

## Social Media Addiction and Poor Mental Health: Examine and Role of Internet Addiction

<sup>1</sup>Madiha Lodhi

<sup>2</sup>Amber Khuram

<sup>\*3</sup>Hafiz Ahmad Ashraf

<sup>4</sup>Um-e-Habiba

<sup>5</sup>Momna Tufail

<sup>1</sup>University of Punjab, Department of Banking and Finance, Gujranwala, Pakistan

<sup>2</sup>University of Punjab, Department of Banking and Finance, Gujranwala, Pakistan

<sup>\*3</sup>University of Central Punjab, Gujranwala, Pakistan

<sup>4</sup>University of Punjab, Department of Banking and Finance, Gujranwala, Pakistan

<sup>5</sup>University of Punjab, Department of Banking and Finance, Gujranwala, Pakistan

<sup>1</sup>[Junaidlodhi657@gmail.com](mailto:Junaidlodhi657@gmail.com) <sup>2</sup>[amberkhuramo6@gmail.com](mailto:amberkhuramo6@gmail.com) <sup>\*3</sup>[ucpahmad@gmail.com](mailto:ucpahmad@gmail.com)

<sup>4</sup>[habibaansarioo22@gmail.com](mailto:habibaansarioo22@gmail.com), <sup>5</sup>[Momnarehani43@gmail.com](mailto:Momnarehani43@gmail.com)

### Abstract

The development of social media took off at a rapid pace, and due to this, there have been concerns about the negative impact it can have on mental health. Though the relationship between the addiction to social media and the mental health outcomes, i.e., depression and anxiety, has been already tested in the previous researches, the given study is dedicated to the relationship between SMA and mental health outcomes, i.e., depression, and anxiety, with the intermediate of IA. Structural equation model was utilized using a sample of 603 students studying in universities to test the proposed model with the control of age, gender, and time of using digital technologies. The results indicate that SMA is not directly related to depression and anxiety instead its impacts are completely mediated by IA. These findings underscore the problematic internet use at the center of defining how excessive use of social media is among the reasons leading to poor mental health. The paper provides a more parsimonious and theoretically based model and adds to the existing literature.

**Keywords:** Social Media Addiction (SMA), Internet Addiction (IA), Depression, Anxiety, Mental health.

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Corresponding Authors\*

Hafiz Ahmad Ashraf

## Introduction

The application of social media and internet-based technologies in the last ten years has become more impressive, transforming how people communicate, interact, and access information (We Are Social, 2022; Montag et al., 2018). Social networking sites have also become part of the daily life of people globally, as a huge number of individuals use social networking sites to socialize, entertain, learn and work on a daily basis (Ryan et al., 2014; Viner et al., 2019). Due to young adults, in particular, online interaction has become one of the prevailing forms of social interaction (Kandell, 1998; Lozano-Blasco et al., 2022). Although the given technological advances have a lot of positive aspects, including the increased connectivity and sharing of information, the accumulating empirical data indicates that the overuse and uncontrollability of social media might be linked to other adverse psychological effects as well (Barry et al., 2017; Marino et al., 2018).

Over the last few years, the issue of SMA (SMA) as a behavioural phenomenon potentially damaging mental health has gained more and more scholarly interest (Griffiths et al., 2016; Huang, 2022). The addiction to social media can be broadly described as compulsive excessive use of social networking websites and the inability to control the use along with the impairment of normal functioning (Andreassen et al., 2016; Ryan et al., 2014). Studies that have looked at the association between SMA and mental health outcomes, however, have shown mixed and inconclusive results. Although some studies have found significant positive correlations between problematic use of social media and poor mental health outcomes, especially depression and anxiety (Barry et al., 2017; Viner et al., 2019), other studies have reported weak, inconsistent, and non-significant ones (Best et al., 2014; Coyne et al., 2020). These inconsistent results indicate that SMA is not the only factor that can be used to explain the difference in the mental health of individuals completely.

Such discrepancy in previous studies made researchers believe that the correlation between SMA and mental health might be more complicated than thought before (Huang, 2018; Marino et al., 2018). In particular, scholars have postulated that other psychological or behavioural processes could mediate the relationship between the use of social media and the development of mental health outcomes. IA is one of those mechanisms which are receiving both theoretical and empirical investigation and that exhibit growing support (Griffiths, 2000; Kuss & Lopez-Fernandez, 2016). IA is a more generalized form of excessive, mismanaged, and obsessive internet use that leads to psychological angst and functional incompetence (Weinstein and Lejoyeux, 2010; Kuss et al., 2014). In contrast to SMA, which is aimed at one particular activity on the Internet, IA accounts for a broader dependency on online interaction. Theoretically, the aspect of IA should be given special attention due to the usage of social media platforms that are almost entirely dependent on the internet-connection availability (Montag et al., 2018). As a result, overuse of social media can support the more general trends of having harmful internet use, which further can have greater direct and significant consequences on mental health (Chou et al., 2017; Lemenager et al., 2018). In this regard, the problematic use of social media can also not directly affect such psychological outcomes like depression and anxiety, but a direct effect can be experienced via a more high degree of IA (Kuss et al., 2014).

Thus, the current paper suggests a simplified and theoretically sound framework that makes IA a mediator in the connection between SMA and mental health. Specifically, since depression and anxiety are specific predictors of mental distress, this research will help to establish previously incongruent conclusions in the literature and offer a more accurate interpretation of how the SMA is associated with mental health (Huang, 2022; Lozano-Blasco

et al., 2022). With this, the paper aims at adding to the body of existing literature by emphasizing the pivotal position of IA in the explanation of how excessive social media consumption can culminate into negative psychological effects.

## Literature Review

The concept of Social Media Addiction (SMA) is widely understood as an uncontrollable and constant preoccupation with the use of social media, which is characterized by the desire to get online and connect with social networking sites. The addicted to social media persons often exhibit the inability to control their consumption and end up suffering loss of control in their normal functioning, poor productivity, and social or academic performance (Andreassen et al., 2016; Ryan et al., 2014). With social media sites taking the front and center in the daily lives of people especially young adults, these researchers have grown interested in exploring their possible effects on the psychological well-being (Kandell, 1998).

The correlation between SMA and the outcomes of mental health, specifically depression and anxiety, has been investigated in a growing body of empirical literature. According to several studies, the problematic use of social media is linked to a greater number of depressive symptoms, emotional distress, and anxiety (Huang, 2022; Marino et al., 2018). These associations have been conceptualised by a number of psychological mechanisms which comprise: excessive social comparisons, negative evaluation fear, low self esteem, and constant exposure to idealised online images. The effects of such processes could be the poor regulation of emotions in people, as well as their feeling of insufficiency, isolation, and psychological susceptibility (Andreassen et al., 2016).

Irrespective of these results, the studies that have analyzed the connection between SMA and mental health have yielded variable and, at times, conflicting findings. Some researchers are based on strong and statistically significant correlations, whereas others provide weak, indirect, or non-significant results regarding the dependence between SMA and psychological distress (Huang, 2022; Marino et al., 2018). Specifically, a number of studies indicate that with a set of other variables factored in, particularly, the overall internet use or individual differences, the direct linkage between SMA and depression and anxiety grows smaller or even vanishes (Ryan et al., 2014). These inconclusive findings suggest that the psychological effects of SMA can be different among groups of people, cultures, and methodological strategies.

The availability of inconsistent literature indicates that SMA in itself might not be adequate enough to explain differences in mental health outcomes. Researchers have been making more and more arguments that overuse of social media cannot be considered separately, and it is a part of a wider trend of online behaviour (Marino et al., 2018). In this view, SMA can act as a distal or indirect determinant, having an impact on mental health by more general means of problematic internet use (Andreassen et al., 2016). In its turn, the correlation between SMA and mental health is bound to be conditioned by a set of underlying behavioural processes that are not confined to the use of the platform in question. In general, the available literature indicates that a higher level of advanced and theoretically based models is required that goes past the direct association of SMA and mental health. The acknowledgement of the shortcomings of the recognition of SMA as a predictor of its own value allows previous studies to offer a solid argument as to why and in what circumstances excessive social media use leads to depression and anxiety (Huang, 2022).

## Internet Addiction (IA) as a Mediation Process

IA is defined as an uncontrollable and unreasonable craving and behavior towards using the internet that leads to personal distress or failure to perform everyday tasks (Weinstein and

Lejoyeux, 2010; Lozano-Blasco et al., 2022). The problem is that people with high IA usually have troubles in controlling their online life, which can have adverse outcomes and influence academic achievements, social life, and mood. With the internet use becoming a crucial part of the contemporary reality, the issues regarding its overuse and maladaptive nature have become the matter of ever-growing interest in the mental health studies (Kuss & Lopez-Fernandez, 2016).

Recent empirical researches have shown significant correlations that exist between IA and poor mental health outcomes, especially depression and anxiety. Problematic internet users have an increased risk of reporting emotional instabilities, unremitting low mood, and anxiety symptoms (Chou et al., 2017; Huang, 2022). Such consequences have been connected to the disrupted sleep patterns, decreased face-to-face social interaction, and cognitive and emotional overload due to the extended use of the internet (Lozano-Blasco et al., 2022). Scholars have also asserted that IA usually underlies more particular online behaviours even problematic social media use. As the social media is mainly used via the use of the internet, overindulging in social network sites can support the wider trends of IA (Kuss & Lopez-Fernandez, 2016). It can therefore be concluded that IA can act as an important means of explanation and mediation whereby SMA can have an impact on mental health. SMA could predispose to depression and anxiety instead of having a direct impact, as it weakens IA in general (Huang, 2022).

## **The Development of Conceptual Model and Hypotheses**

### **Explanation of Conceptual Model**

The theoretical framework of the current research is worked out according to the available literature regarding SMA, the IA, and mental health outcomes. According to the model, the effects of SMA on subsequent levels of IA are sequential, and poorer mental health outcomes are the result of IA, namely depression and anxiety (Griffiths et al., 2016). This model presupposes that the problem of SMA does not produce a direct psychological effect per se, but its effect is mediated by more macro-patterns of problematic internet use. The justification of attributing IA as a mediating variable is based on the fact that social media platforms are web based. Overuse and compulsive use of social networking platforms might consequently worsen the general IA, which was continuously found to be a significant determinant of psychological ill-being (Kuss and Lopez-Fernandez, 2016). At the model level, IA is a proximal process which converts the overindulgence in social media use into negative mental health effects.

The model presents a parsimonious and theoretically consistent way of explaining the impact of SMA on psychological well-being by adopting the depression and the anxiety as important indicators of the mental health. This mediated framework is supported by previous empirical and theoretical studies that indicate that general problematic internet use is central in mediating platform-specific addictive behaviours with psychological distress (Huang, 2022).

### **Hypotheses Development**

**H<sub>1</sub>: There is a positive relationship between SMA and poor mental health outcomes, i.e. depression and anxiety.**

This theory is based on the concept of behavioural addiction and media use theories that indicate that a highly intensive use of certain online behaviours can strengthen the broader tendencies of problematic internet use (Griffiths et al., 2016). Compulsive social media users are prone to spending long hours online and this makes them more dependent on the activities of the internet. Since the use of social media platforms is a significant part of



modern internet use, the greater the levels of SMA, the more vulnerability toward psychological challenges should be positively correlated (Kuss & Lopez-Fernandez, 2016). The problem of addiction to social media has been studied widely as the possible risk factor towards mental health issues. Overuse of social networking sites can result in more negative exposure to social comparison, unrealistic ideals, emotional reliance on feedback on internet resources, and less meaningful offline interactions. Empirical research has revealed that these experiences can increase psychological susceptibility and make people with a strong degree of SMA susceptible to more symptoms of depression and anxiety (Marino et al., 2018; Huang, 2022). However, the current research results indicate that SMA does not have a large direct impact on depression and anxiety as other behaviours involving the use of technology are considered. The direct positive relationship between SMA and mental health outcomes was also non-significant when IA was added to the analysis model. This trend shows that SMA is not a logical choice to attribute to the worse mental health consequences, and it is essential to investigate lower-level processes that connect heavy social media use to mental challenges (Huang, 2022).

## **H2: There is a mediation effect between SMA and poor mental health outcomes, (depression and anxiety) by IA**

The empirical studies conducted in the past have repeatedly shown that IA correlates with depressive symptoms, with low mood, emotional withdrawal, and low motivation (Kuss and Lopez-Fernandez, 2016; Lozano-Blasco et al., 2022). The excessive use of the internet can also interfere with sleep, diminish face-to-face social life, and deteriorate emotional control, which lead to depressive consequences (Bener et al., 2019; Chou et al., 2017). On this basis, it is assumed that the depression will have a positive correlation with increased IA levels. Further hypothesised in this study was that the IA would mediate the relationship between SMA and mental health. The use of the social media is inherently internet-based, which means that with the constant use of the media, people tend to overuse the internet (Griffiths et al., 2016). Such behaviour can be translated into IA, which is compulsive, has poor self-control and functional impairment over time (Weinstein and Lejoyeux, 2010). Previous studies have continued to reveal close correlations between IA and depression as well as anxiety (Kuss et al., 2014; Huang, 2022). This hypothesis is highly supported by the findings of the current research. IA had a complete mediating effect between SMA and depression and had a significant mediating role with anxiety. This implies that subjects who are more socially media addicted will have higher chances of having problematic internet use patterns, which will then lead them to gain higher chances of developing symptoms of depression and anxiety. Hence, the IA is an essential explanatory factor in the context of comprehending the effects of SMA on mental health (Lozano-Blasco et al., 2022).

## **H3: The addiction to social media is indirectly related to anxiety as a result of high proportions of problematic internet use**

Additionally, the IA has been associated with an increased level of anxiety symptoms, including constant worry, uneasiness, and emotional discomfort (Chou et al., 2017; Huang, 2022). The constant use of the Internet can lead to cognitive overload and dependency-based anxiety, especially when the access to the online space is low (Kuss et al., 2014). In line with this, this paper proposes that IA and anxiety will have a positive relationship.

This hypothesis also suggests that anxiety associated with SMA is not a direct consequence of social media use, but it is also a product of more general trends of maladaptive internet use. This leads to people with high SMA spending long hours online, having problems with disconnecting themselves to the online material and being emotionally

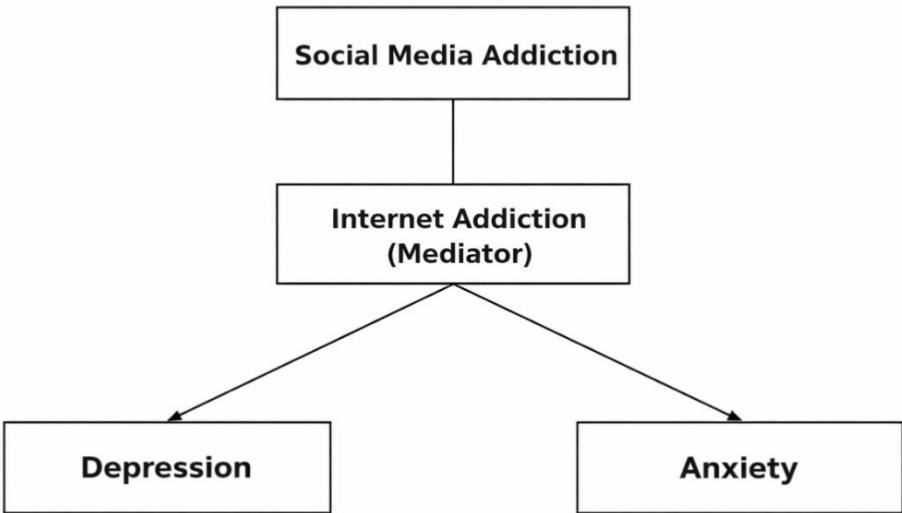
regulated by the digital environment (Griffiths et al., 2016). Such behavioural patterns may increase cognitive overload, emotional instability as well as continuing worry which has a strong relation with symptoms of anxiety (Weinstein and Lejoyeux, 2010). The results of the current paper confirm this indirect pathway. It was observed that the SMA had a strong connection with the anxiety due to its influence on the IA despite the demographic factors and time of use. It underlines that generalized problematic internet use is a better explanation of the presence of anxiety symptoms among people with high SMA but not social media engagement (Huang, 2022). Therefore, the interventions aiming at mitigating anxiety should be oriented towards the diminution of the general addiction to the internet and not merely the decrease in the use of social media.

#### **H4: Depression is mediated by IA between SMA and depression**

Since SMA is estimated to cause overall IA, and in turn, IA is closely linked to depression, the hypothesis is that IA mediates the relationship between SMA and depressive symptoms (Kuss and Lopez-Fernandez, 2016; Lozano-Blasco et al., 2022). This is based on the hypothesis that the effects of SMA do not cause depression rather they cause depression indirectly through augmented degrees of IA.

The hypothesis also assumes that the relationship between SMA and depression is not direct but rather occurs through IA that refers to an intervening hypothesis. Social media websites are visited mostly via the internet, and the overuse of social media usually leads to long and uncontrolled usage of the internet (Griffiths et al., 2016). Addictive behaviours in people using social media might eventually lead to the development of wider IA, which is a compulsive use of the internet, inability to control the usage, and pre-occupancy (Weinstein and Lejoyeux, 2010). These behavioural pattern types may impair the normal functioning, diminish the social interaction in real life, and enhance exposed emotions, which raises the likelihood of depressive symptoms (Bener et al., 2019). The results of the current research give a good empirical evidence to this hypothesis. The relationship between SMA and depression was also found to be mediated by IA completely, meaning that in cases where IA is considered, the relationship of SMA and depression is not significant. Rather, the higher the SMA the higher the IA which consequently was a big predictor of the higher levels of depression. This complete mediation effect implies that SMA among the people who are depressed is strongly influenced by the more problematic use of the internet and not the use of the social media in isolation (Huang, 2022).

**Mediating Role of Internet Addiction in  
Social Media Addiction and Mental Health**



**Methodology**

**Participants and Procedure**

The research design of the current study was quantitative and cross-sectional, which allowed studying the relationship between SMA and IA and mental health outcomes (Creswell and Creswell, 2018). A total of 603 university students were used as the source of data and the average age of the population under study was 22.25 years which is the most active using social media and internet-based technologies. The target population was the university students because of their high digital engagement and susceptibility to problematic internet-related behaviours (Lozano-Blasco et al., 2022).

Using the online platforms and social networking sites, the participants were recruited in various universities located in different regions of Turkey. This strategy would help to reach a rich student sample and increase the data representativeness. The study was done on a voluntary basis and the respondents were guaranteed of anonymity and confidentiality. All the respondents were notified of the objective of the study and gave informed consent beforehand. The study also followed the established ethics in research on psychology and therefore ethical approval was sought by the institutional ethics committee before data collection commenced (Creswell and Creswell, 2018).

**Measures**

The measurement of all constructs present in the study was done by a set of standardised and already tested measures, which have been commonly employed in previous studies and have shown acceptable psychometric attributes (Kuss & Griffiths, 2017).

**Social Media Addiction (SMA)**

The SMA Scale for Adults (SMAS-A) was used to measure the SMA. The scale measures the amounts of compulsive and excessive use of social networking sites by the individuals and their perception of being out of control on the use of social media. The respondents were

required to respond to the questions concerning the degree to which each item was reflective of their experiences on a Likert-type scale where higher scores represented higher degrees of SMA. The scale was confirmed by other researchers and proved a high internal consistency in the current study (Şahin and Yağcı, 2017).

### **Internet Addiction (IA)**

The IA Test (IAT), which is a commonly used instrument of quantifying problematic internet use, was used to measure IA. The scale measures too much and uncontrolled internet-related behaviours that cause psychological distress and disability. The items were answered by respondents according to their habits in the use of the internet, including the inability to manage the time spent online and the disturbance of regular life. The process of IAT is higher when the scores are higher. The instrument had good reliability in the present research as was identified in earlier studies (Young, 1998).

### **Depression and Anxiety**

The Depression and Anxiety subscales of the Depression Anxiety Stress Scale-21 (DASS-21) were used to measure the mental health outcomes. These subscales reflect the degree of depressive and anxiety-related symptoms that the participants have had during a given time. Products are evaluated based on their ability to gauge feelings like sadness, a lack of motivation, tension and extreme worrying. The answers were noted on a scale of Likert type, whereby significant scores were considered as increased depression and anxiety. The subscales of DASS-21 have been widely tested and demonstrated reasonable inner consistency in the current research (Lovibond and Lovibond, 1995). In general, none of the measurement tools showed unsatisfactory reliability, which confirms the appropriateness of all of them to test the proposed relationships in the conceptual model (Kuss and Griffiths, 2017).

### **Data Analysis**

Structural equation modelling (SEM) was used as the major method of data analysis to test the proposed conceptual model and hypotheses. SEM was chosen because it enables to study simultaneously several relationships between the observed and latent variables and evaluate direct and indirect (mediating) effects in one analytical model (Kline, 2016). This method is very apt when dealing with mediation models with complex relations between behavioural and psychological constructs.

The robust maximum likelihood estimation was performed in the analysis, as it is suitable in the cases when the data can be not normal and is more accurate and reliable in estimating the parameters. This is a very popular estimation technique that has been highly suggested in behavioural and psychological studies because it can deal with large samples and provide strong findings (Muthén and Muthén, 2017). According to the past studies, as control variables in the model, age, gender, and time spent on internet and social media were included. The control of these variables helped the study to control the possible confounding factors, as well as ensured that the relationships between SMA and IA with depression and anxiety were not explained by demographic traits or overall level of use intensity. The analysis included these controls which made the test of the suggested mediation model more specific and theoretically based (Hayes, 2018).

### **Results**

The study findings were analysed with the help of structural equation modelling (SEM) aiming to test the conceptual model and hypotheses (Kline, 2016). Measurement model was tested before the structural relationships to determine the sufficientness of the model fit. The results showed that the measurement model fitted well to the data set with the indices of fit above the recommended threshold values ( $CFI > .95$ ,  $RMSEA < .06$ ), which are in line with the accepted



rules of assessing model fit (Hu and Bentler, 1999). These findings indicate that the measurement model selected was suitable and the observed indicators were sufficient to measure their respective latent constructs.

After satisfactory affirmation of an acceptable measurement model, structural model was tested to analyse hypothesised relationship between the variables in the study. It was found that, the SMA was an important positive predictor of IA as suggested in Hypothesis 1. This result shows that those people who claimed to have more compulsive and excessive use of social media were more prone to problematic patterns of overall internet use. Also, IA proved to be a significant predictor of depression and anxiety with support to Hypotheses 2 and 3. In particular, the greater the IA, the greater the depressive symptoms and anxiety. These results support the available literature proposing that problematic internet use is the key factor in development of negative mental health effects (Kuss et al., 2014). Notably, the direct relations between addiction on social media to depression and anxiety were not significant with IA brought in the model. It shows that when the impact of the SMA was considered in the light of the broader internet use behaviour, there was no direct influence of the former on the mental health outcomes. The lack of strong direct effects implies that SMA cannot be the sole aspect that can be used to explain depression and anxiety differences.

The indirect effects further showed that IA completely mediated the correlation between SMA and the variables depression and anxiety in support of Hypotheses 4 and 5. The mediation between the social media dependency and the mental health consequences via internet dependency was also statistically significant, with full mediation established. This trend aligns with the methodological advice on testing the mediation effects when using SEM models (Hayes, 2018).

On the whole, the findings can be regarded as a robust empirical evidence of the offered mediation model and indicate how IA is at the focal point of the partially described relationship between SMA and mental health outcomes.

**Table 1**

Variables	Gender	N	M	SD	t	Df	p
IA	Male	152	1.64	0.87	1.37	601	0.171
	Female	451	1.54	0.81			
Socialmedia addiction	Male	152	2.50	0.72	-1.67	601	0.096
	Female	451	2.61	0.67			
Depression	Male	152	1.08	0.71	0.89	601	0.372
	Female	451	1.01	0.78			
Anxiety	Male	152	0.80	0.66	1.00	601	0.316
	Female	451	0.74	0.66			

**Table 2: Means, Standard Deviations, and Correlations between Variables**

	M (SD)	1	2	3	4	5	6	7	8	9	10
SMA	2.58(.69)	-	.75***	.73***	.39***	.35***	.46***	-.15***	.43***	.50***	.40***
IA	1.56(.86)		-	.75***	.48***	.40***	.45***	-.09*	.47***	.47***	.433***
Depression	1.03(.76)				-	.71***	.76***	-.08*	.25***	.22***	.25**
Anxiety	.76(.66)						.75***	-.07	.19***	.20***	.17***
Age	22.56(3.93)								-.11***	-	-.11**



	)			.16***
Internet use time	3.42(1.25)	-	.67***	.82***
Social media use time	2.76(1.19)	-		.66***
Smartphone use time	3.51(1.17)			-

Discussion

The given research was supposed to investigate the interaction between the SMA and the mental health outcomes considering the mediating role of the IA. The results reveal that SMA is not a direct contributor of depression or anxiety in case IA is put into consideration. Rather, the outcomes suggest that negative social media consumption has its indirect negative impact on mental health development due to the rise in IA levels. This result offers valuable information on the process by which excessive use of the social media can affect psychological health and is in line with theoretical frameworks of behavioural addiction (Griffiths et al., 2016).

The lack of an important direct relationship between the SMA and the mental health outcome is an indication that SMA itself might not be an adequate predictor of depression and anxiety. Instead, its psychological effect seems to be functioning in the form of more general patterns of problematic internet use. This confirms theoretical claims according to which IA is closer and stronger predictor of psychological distress than particular online behaviours (Kuss & Lopez-Fernandez, 2016). Overuse of social media can further augment the general dependency on the internet that subsequently leads to a heightened susceptibility to emotional challenges like depression and anxiety (Huang, 2022). One of the most important gifts of the current study is its parsimonious model, which has been attained due to the intentional elimination of stress and phubbing as an analytical construct. The study does not have any conceptual overlap because it focuses solely on SMA, IA, depression, and anxiety and gives a more explicit explanation of the underlying relationships. This simplified design helps to increase the theoretical clarity and improve the interpretability of the results and overcome this discrepancy with the previous studies that used more cumbersome or disjointed models (Marino et al., 2018).

The results are in line with the earlier research that highlights the pivotal role of IA in the explanation of psychological consequences of excessive digital activity. Similar studies conducted by other researchers have also indicated that problematic internet use is an intermediate that connects different internet behaviours with bad mental health. The current paper makes a contribution to this body of research by empirically proving full mediation and provides additional insights into the fact that IA is a crucial pathway, along which SMA influences mental health (Huang, 2022). Broadly, the findings support the significance of using an integrative approach in the study of the psychological implications of using social media. Instead of focusing on the SMA as a risk factor in its own right, the evidence sheds light on the importance of analyzing more general trends of internet-related behaviour. This method does not only help shed light on the previously incongruent results but also offer a better theoretically informed knowledge of how unregulated high consumption of social media translates to the development of negative mental health results (Griffiths et al., 2016).

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