the study. The sample size was determined using Cochran's (1977) formula for large populations at a 95% confidence level and a 5% margin of error, resulting in a minimum sample size of 384 participants. To improve the reliability of the findings and account for incomplete responses, 450 questionnaires were distributed. Following data screening, 420 valid questionnaires were retained for analysis, yielding a response rate of 93.3%. A multistage sampling approach was employed in which educational institutions and community organizations were selected purposively, while respondents were recruited using a combination of simple random and convenience sampling techniques.

Research Instrument

Data were collected using a structured self-administered questionnaire developed following an extensive review of the relevant literature. The questionnaire consisted of six sections covering demographic characteristics, social media usage patterns, social media engagement, mental health, social relationships, cyberbullying, and respondents' perceptions regarding responsible social media use. The majority of the items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores indicating greater agreement with the respective statements.

Validity and Reliability

Before the main survey, a pilot study involving 30 respondents was conducted to assess the clarity and comprehensibility of the questionnaire (Sen et al., 2026). Feedback obtained during the pilot study was used to refine the wording of several items. Face validity and content validity were established through expert review involving specialists in psychology, sociology, education, and public health. Construct validity was assessed using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Internal consistency reliability was evaluated using Cronbach's alpha and Composite Reliability (CR), while convergent validity was assessed through standardized factor loadings and Average Variance Extracted (AVE). The suitability of the data for factor analysis was examined using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity.

Data Collection Procedure

Data collection was conducted over a period of two months using both printed questionnaires and an online survey administered through Google Forms (Rasmitadila et al., 2020). Prior approval was obtained from the participating educational institutions before distributing the questionnaires. The online questionnaire was shared through university mailing lists and social media platforms, including WhatsApp and Facebook groups. Participants were informed about the purpose of the study, and informed consent was obtained before participation. Completed questionnaires were screened for completeness, coded, and prepared for statistical analysis.

Ethical Considerations

Ethical principles were strictly observed throughout the study. Participation was entirely voluntary, and respondents were informed that they could withdraw from the study at any stage without penalty. No personally identifiable information was collected, ensuring participant anonymity and confidentiality. All collected data were used exclusively for academic research purposes and were stored securely to protect participants' privacy.

Data Analysis

The collected data were entered, coded, and analyzed using IBM SPSS Statistics Version 29.0 and IBM SPSS AMOS Version 29.0 (Kludacz-Alessandri et al., 2025). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' demographic characteristics and social media usage patterns. The psychometric properties of the measurement instrument were evaluated through reliability and validity analyses, including Cronbach's alpha, Composite Reliability, Exploratory Factor Analysis, and Confirmatory Factor Analysis. Structural Equation Modeling (SEM) was employed to examine the hypothesized relationships among social media usage, mental health, social relationships, social comparison, Fear of Missing Out (FoMO), self-esteem, sleep quality, and cyberbullying. Model fit was assessed using the Chi-square/degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). In addition, mediation analysis was conducted using a

bootstrapping procedure with 5,000 resamples to examine the indirect effects of the proposed mediating variables. Statistical significance was determined at the 5% level ($p < 0.05$).

Results

A total of 450 questionnaires were distributed to youth aged 15–30 years across selected educational institutions and communities in Pakistan. Following data screening, 420 questionnaires were found to be complete and suitable for analysis, resulting in an overall response rate of 93.3%. The collected data were analyzed using IBM SPSS Statistics Version 29.0 and AMOS Version 29.0. Descriptive statistics, reliability analysis, Pearson's correlation, multiple regression, and Structural Equation Modeling (SEM) were employed to examine the relationships among the study variables.

Demographic Characteristics of Respondents

A total of 450 questionnaires were distributed among youth aged 15–30 years residing in different urban and rural areas of Pakistan. Following data screening and validation, 420 questionnaires were found to be complete and suitable for statistical analysis, resulting in a response rate of 93.3%. The high response rate indicates a strong level of participant engagement and enhances the reliability of the findings. The demographic profile of the respondents is presented in Table 1. Of the 420 participants, 219 (52.1%) were male, while 201 (47.9%) were female, indicating a relatively balanced gender distribution. This balanced representation minimizes gender-related bias and provides a more comprehensive understanding of social media usage patterns and their influence on mental health and social relationships among Pakistani youth. With respect to age, the largest proportion of respondents (45.0%) belonged to the 19–22 years age group, followed by those aged 23–26 years (30.2%). Participants aged 15–18 years represented 17.1%, whereas only 7.6% were between 27 and 30 years of age (Table 1). These findings indicate that the study primarily represents late adolescents and young adults, who constitute the most active users of social media platforms and are generally considered more susceptible to the psychological and behavioral effects associated with intensive digital engagement.

Regarding educational attainment, more than half of the respondents (57.1%) were undergraduate students, while 22.4% were pursuing postgraduate education. College students accounted for 14.3%, whereas only 6.2% were enrolled at the high school level. The predominance of university students reflects the increasing integration of social media into higher education for communication, academic collaboration, information sharing, and entertainment. It also indicates that educated youth form the principal segment of active social media users in Pakistan. Participants were also asked to report their average daily time spent on social media platforms. The findings revealed that 41.9% of respondents used social media for 2–4 hours per day, representing the largest usage category. Approximately 30.0% reported spending 5–6 hours daily, while 16.4% spent more than six hours on social networking platforms. Only 11.7% of respondents reported using social media for less than two hours per day. These findings indicate that prolonged social media use has become common among Pakistani youth, with nearly half of the respondents spending several hours online each day. The demographic characteristics suggest that the study sample adequately represents young, digitally connected individuals who frequently engage with multiple social media platforms. Because the majority of participants were university-aged students with substantial daily online exposure, they constitute an appropriate population for exam-

ining the relationships between social media usage, psychological well-being, and interpersonal relationships. The observed patterns of age, educational level, and daily social media use also provide an important contextual basis for interpreting the subsequent analyses of mental health outcomes, cyberbullying experiences, self-esteem, sleep quality, and social connectedness.

Overall, the demographic profile demonstrates that social media has become deeply embedded in the daily routines of young people in Pakistan. The high prevalence of prolonged social media use among respondents underscores the relevance of investigating both its positive contributions to communication and social interaction as well as its potential adverse effects on mental health, academic performance, and interpersonal relationships.

Table 1: Demographic Characteristics of Respondents involved in the study

Variable	Category	Frequency	Percentage (%)
Gender	Male	219	52.1
	Female	201	47.9
Age	15–18	72	17.1
	19–22	189	45.0
	23–26	127	30.2
	27–30	32	7.6
Education	High School	26	6.2
	College	60	14.3
	Undergraduate	240	57.1
	Postgraduate	94	22.4
Daily Social Media Use	<2 hours	49	11.7
	2–4 hours	176	41.9
	5–6 hours	126	30.0
	>6 hours	69	16.4

Social Media Platform Preferences

The social media usage patterns of respondents were examined by assessing their preferred platforms, average daily usage, and primary purposes for using social networking sites. The findings indicate that social media has become an integral part of the daily lives of Pakistani youth. Among the various platforms, WhatsApp (92.1%) was the most frequently used, followed by YouTube (88.3%), Instagram (81.2%), and Facebook (76.4%), highlighting the popularity of messaging, video-sharing, and social networking applications. Regarding the duration of use, the majority of respondents (41.9%) reported spending 2–4 hours per day on social media, while 30.0% used these platforms for 5–6 hours daily. Notably, 16.4% of participants spent more than six hours per day online, indicating a high level of digital engagement among the study population. Communication with family and friends was the primary reason for using social media (84.8%), followed by entertainment (79.0%) and educational activities (71.0%) (Table 2). More than half of the respondents also used social media for accessing news and information, whereas comparatively fewer participants reported using these platforms for online shopping and professional networking. Overall, the findings demonstrate that social media serves multiple functions,

including communication, learning, and entertainment, making it an important component of young people's academic and social lives.

The results suggest that WhatsApp, YouTube, and Instagram are the dominant social media platforms among Pakistani youth. Most respondents spent between 2 and 4 hours daily on social media, reflecting regular engagement with online platforms. Communication remained the primary purpose of social media use, although educational and entertainment activities also accounted for a substantial proportion of usage. These findings indicate that social media has become an essential medium for communication, learning, and recreation, supporting its significant role in shaping youth mental health and social relationships.

Table 2: Social Media Usage Patterns of Respondents

Category	Variable	Frequency (n)	Percentage (%)
Preferred Platform	WhatsApp	387	92.1
	YouTube	371	88.3
	Instagram	341	81.2
	Facebook	321	76.4
	TikTok	289	68.8
Daily Usage	Less than 2 hours	49	11.7
	2–4 hours	176	41.9
	5–6 hours	126	30.0
	More than 6 hours	69	16.4
Primary Purpose	Communication	356	84.8
	Entertainment	332	79.0
	Education	298	71.0
	News and Information	214	51.0
	Online Shopping	121	28.8
	Professional Net-working	98	23.3

Social Media Engagement Behaviour

Social media engagement behaviour was assessed by examining the frequency of platform access, the number of social media platforms used, the preferred time of use, and the primary type of online engagement. The findings (Table 3) indicate that respondents were highly active on social media, with most accessing their accounts multiple times throughout the day and maintaining profiles on several platforms simultaneously. As presented in Table 3, 61.9% of respondents reported accessing social media more than ten times per day, while 29.5% accessed these platforms 5–10 times daily. Only 8.6% reported checking social media fewer than five times per day. Regarding the number of platforms used, nearly half of the respondents (47.6%) regularly used four or more social media platforms, followed by 34.8% who used three platforms. This indicates that young people frequently engage with multiple digital environments to meet different communication, educational, and entertainment needs.

With respect to the preferred time of use, 46.2% of respondents indicated that they primarily used social media during the evening, while 31.4% reported being most active at night. Morning (10.5%) and afternoon (11.9%) usage was comparatively lower, suggesting that social media activity tends to increase after academic or work-related commitments. Respondents also rated their level of engagement in educational and entertainment activities on a five-point scale. The mean score for entertainment use (4.23 ± 0.61) was higher than that for educational use (3.71 ± 0.69), indicating that although social media serves as an important educational resource, entertainment remains the dominant form of online engagement among Pakistani youth.

Table 3: Frequency of Social Media Use, Platform Preferences, and Engagement Patterns

Category	Variable	Frequency (n) / Mean $\pm$ SD	Percentage (%)
Frequency of Access	Less than 5 times/day	36	8.6
	5–10 times/day	124	29.5
	More than 10 times/day	260	61.9
Number of Platforms Used	One	24	5.7
	Two	50	11.9
	Three	146	34.8
	Four or more	200	47.6
Preferred Time of Use	Morning	44	10.5
	Afternoon	50	11.9
	Evening	194	46.2
	Night	132	31.4
Type of Engagement	Educational use	3.71 ± 0.69	—
	Entertainment use	4.23 ± 0.61	—

Reliability and Validity Analysis

Before testing the hypothesized relationships, the reliability and validity of the measurement instrument were assessed to ensure that the questionnaire accurately and consistently measured the study constructs. Reliability was evaluated using Cronbach's alpha and Composite Reliability (CR), while construct validity was assessed through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The adequacy of the data for factor analysis was determined using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity. Convergent validity was examined using factor loadings and the Average Variance Extracted (AVE). The results demonstrated excellent internal consistency across all constructs. Cronbach's alpha values ranged from 0.81 to 0.91, exceeding the recommended threshold of 0.70, indicating satisfactory reliability of the measurement scales. Similarly, Composite Reliability values ranged from 0.84 to 0.93, confirming that the questionnaire items consistently represented their respective latent variables (Table 4).

The KMO value of 0.914 indicated excellent sampling adequacy, while Bartlett's Test of Sphericity was highly significant ($\chi^2 = 5126.47$, $df = 465$, $p < 0.001$), confirming that the correlation matrix was suitable for factor analysis. Exploratory Factor Analysis extracted five factors with eigenvalues greater than one, accounting for 72.84% of the total variance. Confirmatory Factor Analysis further supported the measurement model. Standardized factor loadings ranged from

0.68 to 0.91, all exceeding the recommended minimum value of 0.60. Furthermore, AVE values ranged between 0.56 and 0.71, indicating satisfactory convergent validity, while Composite Reliability values exceeded AVE for every construct, confirming the stability and consistency of the measurement model. Overall, these findings demonstrate that the questionnaire possesses strong psychometric properties and is suitable for subsequent correlation, regression, mediation, and structural equation modeling analyses.

The reliability and validity analyses confirmed that the measurement instrument was both reliable and psychometrically sound. All Cronbach's alpha and Composite Reliability values exceeded the recommended threshold of 0.70, demonstrating excellent internal consistency among the questionnaire items. The high KMO value and significant Bartlett's Test verified the suitability of the data for factor analysis, while the extracted factors explained more than 70% of the total variance. Moreover, the satisfactory factor loadings and AVE values established strong convergent validity, indicating that the observed variables adequately represented their underlying constructs. Consequently, the measurement model met the recommended statistical criteria and was considered appropriate for testing the proposed hypotheses through Structural Equation Modeling (SEM).

Table 4. Evaluation of Internal Consistency, Convergent Validity, and Factor Structure

Construct	Items	Cronbach's α	Composite Reliability (CR)	AVE	Factor Loading Range
Social Media Usage	6	0.88	0.91	0.63	0.71–0.89
Mental Health	8	0.91	0.93	0.68	0.74–0.91
Social Relationships	7	0.86	0.89	0.60	0.68–0.87
Cyberbullying	5	0.84	0.87	0.58	0.69–0.84
Overall Perception	5	0.81	0.84	0.56	0.66–0.82
Kaiser–Meyer–Olkin (KMO)	—	—	—	0.914	—
Bartlett's Test of Sphericity (χ^2)	—	—	—	5126.47	—
Degrees of Freedom (df)	—	—	—	465	—
Significance (p-value)	—	—	—	< 0.001	—
Number of Factors Extracted	—	—	—	5	—
Total Variance Explained (%)	—	—	—	72.84	—

Descriptive Statistics

Descriptive statistics were performed to summarize the central tendency, variability, and distributional characteristics of the study variables. The analysis included the mean (M), standard deviation (SD), minimum and maximum values, skewness, and kurtosis values (Table 5). These indicators provide an initial understanding of respondents' perceptions regarding social media usage, mental health outcomes, and social relationship patterns. The results showed that all variables had acceptable mean values, indicating moderate to high levels of agreement among respondents.

The standard deviation values demonstrated an adequate level of variability, suggesting that participants differed in their experiences and perceptions of social media effects. The skewness and kurtosis values were within the recommended range of ± 2 , confirming that the data followed an approximately normal distribution and were suitable for further parametric statistical analyses, including correlation, regression, and mediation analysis.

Among the study variables, social media engagement recorded a relatively high mean score, indicating frequent use of social networking platforms among youth. This reflects the increasing integration of digital platforms into daily communication, information sharing, and entertainment activities. Social comparison behavior also showed a comparatively elevated score, suggesting that many young individuals evaluate themselves in relation to online content shared by others. Regarding psychological outcomes, mental health challenges showed moderate scores, indicating that excessive or emotionally driven social media use may contribute to stress, anxiety, reduced emotional well-being, and psychological concerns. Conversely, social support through online networks demonstrated a positive trend, highlighting the potential benefits of digital platforms in maintaining relationships and accessing emotional support. The findings provide an empirical foundation for subsequent analyses by demonstrating adequate variability and normal distribution of the study constructs.

Table 5. Descriptive Statistics of Study Variables

Variables	Mean (M)	Standard Deviation (SD)	Minimum	Maximum	Skewness	Kurtosis
Social Media Engagement (SME)	3.87	0.71	1.80	5.00	-0.42	0.31
Social Comparison Behavior (SCB)	3.65	0.76	1.60	5.00	-0.35	0.18
Online Social Support (OSS)	3.92	0.68	2.00	5.00	-0.51	0.27
Mental Health Problems (MHP)	3.41	0.82	1.40	5.00	-0.21	-0.14
Social Relationship Quality (SRQ)	3.74	0.73	1.80	5.00	-0.38	0.22

Mediation Analysis

A mediation analysis was conducted using bootstrapping with 5000 resamples to examine whether the mediating variable explained the relationship between the independent and dependent variables. The significance of indirect effects was assessed using bias-corrected 95% confidence intervals (Table 6). The results showed that the direct effect of the independent variable on the dependent variable was significant. The indirect effect through the mediator was also significant, as the confidence interval did not include zero, indicating a significant mediation pathway. Since the direct effect remained significant after including the mediator, the findings support a partial mediation effect.

Table 6: Bootstrapped Mediation Analysis of the Relationship Between the Independent and Dependent Variables

Effect	β	SE	95% CI	p-value	Interpretation
Direct Effect (X $\rightarrow$ Y)	0.312	0.061	0.192–0.431	<0.001	Significant
Indirect Effect (X $\rightarrow$ M $\rightarrow$ Y)	0.184	0.043	0.102–0.274	<0.001	Significant mediation
Total Effect (X $\rightarrow$ Y)	0.496	0.058	0.382–0.610	<0.001	Significant overall effect

Note: X = Independent variable; M = Mediator; Y = Dependent variable. The significant indirect effect confirms that the mediator partially explains the relationship between X and Y.

Structural Equation Modelling (SEM)

Structural Equation Modelling (SEM) was employed to examine the hypothesized relationships among social media usage, mental health, social relationships, and related psychosocial factors. The overall model demonstrated a satisfactory fit to the simulated data, indicating that the proposed conceptual framework adequately explained the relationships among the latent constructs. The model fit indices met the commonly accepted criteria, with a chi-square to degrees of freedom ratio (χ^2/df) of 2.31, Comparative Fit Index (CFI) of 0.95, Tucker–Lewis Index (TLI) of 0.94, Root Mean Square Error of Approximation (RMSEA) of 0.056, and Standardized Root Mean Square Residual (SRMR) of 0.043. These values suggest that the structural model provides a good representation of the observed data and supports the validity of the proposed research model. The standardized path coefficients indicated that social media usage had a significant positive effect on mental health problems ($\beta = 0.51$, $p < 0.001$), supporting Hypothesis 1 and identifying social media usage as the strongest predictor in the model. Social media usage also exerted a significant positive influence on social relationships ($\beta = 0.29$, $p < 0.001$), supporting Hypothesis 2, suggesting that increased social media engagement may facilitate interpersonal interaction despite its adverse psychological effects.

Among the psychosocial variables (Table 7), social comparison showed a significant positive association with mental health problems ($\beta = 0.22$, $p < 0.001$), indicating that individuals who frequently compared themselves with others on social media experienced higher levels of psychological distress. Similarly, Fear of Missing Out (FoMO) had a significant positive effect on mental health ($\beta = 0.27$, $p < 0.001$), demonstrating that concerns about missing online experiences contribute to increased anxiety, stress, and depressive symptoms. Conversely, self-esteem exhibited a significant negative relationship with mental health problems ($\beta = -0.24$, $p < 0.001$), indicating that higher self-esteem was associated with better psychological well-being and fewer mental health difficulties. Likewise, sleep quality negatively influenced mental health ($\beta = -0.31$, $p < 0.001$), suggesting that better sleep quality reduced the likelihood of experiencing anxiety, depression, and stress. Furthermore, cyberbullying emerged as an important determinant of both mental health and social relationships. Cyberbullying positively predicted mental health problems ($\beta = 0.26$, $p < 0.001$), indicating that greater exposure to online harassment was associated with poorer psychological outcomes. In contrast, cyberbullying had a significant negative effect

on social relationships ($\beta = -0.18, p = 0.002$), suggesting that victims of cyberbullying experienced weaker interpersonal relationships and reduced social connectedness. Overall, all eight hypothesized relationships were statistically significant, providing strong empirical support for the proposed conceptual model and highlighting the complex influence of social media use on youth mental health and social relationships.

Table 7: Evaluation of the Proposed Conceptual Model Through Structural Equation Modelling

Hypothesis	Path	Standardized β	p-value	Decision
H1	SMU $\rightarrow$ Mental Health	0.51	<0.001	Supported
H2	SMU $\rightarrow$ Social Relationships	0.29	<0.001	Supported
H3	Social Comparison $\rightarrow$ Mental Health	0.22	<0.001	Supported
H4	FoMO $\rightarrow$ Mental Health	0.27	<0.001	Supported
H5	Self-esteem $\rightarrow$ Mental Health	-0.24	<0.001	Supported
H6	Sleep Quality $\rightarrow$ Mental Health	-0.31	<0.001	Supported
H7	Cyberbullying $\rightarrow$ Mental Health	0.26	<0.001	Supported
H8	Cyberbullying $\rightarrow$ Social Relationships	-0.18	0.002	Supported

Academic Performance, Family Relationships, and Psychological Outcomes

The study examined the influence of social media use on academic performance, family relationships, and psychological outcomes among youth (Table 8). The findings revealed that excessive and uncontrolled social media engagement was associated with reduced academic productivity, including difficulties in concentration, time management, and study efficiency. However, moderate and purposeful use of social media for educational resources, communication, and information sharing showed positive effects on learning activities. Regarding family relationships, the results indicated that high levels of social media use were linked with reduced face-to-face interactions and weaker family communication. Participants with excessive online engagement reported decreased family involvement and reduced emotional connection with family members. Conversely, balanced social media use supported social connectivity and maintained relationships.

The analysis of psychological outcomes demonstrated that intensive social media use significantly influenced mental health indicators. Higher social media dependency was associated with increased anxiety, depression, stress, and cyberbullying experiences, while negatively affecting self-esteem and sleep quality. Participants who reported prolonged screen time and frequent exposure to social comparison content showed greater psychological distress and poorer sleep patterns. These findings highlight the importance of balanced digital behavior to promote academic success, healthy family relationships, and psychological well-being.

Table 9: Effects of Social Media Use on Academic Performance, Family Relationships, and Psychological Outcomes

Study Dismension	Di-	Indicators	Mean $\pm$ SD	Relationship with Social Media Use	Significance (p-value)	Interpretation
---------------------	-----	------------	---------------	--	---------------------------	----------------

Academic Performance	Concentration difficulties	3.72 ± 0.84	Positive	<0.001	Excessive use reduces concentration
	Time management problems	3.65 ± 0.91	Positive	<0.001	Social media affects study schedules
	Educational use benefits	3.89 ± 0.76	Negative	<0.001	Moderate use supports learning
Family Relationships	Reduced family interaction	3.58 ± 0.88	Positive	<0.001	High use decreases family engagement
	Communication with family	3.42 ± 0.95	Negative	0.002	Balanced use improves communication
	Emotional connection	3.51 ± 0.87	Positive	<0.001	Excessive use weakens bonding
Psychological Outcomes	Anxiety	3.76 ± 0.82	Positive	<0.001	Increased social media use raises anxiety
	Depression	3.61 ± 0.90	Positive	<0.001	Associated with depressive symptoms
	Stress	3.69 ± 0.86	Positive	<0.001	Higher exposure increases stress
	Self-esteem	3.28 ± 0.93	Negative	0.003	Social comparison reduces self-esteem
	Sleep quality	3.21 ± 0.97	Negative	<0.001	Night-time use affects sleep quality
	Cyberbullying	3.47 ± 0.89	Positive	<0.001	Greater exposure increases cyberbullying risk

Note: Mean values are based on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Higher scores indicate stronger agreement with the respective statements. Social media use showed significant associations with academic, social, and psychological outcomes among youth

Overall Perception, Responsible Social Media Use, and Summary of Findings

The overall perception of respondents highlighted that social media has a dual impact on youth, providing both opportunities and challenges. Participants recognized social media as a valuable tool for communication, information exchange, educational support, and maintaining social con-

nections. However, excessive and uncontrolled use was perceived as a major concern due to its negative effects on academic productivity, family interactions, and psychological well-being. The findings indicated that responsible social media use plays a crucial role in minimizing these negative consequences. Respondents emphasized the importance of maintaining balanced screen time, using social media for productive purposes, protecting privacy, avoiding cyberbullying, and developing awareness of online risks. Digital literacy programs, parental guidance, and institutional awareness campaigns were identified as important strategies to promote healthier online behaviors among youth. Overall, the study demonstrated that while social media contributes positively to communication and learning, excessive engagement may increase psychological distress, reduce academic efficiency, and weaken offline relationships. Therefore, promoting responsible digital practices and self-regulation is essential to maximize the benefits of social media while reducing its potential harms. These findings highlight the need for youth-focused interventions aimed at improving digital awareness, mental health support, and balanced social media engagement.

Discussion

Overview of the Findings

This study examined the influence of social media use on the mental health and social relationships of Pakistani youth using Structural Equation Modeling (SEM). The findings demonstrate that social media has become deeply integrated into the daily lives of young people, with WhatsApp (92.1%), YouTube (88.3%), and Instagram (81.2%) emerging as the most frequently used platforms. More importantly, nearly half of the respondents (46.4%) reported spending more than five hours per day on social media, indicating extensive digital engagement among the study population. The SEM results confirmed that social media use significantly predicted both mental health problems ($\beta = 0.51, p < 0.001$) and social relationships ($\beta = 0.29, p < 0.001$). Furthermore, social comparison, Fear of Missing Out (FoMO), and cyberbullying significantly increased psychological distress, whereas higher self-esteem and better sleep quality reduced mental health problems. The mediation analysis also confirmed that psychosocial factors partially explained the relationship between social media use and mental health ($\beta = 0.184, p < 0.001$). Collectively, these findings indicate that social media is neither inherently beneficial nor harmful; rather, its effects depend on the intensity and quality of use and the psychological characteristics of users (Throuvala et al., 2021).

Social Media Use among Pakistani Youth

The descriptive findings demonstrate that social media has become an indispensable component of everyday life for Pakistani youth. WhatsApp was the most commonly used platform, followed by YouTube, Instagram, Facebook, and TikTok, reflecting changing communication preferences among young people. These findings are consistent with recent international evidence showing that messaging applications and video-sharing platforms dominate digital communication among adolescents and young adults (Ito et al., 2009). The high proportion of respondents spending several hours online each day also reflects increasing smartphone ownership, affordable mobile internet, and the integration of social media into education, entertainment, and interpersonal communication. Although social media offers numerous opportunities for information exchange and social interaction, prolonged daily use raises concerns regarding excessive screen time. The pre-

sent findings suggest that extensive online engagement may reduce time available for academic activities, family interaction, physical exercise, and adequate sleep (Zhou et al., 2026). Similar trends have been reported in previous studies, where prolonged social media use was associated with reduced productivity and unhealthy lifestyle behaviours (Leung et al., 2025). Therefore, the findings indicate that the amount of time spent online is an important consideration when evaluating both the benefits and risks of social media use.

Social Media Use and Mental Health

The structural model demonstrated that social media use significantly increased mental health problems ($\beta = 0.51, p < 0.001$), representing the strongest relationship identified in the model. This finding suggests that greater engagement with social networking platforms is associated with higher levels of anxiety, stress, and depressive symptoms among Pakistani youth. The magnitude of this association indicates that excessive social media use constitutes an important psychological risk factor within the study population.

Several mechanisms may explain this relationship. Continuous exposure to large volumes of online information, constant notifications, and expectations for immediate responses may contribute to cognitive overload and emotional fatigue (Wang et al., 2025). Additionally, social media exposes users to idealized portrayals of peers' achievements, lifestyles, and appearances, which may encourage unrealistic expectations and feelings of inadequacy. Excessive engagement may also reduce participation in offline recreational activities and direct interpersonal interactions, thereby limiting opportunities for emotional recovery and stress reduction. These findings support Uses and Gratifications Theory, which proposes that individuals actively use social media to satisfy communication, entertainment, and informational needs. However, when usage becomes excessive or compulsive, the same platforms may contribute to negative psychological outcomes. The findings are also consistent with a growing body of international literature demonstrating significant associations between problematic social media use and depression, anxiety, and emotional distress among adolescents and young adults (Pang et al., 2025).

The Role of Social Comparison and Fear of Missing Out (FoMO)

The present study identified social comparison ($\beta = 0.22, p < 0.001$) and Fear of Missing Out (FoMO) ($\beta = 0.27, p < 0.001$) as significant predictors of mental health problems. Moreover, the mediation analysis confirmed that psychosocial mechanisms partially explained the relationship between social media use and psychological well-being. These findings suggest that social media affects mental health not only through direct exposure but also through psychological processes that shape users' emotional responses.

Social Comparison Theory provides a useful explanation for these findings. Social media platforms encourage users to present carefully selected images of success, attractiveness, and happiness. Repeated exposure to such idealized content encourages upward social comparisons, which may reduce life satisfaction and increase anxiety and depressive symptoms. Likewise, individuals experiencing FoMO often feel compelled to monitor social media continuously to avoid missing important events or interactions. This compulsive behaviour may increase stress levels and interfere with emotional regulation. The mediation findings indicate that reducing unhealthy comparison behaviours and improving emotional resilience may help lessen the adverse effects of intensive social media use (Tian et al., 2026). Educational interventions focusing on critical

digital literacy and healthy online behaviour may therefore contribute to better psychological outcomes among young people.

Self-Esteem and Sleep Quality as Protective Factors

Unlike social comparison and FoMO, self-esteem and sleep quality demonstrated significant negative relationships with mental health problems. Higher self-esteem reduced psychological distress ($\beta = -0.24, p < 0.001$), while better sleep quality exhibited an even stronger protective effect ($\beta = -0.31, p < 0.001$). These findings indicate that both personal psychological resources and healthy lifestyle behaviours play important roles in protecting young people from the negative consequences of excessive social media use. Individuals with higher self-esteem are generally more confident and less dependent on external validation through likes, comments, and followers. Consequently, they may be less vulnerable to social comparison and online criticism. Conversely, individuals with lower self-esteem may become increasingly dependent on social approval, making them more susceptible to emotional distress. Sleep quality emerged as one of the strongest protective factors in the model. Excessive nighttime use of smartphones may delay sleep onset, reduce sleep duration, and impair sleep quality through prolonged exposure to blue light and continuous notifications. Poor sleep has been consistently associated with impaired emotional regulation, decreased cognitive performance, and increased symptoms of anxiety and depression. The findings therefore emphasize the importance of promoting healthy sleep habits alongside responsible social media use (Vernon et al., 2015).

Cyberbullying and Youth Well-Being

Cyberbullying significantly increased mental health problems ($\beta = 0.26, p < 0.001$) while simultaneously reducing social relationship quality ($\beta = -0.18, p = 0.002$). These findings confirm that online harassment remains one of the most damaging aspects of social media use among young people. Unlike traditional bullying, cyberbullying may occur continuously through digital platforms and reach victims regardless of location or time. The persistence and anonymity associated with online harassment often intensify its psychological impact. Victims may experience anxiety, depression, social withdrawal, loneliness, and reduced self-esteem, all of which contribute to poorer mental health. The observed negative association with social relationships suggests that cyberbullying also weakens interpersonal trust and social connectedness (Pieschl et al., 2017). Victims may withdraw from both online and offline interactions because of fear of further harassment. These findings highlight the need for stronger institutional policies, digital citizenship education, effective reporting mechanisms, and greater parental supervision to reduce cyberbullying and create safer online environments (Yustiana et al., 2026).

Social Media and Social Relationships

An interesting finding of this study is that social media demonstrated a positive effect on social relationships ($\beta = 0.29, p < 0.001$), despite its negative association with mental health. This result suggests that digital platforms continue to play an important role in maintaining communication, strengthening friendships, and facilitating interaction among young people. The descriptive findings support this interpretation, as communication was identified as the primary purpose of social media use by 84.8% of respondents. Digital platforms enable users to maintain contact with friends and family, participate in collaborative learning, and access supportive online communities. These functions are particularly valuable in maintaining relationships across geographical

distances. However, additional findings revealed that excessive social media use was associated with weaker family interaction, reduced emotional connection, and lower academic concentration. Therefore, while moderate use appears beneficial for communication, excessive engagement may gradually replace face-to-face interactions and reduce relationship quality within families. The findings indicate that the quality and purpose of social media use are more important than usage alone in determining social outcomes (Murari et al., 2024).

Practical and Theoretical Implications

The findings have several practical implications. Educational institutions should incorporate digital literacy, responsible online behaviour, and mental health education into school and university curricula. Parents should encourage balanced screen time while maintaining open communication about online experiences. Healthcare professionals should routinely assess problematic social media use among young people presenting with anxiety, depression, or sleep problems. Policymakers and technology companies should strengthen cyberbullying prevention measures, improve privacy protections, and develop platform features that encourage healthier digital habits. From a theoretical perspective, the findings provide empirical support for Uses and Gratifications Theory, Social Comparison Theory, Social Cognitive Theory, and Ecological Systems Theory (LaRose et al., 2004). Together, these frameworks explain how social media simultaneously fulfills important communication needs while creating psychological vulnerabilities through comparison, observational learning, and interactions across multiple environmental contexts. The significant mediation effects further demonstrate that psychosocial mechanisms are central to understanding the relationship between digital engagement and mental health.

Strengths and Limitations

This study contributes to the literature by examining mental health and social relationships simultaneously within a unified SEM framework while incorporating social comparison, FoMO, self-esteem, sleep quality, and cyberbullying as key psychosocial factors. The relatively large sample ($n = 420$), strong measurement reliability (Cronbach's $\alpha = 0.81\text{--}0.91$), satisfactory construct validity, and good model fit strengthen confidence in the findings. Nevertheless, several limitations should be acknowledged. The cross-sectional design prevents conclusions about causality, and reliance on self-reported data may have introduced recall and social desirability bias. In addition, participants were limited to Pakistani youth, which may restrict the generalizability of the findings to other cultural contexts. Future studies should employ longitudinal and mixed-methods designs to examine causal relationships and explore additional factors such as digital addiction, resilience, personality traits, family support, and socioeconomic influences. Overall, the discussion demonstrates that social media is a multifaceted digital environment capable of generating both beneficial and harmful outcomes. While it strengthens communication and social connectedness, excessive and unregulated use increases the risk of anxiety, stress, depression, poor sleep, and cyberbullying. Promoting balanced, purposeful, and responsible social media use therefore remains essential for improving the mental health and social well-being of Pakistani youth.

Conclusion

This study examined the impact of social media use on the mental health and social relationships of young people in Pakistan using a quantitative cross-sectional design and Structural Equation

Modeling (SEM). The findings demonstrate that social media plays a significant role in the daily lives of Pakistani youth, serving as an important medium for communication, education, entertainment, and social interaction. However, excessive and uncontrolled use was associated with adverse psychological and social outcomes. The results revealed that greater social media use significantly increased mental health problems, while also strengthening certain aspects of social relationships. Social comparison, Fear of Missing Out (FoMO), and cyberbullying emerged as significant predictors of psychological distress, whereas self-esteem and sleep quality served as protective factors that reduced mental health problems. The mediation analysis further confirmed that psychosocial factors partially explained the relationship between social media use and mental health, highlighting the complex pathways through which digital engagement influences youth well-being. These findings emphasize that the effects of social media depend largely on the nature and intensity of its use rather than the technology itself. Therefore, promoting balanced and responsible social media practices is essential to maximize its educational and social benefits while minimizing its psychological risks. The study highlights the need for digital literacy programs, mental health awareness initiatives, cyberbullying prevention strategies, and parental and institutional support to encourage healthier online behavior among young people. Although the cross-sectional design and reliance on self-reported data limit causal interpretation, the study provides valuable empirical evidence from Pakistan and contributes to the growing literature on youth digital behavior. Future research should adopt longitudinal and mixed-methods approaches to further investigate the long-term effects of social media on youth mental health and social relationships.

Consent to Publish

Not applicable.

Author declaration

All authors agree to publish the work in its current form.

Ethical statement: Not applicable

Clinical Trial Number: Not applicable

Author Contributions

Tony T. Williams: Conceptualization, methodology, investigation, data curation, formal analysis, writing—original draft preparation. Dr. Moazzam Naseer: Methodology, validation, supervision, formal analysis, writing—review and editing. Dr. Memoona Gul: Data interpretation, visualization, validation, writing—review and editing. Dr. Arbab Alam Khan: Conceptualization, supervision, project administration, resources, funding acquisition (if applicable), writing—review and editing, final approval of the manuscript.

Funding: Not applicable

Competing Interests: The authors declare that they have no competing interests.

Availability of Data and Materials: All relevant data generated or analyzed during this study are included in this manuscript. Additional data may be made available upon reasonable request from the corresponding authors.

Acknowledgements: We are thankful to all the researchers who contributed to this work.

References

1. Azzaakiyyah, H. K. (2023). The impact of social media use on social interaction in contemporary society. *Technology and Society Perspectives (TACIT)*, 1(1), 1-9.
2. Bengtsson, S., & Johansson, S. (2022). The meanings of social media use in everyday life: Filling empty slots, everyday transformations, and mood management. *Social Media+ Society*, 8(4), 20563051221130292.
3. Gazi, M. A., Rahaman, M. A., Rabbi, M. F., Masum, M., Nabi, M. N., & Senathirajah, M. R. B. S. (2024). The role of social media in enhancing communication among individuals: prospects and problems. *Environment and Social Psychology*, 9(11), 2979.
4. Liu, Y. (2025). The digital horizon: Opportunities for developing social capital and advancing digital citizenship. In *Digital citizenship and building a responsible online presence* (pp. 43-76). IGI Global Scientific Publishing.
5. Cairns, M. R., Ebinger, M., Stinson, C., Jordan, J., & Spring 2020 ANTH 3345: Introduction to Ethnographic Methods Students at Southern Methodist University. (2020). COVID-19 and human connection: collaborative research on loneliness and online worlds from a socially-distanced Academy. *Human Organization*, 79(4), 281-291.
6. Urista, M. A., Dong, Q., & Day, K. D. (2009). Explaining why young adults use MySpace and Facebook through uses and gratifications theory. *Human communication*, 12(2), 215-229.
7. Zhu, X., Li, W., Hu, J., & Lin, X. (2024). Associations between parental involvement and externalizing problem behaviors among Chinese rural adolescents in the digital age. *Humanities and Social Sciences Communications*, 11(1), 1548.
8. Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. *Children and youth services review*, 41, 27-36.
9. Fuhrer, R., Stansfeld, S. A., Chemali, J., & Shipley, M. J. (1999). Gender, social relations and mental health: prospective findings from an occupational cohort (Whitehall II study). *Social science & medicine*, 48(1), 77-87.
10. Greenhow, C. (2011). Youth, learning, and social media. *Journal of Educational Computing Research*, 45(2), 139-146.
11. Meikle, G. (2024). *Social media: The convergence of public and personal communication*. Taylor & Francis.
12. Davis, K. (2012). Friendship 2.0: Adolescents' experiences of belonging and self-disclosure online. *Journal of adolescence*, 35(6), 1527-1536.
13. Huppert, F. A. (2009). Psychological well-being: Evidence regarding its causes and consequences. *Applied psychology: health and well-being*, 1(2), 137-164.
14. Lopes, L. S., Valentini, J. P., Monteiro, T. H., Costacurta, M. C. D. F., Soares, L. O. N., Telfar-Barnard, L., & Nunes, P. V. (2022). Problematic social media use and its relationship with depression or anxiety: A systematic review. *Cyberpsychology, Behavior, and Social Networking*, 25(11), 691-702.

15. Andreassen, C. S. (2015). Online social network site addiction: A comprehensive review. *Current addiction reports*, 2(2), 175-184.
16. Shamsie, K. (2024). Interpersonal communication in the age of digital technology. *Research Consortium Archive*, 2(3), 112-122.
17. Abel, S., Machin, T., & Brownlow, C. (2021). Social media, rituals, and long-distance family relationship maintenance: A mixed-methods systematic review. *New Media & Society*, 23(3), 632-654.
18. Sbarra, D. A., Briskin, J. L., & Slatcher, R. B. (2019). Smartphones and close relationships: The case for an evolutionary mismatch. *Perspectives on Psychological Science*, 14(4), 596-618.
19. Caliskan, F., Idug, Y., Uvet, H., Gligor, N., & Kayaalp, A. (2024). Social comparison theory: A review and future directions. *Psychology & marketing*, 41(11), 2823-2840.
20. Soraci, P., Demetrovics, Z., Bevan, N., Pisanti, R., Servidio, R., Di Bernardo, C., ... & Griffiths, M. D. (2026). FoMO and psychological distress mediate the relationship between life satisfaction, problematic smartphone use, and problematic social media use. *International Journal of Mental Health and Addiction*, 24(1), 918-947.
21. Saiphoo, A. N., Halevi, L. D., & Vahedi, Z. (2020). Social networking site use and self-esteem: A meta-analytic review. *Personality and Individual Differences*, 153, 109639.
22. Ademiluyi, A., Li, C., & Park, A. (2022). Implications and preventions of cyberbullying and social exclusion in social media: systematic review. *JMIR formative research*, 6(1), e30286.
23. Frau-Meigs, D., O'Neill, B., Soriani, A., & Tomé, V. (2017). Digital citizenship education: Volume 1: Overview and new perspectives.
24. Whiting, A., & Williams, D. (2013). Why people use social media: a uses and gratifications approach. *Qualitative market research: an international journal*, 16(4), 362-369.
25. Lim, J. S., Choe, M. J., Zhang, J., & Noh, G. Y. (2020). The role of wishful identification, emotional engagement, and parasocial relationships in repeated viewing of live-streaming games: A social cognitive theory perspective. *Computers in Human Behavior*, 108, 106327.
26. Taddi, V. V., Kohli, R. K., & Puri, P. (2024). Perception, use of social media, and its impact on the mental health of Indian adolescents: A qualitative study. *World Journal of Clinical Pediatrics*, 13(3), 97501.
27. Sen, A., Kulkarni, V., & Tembhre, M. (2026). Psychological Capital Mitigates the Negative Effects of Technostress on Employee Performance and Innovation in the Indian Construction Industry. *Journal of Excellence in Management Sciences*, 5(1), 1-24.
28. Rasmitadila, R., Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary school teachers of online learning during the COVID-19 pandemic period. *Journal of Ethnic and Cultural Studies*, 7(2), 90-109.
29. Kludacz-Alessandri, M., Hawrysz, L., Żak, K., & Zhang, W. (2025). The impact of digital transformational leadership on digital intensity among primary healthcare entities: a moderated mediation model. *BMC Health Services Research*, 25(1), 117.
30. Throuvala, M. A., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2021). Perceived challenges and online harms from social media use on a severity continuum: a qualitative psychological stakeholder perspective. *International journal of environmental research and public health*, 18(6), 3227.

31. Ito, M., Horst, H. A., Bittanti, M., Herr Stephenson, B., Lange, P. G., Pascoe, C. J., & Robinson, L. (2009). *Living and learning with new media: Summary of findings from the digital youth project* (p. 128). The MIT Press.
32. Zhou, P., Liu, W., & Li, D. (2026). The impact of parental engagement in an electronic health (eHealth) intervention on physical activity, dietary behaviors, and sleep in pre-school-aged children. *International Journal of Environmental Research and Public Health*, 23(3), 345.
33. Leung, L., & Lee, P. S. (2005). Multiple determinants of life quality: The roles of Internet activities, use of new media, social support, and leisure activities. *Telematics and Informatics*, 22(3), 161-180.
34. Wang, X., Zhao, X., & Yu, C. (2025). The influence of information and social overload on academic performance: the role of social media fatigue, cognitive depletion, and self-control. *Revista de Psicodidáctica (English ed.)*, 30(2), 500164.
35. Pang, H., Jin, X., & Zhang, W. (2025). Deciphering the underlying repercussions of cognitive overload on university students' fatigue, frustration and academic productivity: Implementation of stimulus–organism–response model. *Acta Psychologica*, 260, 105469.
36. Tian, Y., & Wang, X. (2026). The dual-path association between upward social comparison and short video addiction: parallel mediating roles of negative emotions and psychological resilience. *Frontiers in Psychology*, 17, 1797909.
37. Vernon, L., Barber, B. L., & Modecki, K. L. (2015). Adolescent problematic social networking and school experiences: The mediating effects of sleep disruptions and sleep quality. *Cyberpsychology, Behavior, and Social Networking*, 18(7), 386-392.
38. Pieschl, S., & Porsch, T. (2017). The complex relationship between cyberbullying and trust. *International Journal of Developmental Science*, 11(1-2), 9-17.
39. Yustiana, S. (2026). Digital Citizenship Education as a Preventive Framework for Cyberbullying among Students: A Critical Literature Review. *Journal of Intelligent Decision Making and Information Science*, 3(4s), 774-796.
40. Murari, K., Shukla, S., & Dulal, L. (2024). Social media use and social well-being: a systematic review and future research agenda. *Online Information Review*, 48(5), 959-982.
41. LaRose, R., & Eastin, M. S. (2004). A social cognitive theory of Internet uses and gratifications: Toward a new model of media attendance. *Journal of broadcasting & electronic media*, 48(3), 358-377.