An Investigation into the Impact of Social Media Addiction on Cognitive Failures Among Young Adults: A Cross Sectional Study

U. Nisa (Ulfat Nisa)[1], A. Ahmed (Aqeel Ahmed)[1], S. Ali (Sajjad Ali)[2], K. Hassan (Khayan Hassan)[1], A. Naz (Arab Naz)[2]

[1] National University of Modern Languages, Islamabad. PK
[2] The University of Malakand, Chakdara Khyber Pakhtunkhwa, PK

Original Article

E-mail address:

arab_naz@yahoo.com

Reprint address:

Arab Naz
Dean of Social Sciences & Chairman
Department of Sociology
The University of Malakand
Chakdara Khyber Pakhtunkhwa
Pakistan

Source: Clinical Social Work and Health Intervention *Volume: 16* *Issue: 1-2*
Pages: 95 – 107 *Cited references: 30*

Reviewers:

Roberto Cauda
Institute of Infectious Diseases, Catholic University of the Sacred Heart, Rome, IT
Daria Kimuli
Catholic university of Eastern Africa, Nairobi, KE

Keywords:

Social media addiction. Cognitive failure. Young adults. Cross-sectional research. Pakistani students.

Publisher:

International Society of Applied Preventive Medicine i-gap

CSWHI 2025; 16(1-2): 95 – 107; DOI: 10.22359/cswhi_16_1_2_10 © Clinical Social Work and Health Intervention

Abstract:

This mixed-method cross-sectional research investigated the impact of social media addiction on cognitive failures among young adults in Pakistan. The study employed a correlational technique, using the Social Media Addiction Scale-Student Form (SMAS-SF) and the Cognitive Failures Questionnaire (CFQ) to assess social media addiction and cognitive lapses, respectively, among Islamabad-based university students (n=636) for predictor and criterion variables. At the same time, an exploratory case study was conducted to gather qual-

itative insights from the sample regarding their understanding of the potential risks associated with social media addiction, strategies to counter it, and the cognitive failures it may result in. The findings of the study highlighted a significant positive correlation between social media addiction and cognitive failures, suggesting a strong positive impact of predictor variables on criterion variables. The research further explored the idea that young adults with a higher tendency to be addicted to social media experience greater cognitive lapses, including attention deficits, short-term memory loss, and disruptions in routine tasks. The findings also underscored the need to raise awareness about the potential risks associated with social media addiction and suggested the need for targeted interventions to mitigate its impact on cognitive performance in the educational context.

Background

Social media is an integral part of people's lives in this digital age, as it facilitates digital connectivity, communication, entertainment, business, and jobs. Quoting Walsh (2022), Ahmed et al. (2023) view Snapchat, Instagram, TikTok, and Facebook among many others as the social media platforms that have nurtured global connectivity and communication. However, alongside the benefits of social media use, concerns have arisen about social media addiction and its potential impacts on the psychological and physical health of individuals. The impacts include perseverative thinking, changes to cognitive functioning, inferiority complexes, figure paralysis, and others. In Pakistan, access to social media, particularly through smartphones, has rapidly expanded. Siddiqui (2024) reported that Pakistan was ranked 10th globally in terms of hours spent on smartphones, as Pakistanis spent about 99 billion hours on their digitally-connected devices in 2023. The potential psychological and physical harms associated with heavy social media use underscore the importance of an academic inquiry into the phenomenon. Hence, the current study attempts to understand the impact of social media addiction on cognitive failures and psychological disorders among young adults in Pakistan.

Introduction

Social media addiction is referred to as a behavioral pattern marked by compulsive and excessive engagement with various social media platforms (Jameel et al., 2024; Maccarrone-eaglen & Schofield, 2023) that bears negative consequences on various aspects of users' lives, including personal and social relationships, academic performance, professional routines, and psychological well-being (Pellegrino et al., 2022). A combination of technological, social, and psychological factors contribute to the reinforcement of compulsive and addictive social media usage patterns. This addiction is fueled by the gratification obtained from social media interactions, statuses, validation, and social media features, such as likes, reactions, comments, and shares, all of which lead to feelings of satisfaction and pleasure and increase addictive behaviors (Bhatiasevi, 2024). Furthermore, social media platforms tend to be highly engaging due to features that include notifications, scrolling, and tailored content algorithms that encourage individuals to spend more time on them. Social media addiction may also arise from an individual's desire for social connectivity, belongingness, and peer-acceptance (Angelo et al., 2023). People also use social media to maintain digital relationships, seek social support, and/or compare themselves to others. Excessive reliance on social media for social interactions may lead to social isolation, feelings of loneliness, and fear of missing out, driving social media users to engage in compulsive use to lessen these undesirable emotions (Smith et al., 2021).

Addiction to social media is facilitated by us-

er-friendliness and the ubiquitousness of digital devices, particularly smartphones, that enable unremitting digital connectivity. Smartphones, as modern tools for communication and information access and dissemination, have become instrumental to contemporary high-tech life, offering instant global connectivity and supporting work and entertainment. Equipped with features like social media applications, navigation, e-commerce, and e-banking, these digital devices have reshaped societies. As of December 2023, 85.74% of the global population, translating to 6.92 billion individuals, own smartphones (Bankmycell, 2023). In addition to the widespread use of smartphones and the convenience they bring, numerous potential risks for individuals and society have also been identified. Excessive smartphone use may cause diminished real-world interactions, leading to social isolation, disturbed sleep patterns, anxiety, and stress (Škařupová et al., 2016). A severe decline in productivity in the professional and personal lives of those addicted to smartphones has been reported by many researchers (Lee et al., 2018; Tams et al., 2018; Wang et al., 2022)descriptive analysis, t testing, one-way analysis of variance (ANOVA. Among the challenges a smartphone addict may face are cognitive failures, defined as lapses in cognitive functions that may affect routine activities, ranging from absent-mindedness and forgetfulness to poor attention and misperception (Karishma et al., 2023).

Such failures can be situational, transient, or chronic, and they often manifest in different forms, including forgetting someone's name, misplacing things, and/or having difficulty concentrating (Tirre, 2018). While possibly everyone encounters such failures infrequently, chronic and critical lapses indicate an underlying problem that warrants a thorough investigation. The cognitive processes affected by smartphone use and potential addiction involve attention, memory, and executive functions. The compulsive behavior of checking notifications, engaging with various apps, and multi-tasking leads to divided attention and hinders smartphone users' ability to concentrate on different tasks. Furthermore, the widespread reliance on digital devices to seek information contributes to a dependence on external memory sources that potentially impacts internal memory recall (Mrazek et al., 2021).

Attention deficits are among the significant cognitive failures that involve difficulty maintaining focus or sustaining attention on any particular task (Spaccavento et al., 2019) evaluating the influence of the side and site of the brain lesion, the time from stroke, and the concomitant presence of aphasia or neglect. We assessed 204 patients with a first unilateral brain lesion and 42 healthy individuals with three subtests of the Test of Attentional Performance (TAP. Attentional lapses may lead individuals to have impaired task performance, increased errors, and decreased vigilance, especially in situations that require sustained concentration and attention. Factors that contribute to attention deficit include information overload, boredom, distraction, and fatigue, as they disrupt attentional processes and restrict task performance (Hobbiss & Lavie, 2024). Memory lapses can be counted as another form of cognitive failure that are marked by difficulties in receiving, encoding, storing, and retrieving information (Miller, 2021). These lapses range from minor memory slips to significant memory failures, including forgetting imperative tasks, appointments, and deadlines. Factors that influence memory lapses include multitasking, anxiety, stress, depression, fatigue, and aging-related cognitive functional changes that affect memory processes, such as consolidation, encoding, and retrieval. Similarly, perceptual errors refer to sensory processing and perceptions that may lead to misperceptions and misinterpretations of stimuli (Zaman et al., 2021). Executive function disorders are cognitive failures involving higher-order cognitive functions, including planning, decision-making, and problem-solving, often resulting in difficulties monitoring, organizing and initiating goal-directed behaviors (Colautti et al., 2022). The repercussions of cognitive failures can be of great significance and affect different aspects of life, from academic and professional performance to interpersonal relationships. Furthermore, cognitive failures can lead to self-doubt, frustration, and embarrassment, particularly in critical situations.

The current research seeks to add to the existing body of literature by investigating the impact of social media addiction on cognitive failures among young adults in Pakistan. It focuses on university students in Islamabad, the federal capital of Pakistan. To explore this impact, the study employed a cross-sectional, mixed-method approach, using both quantitative and qualitative methodologies concurrently. The quantitative part of the research employed standardized measures, using the Social Media Addiction Scale-Student Form (SMAS-SF) and the Cognitive Failures Questionnaire (CFQ) to measure the levels of social media addiction and cognitive failures among the respondents. Simultaneously, the researchers collected qualitative data through an exploratory case study. Open-ended questions were embedded in the quantitative survey to gather deeper insights into individuals' perception of social media addiction and potential strategies to mitigate the effects on the cognitive functioning of social media users.

By examining the interplay between social media addiction and cognitive failures, this research aims to contribute to the growing body of literature on the psychological consequences of excessive social media use. Furthermore, the findings of this study have practical implications for educators, policymakers, and mental health professionals in Pakistan, and they highlight the importance of awareness-raising campaigns and targeted interventions to address social media addiction and its impact on the cognitive performance of young adults. Ultimately, this research endeavors to inform evidence-based strategies to foster healthy social media habits and enhance cognitive well-being in the digital age.

Objectives of the Study

The study was driven by the following research objectives:

1. To measure the relationship between social media addiction and cognitive failures among young adults (university students) in Pakistan.
2. To document individual experiences of young adults in Pakistan (Islamabad-based university students) regarding the risks linked with social media addiction and strategies to mitigate its impact on cognitive function.
3. To examine the implications of social media addiction on the cognitive performance of university students in educational settings and suggest interventions to address the dilemma.

Research Hypotheses (Quantitative Part)

The current research devised the following hypotheses for the quantitative survey:

H1. There is a significant positive relationship between social media addiction and cognitive failures among young adults (university students) in Pakistan.

H2. There are significant differences among gender and age groups of young adults (university students) in Pakistan on the variable of cognitive failures and social media addiction.

Research Questions

The exploratory case study was guided by the following research questions:

RQ1. What are the individual perceptions and experiences of the Islamabad-based university students regarding the hazards of social media addiction?

RQ2. How do the Islamabad-based university students understand the impact of social media addiction on their cognitive performance?

RQ3. What are the suggested strategies by the Islamabad-based university students to mitigate the undesirable impact of social media addiction on their cognitive performance?

Research Methodology

a. Research Paradigm: The current study was designed using pragmatism as research paradigm. Johnson and Onwuegbuzie (2004) view pragmatism as the valid philosophy for studies adopting mixed-method research designs.

b. Research Design: The current study, as guided by pragmatism philosophy, adopted a concurrent mixed-method design by employing both quantitative and qualitative approaches to simultaneously collect data from the study participants. The concurrent mixed-method design guides researchers in real-time data

collection for the quantitative and qualitative parts (Dawadi et al., 2021), but the data gathering stands independent of any influence from the other phase (McCrudden et al., 2021; Şahin & Öztürk, 2019).

c. **Research Method (Quantitative)— Cross-sectional, Correlational Survey:** The current mixed-method research employed a cross-sectional, correlational, non-experimental survey method to measure the correlation between social media addiction and cognitive failures among young adults in Pakistan (university students). Such surveys help researchers understand the perceptions, behavior, and opinions of the study population (Lin et al., 2018).

d. **Research Method (Qualitative)— Exploratory Case Study:** This mixed-method study employed an exploratory case study to document the participants' perspectives on the potential risks of social media addiction and identify mitigation strategies/interventions to counter the impacts on university students' cognitive performance in academic settings. Qualitative case studies help scholars conduct in-depth investigations within the given context (Rashid et al., 2019).

e. **Population of the Study:** The population for the study comprised young adults (university students).

f. **Study Participants:** Since the study was related to young adults, the researchers selected university students as study participants.

g. **The Sampling Technique and the Sample:** Due to resource and accessibility considerations, the study employed a purposive convenience sampling technique. The researchers approached more than 1,000 Islamabad-based university students who actively used social media platforms. Of the students approached, 636 agreed to participate in the quantitative survey and simultaneously respond to the open-ended (qualitative) case study questions.

h. **The Instrument:** The current study measured the relationship between social media addiction (predictor variable) and cognitive failures (criterion variable). The researchers adopted the Social Media Addiction Scale-Student Form (SMAS-SF), which was devised and validated by Cengiz (2018) to measure the level of social media addiction (predictor variable) among study populations. The researchers also used the Cognitive Failures Questionnaire (CFQ), developed and validated by Broadbent et al., 1982), to measure the extent of cognitive failures among the study population. The study measured the correlation between the predictor and criterion variables, taking gender and age into consideration.

Data Analysis (Quantitative)— Cross-sectional, Correlational Survey

Table 1 shows the frequencies and percentages of the demographic characteristics of the sample. The study considered age in two categories: 18-24 years and 25-30 years. Similarly, the genders male and female were documented. It was noted that 359 (56.4%) respondents fell into the age group of 18-24 years, and the other 277 (43.6%) study participants were between 25-30 years of age. Moreover, 373 (58.6%) respondents were male, and 263 (41.4%) were female.

Table 2 illustrates that the reliability of the scales is in the good to excellent range, with Cronbach Alpha (α) values of .92 for the Social Media Addiction-Student Form (SMAS-SF) and .88 for the Cognitive Failures Questionnaire (CFQ). Similarly, the Cronbach Alpha values for Virtual Tolerance (VT), Virtual Communication (VC), Virtual Problem (VP), and Virtual Infor-

Table 1 Frequencies and Percentages of the Demographic Characteristics of the Sample (n=636)

Variables	Categories	(f)	(%)
Age	18-24 Years	359	56.4
	25-30 Years	277	43.6
Gender	Male	373	58.6
	Female	263	41.4

mation (VI), the subscales of the Social Media Addiction-Student Form (SMAS-SF), were also recorded as .77, .74, .87, and .76, respectively. Moreover, the Cronbach Alpha values for Forgetfulness (FG), Distractibility (DT), and False Triggering (FT), the subscale of the Cognitive Failures Questionnaire (CFQ), were documented as .81, .74, and .83, respectively. As all of the above-mentioned Cronbach Alpha (α) values fall in the expected range of reliability for any research study, the researchers applied further statistical tests to measure the correlation between social media addiction and cognitive failures among the study population. Table 2 also presents the means, standard deviation, and minimum and maximum ranges for each scale.

Table 3 shows the correlation between the Social Media Addiction Scale-Student Form

Table 2 Reliability Analysis of the Study Scales Used (n=636)

	No. of items				Range	
		(α)	M	SD	Minimum	Maximum
SMAS-SF	29	.92	92.46	20.39	46	145
VT	5	.77	8.79	3.77	5	25
VC	9	.74	18.37	5.86	12	45
VP	9	.87	27.89	7.91	10	45
VI	6	.76	20.67	4.66	9	30
CFQ	25	.88	44.36	14.67	23	83
FG	8	.81	13.91	5.95	6	28
DT	8	.74	15.90	6.25	9	28
FT	8	.83	13.08	5.94	4	28

Note. SMAS-SF=Social Media Addiction Scale-Student Form, VT=Virtual Tolerance, VC=-Virtual Communication, VP=Virtual Problem, VI=Virtual Information, CFQ=Cognitive Failures Questionnaire, FG=Forgetfulness, DT=Distractibility, FT=False Triggering

Table 3 Pearson Product Moment Correlation between the Social Media Addiction Scale-Student Form and its Subscales and the Cognitive Failures Questionnaire and Its Subscales (n=636)

		1	2	3	4	5	6	7	8	9
1.	**SMA**	1	.822**	.904**	.902**	.742**	.967**	.891**	.468**	.926**
2.	**VT**		1	.686**	.674**	.491**	.793**	.735**	.386**	.753**
3.	**VC**			1	.737**	.600**	.880**	.819**	.417**	.845**
4.	**VP**				1	.534**	.861**	.796**	.406**	.825**
5.	**VI**					1	.734**	.653**	.383**	.704**
6.	**CF**						1	.861**	.574**	.925**
7.	**FG**							1	.106**	.974**
8.	**DT**								1	.248**
9.	**FT**									1

*Note:** Correlation is significant at the 0.01 level (2-tailed). SMA=Social Media Addiction, VT= Virtual Tolerance, VC=Virtual Communication, VP=Virtual Problem, VI=Virtual Information, CF=Cognitive Failures, FG=Forgetfulness, DT=Distractibility, FT=False Triggering*

and its subscales, as well as the Cognitive Failures Questionnaire and its subscales. The resulting statistics revealed a significant positive correlation between social media addiction and cognitive failures among the study population. The result supported Hypothesis 1, proposing a significant positive relationship between social media addiction and cognitive failures among young adults (university students) in Pakistan.

Table 4 demonstrates the impact of social media addiction on cognitive failures among young adults (university students) in Pakistan. The R^2 value of .83 revealed that regarding social media addiction, the predictor variable caused 83% variance in the cognitive failures. The criterion variable was F=8853.99, $p<.01$. The findings discovered that social media addiction positively predicted cognitive failures (β=.86, $p<.01$).

Table 5 shows the application of an independent sample *t*-test that indicated statistically significant differences between male and female gender groups on the variables of social media addiction, cognitive failures, and their respective subscales. The statistics presented in Table 5 also revealed that the male study participants scored higher on the variables of social media addiction and cognitive failures compared to their female counterparts. This suggests that they suffered from social media addiction, and ultimately cognitive failures, more than the female participants of the study. This also supported Hypothesis 2, proposing significant differences among gender

Table 4 Regression Coefficient of Social Media Addiction on Cognitive Failures

Variable	B	β	SE	F
Constant	.15		1.11	8853.79
SMA	2.35	.86	.028	
R^2	.83			

Note: N=636, P<.01, SMA-SF=Social Media Addiction

Table 5 Independent Sample t-test Analysis between Male and Female Groups of the Sample on the Variables of Social Media Addiction and Subscales, and Cognitive Failures and Subscales (n=636)

	Male (n=373)		Female (n=263)		T	P	95% CI	
Measures	**M**	**SD**	**M**	**SD**			**LL**	**UL**
1. SMA	95.17	21.77	88.62	17.60	4.181	.000	3.470	9.616
2. VT	16.48	4.91	15.64	4.03	2.366	.018	.143	1.539
3. VC	28.61	6.95	26.58	6.04	3.926	.000	1.016	3.050
4. VP	28.76	8.20	26.65	7.32	3.410	.001	.897	3.331
5. VI	21.31	4.87	19.76	4.19	4.301	.000	.845	2.264
6.CF	46.93	14.85	40.72	13.66	5.440	.000	3.966	8.445
7. FG	14.77	5.94	12.68	5.75	4.460	.000	1.169	3.012
8. DT	16.39	6.38	15.21	5.99	2.370	.018	.203	2.150
9. FT	14.26	5.72	11.41	5.86	6.090	.000	1.931	3.767

Note. P>.05, SMA=Social Media Addiction, VT=Virtual Tolerance, VC=Virtual Communication, VP=Virtual Problem, VI=Virtual Information, CF=Cognitive Failures, FG=Forgetfulness, DT= Distractibility, FT=False Triggering

and age groups of young adults (university students) in Pakistan on the variable of cognitive failures due to social media addiction.

Table 6 reflects the application of an independent sample *t*-test that revealed statistically significant differences between the age groups of the study sample on the variables of social media addiction, cognitive failures, and their respective subscales. The results show that that the study participants in the age group of 25-30 years scored higher on the variables of social media addiction and cognitive failures compared to the respondents in the 18-24 category, suggesting that the older age group (25-30 years) suffered from social media addiction, and ultimately cognitive failures more than those in the 18-24 age bracket. This also supported Hypothesis 2, proposing significant differences among gender and age groups of young adults (university students) in Pakistan on the variable of cognitive failures due to social media addiction.

Results (Thematic Analysis) of the Exploratory Case Study

The questions for the exploratory case study revolved around respondents' perceptions and experiences regarding social media addiction hazards, their understanding of the impact of social media addiction on their cognitive performance, and self-adopted/suggested mitigation strategies/interventions to counter the undesirable impact of social media addiction on their cognitive performance. The responses yielded three main themes: social media addiction hazards, social media addiction's impact on cognitive performance, and the mitigation of social media addiction's impact on cognitive performance. A detailed thematic analysis of the responses from the study participants is as follows:

Theme 1: Social Media Addiction Hazards

The first theme identified from the responses of the study participants was "social media addiction hazards." This theme was further comprised of three sub-themes: Academic Performance, Mental Health Issues, and Disrupted Social Interactions.

Table 6 Independent Sample t-test Analysis between Age Groups on the Variables of Social Media Addiction and Its Subscales, and Cognitive Failures and Its Subscales (n=636).

	18-24 (n=359)		25-30 (n=277)		t	P	95% CI	
Measures	M	SD	M	SD			LL	UL
1. SMA	91.26	19.960	94.02	20.871	-1.685	.093	-5.98	.46
2. VT	15.84	4.436	16.51	4.745	-1.793	.074	-1.39	.06
3. VC	27.36	6.411	28.30	6.945	-1.757	.079	-1.99	.11
4. VP	27.92	7.912	27.84	7.930	.126	.900	-1.16	1.32
5. VI	20.13	4.725	21.36	4.500	-3.354	.001	-1.96	-.51
6.CF	43.32	14.657	45.71	14.624	-2.037	.042	-4.68	-.08
7. FG	13.26	5.774	14.75	6.068	-3.147	.002	-2.43	-.56
8. DT	16.08	6.462	15.67	5.958	.817	.415	-.57	1.37
9. FT	12.40	5.881	13.96	5.915	-3.312	.001	-2.49	-.64

Note. P>.05, SMA=Social Media Addiction, VT=Virtual Tolerance, VC=Virtual Communication, VP=Virtual Problem, VI=Virtual Information, CF=Cognitive Failures, FG=Forgetfulness, DT= Distractibility, FT=False Triggering

a. **Sub-theme 1 — Academic Performance:** The sub-theme Academic Performance highlighted two main aspects: distraction and procrastination, and a difficulty to focus on studies due to social media addiction. It was noted that social media addiction distracts individuals from focusing on their studies and may lead to distress that can impact cognitive performance.
b. **Sub-theme 2 — Mental Health Issues:** The sub-theme Mental Health Issues was defined by social media addicts as being anxiety, stress, low self-esteem, and irrational comparison with others. It was documented that those who use social media in excess (to the level of addiction) have very low self-esteem and suffer from anxiety and stress. Such individuals are also in the habit of irrationally comparing themselves with others.
c. **Sub-theme 3 — Aggrieved Social Interactions:** The sub-theme Aggrieved Social Interactions was based on a decline in face-to-face interactions and the impact on meaningful relationships due to social media addiction. It was observed through the responses of the study participants that individuals who suffer from social media addiction face troubles in their social relationships. They avoid face-to-face interactions, and if they have them, they have them reluctantly. Similarly, social media addicts also suffer from troubled marriages and other social relationships due to their spending a lot of time in the virtual world and not paying attention to real-life relationships and the factors associated with them.

Theme 2: Social Media Addiction Impact on Cognitive Performance

The second theme identified among the responses of the study participants was Social Media Addiction's Impact on Cognitive Performance. This theme was further comprised of three sub-themes: Focus and Concentration, Memory and Retention, and Cognitive Fatigue.

a. **Sub-theme 1 — Focus and Concentration:** The sub-theme Focus and Concentration highlighted two main aspects that are brought about due to social media addiction: increased distractions and trouble concentrating. It was observed from the responses that social media addicts were unable to concentrate on their routine real-life activities, particularly academic activities and studies, as they were distracted by the illusion of the virtual world created by social media and smartphones.
b. **Sub-theme 2 — Memory and Retention:** The sub-theme Memory and Retention comprised forgetfulness, memory lapses, and difficulty retaining information. The respondents recognized that they suffered memory lapses and often forgot important tasks due to being continuously engaged with smartphones and social media. They acknowledged that the tasks they once considered manageable had become more challenging and that they often struggled to retain information and stay focused during class lectures and other academic sessions.
c. **Sub-theme 3 — Cognitive Fatigue:** The sub-theme Cognitive Fatigue included feeling mentally exhausted and having decreased cognitive abilities. It was observed that the respondents suffered mental fatigue due to constant exposure to social media. They reported a decline in their critical thinking skills and problem-solving abilities, attributing it to an overload of information coming from social media platforms, which led to mental overburdening and ultimately cognitive fatigue.

Theme 3: Mitigation of Social Media Addiction Impact on Cognitive Performance

The third theme identified from the respondents' answers to questions about counter-strategies to mitigate the undesirable impacts of social media addiction on their cognitive performance was comprised of individual routines and limitations, conducive learning environments, and mindfulness and self-care.

a. **Sub-theme 1 — Individual Routines and Limitations:** The sub-theme Individual Routines and Limitations was comprised of suggestions by the respondents regarding specific times of social media usage and utilizing digital well-being applications to track and limit screentime. In addition to acknowledging the unavoidability of smartphones and so-

cial media, the respondents agreed that people should use a timetable for social media usage and limit screentime. They also suggested using various digital media usage trackers and applications available for smartphones and other digital devices to ensure their mental well-being, which in turn will help reduce the amount of memory lapses and cognitive failures. They also highlighted the importance of spending as much time socializing with family and friends as possible as a step that could also help individuals counter cognitive fatigue.

b. **Sub-theme 2 — Conducive Learning Environment:** The sub-theme Conducive Learning Environment comprised suggestions including managing smartphone and social media use during physical class lectures, minimizing notifications and distractions, and establishing quiet spaces that could facilitate studying and academic discussions. On one hand, the respondents suggested that individuals could mitigate the hazardous impact of social media, particularly cognitive failures, by reducing their dependence on social media during class lectures. On the other hand, they demanded strict rules by the academic institutions to restrict social media usage during academic discussions. They agreed that smartphone usage should not be allowed in classrooms. The respondents also suggested that academic institutions should encourage study circles and academic debates and establish more study-friendly spaces to counter social media addictions and cognitive failures.

c. **Sub-theme 3 — Mindfulness and Self-Care:** The sub-theme Mindfulness and Self-Care comprised strategies like engaging oneself in mindfulness rituals like meditation and expanding leisure hobbies and activities to counter social media addiction and cognitive failures. The respondents viewed mindfulness practices like deep-breath exercises and meditation as helpful in regaining focus and countering cognitive fatigue and failures caused by addictive social media usage. Similarly, individuals should consciously make efforts to diversify their leisure activities, spend time with family and friends, plan outdoor activities, read books, and exercise to minimize their reliance on smartphones and social media.

Findings of the Study (Quantitative Part)

a. It was found that the scales used: the Social Media Addiction Scale-Student Form (SMA-SF) and the Cognitive Failures Questionnaire (CFQ) for the current study (quantitative part) were reliable.

b. It was found that a significant positive correlation between social media addiction and cognitive failures exists among young adults in Pakistan. Another finding was that social media addiction positively predicts cognitive lapses among the study population. Hypothesis 1, which proposed a significant positive relationship between social media addiction and cognitive failures among young adults (university students) in Pakistan, was supported.

c. It was noted that male respondents and those with an older age (25-30 years) tend to display a greater degree of social media addiction and cognitive failures compared to the female group of respondents and individuals in the younger age group of 18-24 years. Hypothesis 2, which proposed significant differences among gender and age groups of young adults (university students) in Pakistan on the variable of cognitive failures due to social media addiction, was supported.

Findings of the Study (Quantitative Part)

a. Social media addiction causes distraction, procrastination, trouble focusing, and negatively affects cognitive performance. This addiction leads to stress, anxiety, low self-esteem, and irrational comparison with others. It also results in minimal interpersonal interactions and disturbed relationships.

b. Social media addiction leads to increased distraction and reduced concentration, especially in the context of academic performance. Social media addicts often experience cognitive fatigue and failures, including memory lapses, forgetfulness, and reduced cognitive abilities, particularly in retaining information, due to constant exposure to social media.

c. The respondents suggested that social media use should be scheduled. Individuals should install and use digital well-being apps. People should spend time with their family and friends to counter cognitive fatigue. Academic institutions should manage social media use during class lectures, minimize distractions, and create quiet study circles (spaces). Furthermore, engaging in leisure pursuits, practicing mindfulness, and participating in outdoor activities are recommended strategies to counter cognitive failures associated with social media addiction.

Conclusion

The current research explored the significant positive correlation between social media addiction and cognitive failures among young adults in Pakistan. It also found that social media addiction positively predicted cognitive failures among the study populations. Furthermore, the male respondents and individuals falling in the age group of 25-30 years displayed a greater degree of social media addiction and cognitive failures than their female counterparts and younger individuals aged 18-24 years. Moreover, the study showed that social media addiction resulted in distraction, procrastination, poor interpersonal interactions, disturbed relationships, stress, anxiety, and low self-esteem. The findings revealed that social media addicts may also suffer from cognitive fatigue, memory lapses, and reduced cognitive performance. The respondents proposed several strategies to mitigate social media addiction and cognitive failures, including scheduled use of social media, the use of digital well-being apps, engaging in leisure time and outdoor activities with family and friends, regulating social media use during class lectures to minimize distractions, establishing dedicated study circles within academic institutions, and incorporating mindfulness practices.

References

1. AHMED A, NISA U, IFTIKHAR A (2023) Digital Media and Perseverative Thinking : A Case of the Students of Psychology among Islamabad-based Public Sector Universities. *Online Media & Society*, *4*(3), 58–66.
2. ANGELO M, MICHELE F, CLAUDIO S, DAVIDE L (2023) Sense of Belonging at School and on Social Media in Adolescence : Associations with Educational Achievement and Psychosocial Maladjustment. *Child Psychiatry & Human Development*, *0123456789*. https://doi.org/10.1007/s10578-023-01516-x.
3. BANKMYCELL.COM (2023) *How Many Smartphones are in the World?* https://www.bankmycell.com/blog/how-many-phones-are-in-the-world.
4. BHATIASEVI V (2024) The uses and grati fi cations of social media and their impact on social relationships and psychological well-being. *Frontiers in Psychiatry*, *15*, 1260565. https://doi.org/10.3389/fpsyt.2024.1260565
5. BROADBENT D E, COOPER P F, FIBGERALD P, PARKERS K R (1982) The Cognitive Failures Questionnaire (CFQ) and its correlates. *British Journal of Clinical Psychology*, *21*, 1–16.
6. CENGIZ S (2018) Social Media Addiction Scale - Student Form : The Reliability and Validity Study. *The Turkish Online Journal of Educational Technology*, *17*(1), 169–182.
7. COLAUTTI L, ANTONIETTI A, IANNELLO P (2022) Brain sciences Executive Functions in Decision Making under Ambiguity and Risk in Healthy Adults : A Scoping Review Adopting the Hot and Cold Executive Functions Perspective. *Brain Sciences*, *12*(1335). https://doi.org/10.3390/ brainsci12101335 Academic.
8. DAWADI S, SHRESTHA S, GIRI R A (2021) Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education*, *2*(2), 25–36. https://doi.org/10.46809/jpse.v2i2.20.
9. HOBBISS M H, Lavie N (2024) Journal of Experimental Child Sustained selective attention in adolescence : Cognitive development and predictors of distractibility at school. *Journal of Experimental Child Psychology*, *238*, 105784. https://doi.org/10.1016/j.jecp.2023.105784.
10. JAMEEL A, KHAN S, KHAN A A (2024)

Exploring the Impact of Social Media Sites on Compulsive Shopping Behavior : The Mediating Role of Materialism. *Psychology Research and Behavior Management*, *17*, 171–185. https://doi.org/10.2147/PRBM.S442193.

11. JOHNSON R B, ONWUEGBUZIE A J (2004) Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, *33*(7), 14–26. https://doi.org/10.3102/0013189X033007014.
12. KARISHMA AWINASHE M V, JAIN A, SANTHOSH V C, CHOUDHURY B K, ALESSA N, BABAJI P (2023) Smartphone addiction and its impact on knowledge, cognitive and psychomotor skills among dental students in India: An observational study. *Journal of Education and Health Promotion*, *12*(77), 1–6. https://doi.org/10.4103/jehp.jehp.
13. LEE S, KIM M, MENDOZA J S, MCDONOUGH I M (2018) Addicted to cellphones: exploring the psychometric properties between the nomophobia questionnaire and obsessiveness in college students. *Heliyon*, *4*(11), e00895. https://doi.org/10.1016/j.heliyon.2018.e00895.
14. LIN C-Y, GRIFFITHS M D, PAKPOUR A H (2018) Psychometric evaluation of Persian Nomophobia Questionnaire: Differential item functioning and measurement invariance across gender. *Journal of Behavioral Addictions*, *7*(1), 100–108. https://doi.org/10.1556/2006.7.2018.11.
15. MACCARRONE-EAGLEN A, SCHOFIELD P (2023) The influence of social media addiction on compulsive buying behaviour : A comparative analysis of LGBT + and heterosexual consumers. *Journal of Consumer Behaviour*, *22*, 98–121. https://doi.org/10.1002/cb.2115.
16. MCCRUDDEN M T, MARCHAND G, SCHUTZ P A (2021) Joint displays for mixed methods research in psychology. *Methods in Psychology*, *5*(July), 2590–2601. https://doi.org/10.1016/j.metip.2021.100067.
17. MILLER R R (2021) Neurobiology of Learning and Memory Failures of memory and the fate of forgotten memories. *Neurobiology of Learning and Memory*, *181*, 107426. https://doi.org/10.1016/j.nlm.2021.107426.
18. MRAZEK A J, MRAZEK M D, ORTEGA J R, JI R R, KARIMI S S, BROWN C S, ALEXANDER C A, KHAN M, PANAHI R, SADOSS M, SCOTT A, TYSZKA J E, SCHOOLER J W (2021) Teenagers ' Smartphone Use during Homework : An Analysis of Beliefs and Behaviors around Digital Multitasking. *Education Sciences*, *11*(713), 1–10. https://doi.org/https://doi.org/10.3390/educsci1111 0713 Academic.
19. PELLEGRINO A, STASI A, BHATIASEVI V (2022) Research trends in social media addiction and problematic social media use : A bibliometric analysis. *Frontiers in Psychiatry*, *13*, 1017506. https://doi.org/10.3389/fpsyt.2022.1017506.
20. RASHID Y, RASHID A, WARRAICH M A, SABIR S S, WASEEM A (2019) Case Study Method: A Step-by-Step Guide for Business Researchers. *International Journal of Qualitative Methods*, *18*, 1–13. https://doi.org/10.1177/1609406919862424.
21. SAHIN M D, OZTURK G (2019) Mixed Method Research: Theoretical Foundations, Designs and Its Use in Educational Research. *International Journal of Contemporary Educational Research*, *6*(2), 301–310. https://doi.org/10.33200/ijcer.574002.
22. SIDDIQUI A (2024, April 19) Pakistan ranks 10th globally in mobile usage. *The News International*. https://www.thenews.com.pk/print/1180015-pakistan-ranks-10th-globally-in-mobile-usage.
23. SKARUPOVA K, OLAFSSON K, BLINKA L (2016) The effect of smartphone use on trends in European adolescents' excessive Internet use. *Behaviour and Information Technology*, *35*(1), 68–74. https://doi.org/10.1080/0144929X.2015.1114144.
24. SMITH D, LEONIS T, ANANDAVALLI S, SMITH D (2021) Belonging and loneliness in cyberspace : impacts of social media on adolescents ' well-being ABSTRACT. *Australian Journal of Psychology*, *73*(1), 12–23. https://doi.org/10.1080/00049530.2021.1898914.
25. SPACCAVENTO S, MARINELLI C V, NARDULLI R, MACCHITELLA L, BI-

VONA U, PICCARDI L, ZOCCOLOTTI P, ANGELELLI P (2019) Attention Deficits in Stroke Patients : The Role of Lesion Characteristics , Time from Stroke , and Concomitant Neuropsychological Deficits. *Behavioural Neurology*. https://doi.org/10.1155/2019/7835710.

26. TAMS S, LEGOUX R, LEGER P M (2018) Smartphone withdrawal creates stress: A moderated mediation model of nomophobia, social threat, and phone withdrawal context. *Computers in Human Behavior*, *81*, 1–9. https://doi.org/10.1016/j.chb.2017.11.026.
27. TIRRE W C (2018) Dimensionality and Determinants of Self-Reported Cognitive Failures. *International Journal of Psychological Research*, *11*(1), 9–18. https://doi.org/10.21500/20112084.3213.
28. WALSH S (2022) *The Top 10 Social Media Sites & Platforms 2022*. Search Engine Journal. https://www.searchenginejournal.com/social-media/biggest-social-media-sites/#close.
29. WANG J C, HSIEH C Y, KUNG S H (2022) The impact of smartphone use on learning effectiveness: A case study of primary school students. In *Education and Information Technologies* (Vol. 28, Issue 6). Springer US. https://doi.org/10.1007/s10639-022-11430-9.
30. ZAMAN J, CHALKIA A, ZENSES A, BILGIN A S, BECKERS T, VERVLIET B, BODDEZ Y (2021). Perceptual variability : Implications for learning and generalization. *Psychonomic Bulletin & Review*, *28*, 1–19. https://doi.org/10.3758/s13423-020-01780-1.