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# Exploring the Relationship between Social Media Habits and Anxiety Levels in Adults: A Cross-Sectional Study

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## ABSTRACT

**Objective:** To determine the frequency of anxiety and its association with time spent using social media, the platforms used, and the age at which people became involved in using social media as adults. **Study Design:** Cross-sectional observational study. **Settings:** Saidu Group of Teaching Hospitals, Swat Pakistan. **Duration:** September 2024 to August 2025. **Methods:** Socio-demographic variables of active social-media users aged 16 to 45 were measured by data on patterns of using social media, and levels of anxiety through the Generalized Anxiety Disorder-7 (GAD-7) scale. People with severe psychiatric diseases, cognitive impairment, or partial responses were excluded. Data about the use of social media, such as age of initiation and time per day, were highly organized. Associations were tested with chi-square and ANOVA tests. **Results:** There were 67.28 % males and 32.72% females (average age of  $31.34 \pm 8.38$  years). The average age of indulgence in social media is  $17.19 \pm 4.47$  years, and the average time of using social media was  $3.00 \pm 1.19$  hours, mostly on YouTube and Facebook. Moderate anxiety was the most prevalent type (47.7 %), followed by severe (47.7 %), and minimal types (27.52%). A strong positive relationship was recorded between social media use and the level of anxiety ( $r = 0.75$ ,  $p < 0.001$ ). Participants with a higher level of anxiety had started using social media earlier in life and had registered more hours of use per day ( $p < 0.001$ ). **Conclusion:** Social media can negatively impact mental health, with early and prolonged use linked to higher anxiety levels.

**Keywords:** Anxiety, Social media, General anxiety disorder-7 (GAD-7), Adults.

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## INTRODUCTION

Anxiety is a mental disorder characterized by a lot of worry, Apprehension, and the accompanying physiological actions like restlessness and tension. It has proven to be a major mental health issue on the planet. Anxiety is more prevalent in young adults, which can be explained by unique factors such as academic, career-related, and transitional aspects of life.<sup>1</sup> Anxiety is extremely high among youth and young adults in Pakistan. A community-based survey conducted in Karachi has shown that 27.4% of adults experience symptoms of anxiety and depression.<sup>2</sup> A second study has found that the prevalence of anxiety symptoms was 17.5% among people aged between 20 and 29 years.<sup>3</sup> Due to the deep-rooted cultural stigmatization of mental health and a lack of psychological support and rising social pressures, anxiety has become an even more pressing issue in our region.<sup>4</sup>

The active growth of digital technologies has made a fundamental change in the process of communication between

people and made social media an essential part of everyday life. Social media platforms, including Facebook, Instagram, TikTok, and Twitter, have altered the way of communication by enabling people to express themselves, socialize, and get educational information.<sup>5</sup> Empirical evidence shows that young adults in Pakistan use social media as a major channel of social interaction.<sup>6</sup> Although the widespread nature of social media reiterates its significance in our day-to-day lives, research shows that overuse of the platform can be linked with psychological issues, such as anxiety, depression, and emotional imbalance.<sup>7</sup>

Although social media brings considerable psychosocial benefits, all the growing evidence suggests that it can hurt mental health. Excess use or maladaptive use has been associated with high levels of anxiety, psychological distress, and depressive symptomology in young adults. Most research findings during the COVID-19 pandemic showed that excessive exposure to social media was associated with increased anxiety, and 45.5% of the respondents had clinically significant

symptoms.<sup>8</sup> It has also been reported that long-term social media use leads to maladaptive social interactions, fear of missing out, perceived social isolation, and sleep architecture disruptions.<sup>9</sup> This type of pattern can contribute to psychological vulnerability and emotional dysregulation, especially in the case of young adults, who represent the most active group in the online space.<sup>10</sup>

Due to high rates of anxiety and the enhanced utilization of social media in the lives of young adults in Pakistan, there is a need to investigate the relationship between social media consumption and mental well-being. The comprehension of this connection can be used to create and implement effective, evidence-based initiatives that facilitate healthier online interactions and lead the emerging mental health initiatives that are likely to manage the difficulties of the current online environment. This study also examines how patterns of social media engagement relate to anxiety levels among Pakistani adults. This study can help to fill a significant gap in existing research.

The objective of this study was to determine the frequency of anxiety and its association with the duration of social media use, preferred platforms, and the age at which social media use began among adults aged 16 to 45 years attending a tertiary care hospital.

## METHODS

This cross-sectional observational study was conducted from September 2024 to August 2025 in the Psychiatry Unit of Saidu Group of Teaching Hospitals, Swat, Pakistan, using a non-probability consecutive sampling technique. Ethical approval was obtained from the hospital's ethical review board before data collection via letter number 242-ERB/SMC/025 dated 24<sup>th</sup> November 2025. Written informed consent was obtained from all participants in accordance with the principles outlined in the Declaration of Helsinki.

Using the World Health Organization (WHO) calculator 1.1 (Estimating a population proportion with specified absolute precision), the sample size was calculated to be 327, based on a 5% margin of error and a 95% confidence level, using a 30.6% prevalence of mild anxiety among social media users reported in a previous study.<sup>11</sup>

The study included adults between 16 and 45 years of age, of both sexes, who were Pakistani nationals and active social media users, defined as engaging with any social media platform for at least one hour daily over the past month. Participants were recruited both from Saidu Medical College, Swat, and from a private psychiatry clinic during the study period and provided written informed consent before enrollment. Individuals were excluded if they had a prior diagnosis of a severe psychiatric disorder such as schizophrenia or bipolar affective disorder, exhibited cognitive impairment or intellectual disability that interfered with their ability to complete the questionnaire, provided incomplete or inconsistent responses, or were currently admitted for inpatient psychiatric care.

Participants who came to attend to psychiatric patients who met the inclusion criteria were invited to take part as long as they provided informed consent. The questionnaire was structured in four separate sections to collect data in the form of a questionnaire. The first section was comprised of social-demographic data, including age, gender, educational attainment, and socioeconomic status. The second part studied the patterns of social media usage and asked questions concerning the favorite platform (e.g., Facebook, Instagram, YouTube, X (Twitter), age when using social media, and the number of hours spent on the screen daily. The third part performed research on the social media impact on mental health, including such variables as the quality of sleep, behavioral change, attention challenges, the pressure to maintain a certain online identity, and the experience of cyberbullying. The answers were recorded on a four-point Likert scale of never to always.

The fourth part measured anxiety levels with the Generalized Anxiety Disorder-7 (GAD-7) instrument, which is a validated anxiety symptomatology screening instrument. It is a collection of seven items that question how often the participants experienced the occurrence of the following aspects: nervousness, excessive apprehension, restlessness, irritability, or difficulty relaxing in the past two weeks. Each item is rated on a 4-point scale (0 = "not at all," 1 = "several days," 2 = "more than half the days," and 3 = "nearly every day"), giving a total score from 0 to 21. Scores of 0–4 indicate minimal anxiety, 5–9 mild anxiety, 10–14 moderate anxiety, and 15–21 severe anxiety.

Data were analyzed using R software. Categorical variables were presented as frequencies and percentages, and continuous variables as mean  $\pm$  SD. Associations between social media usage and anxiety were tested using Chi-square for categorical variables and the ANOVA test for continuous variables. The Pearson Correlation test was run between social media use and anxiety score.  $p < 0.05$  was considered statistically significant.

## RESULTS

The age was normally distributed as shown in Fig 1. Males ( $n = 220, 67.28\%$ ) were more than females ( $n = 107, 32.72\%$ ). The mean age of participants was  $31.34 \pm 8.38$  years. The mean starting age for social media use was  $17.19 \pm 4.47$  years, and participants spent an average of  $3.00 \pm 1.19$  hours daily on social media. YouTube was the most commonly used platform ( $n = 124, 37.92\%$ ), followed by Facebook ( $n = 112, 34.25\%$ ), Instagram ( $n = 48, 14.68\%$ ), and Twitter ( $n = 43, 13.15\%$ ). The mean GAD-7 score was  $10.01 \pm 5.79$ . (Table 1)

Among the 327 participants, most exhibited a moderate level of anxiety ( $n = 156, 47.71\%$ ), followed by minimal anxiety ( $n = 90, 27.52\%$ ) and severe anxiety ( $n = 58, 17.74\%$ ). Only a small proportion had mild anxiety ( $n = 23, 7.03\%$ ). (Fig 2) The correlation between social media use and anxiety score was high, positive ( $r=0.75$ ) and statistically significant ( $p<0.001$ ). (Fig 3)

Figure 1: Histogram for the age distribution

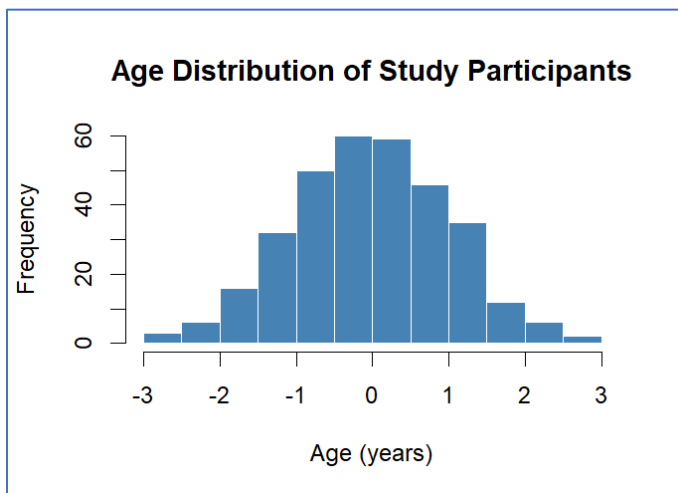


Table 1: Demographic characteristics, social media use, and anxiety levels among study participants (n = 327)

Characteristic	N = 327
Age, years	31.34 (8.38)
Gender	
Female	107 (32.72)
Male	220 (67.28)
Social media platform	
Facebook	112 (34.25)
Instagram	48 (14.68)
X (Twitter)	43 (13.15)
YouTube	124 (37.92)
Starting age at using social media, years	17.19 (4.47)
Daily hours of social media use	3.00 (1.19)
GAD-7 Score	10.01 (5.79)

Mean (SD); n (%)

Figure 2: Pattern of anxiety level among social media users

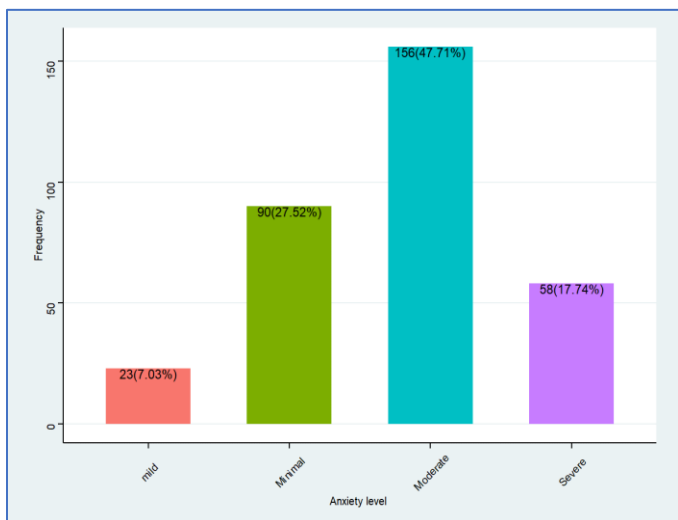
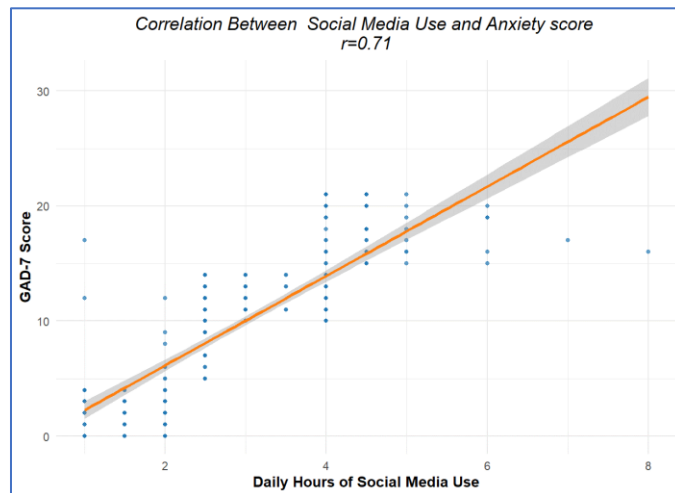


Figure 3: Correlation between social media use & anxiety score



No significant difference in anxiety levels was found by gender ( $p = 0.95$ ) or by type of social media used ( $p = 0.75$ ). Participants with severe anxiety started using social media at a significantly younger age ( $11.22 \pm 1.99$  years) compared with those with moderate ( $16.01 \pm 2.27$  years) and minimal anxiety ( $22.23 \pm 2.74$  years) ( $p < 0.001$ ). The daily duration of social media use was also significantly higher among participants with severe anxiety ( $4.59 \pm 0.92$  hours) than among those with moderate ( $3.27 \pm 0.65$  hours) and minimal anxiety ( $1.66 \pm 0.40$  hours) ( $p < 0.001$ ). (Table 2)

Table 2: Comparison of anxiety level among gender, social media use, starting age, and daily hours of use

Characteristic	Mild N = 23	Minimal N = 90	Moderate N = 156	Severe N = 58	p-value
<b>Gender</b>					0.95*
Female	7 (30.4)	28 (31.1)	53 (34.0)	19 (32.8)	
Male	16 (69.6)	62 (68.9)	103 (66.0)	39 (67.2)	
<b>Social media type</b>					0.75*
Facebook	9 (39.1)	35 (38.9)	49 (31.4)	19 (32.8)	
Instagram	3 (13.0)	11 (12.2)	23 (14.7)	11 (19.0)	
X (Twitter)	4 (17.4)	8 (8.9)	21 (13.5)	10 (17.2)	
YouTube	7 (30.4)	36 (40.0)	63 (40.4)	18 (31.0)	
<b>Start age, years</b>	20.48 (0.51)	22.23 (2.74)	16.01 (2.27)	11.22 (1.99)	<0.001**
<b>Daily hours</b>	2.37 (0.22)	1.66 (0.40)	3.27 (0.65)	4.59 (0.92)	<0.001**

\*Chi-square test, \*\*ANOVA test

DISCUSSION

In this study of 327 adults aged 16 to 45 attending a tertiary care hospital, we observed that anxiety was common, with almost half of the participants experiencing moderate levels of anxiety. Severe anxiety was present in nearly one-fifth of participants, while minimal anxiety affected about a quarter, and only a small proportion reported mild anxiety. On average, participants spent around three hours per day on social media. Longer daily social media use was associated with severe anxiety levels. Those with severe anxiety had begun using social media at a much younger age compared with those with moderate or

minimal anxiety, and they also spent the most time on these platforms each day, averaging over four and a half hours. Anxiety levels did not differ significantly between males and females, nor did they vary according to the type of social media platform used.

The positive association between early initiation and prolonged daily use of social media with higher anxiety levels can be understood through several interconnected mechanisms. Spending more time online increases opportunities for social comparison, fear of missing out, and exposure to distressing or unrealistic content, all of which can aggravate anxiety symptoms.<sup>12</sup> A meta-analysis found that social media addiction correlates with anxiety ( $r = 0.51$ ,  $p < 0.001$ ) across 26,166 students.<sup>13,14</sup> Beginning social media use at a younger age may coincide with critical periods of psychological development, when emotional regulation and coping strategies are still maturing, rendering younger individuals more vulnerable to stress from online interactions. Additionally, excessive social media engagement can displace health-promoting behaviors such as sufficient sleep, regular physical activity, and direct social interactions, further contributing to anxiety risk.<sup>15</sup> The absence of significant differences in anxiety across different platforms suggests that the overall intensity and timing of social media use are more influential on mental health outcomes than the particular type of platform accessed.

In an exploratory research, Tajjamul *et al.*<sup>16</sup> analyzed 120 university students in Karachi and discovered that mental health outcomes linked with social media were anxiety and the fear of missing out (FoMO). They, however, failed to see a statistically significant relationship with frequency of use. On the other hand, our research found that the severity of anxiety was strongly related to the frequency and the duration of social media use. This difference can be explained by the differences in the study design, such as sample size, age distribution, and the assessment instruments. We conducted research among adults whose ages were between 16 and 45 years old and used the GAD -7 to define the scale of anxiety severity.

Faqihi *et al.*<sup>17</sup> studied 2,856 Saudi Arabian adolescents and discovered that older adolescents (16–24 years old) were more vulnerable to having negative mental health outcomes attributed to social-media use. Even though the extent of these effects, in general, was minor, the findings do confirm that age and patterns of exposure are two factors that make one susceptible, which supports our finding that, at the adult stage, the earlier one begins to use social-media the more anxious he/she becomes. The same studies in Malaysia<sup>18</sup> and India<sup>19</sup> also reported that social-media use has the potential to increase anxiety, negative affect and reduce self-esteem especially when overused or motivated by seeking confirmation online. These outcomes agree with ours on the effect of social-media usage of an extended period of time. As found by Rijal *et al.*<sup>20</sup> in Nepal, adolescents that started to use social-media earlier in life and used it longer each day had higher anxiety levels which supports our dose-response finding that the longer the period of use the higher the level of anxiety.

These findings have implications that are significant to mental-health interventions. Limiting the exposure to the social media

at the early age, managing the daily use of this tool and promoting the digital literacy as well as establishing the direct social interactions can help to reduce the likelihood of anxiety in adolescents and adults. The longitudinal research is required to clarify causal relationships as well as to observe possible mediating factors, including sleep disturbance, cyberbullying, and fear of missing out (FoMO) in different age groups and cultural conditions.

## CONCLUSION

Although social media has been a good channel of communication and education, it may have an adverse impact on mental wellness. The development of engagement at a young age along with a long-term use is accompanied by an increase in the state of anxiety. These results highlight the fact that social media is not always an unchecked blessing, thus one should be particularly watchful of the regulation of its use and be aware of its potential consequences in the psychological well-being.

## LIMITATIONS

The main limitations of our study are:

1. It is a single-center study
2. Sample size is small
3. Data regarding the use of TikTok was not gathered.

## SUGGESTIONS / RECOMMENDATIONS

Further studies with a larger sample size and multi-center studies are advised.

## CONFLICT OF INTEREST / DISCLOSURE

There is no conflict of interest declared by all the authors.

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## REFERENCES

1. Yatham LN, Chakrabarty T, Bond DJ, Schaffer A, Beaulieu S, Parikh SV, et al. Canadian Network for Mood and Anxiety Treatments (CANMAT) and International Society for Bipolar Disorders (ISBD) Recommendations for the Management of Patients With Bipolar Disorder With Mixed Presentations. *Bipolar Disorders*. 2021 Aug;23(8):767–788.
2. Farooq S, Khan T, Zaheer S, Shafique K. Prevalence of Anxiety and Depressive Symptoms and Their Association With Multimorbidity and Demographic Factors: A Community-Based, Cross-Sectional Survey in Karachi, Pakistan. *BMJ Open*. 2019 Nov;9(11):e029315.
3. Bano Z, Ejaz M, Ahmad I. Assessment of Prevalence of Anxiety in Adult Population and Development of Anxiety Scale: A Study of 819 Patients With Anxiety Disorder. *Pakistan Journal of Medical Sciences*. 2021 Mar–Apr;37(2):472–476.
4. Rafiq K, Batool SY, Fatima K, Mushtaq M, Sultana N, Saify ZS. Barriers and Attitudes Toward Psychotherapy in Pakistan: A Cross-Sectional Study. *Yemeni Journal of Medical Sciences*. 2025 Sep;19(9):67–69.
5. Hamza A, Yonghong D, Ullah I. Dynamic Shifts in Social Media Usage in Pakistan: A Comparative Analysis Across Pre-, During-, and Post-COVID-19 Periods. *Journalism and Media*. 2025 Jun;6(2):59.
6. Ali R. Social Media and Youth in Pakistan: Implications on Family Relations. *Global Media Journal*. 2016;14:26.

7. Zsila Á, Reyes MES. Pros and Cons: Impacts of Social Media on Mental Health. *BMC Psychology*. 2023 Dec;11(1):201.
8. Sarwar A, Liaqat S, Masood MU, Imran N. Social Media Exposure and Mental Health During COVID-19 Outbreak. *Khyber Medical University Journal*. 2021 Apr–Jun;13(2):91–96.
9. Zhu X, Zheng T, Ding L, Zhang X, Li Z, Jiang H. Exploring Associations Between Social Media Addiction, Social Media Fatigue, Fear of Missing Out and Sleep Quality Among University Students: A Cross-Sectional Study. *PLOS ONE*. 2023 Oct;18(10):e0292429.
10. Gioia F, Rega V, Boursier V. Problematic Internet Use and Emotional Dysregulation Among Young People: A Literature Review. *Clinical Neuropsychiatry*. 2021 Feb;18(1):41.
11. Valkenburg PM, Meier A, Beyens I. Social Media Use and Its Impact on Adolescent Mental Health: An Umbrella Review of the Evidence. *Current Opinion in Psychology*. 2022 Apr;44:58–68.
12. Einstein DA, Dabb C, Fraser M. FoMO, but Not Self-Compassion, Moderates the Link Between Social Media Use and Anxiety in Adolescence. *Australian Journal of Psychology*. 2023 Mar;75(1):2217961.
13. Jing Z, Yang W, Lei Z, Junmei W, Hui L, Tianmin Z. Correlations Between Social Media Addiction and Anxiety, Depression, FoMO, Loneliness and Self-Esteem Among Students: A Systematic Review and Meta-Analysis. *PLOS ONE*. 2025 Sep;20(9):e0329466.
14. Steinberger P, Kim H. Social Comparison of Ability and Fear of Missing Out Mediate the Relationship Between Subjective Well-Being and Social Network Site Addiction. *Frontiers in Psychology*. 2023 Apr;14:1157489.
15. Mougharbel F, Chaput J-P, Sampasa-Kanyinga H, Hamilton HA, Colman I, Leatherdale ST, et al. Heavy Social Media Use and Psychological Distress Among Adolescents: The Moderating Role of Sex, Age, and Parental Support. *Frontiers in Public Health*. 2023 Aug;11:1190390.
16. Tajjamul S, Aleem N. Impacts of Social Media on Mental Health of Youth in Karachi, Pakistan: An Exploratory Study. *Global Digital & Print Media Review*. 2022;5(2):135–146.
17. Faqih FA, Qutob RA, Subh RHM, Aljathalin LAM, Alshalan LZ, Yati SMA, et al. Examining the Effects of Social Media on Mental Health Among Adolescents in Saudi Arabia. *Cureus*. 2024 Jan;16(1):e53261.
18. Samantha L, Zhooriyati S. The Factors of Social Media Usage and Mental Health: A Study on Malaysian Adolescents. *Asian Journal of Behavioural Sciences*. 2022;4(2):45–56.
19. Singh V. Impact of Social Media on Social Life of Teenagers in India: A Case Study. *Journal of Academic Perspective Social Studies*. 2019;12(1):13–24.
20. Rijal A, Thapa P, Sapkota A, Rijal S. Social Media Use and Its Impact on Mental Health Among Adolescents: A Cross-Sectional Study of Kathmandu. *Modern Issues in Medicine and Management*. 2024;28(2):44–58.