

Research Article

Prevalence of social media usage and internet induced loneliness among Gen-Z in King Edward Medical University, Lahore, Pakistan: A Cross-Sectional Study.

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Abstract

Background: Generation Z, immersed in a digital age, faces unique challenges to mental well-being. While social media offers connectivity, its excessive use has been linked to loneliness.

Objectives: This study examines the prevalence of problematic social media use and how it associates with loneliness among Pakistani Gen Z.

Methods: This descriptive cross-sectional study was carried out between January and July of 2024 at King Edward Medical University, Lahore, Pakistan, involving the undergraduate students from first year MBBS to final year MBBS. Data on social demographics, problematic use of social media and internet induced loneliness was obtained by getting the questionnaires filled by 153 students from all the five classes.

Results: This study analyzed a number of variables including problematic social media usage, loneliness, age, gender, academic year, and religious affiliation. The demographic characteristics had no statistically significant association with problematic social media usage. Of the 153 individuals, the vast majority (76.47%) exhibited low or no loneliness. Second-year students reported a significant loneliness p-value (0.025). Problematic and non-problematic social media users differed significantly in their loneliness scores ($t=-3.265$, $P=0.001$), with the problematic users generally experiencing increased levels of loneliness than the non-problematic users.

Conclusion: Despite the low prevalence of problematic social media usage, a significant association between it and increased loneliness was found among students. While overall loneliness levels were relatively low, second-year students reported higher rates.

Keywords: Gen Z, Social Media, Problematic Social Media Usage, Internet, Loneliness, Digital Wellbeing, Social Connectivity.

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Introduction

In the digital era, the wellbeing and social connectivity of Generation Z (Gen Z)—those born between the time period of mid-1990s to early 2010s—have become prominent topics of academic research. Digital nativeness, variety, and social consciousness are characteristics of Generation Z.¹ Gen Z's social interactions and mental health are distinctly impacted by growing up with the internet and digital technologies.² Social media that is a primary channel for social interaction and self-expression, also brings risks such as cyberbullying, anxiety, and depression.³ Problematic

social media use is the term used to describe the phenomena where people who use social media extensively and for extended periods of time have detrimental physical and psychological repercussions.² Excessive social media consumption has detrimental effects on daily life, professional performance, participation in social events, interpersonal interactions, and general health and well-being.⁴ Loneliness is an arbitrary feeling of mismatch between one's perceptions and the real status of behavioral interactions.⁵ When individuals prioritize their online relationships and activities over developing and engaging in genuine, in-person connections with others, it can create a sense of loneliness and detachment.⁶

Social media has become ubiquitous among young people, especially during the COVID-19 pandemic, with teenagers frequently using YouTube, Instagram, and TikTok. According to an ISTAT poll conducted in 2019, 85.8%



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of Italian teenagers between the ages of 11 and 17 used smartphones on regular basis, and more than 72% of them utilizing them for browsing the Internet. Media consumption may have certain negative effects, particularly for the most susceptible populations, such the young⁷

The quality and depth of digital connections can vary, sometimes resulting in sensations of solitude and social isolation despite high levels of online interaction⁸

Research shows a link between social media use, particularly Social Networking Sites (SNS), and social isolation in young people. While social media can facilitate social interactions, excessive passive use of SNS can lead to higher levels of perceived social isolation and reduce time for offline social interactions⁹

Researches indicates that promoting digital wellbeing among Gen Z requires a comprehensive approach. Educational initiatives to enhance digital literacy, encourage healthy online behaviors, and promote balanced technology use are crucial¹⁰

Social media has transformed social connection, but virtual relationships can be shallow and inadequate compared to in-person interactions. Research explores the impact on family, friendships, and social engagement, especially for Gen Z, who rely heavily on digital platforms.¹¹

While there is a wealth of study on Gen-Z's digital use, very little of it focuses particularly on Pakistani Youth. To assist Pakistanis' wellbeing in the digital era, their prevalence of problematic social media usage must be assessed. This study also aims to address the association of digital technology with emotional well-being of Gen-Z.

Methods

This study was a descriptive cross-sectional investigation aimed at assessing the prevalence of PSMU and loneliness among Gen Z. The research was conducted at King Edward Medical University, Lahore, Pakistan. Participants had to fulfill certain inclusion criteria in order to be eligible for the study: (1) Undergraduate college students currently enrolled in MBBS program.(2) Age range between 12 to 29 years.(3) Regularly using digital devices and internet. Individuals who were dropped out of medical college and those unwilling to give consent were excluded from the study.

Sample size of 153 students is estimated by using 95% confidence level, 4% absolute precision with percentage prevalence (p) of problematic social media use as 6.82%. Participants for the study were chosen using a non-probability convenient sampling technique.

The researchers distributed the questionnaire themselves. All participants gave their informed consent before any data were collected. The questionnaire was adopted from

Justin Thomas, Department of Psychology, College of Natural and Health Sciences, Zayed University, Abu Dhabi, United Arab Emirates (9) and Katherine L. Dittmann, Andrews University¹³ The questionnaire consisted of social demographics, problematic social media usage and Internet induced loneliness, labelled under Section A, B and C respectively.

The Section A consists of a Demographic information form in order to gather information about age, gender, year of study, religion, email etc.

The Section B consists of a questionnaire regarding problematic social media use. For measuring problematic social media usage, 8 PSMU (problematic social media usage) items were used. When determining a person's problematic usage status, the unwavering acceptance of at least five items/symptoms ("never") served as the cutoff point.

The Section C consists of a questionnaire regarding Internet induced loneliness among Gen-Z. For measuring internet induced loneliness, a 20 item UCLA Loneliness Scale was used. "I often feel this way" (O) = 3 scores, "I sometimes feel this way" (S) = 2 scores, "I rarely feel this way" (R) = 1 score, "I never feel this way" (N) = 0 score. The results were measured as: < 28 score = low/ no loneliness, 28 to 43 = moderate loneliness, Total score > 48 = High loneliness.

Data collection was conducted within the six-month period allocated for the study after the approval of the research synopsis. Social media use was categorized into problematic and non-problematic groups, while internet-induced loneliness was classified into no, moderate, and high levels based on cut-offs. To investigate relationships between these categorical variables and demographic characteristics (age, gender, and year of study), chi-square tests were utilized. An independent samples t-test was used to determine how problematic and non-problematic social media users differed in their loneliness levels.

Results

This research looked at a variety of characteristics, including age, year of study, gender, religion, overall endorsement, and problematic usage. Of the 153 participants, 147 (96.1%) were aged 19-24, 5 (3.3%) were aged 12-18, and 0.7% were aged 25-29. The majority of participants (34%) were in their second year. The research has 74 male (48.4%) and 79 female (51.6%) participants.

Out of a total of 153 students, 76.47% (117 students) reported low/no loneliness (scores less than 28), whereas 23.53% (36 students) reported moderate loneliness (scores between 28 and 43). It is worth noting that no kid scored higher than 48, suggesting significant degrees of loneliness. One (20%) person in the age range 12-18 years, ten (6.8%) in the age group 19-24 years, and none

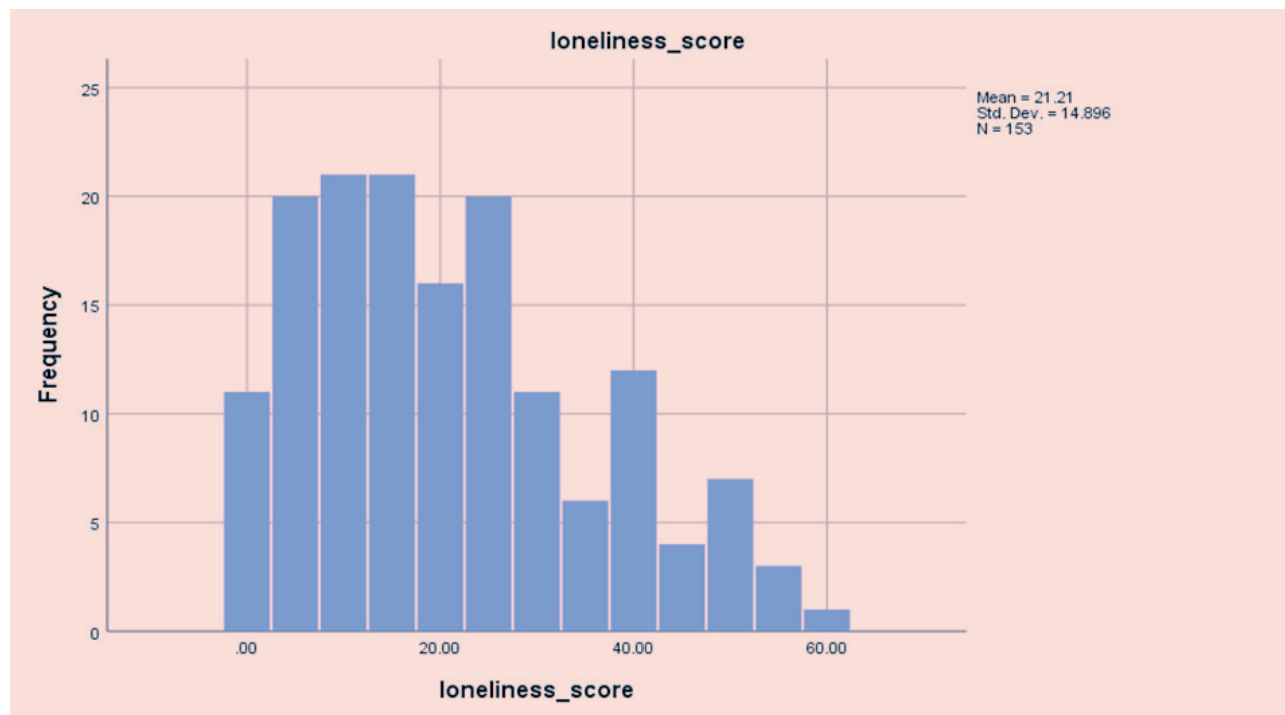


Figure 1: Score of Loneliness

The histogram shows that 76.47% of students reported low/no loneliness, while 23.53% reported moderate levels. No student reported severe loneliness.

in the age group 25-29 years were problematic social media users. Three (17.6%) students from the first year, four (7.7%) from the second year, two (14.3%) from the third year, one (2.4%) from the fourth year, and one (3.6%) from the fifth year were troublesome users. Six (8.1%) male students and five (7.2%) female students were troublesome users.

3 (60%) students in the age group 12-18 years, 105(71.4%) students in the age group 19-24 and 1(100%) student in the age group 25-29 experienced low/no loneliness. 1 (20%) student aged 12-18, 29 (19.7%) students aged 19-24, and 0(0) student aged 25-29 experienced moderate loneliness. One (20%) student in the age group 12-18 years, thirteen (8.8%) students in the age group 19-24, and zero (0%) students in the age group 25-29 experienced significant levels of loneliness. 10 (58.8%) first-year students, 36 (69.2%) second-year students, 8 (57.1%) third-year students, 33 (78.6%) fourth-year students, and 22 (78.6%) final-year students

reported minimal or no loneliness. Two (11.8%) first-year students, ten (19.2%) second-year students, six (42.9%) third-year students, eight (19%) fourth-year students, and four (14.3%) fifth-year students reported moderate loneliness. 5 (29.4%) first-year students, 6 (11.5%) second-year students, 0 (0%) third-year students, 1 (2.4%) fourth-year students, and 2 (7.1%) fifth-year students reported significant levels of loneliness.

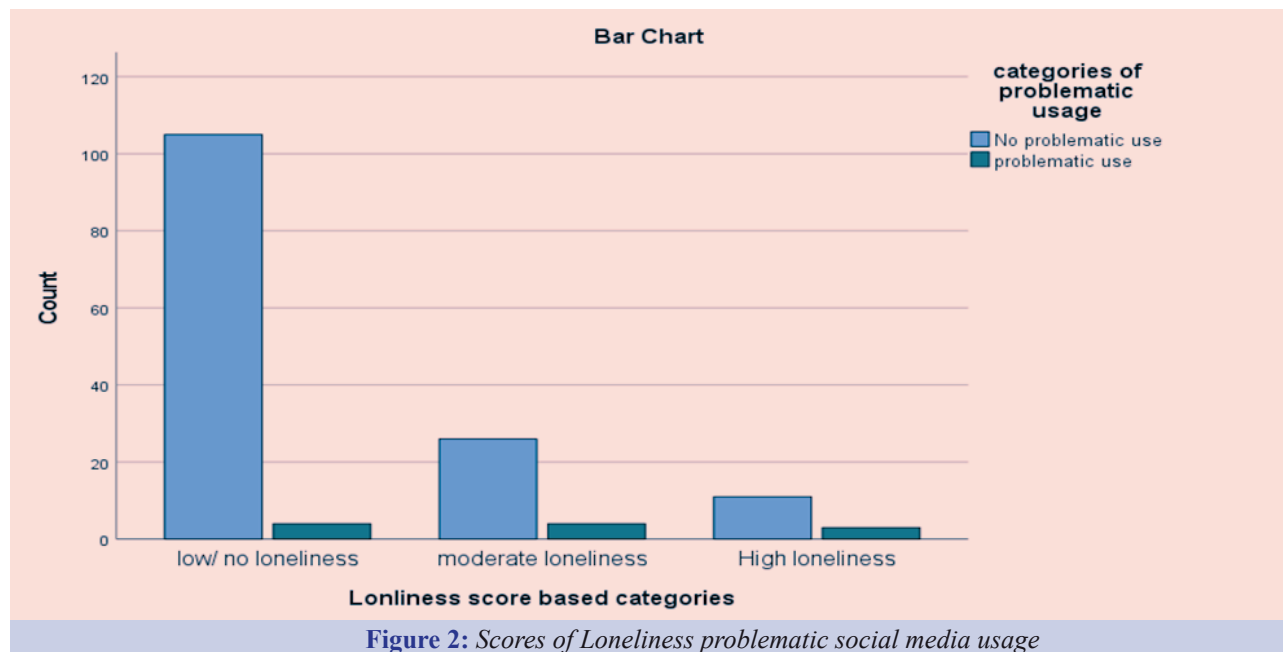
10 (58.8%) first-year students, 36 (69.2%) second-year students, 8 (57.1%) third-year students, 33 (78.6%) fourth-year students, and 22 (78.6%) final-year students reported minimal or no loneliness. Two (11.8%) first-year students, ten (19.2%) second-year students, six (42.9%) third-year students, eight (19%) fourth-year students, and four (14.3%) fifth-year students reported moderate loneliness. 5 (29.4%) first-year students, 6 (11.5%) second-year students, 0 (0%) third-year students, 1 (2.4%) fourth-year students, and 2 (7.1%) fifth-year students reported significant levels of loneliness.

Table 1: Association between age, year of study, and gender with problematic social media use.

Variable	X ²	P value
Age	1.34	0.512
Year of study	5.867	0.209
Gender	1.81	0.67

Table 2: Significance between problematic use and genders or years of study.

Variable	Problematic users	Non-problematic users
Age		
-12-18 y	1	4
-19-24 y	10	137
-25-29 y	0	1
Year of study		
- 1st year	3	14
- 2nd year	4	48
- 3rd year	2	12
- 4th year	1	41
- 5th year	1	27
Gender		
- Male (1)	6	68
- Female (2)	5	74



The findings show that there is a significant difference in loneliness scores between problematic and non-problematic social media users ($t=-3.265$, $P=0.001$), with problematic users experiencing more loneliness than non-problematic users ($MD=-14.76120$, 95% CI: -5.82979 to -23.69262 ; $SE=4.52041$).

Discussion

Social media's widespread impact on Generation Z has raised concerns about its possible drawbacks, such as problematic use and related problems with psychological

health.¹⁴ Among this group, internet-induced loneliness has become a major worry.¹⁴ As Generation Z increasingly engages with social media platforms, it becomes essential to examine the extent of problematic social media usage and its connection to online-induced feelings of isolation among this age group.¹⁴ Overuse of social networking platforms can result in negative effects that could negatively impact users' personal, social, and/or professional lives.¹⁵ Excessive use of social media platforms has been associated with PSMU, which can have detrimental effects on relationships, involvement in the community, and academic performance.¹⁶ Adolescents who are introverted, emotionally unstable, and less

gregarious have a stronger correlation between compulsive internet use and loneliness.¹⁷ Compared to normal internet users, over-users and addicts tend to be more neurotic and less extraverted, more socially apprehensive and emotionally isolated, and to spend a disproportionate amount of time on online activities.¹⁷

Our study supports this idea that loneliness is more prevalent among problematic social media users than non-problematic social media users. The findings indicate a relatively low prevalence of loneliness among the study population. A substantial majority of students (76.47%) reported low or no loneliness, suggesting that a significant portion of the sample experienced a positive sense of social connection and well-being. However, a considerable minority (23.53%) exhibited moderate levels of loneliness. This suggests that a portion of the student population is experiencing challenges in their social relationships or personal lives, which may be impacting their overall well-being. The absence of students scoring above 48 on the loneliness scale is noteworthy. This indicates that while some students experienced moderate loneliness, severe or extreme isolation was not prevalent in this sample. It is worth noting that the absence of high loneliness scores in this study contrasts with some research indicating higher prevalence rates in certain populations.¹⁸

The study sample predominantly comprised young adults aged 19-24, with a majority in their second year of study. While the overall loneliness levels were relatively low, the data revealed significant differences based on year of study. Second-year students reported significantly higher levels of loneliness compared to their peers ($p=0.025$). This finding aligns with previous research suggesting that the transition to university life can be a challenging period marked by academic pressures, social adjustments, and increased risk of loneliness.¹⁹ The observed results can be attributed to the tendency of isolated individuals to shun the formation of intimate, positive connections with others. These students often deteriorate their existing relationships, leading to what has been characterized as distressing emotional circumstances.²⁰ These negative self-perceptions can lead to students feeling negative about themselves, and studies have also shown that individuals who feel more isolated and have lower self-regard tend to have a more negative outlook on their interpersonal connections.^{21,22} Such circumstances may hinder university students from developing in-person social connections with their peers, potentially resulting in more negative self-perceptions.¹⁹

Gender has a significant influence on how people behave on social media because boys and girls typically use social media for distinct reasons and purposes and exhibit various forms of internet use overall.²³ However in our study, no significant differences ($p=0.67$) in loneliness levels and PSMU were observed between male and female students, suggesting that gender may not be a primary determinant of loneliness and PSMU among this population. One reason for this contradiction may be

almost the same proportion of male and female students in our population. Second reason may be the equal access to internet among both male and female students.²⁴

The finding that a relatively small proportion of participants (11 out of 153) exhibited problematic social media use is noteworthy. This suggests that while problematic use is a concern, it might not be as widespread among the studied population as anticipated based on previous research. This finding contradicts with a previous study which states that the majority of Gen Z members are likely to have spent the majority of their life online and on smartphones, and most can not remember a time before social media. Consequently, they are more prone to problematic social media usage.²⁵ Several important reasons can be considered regarding this. First, the participants might possess effective coping mechanisms or have developed healthy digital habits, mitigating the risk of problematic social media use.²⁶ Second, there's a possibility that the prevalence of problematic social media use is underestimated due to social desirability bias or participants' reluctance to disclose such behaviors. Third, the specific characteristics of the sample (e.g., age, educational background) might influence the prevalence of problematic social media use. Further research with different populations is needed to draw more generalizable conclusions.

The research results, which revealed a notable positive association between excessive social media usage and feelings of isolation, align with the conclusions of earlier investigations.^{3,27} These studies have highlighted the role of social media in exacerbating feelings of isolation, social comparison, and reduced face-to-face interaction. People who spend time in virtual environments are isolated from real-world surroundings and may experience loneliness.²⁸ In a similar vein, people who use social media excessively report feeling more alone.²⁹ People with internet addictions feel more alone than people without addictions.³⁰

The research results highlight the critical need to tackle loneliness as a major concern among college students. While the overall picture might appear positive, the presence of a substantial minority experiencing moderate loneliness necessitates targeted interventions. Due to the cross-sectional design of the research, it is not possible to determine cause-and-effect relationships among the examined variables. While it reveals associations between loneliness, problematic social media use, and demographic factors, it cannot determine the direction of causality. To comprehend the chronological order of these variables, research conducted over an extended period is essential. The sample size, while sufficient for detecting significant differences, might be limited in terms of generalizability to the broader population of university students. Concentrating on a primarily young adult sample may limit the generalizability of results to other age demographics. Utilizing self-reported information may skew results due to participants' tendency to provide socially acceptable answers or their inability to accurately recall past events. Participants may underreport

problematic social media use or over-report loneliness to present a socially desirable image. The study primarily focused on the prevalence of loneliness without delving deeper into its subtypes (e.g., social, emotional, existential loneliness). A more nuanced understanding of loneliness experiences could provide valuable information into targeted interventions.

The link between excessive social media usage and feelings of isolation underscores the importance of implementing digital education initiatives and psychological support services to assist students in managing the intricacies of online social interactions. To obtain a detailed understanding of the factors influencing loneliness among university students, future research should explore: 1) The specific reasons for increased loneliness among second-year students. 2) The enduring impact of excessive social media usage on psychological well-being. 3) The impact of diverse strategies designed to alleviate isolation and enhance quality of life. Through investigating these topics, scientists can create more successful approaches to foster students' social and emotional growth.

Conclusion

Despite a relatively low prevalence of problematic social media use, its association with elevated loneliness is evident. This underscores the importance of addressing both issues concurrently. While most students reported low loneliness levels a significant portion of students, especially second-years, felt moderately lonely. This research contributes to the expanding body of knowledge on the psychological effects of excessive social media use. By identifying vulnerable student populations and the factors associated with loneliness, universities can implement targeted support services and educational programs to foster a healthier and more connected campus community.

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Authors' Contributions:

SC, SB: Conceptualization, Methodology, Writing Original Draft.

SU, SA: Investigation, Data Curation, Formal Analysis and contributed in writing original draft.

MZA, MI, NU: Design of study, revise critically and final Review & Editing.

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