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ANTECEDENTS & CONSEQUENCES OF SOCIAL MEDIA ADICTION AMONG STUDENTS IN HIGHER EDUCATIONAL CONTEXT

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KEYWORDS	ABSTRACT
Social Media Addiction (SMA), Psychological Distress (PD), Fear of Missing Out (FOMO), Subjective Wellbeing (SW), Sleep Quality (SQ), Self-Assertion (SA)	The objective of this research is to investigate how social media addiction mediates relationships between psychological distress and fear of missing out (FOMO) with subjective wellbeing and sleep quality, respectively. The present study also investigated the moderating effect of self-assertion upon association between social media addiction and both subjective wellbeing and sleep quality. This is the quantitative research. Data is collected with the help of structed questionnaire from 327 university' students. Structural equation modeling was used to analyze the data and test the hypothesized relationships. The research focuses on students of education sector and may not be fully generalizable to other sectors. Additionally, future research could track changes over longer period and expand the geographical scope to include diverse industry settings. This research contributes to the body of knowledge as no previous research has examined mediating role of social media addiction for relationship of psychological distress & fear of missing out (FOMO) with subjective wellbeing and with sleep quality respectively. Current study also contributes in body of knowledge as no previous research has examined the moderating effect of self-assertion on the link between the social media addiction and subjective wellbeing as well as with sleep quality respectively.
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INTRODUCTION

The social media platforms attract worldwide attention as users across the globe demonstrate high levels of engagement with these networks. Millions of people worldwide are negatively impacted by the social media platforms (Andreassen, 2015; Singh, Dixit & Joshi, 2020). From Pinterest to Facebook, Instagram, Snap Chat, WhatsApp, WeChat, Google, YouTube, Twitter, LinkedIn, social

media seems to have made an addict out of most users (Kizgin, Jamal, Dey & Rana, 2018). This has contributed a lot to prediction that the current 2.03bn social media users will grow to a potential 2.67bn in 2018, according to the digital revolution (Ikon Michael junto a Chika, (2018). As per TFE Times (2017), 28% of total media time is spent on social networks, 15-19-year-old users consuming an average of about 3 hours on social media platforms, while 20-29-year-old users attain about 2 hours daily as per facts and figures. With 1.23 billion users spending 17 minutes per day on social networking sites, that also translates into a whopping 39,757 years' worth of the combination in one year on social media sites. TFE Times (2017) adds that with up to 18% of users unable to go beyond about two hours without checking the site, 16% are dependent on the Twitter or Facebook updates for their day time.

Every day, approximately "five million" photos are posted on Instagram. Twitter produces more than 500 million tweets a day. Five billion "Google +1" button hits are recorded daily, whereas each second two new members are created on LinkedIn, insignificant knowledge about the social media importance and use. Moreover, twenty eight percent of the Twitter users see their posts at daily basis (Pfeffer, Matter, Jaidka, Varol, Mashhadi, Lasser & Morstatter, 2023). Twitter users start checking their feeds as soon as they wake up (Cola, Mazza & Tesconi, 2023). Gaille (2018) states that an estimated 350 million conveyors of social networking are said to be addicted to Facebook itself; the highest prevalence of addiction is among these aged between 16 and 25. In this regard, nearly 68% of these users admit to browsing social media daily for around 10 minutes, while 61% believe they must check Facebook multiple times each day. The usage of social media has been seen to be at optimum level in developing countries compared to industrialized ones (Poushter, Bishop & Chwe, 2018; Timilsina, 2022).

These researches argued that younger individuals tend to utilize social media more often than older individuals for self-expression and interactions with peers. The majority of the global population resides in the developing countries (United Nations, Department of Economic and Social Affairs, Population Division, 2011; Mingst, Karns & Lyon, 2022). Around 45 million individuals live in Pakistan, with nearly 92% of them being youth, making them some of most active Facebook users (Sathar & Bongaarts, 2016; Ali, Faraz, Memon, Salman & Aziz, 2024). In this way, Facebook is basically going to help young Pakistanis throw off their old cultural shackles (Ambrosi, Avis & Riva, 2018) and weaken fundamentalists (Avis, 2016; Shahriar, 2021), or sometimes it can be argued that Facebook is inciting violence in Pakistan. The addiction may inflict adverse consequences on one's psychological well-being, like sharp negative moods, low self-esteem & impaired relational skills. teenagers experience a rise in both suicidal thoughts and actions (Shannon, Bush, Villeneuve & Marshall, 2022).

Research indicates that social media platforms became crucial for emergency support during the pandemic period of 2020 yet evidence shows that COVID-19 stress leads to greater social media addiction according to Zhao and Zhou (2021). Evidence today shows that the younger individuals particularly teens face a greater risk of developing addictions through social media along with other platforms (Throuvala, Griffiths, Rennoldson & Kuss, 2019; Samarraie, Bello, Alzahrani, Smith & Emele, 2022; Sirola, Kaakinen & Oksanen, 2019). Current research is designed to explore the

mediating role of addiction of social media for the relationship of psychological distress, fear of missing out (FOMO) with subjective wellbeing and sleep quality. In this regard, impulse control issues, reduced attention span, and compulsive checking behavior are key indicators of addiction. Current study will also examine the moderating role of social media addiction with the subjective wellbeing as well as sleep quality. In this regard, the current research proposes are the following objectives of research.

Objectives & Questions

RO1: To check the impact of (a) psychological distress (b) fear of missing out on social media addiction among students.

RO2: To check on the impact of social media addiction on (a) subjective wellbeing (b) sleep quality in particular context.

RQ1: What are the impacts of (a) psychological distress (b) fear of missing out on social media addiction in particular context?

RQ2: What is the impact of social media addiction on the (a) subjective wellbeing and, (b) sleep quality in particular context?

LITERATURE REVIEW

Psychological Distress & Social Media Addiction

Anxiety and depression symptoms form the primary basis for defining psychological distress (PD) in the academic literature (Drapeau et al., 2012; Scandurra, Pizzo & Freda, 2024). The individuals utilize social media platforms as important coping strategies to address their emotional distress (Eijnden, Lemmens & Valkenburg, 2016). As per Huang, Zhang and Liu (2021), negative emotions like anxiety, mental stress, and depression act as significant indicators of social media addiction (SMA). The desire for validation compels individuals with depression to invest considerable time on social media in pursuit of likes and followers (Hartanto, Quek, Tng & Yong, 2021). Research carried out by Vannucci, Flannery and Ohannessian (2017) discovered that individuals with anxiety issues show higher SMA because they use these platforms to reduce their anxiety levels. Social media acts as a significant means of communication tool for adolescents who experience high PD and mental health issues as per to research led by Kanyinga and Lewis (2015). PD demonstrates direct link with SMA as proven by multiple research studies (Panno, Giacomantonio, Carrus, Maricchiolo, Pirchio & Mannetti, 2020; Zhao & Zhou, 2021). The current research work proposed hypothesis based on this established fact.

H1: The psychological distress has positive impact on the social media addiction among students

Fear of Missing Out & Social Media Addiction

The psychological idea of fear of missing out persists because individuals want to know what is happening across the different locations while simultaneously fearing others may enjoy rewarding the experiences without their presence (Przybylski, Murayama, DeHaan & Gladwell 2013). The phenomenon of fear of missing out among social media users occurs when they feel distressed about missing opportunities to connect with others through online platforms (Alutaybi, Thani, McAlaney & Ali, 2019). The phenomenon of fear of missing out demonstrates a positive relationship with both

general use of social media and dependency on these platforms (Uram & Skalski, 2022; Przybylski et al., 2013) especially the social media addiction (Blackwell, Leaman, Tramposch, Osborne & Liss, 2017). In this connection, the ongoing research presents the proposed hypothesis as stated with the following assertion.

H2: The fear of missing out positively affects the social media addiction among students.

Social Media Addiction, Sleep Quality & Subjective Wellbeing

Social media users throughout the world develop excessive enthusiasm for online platforms leading them to invest substantial amounts of time in these networks. Social media platforms have proven detrimental to life quality for millions of people around the world based on research by Andreassen (2015) and Singh et al. (2020). The research and study show that social media affects private life (Acılar & Mersin, 2015) and the psychological health (Chen et al., 2020) as well as interpersonal relationships (Çalışır, 2015) and leads to higher depression levels (Haand & Shuwang, 2020) and the dependence on social media. Overuse of social media platforms leads to paranoid thoughts and phobic anxiety while also fostering feelings of anger and hostility in users (Bilgin, 2018). According to Eroğlu and Yıldırım (2017), prolonged engagement with social media during the day leads to diminished SP. The quality of sleep-in students results in the daytime drowsiness, impacting their performance, academic success, engagement in activities, and energy levels, as demonstrated by Güneş et al. (2018). The current research generated following theoretical proposition because of above-mentioned fact.

H3: The social media addiction has positive impact on sleep quality among the students

Three constructs, joy, contentment with the life, and personal wellbeing are occasionally utilized synonymously although they represent the distinct concepts. The life-satisfaction (LS) constitutes a fundamental part of subjective wellbeing along with the positive affective responses and negative affective states. The term happiness shares comparable definition with SWB. The core difference between these terms emerges from the fact that happiness refers solely to personal emotional states yet LS accounts for the emotional states of others (Ng, 2015). The researchers assess SWB in their study by including SE because of two main reasons: (i) SWB integrates contentment in life, negative emotions, and positive emotions and (ii) SNS usage affects SWB because it enables people to learn about others' self-perceptions. Thus, it found that there is negative impact of SMA on subjective wellbeing or LS (Koç & Turan, 2021; Marttila et al., 2021; Afroz, 2016). Based on this fact, research proposed the hypotheses.

H4: The social media addiction has a negative impact upon subjective wellbeing among students
H5: SMA plays a mediating role for the relationship of (a) PS (b) FoMO with subjective wellbeing
H6: Social media addiction plays a mediating role for the relationship of (a) PS (b) FoMO with SQ

Moderating Role of Self-assertion

When a person asserts themselves, they experience internal wish to communicate their personality with other people according to Alberti and Emmons in 1978 and Jin in 2015 and Wolpe in 1968. The researchers Derlega et al. (1993) connect self-assertion to emotional bonds we share with others through the dimensions of intimacy and commitment and the way we respond to them. The ability to assert oneself stands as essential quality for individuals who want to maintain social connections

with other people. The self-assertion process in the online platforms allows users to share thoughts through messaging and comment responses and photo and video uploads and other activities. The public unrest during social events makes users wish to communicate their opinions about popular subjects that attract widespread notice. Regular and passive social media use tends to increase during times of public unrest (Verduyn et al., 2015). The current research also proposes the following moderate hypotheses.

H7: The SA has a mediating role in the connection of social media addiction with (a) SWB (b) SQ

Figure 1 Research Model
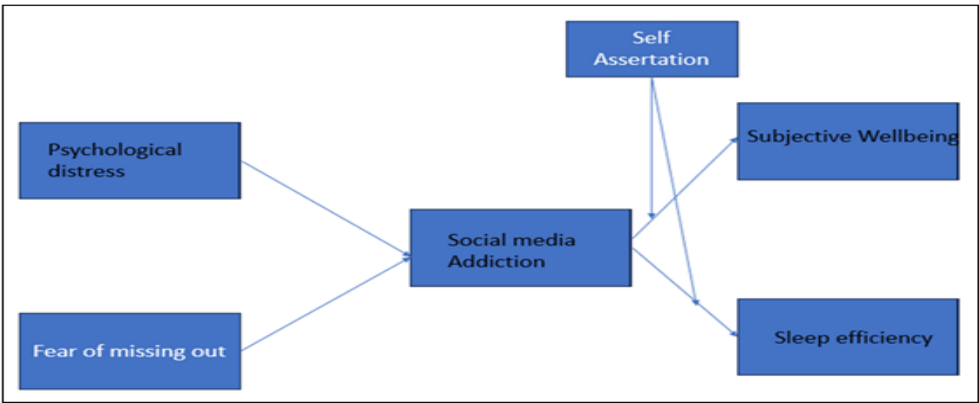
RESEARCH METHODOLOGY

FoMO comprises of 10 questions graded on a scale from 1 (not true at all) to 7 (very true) (Przybylski et al., 2013). The SQ scale was created by Meijer and van den Wittenboer (2004). This measurement involves four items. The assessment of SMA is conducted using 14 different scales. This scale was taken on by earlier researcher (Al-Menayes, 2015). SWB Scale (SWLS; Diener et al. 1985). The SWLS consists of four items. Self-assertion was assessed using 6 items and taken from previous researcher (Heidari, 2018). The data was collected from 350 university students with the help of convenance sampling technique.

Measurement Model Assessment

The measurement model evaluation phase requires evaluating AVE, Cronbach alpha, composite reliability, factor loadings, discriminant validity. The findings suggest that initial four parameters satisfied threshold criteria set by Hair et al. (2021) (i.e., AVE>0.5, α>0.7, Loading>0.7 and CR>0.7), as illustrated in Table I.

Table 1 Measurement Model: VIF, Reliability and Convergent Validity

Construct	Item Code	Loadings	VIF	α	CR	AVE
Social Media Addiction	SMA1	0.852	1.694	0.824	0.878	0.764
	SMA2	0.792	2.234			
	SMA3	0.882	2.020			
	SMA4	0.754	4.254			

SMA5	0.745	2.607	
SMA6	0.882	3.531	
SMA7	0.764	3.456	
SMA8	0.771	3.564	
SMA9	0.732	4.254	
SMA10	0.813	2.607	
SMA11	0.782	3.531	
SMA12	0.840	3.456	
SMA13	0.842	3.564	
SMA14	0.791	1.587	

Table 1A Measurement Model: VIF, Reliability and Convergent Validity

Construct	Item Code	Loadings	VIF	α	CR	AVE
Psychological Distress	PD1	0.798	2.442	0.815	0.784	0.764
	PD2	0.745	2.765			
	PD3	0.882	2.884			
	PD4	0.764	2.994			
Sleep Quality	SQ1	0.817	2.745	0.814	0.882	0.764
	SQ2	0.806	3.682			
	SQ3	0.825	3.304			
	SQ4	0.843	2.025			
Fear of Missing Out	FoMO1	0.745	3.245	0.794	0.854	0.779
	FoMO2	0.826	2.021			
	FoMO3	0.852	3.022			
	FoMO4	0.792	2.824			
	FoMO5	0.882	2.445			
	FoMO6	0.754	2.564			
	FoMO7	0.795	2.842			
	FoMO8	0.778	1.842			
	FoMO9	0.778	2.842			
	FoMO10	0.778	1.842			

Table 1B Measurement Model: VIF, Reliability and Convergent Validity

Construct	Item Code	Loadings	VIF	α	CR	AVE
Satisfaction with Life Scale	SWLS1	0.814	3.254	0.826	0.884	0.764
	SWLS2	0.854	3.412			
	SWLS3	0.854	2.254			
	SWLS4	0.854	2.412			
Self Assertation (SA)	SA1	0.792	3.022	0.789	0.778	0.825
	SA2	0.882	2.824			
	SA3	0.754	2.445			
	SA4	0.795	2.564			

SA5	0.778	2.842
SA6	0.778	1.842

Researchers verified that every concept maintains distinctiveness from the rest based on tests of discriminant validity. The HTMT technique emerged as a more credible approach for establishing discriminant validity among constructs than both cross-loading and the Fornell-Larcker criterion (Hair et al, 2021). In Table III all HTMT values fell below 0.85 which means discriminant validity exists between all constructs in this study. The examination of collinearity began with the VIF test before moving into the assessment of the structural model. According to research by the Hair et al. (2021), all measurement of the models demonstrated no signs of the collinearity because their VIF values were below.

Table 2 Discriminant Validity (HTMT<0.85)

PD	FoMO	SMA	SWB	SQ	SA
PD					
FoMO 0.453					
SMA 0.321	0.321				
SWB 0.225	0.224	0.254			
SQ 0.425	0.324	0.352	0.425		
SA 0.561	0.224	0.372	0.324	0.284	

Structural Model Hypotheses Testing

After confirming that measurement model was accurate and valid, the assessment of the structural model commenced. It is at this stage where assumption is thus made. In this connection, all the tests, including the test for effect sizes, relevance of prediction, and coefficients of determination were conducted as well.

Table 3 Structural Model: Hypotheses Relationships

Direct Relationships					
Relationships	Path Coefficient	SD	t-value	p-value	Decisions
PD → SMA	0.249	0.048	5.932	0.000	Accept
FoMO → SMA	0.182	0.035	9.332	0.000	Accept
SMA → SQ	0.234	0.040	5.294	0.000	Accept
SMA → SWB	−0.310	0.035	4.332	0.000	Accept
Mediation					
Relationships	Path Coefficient	SD	t-value	p-value	Decisions
PD -> SMA ->SWB	-0.014	0.023	5.512	0.020	Accept
FoMO -> SMA ->SWB	-0.027	0.024	2.282	0.010	Accept
PD -> SMA -> SQ	-0.014	0.023	3.422	0.010	Accept
FoMO -> SMA -> SQ	-0.027	0.024	6.282	0.020	Accept
Moderation					
Relationships	Path Coefficient	SD	t-value	p-value	Decisions
SMA × SA→ SWB	-0.018	0.023	5.512	0.020	Accept
SMA × SA→ SQ	0.002	0.024	2.282	0.210	Accept

A bootstrap process including 5000 iterations was implemented to examine the indirect and direct connection with help of line test (Hair et al., 2021). Table III summarizes the findings. Current study proposed 4 direct, 2 mediating (4 sub hypotheses), one moderating (2 sub hypotheses). Results confirmed that direct and 2 mediating (4 sub hypotheses) are accepted and one moderating sub hypothesis is accepted. H1: Psychological distress has positive Impact on social media addiction. Results of current study (0.249, p < 0.001) in line with the result of the previous studies (Sampasa-Kanyinga & Lewis, 2015; Panno et al., 2020; Zhao & Zhou, 2021). These researches examined that psychological distress has positive Impact on the social media addiction. H2: Fear of missing out (FOMO) positively influences addiction to social media. Results of current study (0.182, p < 0.001) in line with result of previous studies (Alutaybi et al., 2019; Blackwell et al., 2017). In this regard, these researches examined and concluded that Fear of missing out (FoMO) has positive impact on social media addiction.

H3: Social media addiction influence positively on sleep quality. Results of current study (0.234, p < 0.001) in line with the result of previous studies (Eroğlu & Yıldırım, 2017; Güneş et al., 2018). These researches examined that social media addiction has positive Impact on sleep quality. H4: Addiction to social media positively affects subjective well-being. Results of current study (-0.310, p < 0.001) in line with the result of previous studies (Koç & Turan, 2021; Marttila et al., 2021; Afroz, 2016). These researches examined that social media addiction has negative impact on subjective wellbeing. H5: Social media addiction serves as an intermediary in the connection between (a) Psychological distress (b) Fear of missing out (FOMO) and subjective wellbeing. Results of current study provides the following results (-0.014, p < 0.05) and (-0.027, p < 0.05). These are the findings of current study.

H6: Social media addiction acts as a mediator in the connection between (a) psychological distress (b) fear of missing out (FoMO) and sleep quality. Results of current study provides the following results (-0.014, p < 0.05) and (-0.027, p < 0.05). These are the findings of current study. These are the findings of current study. H7: Self Assertation plays a moderating role for the relationship of social media addiction with (a) subjective wellbeing (b) sleep quality. The results of current study also provide the following results (-0.018, p < 0.05) and (0.002, p > 0.05). These are the findings of current study that provide significant information in reaching the conclusion. As, self assertation moderates the relationship of social media addiction with subjective wellbeing and Self Assertation does not moderate the relationship of social media addiction with sleep quality. These are also the findings of current research.

Table 4 Summary of Hypotheses

SN	Hypotheses	Result	Decision
H1	SMA has a positive impact on PD.	(0.249, p < 0.001)	Accepted
H2	SMA positively affects the FoMo	(0.182, p < 0.001)	Accepted
H3	SMA has positive Impact on SQ	(0.234, p < 0.001)	Accepted
H4	SMA has a negative impact on SWB	(-0.310, p < 0.001)	Accepted
H5	SMA serves as mediating for connection of (a)PD (b) FoMO in relation to SWB	(-0.014, p < 0.05) and (-0.027, p < 0.05)	Accepted

H6	SMA serves as a mediating factor in connection between (a) PD and (b) FoMO with SQ	(-0.014, p < 0.05) and (-0.027, p < 0.05)	Accepted
H7(a)	SA serves as a moderating factor in connection between SMA and SWB.	(-0.018, p < 0.05)	Accepted
H7(a)	SA serves as a moderating factor in connection between SMA and SQ.	(0.002, p > 0.05).	Rejected

CONCLUSION

This study concludes that the social media addiction (SMA) plays a critical mediating role in the relationship between emotional stressors specifically psychological distress and fear of missing out (FoMO) and key indicators of the individual wellbeing, including subjective wellbeing and sleep quality. While SMA was found to positively correlate with sleep quality, its negative impact on subjective wellbeing highlights the complex and potentially contradictory nature of its influence. The significant mediating effects underscore SMA as a pivotal behavioral outcome through which emotional and psychological challenges manifest in health-related consequences. Moreover, the moderating effect of self-assertion indicates individual coping characteristics can alleviate the negative impacts of SMA, especially concerning well-being. Still, its non-significant influence on SMA-sleep quality relationship indicates a limited protective role in domain. Findings emphasize the need for targeted psychological and behavioral actions that tackle both drivers and impacts of SMA, while fostering resilience traits like self-assertation to promote healthier digital habits and mental health outcomes.

Research Implications

1. The findings of this study offer several important theoretical and practical implications. First, the positive influence of psychological distress and the fear of missing out (FoMO) related to SMA emphasizes importance for mental health professionals, educators, and policymakers. to recognize emotional vulnerabilities significant precursors to problematic digital behavior. Interventions targeting psychological resilience & emotional regulation may be effective in reducing risk of SMA.

2. Second, the dual role of SMA as a mediator and an independent predictor—emphasizes its complex impact on both the sleep quality and subjective wellbeing. While SMA appears to improve sleep quality in this context, it simultaneously undermines the overall wellbeing, suggesting that its effects may be context-dependent or influenced by usage patterns and individual differences. This insight underscores the need for balanced and mindful social media use, guided by the evidence-based public awareness campaigns and digital literacy diverse initiatives.

3. Third, the mediating role of SMA in the relationship between psychological factors (distress and FoMO) and health outcomes further suggests that addressing SMA could be a strategic focal point in broader mental health interventions. By disrupting the mediating pathway, professionals may be able to alleviate the negative impact of emotional stressors on both wellbeing and sleep.

4. Finally, moderating role of self-assertation on link between SMA and subjective wellbeing indicates that personal traits can buffer negative outcomes. Training programs that foster

self-regulation, assertiveness, and personal agency may boost individuals' ability to manage their digital behaviour more effectively. However, the lack of moderating impact on sleep quality suggests that different mechanisms may underlie this relationship, pointing to a need for further investigation.

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