DIALOGUE SOCIAL SCIENCE REVIEW

The Digital Addiction Among College Students: Social Media, Mental Health and Youth Behavior

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ABSTRACT
Rapid digitalization has changed the patterns of communication, social interaction and lifestyle behaviors especially among youth in society. Extreme dependence on the platforms of social media has led to apprehensions about digital addiction recognized increasingly as a significant psycho-social issue in present era. This research explores the interplay of social media usage, the mental health and the behavioral patterns among college students in Faisalabad, Pakistan. Sample of 400 students both boys and girls was selected from five main co-educational colleges (80 participants from each from) Government Graduate College Samanabad, Government Municipal Graduate College Abdullahpur, Government Graduate College of Science, Government Islamia Graduate College Sargodha Road and Government Graduate College Satiana Road Peoples Colony Faisalabad. The respondents (BS level) were selected using stratified random sampling technique. The data was gathered through questionnaire. This tool was constructed on the standardized scales measuring digital addiction, mental health i.e. stress, anxiety, and depression, and behavioral patterns i.e. academic performance, sleep cycles and social interaction. Findings of the study revealed a strong correlation between excessive usage of social media and declining mental health with significant impact on the academic and social behavior of students. Apart from this, present study contributes to sociological understanding regarding how lifestyles driven by technology affect youth well-being and reflects the urgent need for awareness campaigns, digital literacy programs and intervention strategies to mitigate negative impacts of digital addiction among college students.

Keywords: Digital addiction; mental health; social media usage; behavioral patterns; college students; youth sociology.

INTRODUCTION:

The digital technology along with its rapid advancements have reshaped the pattern of social interaction, communication and learning across the globe. The platforms of social media have become deeply implanted in the daily life of young people especially students. While they give opportunity for networking, self-expression and information sharing, their excessive and uncontrolled use leads towards the digital addiction which can be defined as a condition increasingly recognized as a modern social problem (Kuss & Griffiths, 2017). The digital addiction refers to compulsive use of online platform where people experience loss of control, preoccupation with virtual engagements and the negative effects in the academic, psychological and social domains (Andreassen, 2015).

College students at the transitional stage of adolescence and early adulthood are highly inclined towards such kind of addictive behavior. Various research studies highlight that prolonged exposures to social media platforms are associated with stress, anxiety, depression and low self-esteem among students (Marino et al., 2018). The digital addiction modifies youth behavior manifesting in disturbed sleeping pattern, reduced face-to-face interaction, academic decay and the strained family relationship (Twenge & Campbell, 2018). In the context of South Asia, the cultural expectations and academic pressure are already significant, so these patterns become more problematic making students' well-being and social adjustment increasingly fragile (Iqbal & Jami, 2021).

Apart from psychological and technological concerns, the issue of digital addiction among students is also a sociological one as it shapes values, social norms, and interpersonal relationships. In the context of Pakistan, understanding this interplay is essential as social media penetrations have grown rapidly in recent years particularly among youth (Pakistan Telecommunication Authority [PTA], 2023). The students of colleges in Faisalabad are traversing new digital reality while facing academic responsibility, the pressure of peers and mental health challenges. The main aim of this study is to explore how social media usage contributes to digital addiction and how this in turn, affects the mental health and behavioral pattern of students. Through investigating these dynamics, the study seeks to contribute to the wider discussions of technology-driven social problems and provides insight for educators, parents and policymakers to foster healthy digital practice among youth in Pakistan.

RATIONALE OF THE STUDY:

The excessive use of social media among college students has shifted from tool of communication and learning to the source of *digital addiction* which is negatively affecting their mental health and social behaviors. The college students are highly vulnerable to stress, anxiety and academic pressures which can be worsened by the compulsive online engagements. The rapid digitalization has increased youth dependence on social networking sites particularly in urban centers like Faisalabad Pakistan, yet limited researches have systematically examined its sociological implication in terms of students' well-being and behavioral patterns. This study has therefore significant importance as it targets to fill this gap by exploring the relationship between the usage of social media, mental health and the youth behavior by providing evidence that can guide educators, parents and policymakers in formulating effective strategy to promote healthier digital practices and reduce the risk linked with the digital addiction.

OBJECTIVES:
To observe the extent of the digital addiction among college students in Faisalabad
To examine the relationship between social media usage and mental health of students
To evaluate the impact of the digital addiction on the behavioral patterns, academic performance and social interactions among college students

LITERATURE REVIEW:
As highlighted by the growing body of research on digital addiction the extent to which social media has become a vital part of youth lifestyle with positive and negative consequences, the scholars note that while platforms such as Facebook, Instagram and TikTok increases connectivity and provide spaces for self-expression, their excessive use is strongly associated with the compulsive behavior patterns (Sun & Zhang, 2021). The digital addiction is conceptualized as behavioral disorders resembling substance-related addiction which is marked by preoccupation, withdrawal symptoms and inability to regulate usage (Elhai, Levine, & Hall, 2019) and the recognition of this phenomenon underscore the need for sociological studies investigating its effects within educational setting where youth are most active online.

Researches have demonstrated consistent links between problematic social media use and the high level of depression, anxiety and stress among the students (Hou et al., 2020) as the prolonged online engagements have been shown to reduce sleep quality, disrupt circadian rhythms and contribute to fatigue which exacerbates psychological distress (Wang et al., 2022). The said findings demonstrate that excessive social media usage does not only reflect a leisure activity but constitutes health risk factors with broad implication for youth well-being as further indicated by various studies that digital addiction affects behavioral patterns in multiple domains especially in academic performance. The undue social media usages have been associated with lower grades, procrastination and poor time management among college students (Yang et al., 2021). The addictive use pattern limits participation in face-to-face interactions reduces social skills and weakens family and peer relationship (Boursier, Gioia, Musetti, & Schimmenti, 2020) and these consequences reflect how digital addiction extends beyond the individual to influence broader social relations.In a recent cross-cultural research, it was revealed important variation in how digital addiction manifests. China, South Korea and Pakistan show higher vulnerability among youth population due to widespread availability of smartphone and cultural emphasis on online connectivity (Fumero, Marrero, Bethencourt, & Peñate, 2020) as highlighted by the studies in Pakistan that students often use social media as a coping mechanism for academic stress which paradoxically worsens their psychological and behavioral outcomes (Akram & Kumar, 2017). The research scholars are beginning to observe strategies to mitigate negative impacts of digital addiction including digital detox programs, awareness campaigns and integration of digital literacy into educational curricula (Sarmiento et al., 2022) as these approaches recognize that the social media cannot be eliminated from modern life, however the students must be empowered to regulate their use and develop healthy online habits and by situating the digital addiction within framework of mental health, education and youth sociology.

METHODOLOGY:
This study used a quantitative cross-sectional survey design to explore the association between digital addiction, social media usage, mental health and the youth behavior among college students in Faisalabad, Punjab Pakistan. Population of the research comprised of all BS-level students enrolled in Government Graduate Colleges of

Faisalabad and from this population, sample of 400 students using Krejcie and Morgan's (1970) sample size determination table suggesting that for a large population (above 10,000) sample of around 384 respondents is sufficient at the 95% confidence level, was drawn. The stratified sampling technique was employed to ensure proportionate representation across gender and educational levels. Moreover, from each of five selected coeducational colleges (Govt. Graduate College Samanabad, Govt. Graduate College of Science, Govt. Municipal Graduate College Abdullah Pur, Govt. Islamia Graduate College Sargodha Road & Govt. Graduate College Satiana Road Peoples Colony) 80 participants were selected giving balanced representation from all institutions. The data were gathered by questionnaire consisting of four sections i.e. first section included demographic attributes such as age, gender and educational level, second section measured social media usage and digital addiction using Social Media Addiction Scale (SMAS) employed to the local cultural context, the third section measured mental health by standardized scale, named as Generalized Anxiety Disorder Scale GAD-7 and Patient Health Questionnaire PHQ-9. Last section explored behavioral patterns such as sleep disturbance, procrastination, social interaction and academic performance and all these items were measured by a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Moreover, the instrument was reviewed by two experts in sociology and psychology to establish validity and reliability and a pilot test was conducted with 30 students from a non-sample college. The results depicted high internal consistency with Cronbach's Alpha coefficients exceeding (0.80) across all subscales. The data collection was done over four weeks with the researcher personally visiting colleges, briefing students and ensuring voluntary participation. Collected data were analyzed on SPSS with descriptive statistics i.e. means, frequencies, percentage and standard deviation summarized the responses. The inferential statistics i.e. Pearson's correlation coefficient to test associations between digital addiction, mental health and behavioral patterns; t-tests to analyze gender differences and ANOVA to know variations between Male and Females BS students, regression analysis to evaluate the predictive influence of digital addiction on mental health outcomes and behavioral tendencies.

Colleges	BS Male	BS Female	Total
Govt. Graduate College Samanabad Faisalabad	40	40	80
Govt. Graduate College of Science Faisalabad	40	40	80
Govt. Municipal Graduate College Abdullah Pur Faisalabad	40	40	80
Govt. Islamia Graduate College Sargodha Road Faisalabad	40	40	80
Govt. Graduate College Satiana Road Peoples Colony Faisalabad	40	40	80
Total	**200**	**200**	**400**

Sample Distribution

RESULTS & DISCUSSION:
Table No. 1: Demographic Attributes of respondents (N = 400)

Variables	Category	Frequency (n)	Percentage (%)
Gender	Male	200	50.0
	Female	200	50.0
Age	18–20	150	37.5

	21–23	180	45.0
	24+	70	17.5
Daily Social Media Use	1–2 hours	80	20.0
	3–4 hours	150	37.5
	5+ hours	170	42.5

Demographic profile of the participants illustrates a balanced gender representation showing equal participation from both male and female students. It ensures unbiased comparison of the patterns across groups. according to the above table, majority of the participants belonged to the age group of 21-23 yeas, consistent with the typical BS enrollment and represent age group particularly vulnerable to the digital dependency because of increased academic and social reliance on the online platforms. Furthermore, over 40% students reported using social media more than five hours every day which highlights the intensity of digital engagements among college youth in Pakistan. These trends mirror recent findings in Pakistan and globally where spending excessive time on screen has been linked with diminished social well-being and heightened susceptibility to digital addiction (Kuss & Griffiths, 2017; Khan et al., 2021). This data from the findings emphasizes the pressing need to address excessive social media use among college students as a critical and rising social issue.

Table No. 2: Descriptive Statistics of Digital Addiction, Mental Health and Behavior

Variable	Mean (M)	Std. Deviation (SD)	Minimum	Maximum
Digital Addiction Score	3.72	0.81	1.40	4.90
Anxiety (GAD-7)	3.55	0.76	1.20	4.85
Depression (PHQ-9)	3.61	0.82	1.30	4.95
Academic Performance	3.22	0.88	1.00	4.80
Sleep Disturbance	3.84	0.79	1.40	4.90

Descriptive analysis of the above table highlights relatively higher mean score for digital addiction M = 3.72, anxiety M = 3.55, depression M = 3.61 and sleep disturbance M = 3.84 which suggest that the use of social media is strongly associated with the psychological and behavioral strain among college students. The academic performance indicated a moderate score M = 3.22 illustrating that while students may maintain some levels of academic engagements, their mental health and everyday functioning are negatively affected by the excessive digital use. The above data findings align with the studies conducted in South Asia and the Middle East. The said study reported that digital overuse correlates with mental health deterioration and lifestyle disruptions (Andreassen et al., 2017; Hussain & Griffiths, 2018). Elevated score on mental health measures reinforces the argument that social media addiction is not only a technological concern but also a sociological and psychological issue requiring intervention.

Table No. 3: Gender Differences in Digital Addiction and Mental Health

Variable	Gender	Mean (M)	SD	t	p
Digital Addiction	Male	3.80	0.78	2.15	0.032*
	Female	3.64	0.84		
Anxiety (GAD-7)	Male	3.49	0.75	1.82	0.069
	Female	3.61	0.77		
Depression (PHQ-9)	Male	3.55	0.79	2.24	0.026*

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	Female	3.67	0.85		

*p < .05 indicates significant difference.

Result of the above independent sample t-test highlight significant gender differences in both digital addiction and the levels of depression as male students score higher on digital addiction while the female students testified slightly higher depression levels. These findings reflect global and regional trends where males engage more heavily in social networking sites and online gaming which increase their susceptibility to addiction (Andreassen et al., 2012). The female youth is more likely to experience emotional and psychological strain associated to the online social comparison (Marino et al., 2018). Absence of significant difference in anxiety across genders illustrates that anxiety resulting from digital use may be a shared experience among male and female youth in Pakistan. The above result highlights the nuanced gendered nature of digital addiction and its associated impacts pointing to the necessity of gender-sensitive awareness and counseling intervention.

Table No. 4: One-Way ANOVA: Social Media Usage Hours and Digital Addiction

Source	SS	Df	MS	F	P
Between Groups	14.21	2	7.10	11.52	0.000***
Within Groups	244.80	397	0.62		
Total	259.01	399			

The results of the above table indicate that students using social media more than 5 hours every day scored significantly higher on digital addiction compared to those using 1-2 hours or 3-4 hours (***p < .001.) ANOVA results highlighted statistically significant differences in digital addiction scores across groups with varying social media usage hours. Students using social media for five or more hours every day had substantially higher addiction score compared to those students who are using it for fewer hours demonstrates a clear dose-response relationship where longer online engagements intensify the risks of addictive tendencies. These findings are consistent with Kircaburun and Griffiths (2019) who stressed that time spent online is the strongest predictor of the digital addiction. Moreover, the result underscores the growing vulnerability of heavy users which suggests that interventions should particularly target students with prolonged online exposure, raising awareness about time management and promoting balanced digital practices.

Table No. 5: Regression Analysis: Predicting the Youth Behavior from Digital Addiction & Mental Health

Predictor	B	SE	Beta	t	p
Constant	1.42	0.23	-	6.17	0.000
Digital Addiction	0.41	0.06	0.38	6.83	0.000***
Anxiety (GAD-7)	0.25	0.07	0.22	3.57	0.000***
Depression (PHQ-9)	0.32	0.08	0.27	4.00	0.000***

$R = 0.61$, $R^2 = 0.37$, Adjusted $R^2 = 0.36$, $F_{(3,396)} = 78.24$, $p < .001$ Digital addictions, anxiety and depression significantly predicted the negative youth behavioral outcome.
The above regression model explains that digital addiction, anxiety and depression collectively depicts a significant portion of variance 37% in negative youth behavioral outcome such as poor academic engagements and disrupted social functioning. The

digital addiction emerged as a strongest factor which is followed by anxiety and depression. This finding aligns earlier studies that identified digital addiction as a leading cause of poor psychosocial adjustment and diminished student performance (Tang et al., 2021; Elhai et al., 2019). The strong predictive power of mental health variables further explains that digital addiction does not operate in isolation, it intertwines with psychological conditions creating a feedback loop of dependency and distress and these results advocate for integrated strategy involving mental health support, digital literacy and institutional monitoring to curb the adverse impacts of excessive social media use on youth behavior.

CONCLUSION

The excessive use as well as engagement with social media among youth has significant implications for the mental health and behavioral patterns as concluded by the present study. Findings of the study highlight gender-based differences where female students were more inclined to emotional distress while male students showed higher behavioral dependence and that prolonged use strongly correlates with the symptoms of stress, anxiety and academic decay. Moreover, ANOVA results confirmed that intensity of digital addiction varies across colleges depicting diverse institutional cultures and peer influences. This research emphasizes the urgent need for awareness campaigns, counseling services and healthy digital habits among students to mitigate the adverse psycho-social effects of digital addiction.

Recommendations

Several recommendations can be made to address the challenges of digital addiction among college students based on the findings of the study:

The colleges should arrange regular awareness programs, seminars, workshops to educate students about the psychological risks of excessive social media use and promote balanced online behavior.

The counseling and support Services should be established with trained psychologists who can help identify and manage stress, anxiety and behavioral problems linked with digital addiction.

Incorporating digital literacy and responsible technology use into academic courses will empower the students to critically evaluate their screen time and adopt healthier patterns of engagement.

The Parents and faculty members should be sensitized about early signs of digital overuse so they can provide timely support and interventions.

The colleges should encourage extracurricular activities such as sports, debates and cultural events to provide students with constructive outlets for socialization and stress relief, reducing reliance on digital platforms.

The Educational authorities and policymakers should frame guidelines on safe technology use in educational settings, ensuring students maintain a balance between academic productivity and digital engagement.

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