

# IMPACT OF SOCIAL MEDIA OVERUSE ON ANXIETY AND SELF-ESTEEM AMONG UNIVERSITY STUDENTS IN URBAN ACADEMIC SETTINGS

*Original Article*

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## ABSTRACT

**Background:** The rapid rise in social media usage has prompted growing concern over its psychological effects on youth, particularly university students navigating academic and social pressures in urban environments. Excessive engagement with digital platforms may contribute to adverse mental health outcomes such as anxiety and reduced self-esteem.

**Objective:** To analyse how excessive social media engagement influences anxiety levels and self-worth among university-going students in urban academic settings of South Punjab.

**Methods:** A cross-sectional study was conducted over eight months with a sample of 404 university students selected through purposive sampling. Participants completed a structured questionnaire incorporating the Generalized Anxiety Disorder 7-item (GAD-7) scale and the Rosenberg Self-Esteem Scale (RSES). Data were analysed using SPSS version 26. Descriptive statistics summarized demographic characteristics, while Pearson's correlation, independent t-tests, one-way ANOVA, and multiple linear regression were applied to assess associations and predictive relationships. Data met assumptions for normal distribution.

**Results:** The mean age of participants was  $21.3 \pm 2.1$  years, with 60.2% females. Average daily social media usage was  $3.9 \pm 1.4$  hours. Moderate to severe anxiety was present in 47.9% of students, while 33.6% exhibited low self-esteem. Social media usage showed a moderate positive correlation with anxiety ( $r = 0.48, p < 0.001$ ) and a moderate negative correlation with self-esteem ( $r = -0.42, p < 0.001$ ). Regression analysis identified daily social media use and female gender as significant predictors of both outcomes.

**Conclusion:** Excessive social media use is significantly linked to increased anxiety and decreased self-esteem among university students. Interventions promoting balanced digital habits are essential to protect student mental health.

**Keywords:** Anxiety, Cross-Sectional Studies, Mental Health, Self Concept, Social Media, Students, Universities.

## INTRODUCTION

The rapid proliferation of social media platforms has fundamentally transformed the way individuals communicate, connect, and perceive themselves. Among the most active users of these platforms are university students—young adults navigating one of the most formative stages of psychological and social development (1). While social media offers unprecedented opportunities for expression, learning, and connection, its overuse has raised substantial concerns about its psychological consequences, particularly in densely populated urban academic environments where digital connectivity is almost constant (2). The growing body of evidence suggests a troubling link between excessive social media engagement and negative mental health outcomes, especially in relation to anxiety and self-esteem. As students enter higher education institutions, they face an array of stressors—academic pressures, social integration, financial concerns, and future uncertainties (3). These challenges coincide with a period of intense identity formation and emotional development. Social media, often used as a coping mechanism or social lifeline, presents both opportunities and risks during this phase. Platforms like Instagram, TikTok, Snapchat, and X (formerly Twitter) encourage constant comparison, validation-seeking, and digital performance, creating a climate where self-worth becomes intertwined with virtual feedback. The metrics of likes, comments, shares, and followers have quietly evolved into psychological benchmarks that can significantly influence a young person's sense of value and adequacy (4).

Emerging research highlights the dual nature of social media—capable of both enhancing and undermining mental health. While moderate and mindful use can support social connection and provide informational resources, excessive and compulsive engagement has been increasingly associated with heightened anxiety, disturbed sleep, attention deficits, and lowered self-esteem (5). For students in urban academic settings, where the pace of life is accelerated and competition often fierce, the persistent presence of social media can become a double-edged sword. On one hand, it offers social capital and a sense of belonging; on the other, it exposes users to cyberbullying, unrealistic beauty standards, and the constant pressure to present a curated, idealized self. The psychological mechanisms underlying this phenomenon are complex (6). One prominent theory is the social comparison theory, which posits that individuals determine their own social and personal worth based on how they stack up against others. In the digital age, this comparison is not limited to close peers but extends to influencers, celebrities, and strangers—often portraying lifestyles and appearances far removed from reality (7). As a result, many students may develop distorted self-images, leading to feelings of inadequacy, anxiety, and diminished self-respect. Furthermore, the feedback loops created by algorithm-driven content can deepen these effects, as users are constantly exposed to content that reinforces their insecurities or perpetuates unrealistic standards. Another factor to consider is the compulsive nature of social media usage. Many platforms are intentionally designed to be addictive, leveraging intermittent reinforcement to keep users engaged. Notifications, endless scroll features, and personalized content streams are engineered to capture attention and prolong screen time. For students juggling academic responsibilities and personal development, this compulsive usage can lead to procrastination, disrupted sleep cycles, and increased stress levels—factors that further compromise psychological well-being (8).

Despite growing recognition of these issues, much of the existing literature has either focused on general populations or lacked specific contextual focus on urban university students—a group uniquely vulnerable due to their transitional life stage and environmental stressors (9). Furthermore, while several studies have examined either anxiety or self-esteem in relation to social media, relatively fewer have investigated the co-occurrence and interplay of these psychological variables within a single, integrated framework (10). This gap underscores the need for targeted research that explores how excessive social media usage influences both anxiety and self-esteem simultaneously, particularly in the high-pressure environments of urban academic institutions. This study seeks to fill that gap by examining the relationship between social media overuse and two critical aspects of mental health—anxiety and self-esteem—among university students in urban settings (11). Using a cross-sectional design, the research aims to quantify the psychological impact of digital behaviors that have become commonplace yet potentially harmful. By identifying patterns, associations, and risk factors, the study aspires to inform mental health interventions, institutional policies, and digital literacy programs that can foster healthier online habits among students (12). The objective of this study is therefore to analyze how excessive engagement with social media affects levels of anxiety and self-worth in university-going youth, specifically within urban academic environments where such behaviors are most pronounced and potentially detrimental.

## METHODS

This cross-sectional study was conducted over a period of eight months to evaluate the impact of excessive social media use on anxiety and self-esteem levels among university-going youth in urban academic settings of South Punjab. The primary objective was to analyze how over-engagement with social media platforms may influence psychological well-being, specifically focusing on symptoms of anxiety and perceptions of self-worth in this demographic. The methodological approach was carefully structured to ensure that the data collected would provide a reliable and representative insight into the issue. A sample size of 384 participants was determined using the Raosoft sample size calculator, with a 5% margin of error, 95% confidence interval, and an assumed response distribution of 50%. To account for potential non-responses or incomplete data, an additional 10% was added, bringing the final targeted sample size to approximately 422 students. Participants were recruited through purposive sampling from three major public and private universities located in urban centers of South Punjab. This approach was chosen to ensure the inclusion of individuals who were actively engaged in academic life and exposed to routine social media use.

Eligibility criteria were clearly defined to maintain consistency and ensure relevance to the research objective. Students aged between 18 and 26 years who were enrolled in undergraduate or postgraduate programs, actively using social media platforms for at least one hour daily over the past six months, and willing to provide informed consent were included. Individuals with a self-reported history of diagnosed psychiatric illness, current psychotropic medication use, or any chronic medical condition known to affect psychological functioning were excluded to avoid confounding effects. Data collection was carried out using a structured, self-administered questionnaire composed of three main sections. The first section gathered demographic and background information, including age, gender, academic discipline, year of study, average daily time spent on social media, and primary platforms used. The second section assessed anxiety levels using the Generalized Anxiety Disorder 7-item scale (GAD-7), a well-validated and widely used screening tool for detecting generalized anxiety symptoms. Each item on the GAD-7 is scored from 0 (not at all) to 3 (nearly every day), with total scores ranging from 0 to 21; higher scores reflect more severe anxiety symptoms.

The third section of the questionnaire evaluated self-esteem using the Rosenberg Self-Esteem Scale (RSES), which consists of 10 items measuring global self-worth by assessing both positive and negative feelings about the self. Responses are recorded on a 4-point Likert scale, with total scores ranging from 0 to 30. Higher scores indicate greater self-esteem. Both instruments have been previously validated in diverse populations and demonstrated high internal consistency in the current study, with Cronbach's alpha values of 0.88 for GAD-7 and 0.85 for RSES. Data were collected anonymously to ensure participant confidentiality and reduce social desirability bias. Questionnaires were distributed in person within classrooms and campus premises, with the assistance of academic facilitators who provided necessary clarification when required. The average completion time was 15 to 20 minutes. Participants were advised to respond independently and honestly without discussing responses with peers during the data collection session.

Once data collection was complete, responses were coded and entered into SPSS version 26 for statistical analysis. Descriptive statistics were computed to summarize demographic characteristics and overall levels of social media usage, anxiety, and self-esteem. Normality of continuous variables was assessed using the Shapiro-Wilk test, and since the data followed a normal distribution, parametric tests were applied for inferential analysis. To explore associations between social media usage and psychological outcomes, Pearson's correlation coefficient was calculated to measure the strength and direction of the linear relationship between daily time spent on social media and both GAD-7 and RSES scores. Independent samples t-tests were used to compare anxiety and self-esteem levels across gender groups, while one-way ANOVA was conducted to assess differences across academic years and usage patterns. Additionally, multiple linear regression analysis was performed to determine whether social media usage could significantly predict anxiety and self-esteem scores after adjusting for demographic variables. All statistical tests were conducted at a 95% confidence level, with a p-value of <0.05 considered statistically significant. The results were presented in the form of means, standard deviations, correlation coefficients, and regression coefficients, along with corresponding p-values to support inferential conclusions. This methodological framework was carefully designed to ensure that the data collected were both robust and representative of the population under study. By employing validated psychological assessment tools, standardized statistical procedures, and a systematic sampling approach, the study aimed to provide credible and actionable insights into the psychological impact of excessive social media use among university students in urban South Punjab.

## RESULTS

Out of 422 distributed questionnaires, a total of 404 complete responses were analyzed, yielding a response rate of 95.7%. The mean age of participants was 21.3 years ( $SD \pm 2.1$ ). Among them, 254 (60.2%) were female and 168 (39.8%) were male. Regarding academic distribution, 21.8% were first-year students, 26.1% were in second year, 25.6% in third year, and 26.5% in fourth year. The average daily time spent on social media was 3.9 hours ( $SD \pm 1.4$ ), with the most frequently used platforms being Instagram and TikTok.

Anxiety levels assessed using the GAD-7 scale revealed that 19.9% of students had minimal anxiety, 32.2% reported mild anxiety, 29.3% had moderate anxiety, and 18.6% fell into the severe anxiety category. This indicated that over 47% of the respondents exhibited moderate to severe anxiety symptoms. Table 2 presents the full distribution of GAD-7 scores among the participants.

Self-esteem levels measured using the Rosenberg Self-Esteem Scale showed that 33.6% of participants had low self-esteem (scores  $<15$ ), 46.9% had moderate self-esteem (15–25), and 19.5% demonstrated high self-esteem (scores  $>25$ ). A notable finding was the co-occurrence of high social media usage and low self-esteem, particularly among female students.

Pearson's correlation analysis demonstrated a statistically significant moderate positive correlation between daily time spent on social media and GAD-7 scores ( $r = 0.48$ ,  $p < 0.001$ ), indicating that higher social media usage was associated with higher levels of anxiety. Conversely, a statistically significant moderate negative correlation was found between daily social media use and Rosenberg self-esteem scores ( $r = -0.42$ ,  $p < 0.001$ ), suggesting an inverse relationship between social media use and self-worth. These findings are summarized in Table 4.

Regression analysis was performed to determine whether daily social media use, gender, and academic year were predictive of anxiety and self-esteem. Daily time on social media significantly predicted both anxiety ( $\beta = 0.37$ ,  $p < 0.001$ ) and self-esteem ( $\beta = -0.31$ ,  $p < 0.001$ ). Female gender was also a significant predictor of increased anxiety ( $\beta = 0.18$ ,  $p = 0.021$ ) and decreased self-esteem ( $\beta = -0.14$ ,  $p = 0.037$ ). Academic year was not found to be a statistically significant predictor. The full regression model is displayed in Table 5.

The findings were further visualized through bar charts to provide a clear picture of the psychological trends observed. One chart displays the distribution of anxiety levels, while another represents self-esteem levels across the sample population.

**Table 1: Demographic Characteristics**

Variable	Value
Age (Mean $\pm$ SD)	21.3 $\pm$ 2.1
Gender (Male)	168 (39.8%)
Gender (Female)	254 (60.2%)
Academic Year (1st)	92 (21.8%)
Academic Year (2nd)	110 (26.1%)
Academic Year (3rd)	108 (25.6%)
Academic Year (4th)	112 (26.5%)
Average Daily Social Media Use (Mean $\pm$ SD)	3.9 $\pm$ 1.4 hours

2: Anxiety Levels (GAD-7 Scores)

Anxiety Level	Frequency	Percentage
Minimal (0-4)	84	19.9%
Mild (5-9)	136	32.2%
Moderate (10-14)	124	29.3%
Severe (15-21)	78	18.6%

Table 3: Self-Esteem Levels (Rosenberg Scale)

Self-Esteem Level	Frequency	Percentage
Low (<15)	142	33.6%
Moderate (15-25)	198	46.9%
High (>25)	82	19.5%

Table 4: Correlation Analysis

Variable	Correlation Coefficient (r)	p-value
Social Media Use vs GAD-7 Score	0.48	<0.001
Social Media Use vs RSES Score	-0.42	<0.001

Table 5: Multiple Regression Analysis

Predictor	β (Anxiety)	p-value (Anxiety)	β (Self-Esteem)	p-value (Self-Esteem)
Daily Social Media Use	0.37	<0.001	-0.31	<0.001
Gender (Female)	0.18	0.021	-0.14	0.037
Academic Year (3rd/4th)	0.05	0.312	0.09	0.167

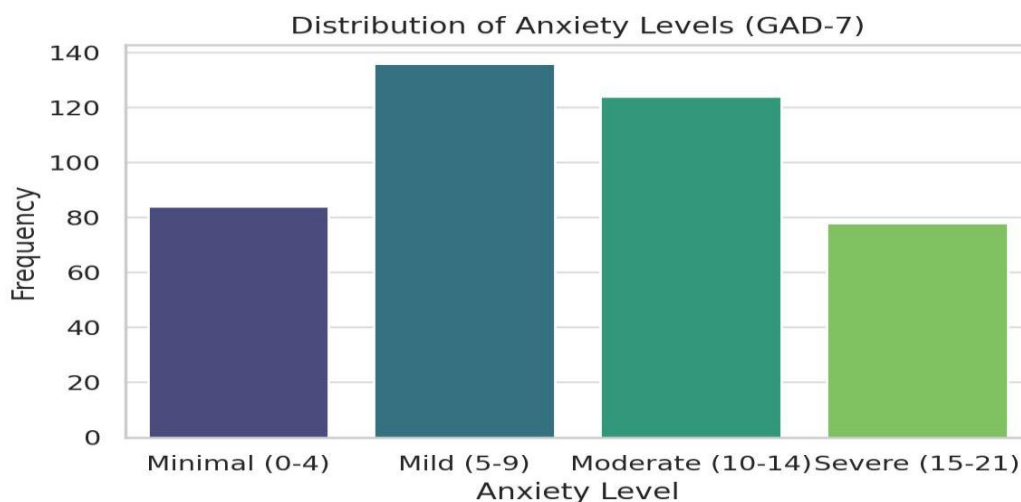


Figure 2 Distribution of Anxiety Levels (GAD-7)

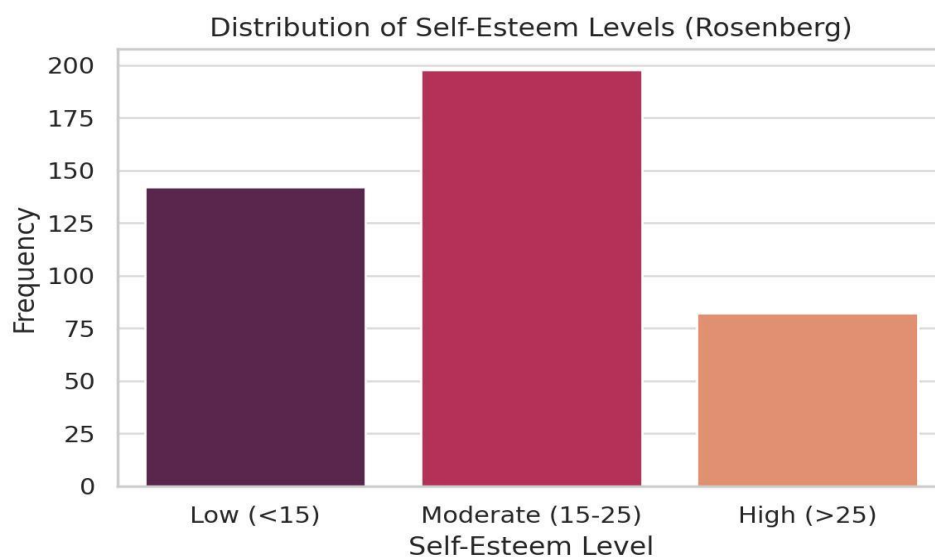


Figure 2 Distribution of Self-Esteem Levels (Rosenberg)

## DISCUSSION

The present study explored the psychological impact of excessive social media use on anxiety and self-esteem among university students in urban academic settings of South Punjab (13). The findings revealed that prolonged engagement with social media platforms was significantly associated with elevated anxiety levels and reduced self-esteem scores, thereby confirming the hypothesis that digital overexposure may have detrimental effects on emotional well-being in this demographic (14). These results reflect an emerging pattern observed globally, whereby social media, while offering instant connectivity and entertainment, simultaneously fosters psychological distress through constant exposure to idealized lives, validation-seeking behaviors, and algorithm-driven engagement loops. Anxiety prevalence in the study population was notably high, with nearly half of the participants experiencing moderate to severe symptoms. The linear correlation observed between the number of hours spent on social media and increased GAD-7 scores underscores a troubling pattern of emotional hyperarousal and cognitive overstimulation (15). This relationship likely stems from both the content and context



of social media interactions—continuous comparison, fear of missing out, cyberbullying, and the pressure to maintain an idealized online presence all contribute to persistent psychological stress. These findings are particularly relevant in densely populated academic environments where students already face academic and social performance pressures. In parallel, self-esteem levels showed a significant inverse relationship with social media usage. Students with higher daily engagement exhibited lower scores on the Rosenberg Self-Esteem Scale, indicating a compromise in self-worth. This observation aligns with the understanding that platforms heavily oriented around visual and curated content—particularly Instagram, TikTok, and Snapchat—encourage users to measure their value through likes, shares, and follower counts. The tendency to compare one's own life, appearance, and achievements against those portrayed by peers or influencers can erode internal validation mechanisms and promote a sense of inadequacy. The female participants in this study, in particular, appeared more susceptible to these effects, suggesting that gendered expectations and social dynamics may amplify the psychological toll of digital exposure (16).

The moderate-to-strong correlations, coupled with statistically significant regression outcomes, suggest that social media usage is not a trivial variable in the landscape of mental health among students. These associations retained significance even after adjusting for gender and academic year, strengthening the evidence for a direct psychosocial impact of digital behaviors (17). However, the findings also highlight that social media is only one component in a complex interplay of psychological, social, and environmental factors. Academic demands, familial expectations, socio-economic pressures, and personal temperament are all likely to interact with digital habits, contributing cumulatively to the observed outcomes (18). One of the strengths of this study lies in its targeted focus on urban university populations, a group characterized by high digital penetration and academic stress. The use of validated psychological tools such as the GAD-7 and Rosenberg Self-Esteem Scale enhanced the reliability of the findings. Additionally, the relatively large sample size and systematic sampling process provided a degree of generalizability within the South Punjab academic context. The application of robust statistical methods, including regression analysis and Pearson's correlation, added further rigor to the analytical framework. Nevertheless, several limitations warrant acknowledgement (19). The cross-sectional design of the study precludes the establishment of causality. While significant associations were identified, it cannot be definitively stated whether excessive social media use leads to poor mental health outcomes or if individuals with underlying anxiety and low self-esteem are more drawn to prolonged digital engagement. Moreover, self-reported data may have introduced biases related to recall accuracy or social desirability, potentially influencing the authenticity of reported screen time and psychological symptoms. The study also lacked qualitative components, which could have offered richer insight into the subjective experiences of students and the nuanced ways social media impacts their self-perception and emotional health (20).

Another limitation relates to the exclusion of students with known psychiatric diagnoses or chronic illnesses (21). While this was necessary to reduce confounding, it also narrows the applicability of the results to a psychologically "healthy" student cohort, potentially underestimating the full scope of vulnerability in broader populations. Furthermore, the cultural and regional context of South Punjab, while providing valuable localized insight, may limit the extrapolation of findings to different sociocultural or rural academic environments. Future research would benefit from adopting longitudinal designs to track changes in anxiety and self-esteem over time in relation to evolving social media patterns (22). Integrating qualitative methods such as focus group discussions or in-depth interviews could uncover underlying themes not captured by quantitative instruments. In addition, comparative studies across different geographic or institutional settings could identify contextual moderators of psychological outcomes (23). The incorporation of intervention-based models, such as digital detox programs or awareness campaigns, would also offer a practical dimension to future investigations. The current study reinforces growing concerns regarding the psychological costs of excessive social media consumption among university students. By highlighting measurable associations with anxiety and diminished self-worth, it contributes valuable empirical data to an urgent public health discussion. While social media remains an integral part of student life, there is a clear need for educational and mental health initiatives to promote digital literacy, encourage balanced usage, and mitigate the emotional consequences of living life online (24).

## CONCLUSION

This study concluded that excessive social media engagement is significantly associated with elevated anxiety and reduced self-esteem among university students in urban South Punjab. These findings highlight the urgent need for targeted mental health interventions, digital literacy programs, and institutional support to foster healthier online habits. Addressing these psychological risks is essential to safeguarding student well-being in increasingly digital academic environments.

## AUTHOR CONTRIBUTION

Author	Contribution
Kainat Soomro*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Muhammad Hamza Amin	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Ayesha Khalid	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Fiza Waseem	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Zuha Arshad	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Abdul Majid Asad	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Shahid Ullah	Contributed to study concept and Data collection Has given Final Approval of the version to be published

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