



## BELONGING & LONELINESS IN CYBERSPACE: IMPACTS OF SOCIAL-MEDIA ON GRADUATE STUDENTS' WELL-BEING

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KEYWORDS	ABSTRACT
Social-Media, Belonging, Loneliness, Cyberspace, Well- being, Central Punjab, Pakistan	This study examines the influence of social media on the lives of graduate students in Central Punjab, Pakistan, in terms of belonging, loneliness, and well-being. The study uses semi-structured, as the approach to exploration research guided by exploratory design which was conducted with eleven MS/MPhil and PhD students who were recruited on the basis of purposive and maximum variation sampling methods. Thematic analysis developed by Braun and Clarke was used to investigate the way students make sense of and bargain their emotional and relational experiences in digital spaces. Results show a double trend: social media can act as an important space of academic, emotionally supportive, and community-building interaction, but on other hand, it exacerbates loneliness, stress due to comparison, and emotional exhaustion. Students who participated intentionally, either by putting their academic efforts into collaboration or supportive peer groups, claimed to have greater belonging, whereas the passive usage, algorithm-mediated comparisons, and internet poisoning made the students feel more isolated. The study provides culturally competent evidence on the current discourses on cyberspace, psychological well-being, and higher education in South Asia.
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### INTRODUCTION

The evolution of social media is changing the manner in which people befriend each other, enjoy the sense of belonging, and battle loneliness in the online arena. The academics are growing more concerned with the idea that cyberspace has become an incredibly important space where youth develop the social identities, sustain peer networks, and find emotional support (Smith, Leonis &

Anandavalli, 2021; Tang, Omar, Bolong & Zawawi, 2021). Although online activity provides the chance to be connected via platforms promise connection and community, it can the conditions that make them feel lonelier, socially compare and experience psychological distress, especially among the students who adjust to the new academic environments (Zhang, Tang & Liu, 2023; Wang, Chen & Liu, 2024).

It is also demonstrated by research that the necessity to feel a part of a community and belong plays with strong part of human needs, that has now become deeply connected with internet interaction (Kishor, Bansal, Joshi, Gulati & Pandey, 2025). The use of social media in the higher education has permeated academic, social, and personal experiences, which affect the well-being of the student in intricate manner (Gupta, 2014; Nazari, Hosseinnia, Torkian & Garmaroudi, 2023). Cyberspace has become the source of academic cooperation, as well as emotional release of academic pressure, loneliness, and stress in many students of universities, mainly at graduate level linked to loneliness, social comparison as well as psychological distress (Ashraf Iqbal & Hussain, 2024; Shah, Gul, Khan, Ahmad & Zia, 2024). Nonetheless, research also warns that it is problematic or excessive use of the social media that may intensify the sense of loneliness, evoke negative social comparison, and cause a mental health problem (Zaka, Bashir, Hasan & Ali, 2024; Wu, Feng & Zhang, 2024; Cui, Wang, Liu & Yang, 2023).

These are quite topical in the field of Pakistan, where the number of users of social media rapidly grows, but there is little empirical knowledge about how the sense of digital belonging or the online loneliness impacts graduate students (Mateen & Agha, 2023). Considering such dynamic changes, there is an urgent necessity to determine the manner in which graduate students in Central Punjab derive a sense of belonging and loneliness in the cyberspace, and how such online communications influence emotional health of students. in this connection, the interpretivist paradigm is especially in a good position to discover the subjective meanings with which the students perceive their online activities and go beyond the quantitative association towards what is actually lived in the different environments. The work is a reaction to increased interest of researchers in expansion of situational, qualitative knowledge of the psychological as well as social consequences of the use of the digital media (Bonsaksen, Ruffolo, Price, Leung, Thygesen, Lamph & Geirdal, 2023; Plackett, Blyth & Schartau, 2023).

### **Conceptual Framework**

The paper is based on an interpretivist perception of the way graduate students are creating the meanings of belonging and loneliness in the cyber world. The available evidence shows that social media sites have become the focal points where people exchange identities and social inclusion and emotional support for the particular purposes (Smith, Leonis & Anandavalli, 2021; Kishor, Bansal, Joshi, Gulati & Pandey, 2025). Two associated concepts in the current digital environment, which are belonging as well as loneliness, determine psychological experiences of individuals and their social well-being.

### **Feeling of Identity in Cyberspace**

Belonging is core type of human need whose characteristics are defined by a sense of acceptance, inclusion, and significant social connectedness (Kishor et al., 2025). Social media will provide the

possibilities of interactions and self-expression, membership of online communities, and this aspect can boost the sense of social belonging among students. The studies indicate that online platforms ensure that the users remain connected to their friends, connect with the peer's networks, and form supportive relationships that positively affect well-being (Tang et al., 2021; Huang et al., 2022). These online networks can be life-saving sources of social confirmation and emotional strength to graduate students with intense educational requirements and scarce physical connection (Iqbal & Hussain, 2024).

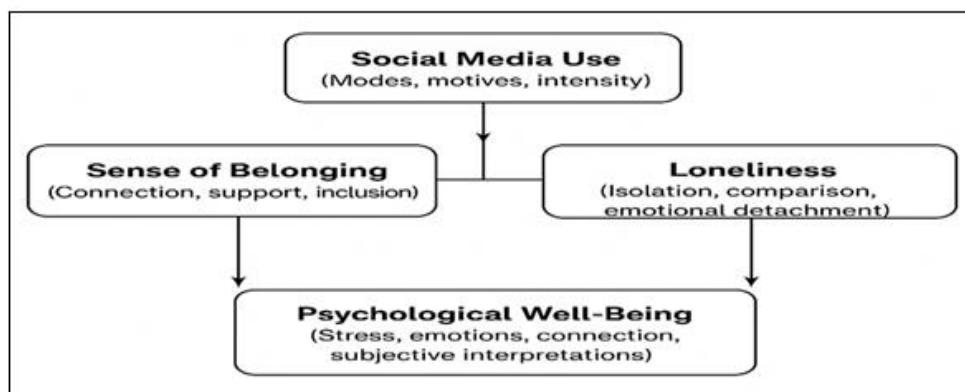
### Use of Social-Media Is a Two-Sided Context

Social media serves as both a support mechanism and a stressor at the same time. The studies report positive and negative effects of the digital interaction, with the findings being dependent upon the type, purpose, and depth of use (Plackett, Blyth & Schartau, 2023; Zhang, Tang & Liu, 2023). The social media helps some students to find community, coping & control emotions in stressful moments (Cauberghe et al., 2021). To others, it has led to psychological issues including anxiety, depressive symptoms, and emotional congestion (Nazari et al., 2023; Mateen & Agha, 2023; Cui, Wang, Liu & Yang, 2023).

### Interpretive Outcome of Psychological Well-Being

The domain of well-being in the current research is addressed in terms of subjective perceptions of students on their emotional conditions, stressfulness, social connectedness & general psychological functioning. It has been proposed in literature that well-being is intermediated by such paths that include measures of social inclusion, comparative, validation, and relational satisfaction for social interaction, expression, and identity formation (Wang et al., 2024; Seabrook, Kern & Rickard, 2016; Xing et al., 2025). Harvesting to these pathways is not very consistent, as it depends on varied interpretations of the experience people have of the online experience and how people internalize this experience.

Figure 1 Conceptual Framework



### Research Objectives

1. To investigate ways of how graduate students build the sense of belonging and loneliness by means of their interactions on social media.

2. To investigate the outcomes of social media, use on the emotional and psychological well-being of the students in particular context.
3. To learn contextual, cultural & relational contexts that effect experiences & lives of students in cyberspace toward digital connectedness and isolation.

## LITERATURE REVIEW

In modern literature, social media is represented as multifaceted digital informational environment that is able both to create the sense of social closeness and to intensify the sense of loneliness. Even preliminary reviews highlight that online interaction poses new possibilities of social support and identity work and peer bonding and generates threats to subjective well-being, at the same time (Naslund et al., 2020; Best et al., 2014). Syntheses of empirical data have inconsistent findings: some studies indicate beneficial impacts of intentional, vigorous use, but other studies offer associations between the presence of particular patterns of use and compromised mental wellbeing (Seabrook et al., 2016; Plackett et al., 2023). This ambivalence forms the basis of the modern researches which complement neither the positive nor negative nature of social media but rather a situation where the impact varies with the intentions, ways and purposes of application (Valkenburg & Peter, 2013; Tang et al., 2021).

### Belonging: Cyberspace Mechanisms & Affordances

Belonging, as a sense of acceptance, inclusion, and meaningful connection has returned as one of the cornerstone products of digital platforms (Kishor et al., 2025). According to the scholars, social media also delivers chance to sustain geographically disturbed networks, join interest communities, and test identity in less risky environments (Gupta, 2014; Tang et al., 2021). In scenarios of crisis (e.g., lockdown due to COVID-19), social media were exploited by users to face loneliness and anxiety by getting emotional support and peer validation, which showed the abilities of platforms to facilitate feelings of belonging by being restricted with offline contact (Cauberghe and al., 2021; Huang et al., 2022). Online study groups, academic networks and informal peer forums can play a functional role in the case of students and serve as sources of social confirmation that reduce stress and lead to the greater sense of connectedness (Ashraf Iqbal & Hussain, 2024; Nazari, Hosseinnia, Torkian & Garmaroudi, 2023).

An independent chain of the evidence relates some social media usage patterns with the elevated loneliness and depressive symptoms, and stress levels (Zaka, Bashir, Hasan & Ali, 2024; Seabrook, Kern & Rickard, 2016). Passive consumption (no engagement) and upward social comparison can be among the most frequently mentioned processes that destroy your subjective well-being (Mo & Peng, 2023; Fardouly & Vartanian, 2016). The longitudinal and cross-national researches indicate that problematic or addictive use is especially likely to cause the increased loneliness in the future (Wu, Feng & Zhang, 2024; Marino, Gini, Vieno & Spada, 2018). In addition, the variations in the individuals are impressive: the connection between loneliness and social media use is mediated by motives of social media use (e.g., social connection vs. entertainment) and by a characteristic of the user population, e.g., shyness (Bonsaksen, Ruffolo, Price, Leung, Thygesen, Lamph & Geirdal, 2023; Wang et al., 2024).

### Mechanisms: Passivity, Comparison & Addiction

The explanatory models identify some psychological mechanisms that mediate the effect of social media on well-being. The upward social comparison is linked towards low self-esteem and higher depressive symptoms, especially on highly visual platforms where highly edited portrayal is a widespread behavior (McCrory, Best & Maddock, 2020; Mo & Peng, 2023). Passive utilization is likely to decrease the social self-efficacy and perceived social support, and active, two-sided usage produces more positive results on the average (Dienlin & Johannes, 2020; Zhang et al., 2023). The extensive consequences of problematic usage and addiction are disturbance of sleep, a decreased level of life contentment, and susceptibility to emotional pain-states that continually give rise to loneliness (Varghese, Santoro, Lugo, Ghislandi, Torbica & Gallus, 2021; Lapierre & Zhao, 2024; Zaka et al., 2024).

The connection quality may be undermined with each instance of technofeference and smartphone incursion on in-person communication, further amplifying the isolation despite being digitally connected (Lapierre & Zhao, 2024). The literature highlights the fact that social media impacts depend on social, cultural moderators, and individual ones. Differential susceptibility models posit that beneficiaries and victims of media exposure are predicted by personality, age, and contextual factors introduce complex challenges linked to loneliness, social comparison, and mental distress (Valkenburg & Peter, 2013; Orben & Przybalski, 2019). Motives are important: platforms in social support help to ameliorate loneliness, passive entertainment or status monitoring are results that worsen the loneliness (Bonsaksen, Ruffolo, Price, Leung, Thygesen, Lamph & Geirdal, 2023; Zhang, Tang & Liu, 2023).

A change in the technology and other related processes, like the impact of algorithms on content personalization are already undergoing change as the variables of user experience and wellbeing outcomes (Verma, Kaushal, Manugula & Ashok, 2023). Research involving the education sector highlights the exposure of students to the negative effects of social media, with the assessments revealed relatively often, such as correlations alongside depressive symptoms (Mateen & Agha, 2023; Cui et al., 2023). Qualitative and quantitative studies with Pakistan-specific implications indicate that there are gaps in mental health awareness among the college students and that the practice of social media has a correlation with mental health in students (Shah, Gul, Khan, Ahmad & Zia, 2024; Iqbal & Hussain, 2024). Nevertheless, these works are cross-sectional and instrument oriented with very ambiguous interpretative questions concerning the lived meanings and cultural norms within scope.

### Research Gaps of Study

The majority of available evidence is based on cross-sectional surveys, correlational-based analysis & meta-analytic synthesis, establishing linkages but not giving much information about subjective meanings (Seabrook et al., 2016; Plackett et al., 2023). Although increasing, qualitative research is not as widespread and there are exceptions that focus on the views of adolescents and their coping strategies on social media (Popat & Tarrant, 2023; Cauberghe et al., 2021). Considering cultural contextualization of belonging & loneliness, interpretivist methods are fit to undo how students in Central Punjab make sense of digital connectedness, idealization of symbolic roles of interactions

(online), and locally uttered norms that determine psychological consequences (Kishor et al., 2025; Smith et al., 2021).

Three gaps are identified in literature: (1) insufficient depth of qualitative study done on graduate students lived senses of belonging and loneliness in non-Western countries; (2) lack of study of how motives, platform norms, and culture converge to produce subjective well-being and (3) developing a view of the processual dynamics how sentiment of well-being lacks an absolute response to the online practices by the day. The curated nature of online content, emphasizing success, productivity, and achievement, can intensify social comparison and self-doubt among graduate students. in this linking, these gaps support an interpretivist, qualitative investigation titled on graduate students in Central Punjab closer to inform about contextually details regarding the meanings as well as social actions that mostly the quantitative findings can report (Smith et al., 2021; Bonsaksen et al., 2023; Shah et al., 2024).

## RESEARCH METHODOLOGY

The qualitative research design conducted in this study was an exploratory, constructivist design in order to examine effects of social media on experiences of belonging, loneliness and general well-being among graduate students in Central Punjab. The consent form was used to select eleven BS and MS/MPhil students in universities of Lahore, Faisalabad and Sargodha, to take part in the study, based on their active usage of social media and their desire to share their experiences. The data was gathered using semi-structured in-depth interviews that lasted 30-35 minutes and were in-person as they took place in the form of online connection, loneliness, peer interaction, digital identity and emotional well-being questions. All interviews were tape recorded with consent, transcribed word-for-word, and analyzed through framework of thematic analysis developed by Brown and Clarke, requiring systematic coding, theme generation, and interpretation refinement. Local institutional review committee was engaged and provided an ethical approval, and assured the participants of anonymity and voluntary participation. Member checking, reflexive journaling, triangulation using field notes, provision of thick textual description was used to ensure trustworthiness and researcher reflexivity was used throughout to reduce bias and enhance the dependability and confirmability of the results.

## RESULTS OF STUDY

Table 1 Demographic Characteristics of Participants

Participant	Gender	Age	Program	University Type	Primary SM Platforms
R1	Female	23	BS Botany	Public	Instagram, WhatsApp
R2	Male	26	MPhil Sociology	Public	Facebook, WhatsApp
R3	Male	25	BS Psychology	Private	Instagram, TikTok
R4	Female	24	BS Education	Private	WhatsApp, Facebook
R5	Male	27	BS Pol. Science	Public	Twitter (X), LinkedIn
R6	Female	22	BS Mass Communication	Public	Instagram, TikTok
R7	Male	28	MPhil Islamic Studies	Public	WhatsApp, Facebook
R8	Female	25	BS Computer Science	Private	Instagram
R9	Male	29	BS Sociology	Public	Facebook, WhatsApp

R10	Female	24	MS Clinical Psychology	Public	Instagram
R11	Male	26	BS Sports Science	Private	Facebook, TikTok

The interview data were analyzed to identify three general themes that delineate the social media contribution to sense of belonging, loneliness and psychological well-being of graduate students in Central Punjab setting. They are following themes: (1) Online Belonging & Digital Connectedness, (2) Cyberspace-Driven Loneliness and Emotional Strain, (3) -Ambivalent Effects of Social-Media on Well-Being.

### Theme 1: Online Belonging and Digital Connectedness

A number of respondents defined social media as source of peer support, academic companionship and social attachment, particularly at times when physical interaction was limited. Since students shared in academic groups, interest pages, and continued communication with friends online, they felt a sense of community. R1 stressed the importance of digital interactions in making her feel like she belonged: "Whenever I join academic WhatsApp groups or Instagram communities, I feel like I belong somewhere like I'm part of a circle." R4 reported online communication causing the feeling of social isolation to decrease: R7 became part of religious-community aspect of belonging: "The Islamic study circles I follow online give me a sense of identity and connection that I don't always feel on campus." Online belonging also substituted absence of offline social opportunities to several participants. R8 clarified: "As a computer science student, most of my peers are introverted. But on Discord and Instagram, we interact more openly." R11 referred to social media as the venting pot: "Sometimes I share my feelings online because I know someone will respond, even if I can't talk to people face-to-face."

### Theme 2: Cyberspace-Driven Loneliness and Emotional Strain

Although demonstrating its advantages, participants demonstrated that social media aggravated loneliness and pressure of comparison, as well as emotional exhaustion. Some respondents explained a paradox a sense of social being and emotional disconnection. There was disconnection observed by R3: "I talk to many people online, but honestly it feels shallow—like I'm surrounded by people but still lonely." R6 expressed a similar feeling in terms of social comparison: "When I see others having fun or achieving things, it makes me feel left out and lonely, even though I'm scrolling all day." R9 described digital overexposure: "WhatsApp groups sometimes overwhelm me. I disconnect, but then I feel more isolated. It's a cycle." R10 attached importance to emotional fatigue: Sometimes I feel drained, not because of university, but because social media keeps me mentally occupied and emotionally empty." R2 explained that online communications were not that warm as face-to-face interactions: "People reply, but it doesn't feel real. It's not the same as sitting with someone." These narratives reveal that even still social media open possibility of linking with others, it can increase emotional loneliness.

### Theme 3: Ambivalent Effects of Social-Media on Well-Being

The respondents described diverse or inconsistent impacts of the social media on their well-being: at times positive and supportive, and at times negative or addictive. This ambiguity indicates multi-dimensionality of online interaction among postgraduates. R5 explained social media as productive

and a stressful experience: "LinkedIn motivates me professionally, but Twitter drains me mentally because of constant debates." R1 also stated emotional boost: "Funny reels and motivational posts genuinely improve my mood on difficult days." But R8 contradicted it: "When I spend too much time online, my anxiety increases. I feel like I'm wasting my life." R7 observed the time-consuming aspect of online interaction: "Scrolling is addictive. It helps relax, but I lose hours without realizing it, which later stresses me." R11 express that: "Social media affects my sleep and concentration, but it also helps me stay socially active. So, it's both good and bad." Among the respondents, the two-fold influence of social media is an imminent tension between digital support and digital strain as main finding of this study.

## DISCUSSION

This research will demonstrate complicated and inconsistent connection between social media and social media use & feelings of belonging, loneliness, and well-being in graduate students in Central Punjab. The participants indicated that social media was both a valuable form of connection and instigator of emotional strain as was experienced globally in past studies. The social media became a place of staying connected with academics and social contacts; this correlates with [Smith et al. \(2021\)](#) who assert that the online world can facilitate belonging through supportive peer networks. On the same note, [Kishor et al. \(2025\)](#) emphasize that digital spaces can satisfy the basic urge of people belonging to a group, and crucially appeals to the students in study who utilized WhatsApp and Instagram to form a community. The literature reveals that social media supports collaborative learning & wider participation in tertiary education ([Gupta, 2014](#)) that is consistent with participants who used digital communication to organize academic activities. The impact of social media as strengthening bond and increase in emotional fatigue described by dual effect is growing in line with the world.

Researchers show that psychological reactions to the online environment considerably rely on what motives a person has in using it ([Bonsaksen et al., 2023](#)) and degree of shyness, social comparison, or perceived power ([Wang et al., 2024; Mo & Peng, 2023; Huang et al., 2022](#)). This contributes toward why there are participants in the current study who found the social media uplifting whereas there are others who felt that it was draining. An example is that respondents who used platforms mostly to receive academic/ professional assistance replicated positive outcomes established in [Plackett et al. \(2023\)](#), but those passively used them noted such increased anxiety like patterns documented in [Nazari et al. \(2023\)](#). The cynical attitude of students is consistent with [Zhang et al. \(2023\)](#), whose article outlines reciprocal nature of emotional control and platform usage in defining psychological health. The idea is backed up by wider psychological and media conceptions. As it is proposed by Differential Susceptibility to media effects model ([Valkenburg & Peter, 2013](#)), nature & motivation of people determine extent to which exposure to the digital environment affects their emotional & behavioral states.

This model is manifested in the various reactions of the participants with some feeling connected and others becoming over stimulated depending on the patterns of the use. The existence of digital behaviors like upward comparison, ever-present monitoring, or exposure to idealized content also suggests that digital behaviors can justly lead to vulnerability to loneliness and distress ([Orben &](#)

Przybylski, 2019; Seabrook et al., 2016; Fardouly and Vartanian, 2016 Roberts et al., 2022). The mentioned mechanisms could be observed among students of Central Punjab graduates who said that they felt like surrounded and alone, which is frequently reported in the international literature (Popat & Tarrant, 2023; McCrory et al., 2020). These findings are supported with local studies conducted in Pakistan. Studies show that rate of social-media-induced distress, low self-worth, and burnout among university students is increasing (Shah et al., 2024; Ashraf Iqbal & Hussain, 2024; Umar et al., 2024).

The emotional instability and sleep disturbances reports of participants provided in this research also reflect region evidence of problematic smartphone use and technofference (Lapierre & Zhao, 2024) and correlations between distress and compulsive use (Wu et al., 2024). The present research has a direct contribution to the situation in Pakistan, showing the emotional consequences of social media are influenced by cultural expectations, academic pressure, and lack of offline social spaces, which aligns with results of Bangash et al. (2025). Lastly, it is stated in the study that social media should be perceived as a neutral, non-toxic, and non-beneficial sociotechnical environment, which is, in fact, an argument that Naslund et al. (2020) and Khalaf et al. (2023) share. The ambivalence of students justifies worldwide demands to develop subtle studies on digital health (Beullens et al., 2025; Hernandez-Pena et al., 2024). Although positive interactions led to feeling of belonging and eased loneliness, overuse or lack of control, especially in emotionally exposed situations, increased isolation and anxiety.

These results correspond to the evidence of other countries indicating that online interactions are capable of enhancing and deteriorating well-being at the same time based on platform design, use patterns, and the context (Verma et al., 2023; Rega et al., 2023; Varghese et al., 2021; Marino et al., 2018). Altogether, the current research paper adds to the emerging body of literature by providing a contextualized picture of the ways graduate students in Central Punjab are able to juggle a sense of belonging and loneliness in cyberspace. Rather than encouraging authentic connection, lengthy exposure to the idealized representations of life and academic success can weaken self-worth and exacerbate emotional isolation. In this connection, outcomes demonstrate the role of being digitally literate, mentally healthy, and supported by institutions to get engaged in online activities in a balanced manner. The future of student well-being, based on the recent research, is not in cutting social media use, but rather creating healthier and more purposeful tendencies of social media use (Xing et al., 2025).

## CONCLUSION

This paper brings forth a delicate insight on the role of the social media in influencing the sense of belonging, loneliness, of graduate students in cultural and academic landscape of Central Punjab. The results indicate that social media is crucial connectivity area and source of emotional pressure, which may describe the negative and positive sides of digital interaction as they are found in global literature. Even though students often used online tools to sustain their academic connections, and find peer support and community feelings, it still intensified their loneliness and anxiety in case of passive engagement, driven by comparisons, or even feeling worried. These paradoxical experiences point out fact that effects of social media are not inherent to the sites themselves, but revealed over

how people use them, what meanings they give to online communications, and larger social forces they maneuver in.

The conclusion of the study is that social media does not slightly relieve or will inevitably cause loneliness, it enhances the preexisting emotional conditions and relationship patterns. The graduate students who had good offline ties and meaningful online habits were more likely to report feeling more a part of a particular group, and those with difficulty managing academic pressures, a lack of offline social support, or high levels of comparison were more susceptible to emotional fatigue. Such results highlight the necessity of universities to make the digital practices healthier, combine the digital well-being initiatives, and offer easy access to mental-health services to meet live realities of students in the diverse circumstances. Altogether, the study provides the culturally based and evidence-based research that digital belonging is dynamic and conditional and has a combination of the personal, social, and contextual elements that impact the well-being of graduate students in modern cyberspace.

### **Implication & Recommendation**

The present study has serious implications on learning and educational institutions, mental-health professionals, and policy makers who wish to improve the digital well-being of graduate students in Central Punjab. To begin with, researchers emphasize that social media is inextricably connected with academic identity, peer connectedness, and emotional regulation, and universities should be capable of acknowledging online space as part of, not an extrinsic to, the student experience. The digital well-being education must then be included in orientation programs, research supervision procedures and even co-curriculum experiences in the institutions so that the students can acquire knowledge on how to handle the comparison-based stress, passive scrolling, and develop positive thoughts on using the internet intentionally. Moreover, the close correlation between social media usage and sense of loneliness appears to be the key that predetermines the importance of providing on-campus and online mental health care, counseling, peer-help groups, and psychological first-aid programs.

The teachers and supervisors can contribute to this aspect by enabling inclusive offline academic communities that help the students lessen on the social media as source of emotional validation and informational support. Policy-wise, institutions of higher education in Punjab could contemplate the creation of guidelines within their institutions that will support healthy digital practices, help students avoid cyberbullying & promote platforms that help them learn together but do not inspire performance against peers. Other intrusions, like digital detox tuition, time management courses, and student-led student well-being programs, can prevent the risks of overindulging or unguided social media use. Lastly, future study would broaden this question by comparing public and private universities, studying gendered patterns of online belonging, how AI-driven algorithms may impact emotional experiences of students, who use Internet. By making digital literacy and psychosocial support priorities, universities will be able to establish spaces in which graduate students will feel a sense of real belonging, both online and offline, and develop resilient and balanced relationships with social media.

### Limitations & Future Research

Despite the valuable contribution that this study makes towards the research of the effect of social media on the formation of belonging and loneliness among graduate students at Central Punjab, a few limitations should be considered. To start with, the size of sample was adequate in the context of qualitative investigation but only eleven participants were included into the sample of apparently selected universities which limits the generalizability of the results and might not be sufficient to represent all experiences in whole region for contributing in particular sphere. Second, the scholars solely used self-reported measurement methods by interviewing people, which could be subject to memory recall, selective disclosure, as well as ability of participants to talk comfortably about the emotional experiences.

Lastly, and perhaps not evidence comprehensively covered in the context of this research, is the cultural factors e.g., family values, gender beliefs, and language choices that could have influenced the online behavior of the participants. The ways in which future studies can resolve these gaps are through having larger more diverse samples such as students in rural campuses and those who are marginalized as they may have quite different experiences online. A longitudinal or mixed-method study would give a more in-depth understanding of how online belonging and loneliness change over the academic process. Additional research pitting undergraduates and graduate students or public and private institutions may help clarify some differences attached to context. Besides, the results of further studies might be role of algorithm exposure, the problem of digital surveillance, and the psychological and emotional diverse issues of AI-mediated content and its effect on well-being of students.

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