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RESEARCH ARTICLE

SOCIAL MEDIA INDUCED FOMO EFFECT ON DEPRESSION: A SERIAL MEDIATION ANALYSIS TOWARDS PROBLEMATIC SOCIAL NETWORKING USAGE AND PHUBBING BEHAVIOUR

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ABSTRACT

BACKGROUND:

Depression is a major mental health disorder with severe personal and societal effects. It is characterised by a variety of feelings that are present at the same time (pessimism, frustration, sadness, etc.). Many issues or worries in the modern world have been heightened by fears such as running out of mobile phones, out of internet packages, or Fear of missing out (FOMO). Despite this, little research on the relationship between these social media-induced FOMO has been undertaken on depression.

OBJECTIVE:

The present study intended to investigate the relationship between FOMO and depression through the serial mediation effect of problematic social networking usage and phubbing behaviour.

METHODOLOGY: SPSS 23 with Process Macro and AMOS 21.0 were used to evaluate the survey data of 379 respondents from universities in North India.

RESULTS:

FOMO has a significant detrimental effect on depression among its users. Also, this relationship was significantly mediated by both problematic social media usage and phubbing behaviour which supports the serial mediation model. Hence, the results exhibit that FOMO predicts problematic social media usage and phubbing behaviour, which in turn causes depression among users.

CONCLUSIONS:

Since most students use social media activity in the digital era, there is a significant risk that these students may be exposed to the negative impacts of problematic social networking usage, phubbing behaviour and depression. Therefore, students, parents, educators, and policymakers need to promote responsible social media use and teach students about detrimental behaviours including FOMO, problematic social media usage, and phubbing.

KEYWORDS

depression, fear of missing out, FOMO, phubbing, problematic social networking usage.

INTRODUCTION

Depression places a significant strain on society. Around 350 million individuals worldwide suffer from depression, one of the most prevalent mental health diseases [1]. Depression is a mental disease marked by the concurrent presence of a wide range of emotions (Frustration, sadness, pessimism etc.) [2]. According to Rudolph [3], depression is a serious mental health issue with severe personal and societal repercussions. Therefore, it is important from both a scientific and practical one to investigate the potential causes of either an increase or decrease in depression. Nowadays, mobile phones are practically ubiquitous. Younger smartphone users, who form the so-called "always on" generation, are always on their devices [4]. The smartphone is always with its user, making life easier and offering support through terrible times. In other words, the smartphone is a digital companion as much as a piece of technology [5]. By utilising this function, mobile communication helps people connect with others and feel more connected to their families, friends, and other people in their lives. With the widespread use of smartphones, users now access the internet at any time, and anywhere [6]. The analysis report of Social Networking Sites (SNS) 2021 research reveals that young people between the ages of 18 and 29 use all social media platforms. Out of these, 95% of people between the ages of 18 and 29 have at least one social media account, with Instagram and Snapchat being the most widely used [7]. Therefore, many issues or worries in the modern world have been heightened by fears such as running out of mobile phones, out of internet packages, or forgetting the phone at home and fear of missing out. People have come to depend on the digital world, and when it is gone, people's tolerance levels are challenged [8]. According to Przybylski et al. [9], Fear of missing out (FOMO) is the "pervasive uneasiness that others might be enjoying rewarding experiences from which one is absent," and it causes people to worry or fear that they are missing out on important knowledge and experiences. FOMO is also known as a desire to know what other people are doing and stems from the assumption that others are enjoying fascinating experiences while one is absent. FOMO is a result of a lack of emotional support and desires in daily life [10]. Addiction, depression, anxiety, and poor sleep quality are common physical and psychological issues that come along with FOMO [11]. Due to their greater sensitivity and prominence as social media users, young people and adults are typically more susceptible to FOMO [12]. Numerous research studies have shown linkages between FOMO and adolescents' negative health symptoms, depression, increased alcohol usage, stress levels, and sleep issues [13-16]. Furthermore, behavioural addiction scholars stated more focus is needed on the psychological mechanisms that underlie problematic behaviour [15-19]. Problematic social networking site usage (PSNU) is described as a disorder that reflects a behavioural addiction. Problematic social media use is indicative of a quasi-disorder in which compulsive overuse of social media platforms leads to bad outcomes [20]. FOMO is a psychological mechanism that may explain the problematic use of social media. Moreover, one assumption about those with more FOMO is that they want to constantly know what other people are up to, perhaps by using social media [21,22]. However, it is less clear that those factors (e.g., phubbing) may increase the risk of depression. Phubbing is the extent to which your romantic partner/spouse/friend uses or is distracted by his/her cell phone while in your company [23].

While the negative consequences of FOMO are mentioned, the underlying psychological mechanisms that link FOMO to these issues are not fully understood. This represents a significant gap in the existing knowledge. Moreover, given the ever-increasing integration of these devices into daily life, understanding the psychological processes at play in problematic usage is crucial. This suggests a need to investigate how this usage is contributing to depression. Furthermore, it suggests that phubbing might be associated with an increased risk of depression. However, this potential relationship is less clear, and further research is needed to explore whether and how phubbing contributes to mental health problems. So, the goal of this study was to investigate the role of social media-induced FOMO in predicting depression among students because adults between the ages of 18 and 29 said it was extremely difficult to stop using social media [8] as well as the significance of problematic social media usage and phubbing behaviour as a mediating factor in the association of social media-induced FOMO and depression among the students of Punjab and Chandigarh Tricity. Now the question arises "How does social media-induced FOMO predict depression through problematic social media usage and phubbing behaviour?" To answer this question, a serial mediation conceptual framework was developed and studied.

The current study is worthwhile for several reasons. The study's originality is that it has used objectives and models

that had not previously been studied. Through the literature review, there were very few studies investigating the relationship between social media-induced FOMO and depression. However, no other study in the related literature examined the mediating role of problematic social media usage and phubbing behaviour in the relationship between FOMO and depression specifically serial mediation of these variables. In this respect, this study was considered important in terms of being original and its contribution to the literature. Moreover, there is a need for research that delves deeper into these relationships, explores the underlying psychological processes, and provides valuable insights for developing interventions and strategies to promote healthier digital media use and mental well-being, particularly among young adults.

THEORETICAL FRAMEWORK AND HYPOTHESES FORMULATION

The literature demonstrates that FOMO is brought on by unfulfilled psychological desires [24]. Depression is one of the most prevalent disorders in teenagers, along with FOMO. Miller [25] showed that 8.5% of teenagers had depression, and Ingram [26] claimed that this percentage rose to 20% in people around the age of 18. According to another study, depression was one of the most prevalent disorders worldwide in 2020 [27]. It has been noted that research on the link between social media and depression has increased in recent years. Numerous research showed a positive association between Facebook and Instagram use and depressive symptoms [28-32], it is believed that using Facebook results in envious behaviour toward the experiences of others and has a detrimental impact on well-being [33]. Therefore, the development of social media will be fueled by FOMO emotions, which further encourage users to intensify FOMO feelings. People with FOMO need to adjust because emotion can harm their psychological well-being and would be a major cause of depression among users [34]. In a study by Sette et al. [35] with 409 people between the ages of 18 and 63, it was discovered that those with a history of depression or suicide attempts had higher FOMO levels. Another study found that the association between depression, anxiety, and smartphone issues is mediated by the inclination to distress and FOMO [36]. In their study on college students, Baker et al. [37] discovered that FOMO was linked to depression symptoms. In conclusion, studies in the literature show a link between depression and FOMO that is favourable. However, there might still be aspects of the relationship between FOMO and depression that have not been thoroughly explored or understood, especially among young adults or students. Moreover, social media use can become harmful when it is overused. PSNU use has been the subject of several studies [38,39]. The differences between problematic social media use and a potential social media behavioural addiction are still being discussed in the research [17,40]. However, in this study, we employ the term "problematic social networking usage," which we describe as an unhealthy excessive form of social media use, marked by a lack of control over the activity and sustained behaviour despite negative life effects. Our goal is to identify the variables that influence problematic social media use among students. As previously stated, one goal of this study is to determine whether students who report having more FOMO also have more PSMU. This is supported by other research [41-46], which also suggests that persons who feel FOMO might use social media to check in on others to calm their anxieties. Ironically, though, the more individuals check their social media accounts, the more events they can discover that they have been missing. Using social media to calm your nerves could wind up giving you FOMO. As a result, this downward spiral may continue, gradually turning social media use into a problem. Additionally, studies have shown a favourable correlation between social media addiction and depressive symptoms. For example, addiction to Facebook and mobile devices has been linked to depression in studies [47,48]. A study by Wang et al. [49] indicated that social media addiction was a strong indicator of adolescent depression. In addition, a longitudinal study by Vannucci et al. [50] revealed that "heavy social media use appears to be the most problematic social media pattern in predicting psychosocial adjustment during early adolescence. A higher likelihood of depressive symptoms, anxiety [45,51], lower self-esteem [20,51,52], social isolation [53], lower life satisfaction, poorer sleep quality, disordered eating [54], and a higher likelihood of body image dissatisfaction have all been linked to problematic social media use. Thus, it can be implied that problematic social networking usage mediates the relationship between social media-induced FOMO and depression. Additionally, FOMO is a predictor of the use of social media during conversations with co-present individuals known as phubbing. Phubbing has a deleterious effect on relational outcomes including impression creation [55]. People prefer to use cell phones to access the internet. They can stay in touch with their online affiliate groups wherever they are through their smartphones. As a result, we assume that individuals who suffer anxiety may use their smartphones to briefly access

their social media accounts [56]. People who are anxious and have high levels of FOMO are likely to misuse social media on their smartphones in such a way that it interferes with their offline social contacts, which makes them phub their offline interaction partners. However, partner phubbing increases the chance of developing depression. McDaniel & Coyne [57] and Roberts & David [23] have examined the impact of relationship phubbing and technological distraction on depression. Technoference, also known as partner phubbing, is the regular disruption of a couple's time together or interactions caused by technology, such as a mobile phone or a smartphone [57]. They both discovered that excessive use of technology or frequent phubbing by a partner/friend can have a negative impact on depression. Thus, it can be implied that phubbing mediates the relationship between social media-induced FOMO and depression. Furthermore, the compensatory internet use theory [58] stated that people frequently use social media to lessen their negative emotions, such as loneliness, anxiety, and FOMO. According to a growing body of research, problematic social media use can be significantly and positively correlated with FOMO [59-61]. Additionally, a cross-sectional study reveals that FOMO is the best predictor of social media addiction, outperforming other factors [62]. Furthermore, the optimal flow theory contends that college students will attempt to sustain their excessive usage of social media and smartphones even at great expense, which results in the detrimental effects of their phubbing behaviour [63]. According to certain empirical investigations [16,39,64], problematic social media use is positively connected with phubbing behaviours. Moreover, according to Phubbing's research evidence, this sort of addiction has a detrimental effect on children, families, friends, and romantic relationships [47,65-67]. It can be argued that this addictive social media usage behaviour, which has detrimental consequences on interpersonal interactions and social interactions in general may also have negative impacts on mental health and lead to certain psychological diseases [68,69]. According to Roberts and David's research [23], phubbing has a detrimental effect on one's well-being and is linked to depressive symptoms. Additionally, those who engage in phubbing behaviours suffer severe depression [68]. Thus, it can be implied that the association between FOMO from social media and depression may be mediated sequentially by problematic social media use and phubbing behaviour.

So, based on above evidence, this study proposed following hypothesis:

H1: Students who experience high social media-induced FOMO, report higher depression.

H2: Problematic social networking usage positively mediates the relationship between social media-induced FOMO and depression.

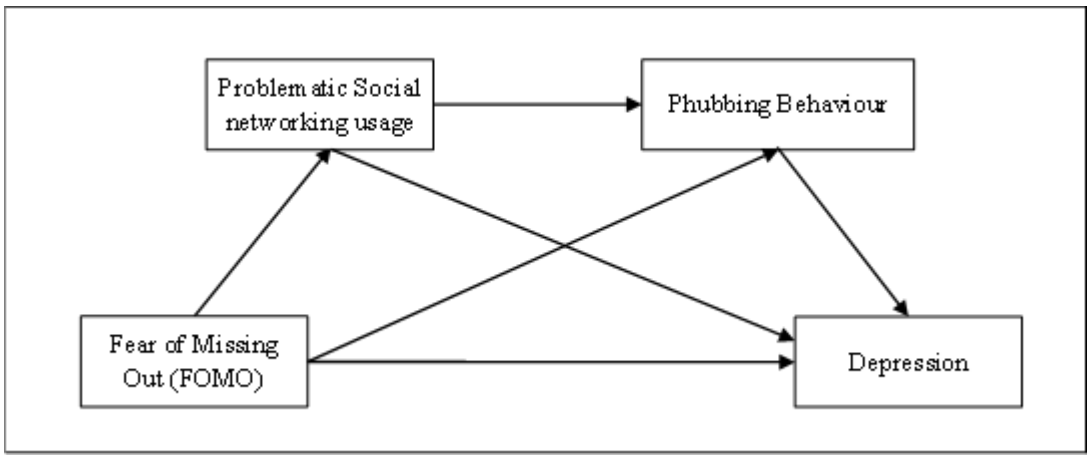
H3: Phubbing behaviour positively mediates the relationship between social media-induced FOMO and depression.

H4: Problematic social networking usage and Phubbing behaviour serially mediate the relationship between social media-induced FOMO and depression.

CONCEPTUAL FRAMEWORK:

Based on the above literature and hypotheses, the following conceptual framework has been framed in Figure 1:

FIGURE 1: CONCEPTUAL FRAMEWORK



METHODOLOGY

SAMPLE AND PROCEDURE

This study aims to investigate the relationship between social media-induced FOMO and depression among university students in north India. The study used judgmental sampling to collect the data from the students of Punjab and Chandigarh Tricity in India.

G Power is a statistical tool that can be used to calculate an accurate sample size by considering effect size and alpha level [70]. However, this study determined the sample size using the criteria established for applying data analysis tests (factor analysis and regression analysis). According to MacCallum et al., [71] the sample size for the factor analysis should be at least 300. Furthermore, researchers have suggested that a sample size of 300 is appropriate for the factor analysis [72]. However, 400 questionnaires were sent through both online and offline media. About 200 questionnaires were sent through offline and 200 through online mode. 191 and 188 valid responses were received from both modes respectively. Due to incomplete and invalid responses, 21 of the submitted questionnaires were discarded and 379 were left for further analysis. The probability of potential biases was also controlled by sending a maximum invitation of 65 questionnaires to single university students. A large sample size was used in the study for several reasons. First and foremost, a large sample size accurately represents the population. Second, it reduces the influence of outliers or extreme observations. Finally, adequate numbers of samples are required to produce results that differ significantly between variables. Additionally, the fundamental requirements of sample size and data accuracy have been met prior to analysis. For model analysis, it is recommended that the sample size should be between 100 and 150 [73,74]. Therefore, the sample size of 379 for the current study is sufficient to analyze the suggested model. Data was collected from reputed universities like Panjab University, Chandigarh, Chandigarh University, Thapar Institute of Engineering and Technology, Patiala, Guru Nanak Dev University, Ludhiana, Lovely Professional University, Phagwara, Central University of Punjab etc. in Punjab of North India. These universities of Punjab and its capital Chandigarh are listed in the Top 100 universities of NIRF India Ranking 2022 [75]. These universities likely have a diverse student population, which can enhance the generalizability of the findings. Reputed universities are often considered reliable sources of data due to the quality of education and the diversity of their student bodies. Moreover, the study emphasizes that the participation of respondents was informed, voluntary, and safe for research objectives, with no ethical concerns. This ensures that the research was conducted ethically and responsibly, respecting the rights and well-being of the participants.

MEASUREMENT DEVELOPMENT

FOMO: The variables in the present study were measured using existing scales extracted from previous literature. The social media-induced FOMO was measured by five items (FOMO1 to FOMO5) adapted from the scale of Przybylski et al. [9]. The sample item is "I fear my friends have more rewarding experiences than me on social media.'' Items were assessed on a five-point Likert scale ranging from 1 (Not at all true of me) to 5 (extremely true of me)

Depression: A five-item scale (DEP1 to DEP5) developed by Salokangas et al. [76] was used. The sample item is "I have felt unworthy." Items were assessed on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Problematic social networking usage: A nine-item scale (PSNU1 to PSNU9) has been constructed based on a scale developed by Caplan [77] with modifications as per the requirement of the study. The sample item is "I have difficulty controlling the amount of time I spend online." Items were assessed on a five-point Likert scale ranging from 1 (never) to 5 (Always).

Phubbing Behaviour Scale: A nine-item (PHUB1 to PHUB9) Partner Phubbing Scale developed by Roberts & David [23] was used to assess participants' partner phubbing. The sample item is " My partner glances at his/her cell phone when talking to me." Items were assessed on a five-point Likert scale ranging from 1 (never) to 5 (Always). Responses to all items were summed to produce a composite score, with higher scores indicating higher levels of partner phubbing.

DATA ANALYSIS

SPSS version 23 was used to code the collected data. Additionally, the instrument's reliability was determined using Cronbach's alpha in SPSS, and its validity was investigated using Confirmatory Factor Analysis (CFA) in AMOS Version 21.0. In SPSS, Cronbach's alpha is a commonly used statistic to assess the internal consistency or reliability of a scale. It measures how closely related a set of items are as a group. A high Cronbach's alpha value

(above 0.60) suggests that the items in the instrument are reliable and measure the same underlying construct consistently [78]. Ensuring both convergent and discriminant validity is essential in research to provide evidence that the measurement tool is reliable and accurately reflects the theoretical constructs being studied. If the correlation between items measuring the same construct is high (convergent validity), and the correlation between items measuring different constructs is low (discriminant validity), it suggests that the measurement instrument is valid in capturing and distinguishing the constructs it is designed to assess [79]. Furthermore, hypothesis testing of direct and indirect effects was carried out in SPSS version 23 using the PROCESS macro with bootstrapping 5000 at a 95% confidence level. The PROCESS macro is a widely used tool for conducting various types of mediation and moderation analyses. A 95% confidence level indicates that the results are considered statistically significant if the confidence intervals do not include zero [80].

RESULTS

DEMOGRAPHIC PROFILE

Table 1 shows the demographic profile of respondents following gender, age, qualification, family structure, and region.

FACTOR ANALYSIS AND MEASUREMENT MODEL

Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity are often used as preliminary steps in factor analysis to ensure that the data are suitable for extracting meaningful factors or dimensions as shown in Table 2. Kaiser-Meyer-Olkin assesses whether the dataset has enough common variance among variables to warrant factor analysis. A KMO value of more than .8 indicates that the sample is adequate for the factor analysis as there is substantial common variance among the variables. Bartlett's Test of Sphericity checks whether there is enough correlation among the variables to justify factor analysis. According to Barlett's test, p-value<.001 make up the constructs are significantly satisfying. Thereafter, Exploratory Factor Analysis (EFA) with varimax rotation was used to re-evaluate the scales' applicability for the current study as shown in Table 3.

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Demographic Variables	Categories	Percentage
Gender	Male	47.7
	Female	52.3
Age	Less than 18	37.4
	18-24	42.2
	Above 24	20.4
Qualification	Diploma	25.3
	Under Graduation	33.7
	Post-Graduation	41.0
Family Structure	Nuclear	57.2
	Joint	42.8
Region	Rural	33.9
	Semi-urban	39.4
	Urban	26.7

Note: (Source: Primary Data)

TABLE 2: KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.879
Bartlett's Test of Sphericity	Approx. Chi-Square	4829.159
	Df	378
	Sig.	.000

TABLE 3: ROTATED COMPONENT MATRIX

Variables	Items	Factor Loading			
		1	2	3	4
Social media-induced FOMO	FOMO1	.798			
	FOMO2	.825			
	FOMO3	.793			
	FOMO4	.792			
	FOMO5	.817			
Depression	DEP1		.821		
	DEP2		.855		
	DEP3		.873		
	DEP4		.885		
	DEP5		.850		
Problematic social networking usage	PSNU1			.765	
	PSNU2			.817	
	PSNU3			.699	
	PSNU4			.747	
	PSNU5			.815	
	PSNU6			.807	
	PSNU7			.807	
	PSNU8			.777	
	PSNU9			.700	
Phubbing Behavior	PHUB1				.738
	PHUB2				.738
	PHUB3				.788
	PHUB4				.771
	PHUB5				.756
	PHUB6				.750
	PHUB7				.740
	PHUB8				.664
	PHUB9				.779

Note: (Source: Primary Data)- 1.Extraction Method: Principal Component Analysis.

2.Rotation Method: Varimax with Kaiser Normalization.

3.FOMO: Fear of Missing out, DEP: Depression, PSNU: Problematic social networking usage, PHUB: Phubbing Behaviour

After that, the model fit of the research model was examined through confirmatory factor analysis (CFA) in AMOS 21 [81], as shown in Figure 2. Confirmatory Factor Analysis (CFA) is a statistical method for determining the association between observed variables and validating the factor structure. Then, the proposed model was analyzed to reveal the values of model fit i.e., CMIN/DF=2.22 ≤3, GFI=.825>=.8, PGFI=0.699>=0.5, CFI= 0.909 >= 0.9, TLI=0.900 >= 0.90 and RMSEA= 0.071 =< 0.08. All these values were found to be within acceptable ranges representing the goodness of model fit as shown in Table 4. It represents that the proposed model is a good fit for the data, which means that the model explains the observed data well and that the relationships between variables in the model are consistent with the data [82].

FIGURE 2: CONFIRMATORY FACTOR ANALYSIS

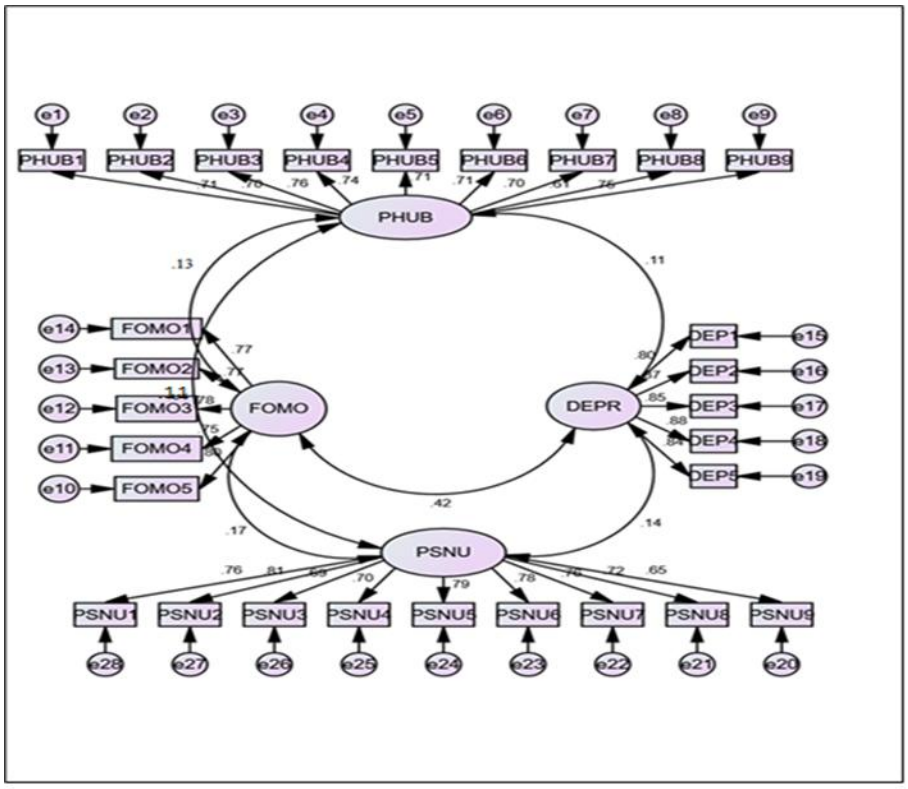


TABLE 4: FIT STATISTICS OF THE MODEL

Model Fit	Model Statistics	Cut-off Criteria
CMIN	766.595	
DF	344	
CMIN/Df	2.228	≤3 [83]
GFI	.825	≥.8 [84]
PGFI	.699	≥.5 [85]
CFI	.909	≥.9 [83]
TLI	.900	≥ 0.9 [86]
RMSEA	.071	≤.08 [87]

Note: (Source: Primary Data)

TESTING COMMON METHOD BIAS (CMB)

The current study controls for common method bias by collecting self-reported data via a survey questionnaire at two different points in time. However, when every participant completes a survey, common method bias is possible. As a result, this study employs Harman's Single-factor method to eliminate the CMB dilemma while maintaining respondents' privacy and confidentiality. This method is the most extensively used test to determine biases. The results showed that the variation explained in the study was only 22.28% which is less than Harman's stated criteria of 50% [88], demonstrating that the instrument was free of the common method variance problem. As a result, statistical data suggest that common method bias does not pose a threat to the interpretation of the current study's findings.

RELIABILITY AND VALIDITY ANALYSIS

Reliability Analysis

The reliability of the scales was tested by using Cronbach's alpha coefficient. Cronbach's alpha above 0.7 is considered good for the scales' reliability [78]. Table 5 depicts Cronbach's alpha of the scale items.

TABLE 5: RELIABILITY

Sr. No.	Scales	Cronbach alpha
1	Social media-induced FOMO	.881
2	Depression	.827
3	Problematic social networking usage	.812
4	Phubbing Behavior	.801

Note: FOMO: Fear of Missing out

Convergent and Discriminant validity analysis

Following the identification of factors from the EFA, model fit, and reliability, scales are validated in terms of convergent and discriminant validity through CFA. The convergent and discriminant validity values were calculated using the stats tools package's validity master. All the data was found to be within acceptable ranges, such as CR>0.6 and AVE>0.5 [83,89], confirming internal consistency and convergent validity. Moreover, to achieve discriminant validity, the Fornell and Larker criterion is used, in which the correlation coefficient should be less than .85 (off-diagonal elements are correlation between constructs) and AVE square root scores or diagonal values of all variables (bold) should be greater than correlation values in the corresponding row and column demonstrating discriminant validity [89]. Table 6 shows the variables exhibit convergent and discriminant validity. After that, the model was used for the final analysis of hypotheses testing.

TABLE 6: CONVERGENT AND DISCRIMINANT VALIDITY STATISTIC OF VARIABLES

	CR	AVE	MSV	MaxR(H)	FOMO	PHUB	DEPR	PSNU
FOMO	0.882	0.600	0.173	0.883	**0.775**			
PHUB	0.918	0.557	0.013	0.923	0.132	**0.746**		
DEPR	0.928	0.720	0.173	0.930	0.416	0.114	**0.849**	
PSNU	0.931	0.600	0.030	0.934	0.174	0.112	0.141	**0.775**

Note: (Source: Primary Data)

1. CR= Composite reliability, AVE= Average variance extracted MSV= maximum shared variance.
2. FOMO: Fear of Missing out, DEPR: Depression, PSNU: Problematic social networking usage, PHUB: Phubbing Behaviour

HYPOTHESIS TESTING

Descriptive Statistics

Table 7 summarizes the descriptive statistics findings and variable correlations. All the factors were discovered to be statistically significant and correlated.

Results of Direct Effects

The direct effect of all four constructs is shown in Table 8. FOMO has a positive direct effect on depression (β=.1156, p=0.024), PSNU (β=.3415, p=0.000), and Phubbing behaviour (β=.1321, p=0.002). Similarly, a positive significant impact of PSNU on depression (β=.1565, p=.006), and phubbing behaviour (β=.3550, p<0.00) is observed. Further, phubbing

behaviour was also found to positively impact depression (β=.5349, p<0.000).

TABLE 7: DESCRIPTIVE STATISTICS AND INTER-CORRELATIONS AMONG VARIABLES

S. No.	Variables	M	SD	FOMO	PSNU	PHUB	DEPR
1.	**Social media-induced FOMO**	3.54	.590	1			
2.	**Problematic social networking usage**	3.51	.570	.154*	1		
3.	**Phubbing behaviour**	3.53	.576	.141*	.122**	1	
4.	**Depression**	3.61	.782	.378**	.158*	.147*	1

Note: (Source: Primary Data)

1. *Correlation is significant at the 0.05 level (2-tailed).
2. **Correlation is significant at the 0.01 level (2-tailed).
3.FOMO: Fear of Missing out, DEPR: Depression, PSNU: Problematic social networking usage, PHUB: Phubbing Behaviour

TABLE 8: RESULTS OF DIRECT EFFECT

Relationships	β	se	t	p	boot LLCI	boot ULCI
FOMO-> DEPR	.1156	.0511	2.262	.024	.0150	.2161
FOMO->PSNU	.3415	.0547	6.239	.000	.2337	.4492
FOMO-> PHUB	.1321	.0430	3.0754	.002	.0475	.2167
PSNU->DEPR	.1565	.0574	2.7280	.006	.0436	.2694
PSNU -> PHUB	.3550	.0442	8.0389	.000	.2681	.4419
PHUB -> DEPR	.5349	.0704	7.59	.000	.3963	.6735

Note:(Source: Primary Data)

1. *** p-value < 0.01; ** p-value < 0.05
2. FOMO: Fear of Missing out, DEPR: Depression, PSNU: Problematic social networking usage, PHUB: Phubbing Behaviour

RESULTS OF INDIRECT EFFECTS

The direct and indirect effects of PSNU and Phubbing behaviour were examined. It was observed that after mediation analysis, the direct effect of FOMO on depression is positively significant (β=.1156, 95% CL: .0151, .2161), leading to the acceptance of hypothesis H1. The total size of the indirect effect is (β=.1889, 95% CL: .1103, .2753), and was found to be statistically significant as there are no zeroes between LLCI and ULCI in the confidence interval. Mediation effect of PSNU, H2 (β=.0534, 95% CL: .0124, .1053) and Phubbing behaviour, H3 (β=.0707, 95% CL: .0184, .1261) were found to be statistically significant. Simple mediation analyses predicted in hypotheses 2 and 3 are supported by the results. Further, examining the serial mediating effect H4 (β=.0648, 95% CL: .0333, .1076), is also found to be statistically significant. Through this, the serial mediation effect of PSNU and phubbing behaviour is confirmed in the relationship between FOMO and depression. As proposed, all the results were found to be statistically significant, supporting all hypotheses as shown in Table 9.

TABLE 9: SPECIFIC INDIRECT EFFECTS

Relationships	H	Effect	boot SE	boot LLCI	boot ULCI	Decision
Direct effect after mediation						
FOMO->DEPR	H1	.1156	.0511	.0150	.2161	Accepted
Indirect Effects						
FOMO -> PSNU -> DEPR	H2	.0534	.0238	.0124	.1053	Accepted
FOMO -> PHUB -> DEPR	H3	.0707	.0276	.0184	.1261	Accepted
FOMO -> PSNU -> PHUB -> DEPR	H4	.0648	.0191	.0333	.1076	Accepted
Total Indirect effect		.1889	.0418	.1103	.2753	

Notes: (Source: Primary Data)

1.H: Hypothesis, FOMO: Fear of Missing out, DEPR: Depression, PSNU: Problematic social networking usage, PHUB: Phubbing Behaviour

2.Number of bootstrap samples for bias-corrected bootstrap confidence intervals: 5000. Level of confidence for all confidence intervals: 95%

DISCUSSION

The purpose of this article was to better understand how depression is the consequence of social media-induced FOMO. The study presented and investigated a serial mediation model of FOMO causing depression through problematic social networking use and phubbing behaviour. The study's empirical findings indicate some significant conclusions.

Firstly, the study examined the direct and indirect effects of FOMO on predicting depression. The study found that FOMO is an essential element influencing depressive symptoms. From hypothesis one, results exhibit a positive significant association between FOMO and depression, which explains that social media-induced FOMO will result in feelings of depression. These findings are consistent with previous studies [29,37] which also found a positive significant relationship between FOMO and Depression. Both direct and indirect effects were found to be statistically significant. The study posits that because of FOMO, individuals may struggle to process the overwhelming amount of information they feel they need to, resulting in a mood disorder characterized by depression. In essence, this research suggests that FOMO has negative impacts on overall well-being, with a particular emphasis on its role in causing depression. The study also argues that increased social media use can lead to a detrimental shift in users' mental well-being. This is attributed to the idea that increased screen time may limit opportunities for individuals, especially students, to engage in activities that have a positive impact on their mental and physical health. In summary, the study's findings support the notion that FOMO is linked to depression and underscores the potential negative consequences of excessive social media use on mental well-being, especially in the context of missed opportunities for positive engagement. This provides valuable insights into the relationship between technology-related phenomena and mental health.

Thereafter, the study explored the mediating role of PSNU and phubbing behavior in the relationship between FOMO and depression. As anticipated, the results of the study indicated that these mediating variables had a positively significant effect on the relationship. These findings contribute to the existing body of literature that has examined the associations of PSNU and phubbing behavior with FOMO and depression, as referenced in previous studies [23,47,57,65,66,68,69]. The study first forecasted the mediation effect of PSNU and found significant empirical results that align with previous research. This suggests that FOMO is a significant predictor of problematic social media usage, which, in turn, leads to symptoms of depression. In other words, individuals experiencing FOMO are more likely to engage in problematic social media usage, which then contributes to depressive symptoms. The study's results emphasize that reducing feelings of FOMO could be a strategy to decrease problematic social media usage and, consequently, alleviate depressive symptoms. Furthermore,

the study examined phubbing behavior as a mediator in the relationship between FOMO and depression. The results confirmed a positive mediating role for phubbing behavior, which is consistent with findings in existing studies [23,49,68,90,91]. Phubbing, or the act of being distracted by one's phone in social interactions, has been associated with an increased risk of depression symptoms and decreased psychological well-being [92]. This highlights the potential negative impact of phubbing behavior on mental health. In summary, the study's findings suggest that both PSNU and phubbing behavior mediate the relationship between FOMO and depression. These results contribute to a growing body of evidence indicating the importance of considering these variables in understanding the complex interplay between social media-related phenomena, FOMO, and mental health outcomes. The study emphasizes the need to address FOMO and its associated behaviors to mitigate the risk of depression and promote psychological well-being.

Finally, the study also examined the proposed serial mediation of PSNU and phubbing behavior in the relationship between FOMO and depression. The results of this analysis revealed that both PSNU and phubbing behavior played a statistically significant role in influencing FOMO and, subsequently, depression. This is a noteworthy and significant finding, as it represents the first study to investigate serial mediation in this complex relationship. The concept of serial mediation suggests a sequential chain of influence: when FOMO is experienced, it leads to higher levels of PSNU, which, in turn, induces phubbing behavior, and this ultimately results in a detrimental impact on mental health, specifically leading to depression. In essence, the study's findings illuminate that both PSNU and phubbing behavior are critical factors that strengthen the positive association between FOMO arising from social media and the experience of depression. This highlights the importance of understanding the successive and cumulative impact of these variables on mental health outcomes. The results provide valuable insights into the mechanisms through which FOMO can lead to depression, emphasizing the role of problematic social media use and phubbing behavior in this process. In summary, the study's novel exploration of serial mediation in the context of FOMO, PSNU, phubbing behavior, and depression contributes to a deeper understanding of the intricate relationships among these variables and underscores their significance in influencing mental well-being.

IMPLICATIONS

The main aim of this research study was to analyse the relationship between FOMO from social media and Depression. This has been done by analysing several literature reviews concerning the topic discussion. Accordingly, with the findings indicating the effect of social media-induced FOMO and depression there are implications that this study will have on different fields.

THEORETICAL IMPLICATIONS

This study has discovered a link between FOMO and depression. According to this study, FOMO has a variety of detrimental effects, including addiction i.e., problematic social media usage and phubbing behaviour which causes the mental effect of depression. Since phubbing is a relatively recent issue, to our knowledge there has not been any research looking into the more complex connections between phubbing, FOMO, Problematic social media use and depression. However, it is reasonable to predict that links as these variables do exist based on studies completed to date, such as those in the field of new media psychology. Moreover, the current study made a significant contribution to the literature by ascertaining the significant serial mediation of problematic social media use and phubbing in the relationship between social media-induced FOMO and depression. From the viewpoint of business majors, social media has emerged as a field of study that cannot be neglected due to the rapid development of information technology. The basis for reducing depression is laid out by research on the connection between FOMO and depression.

PRACTICAL IMPLICATIONS

The results of this investigation will benefit medical professionals. Specifically, this is intended solely for mental health professionals like psychologists and therapists. The research's conclusions point to the depressing consequences of FOMO, problematic social media usage, and phubbing behaviour. Since it is well known that this mental illness is among the most prevalent in the world, hence, psychologists and therapists who comprehend how online users' despair is caused by FOMO, problematic social media usage, and phubbing behaviour are better able to assist those who are suffering. The second effect of this study was on stakeholders in education. This study can be used as a foundation by university administrations, teachers, and authorities to develop curricula that incorporate social media use. Since most students use social media activity in the digital era, there is a significant

risk that these students may be exposed to the negative impacts of anxiety and depression. Therefore, students, parents, educators, and policymakers need to promote responsible social media use, educate students about digital citizenship, encourage open conversations about mental health, and provide resources for managing screen time and digital well-being. It is also vital to stay updated on the latest research and trends related to social media usage and its effects on students.

LIMITATIONS AND FUTURE SCOPE

While the findings of the study highlighted the relevance of social media-induced FOMO, problematic social media usage, and phubbing behaviour on depression, however, like any other research, this study also had its significant limitations.

Firstly, despite using a two-wave survey with a three-week gap between them, the study's ability to draw definitive causal inferences regarding the effects of FOMO, PSNU, and phubbing behaviour on depression is hampered by the short time interval employed for data collection. Future research is advised to employ a longitudinal or quasi-experimental study method to better reflect variations in the relationship of variables over time. Second, the study's restricted use of data from northern Indian cities raises questions about its generalization. Moreover, the same model can be reproduced in future research with a bigger sample size in other regions and nations to determine whether there is a cultural influence on the association being studied. Third, FOMO was primarily examined in the study as a factor influencing other factors. Future research should also explore more factors. Finally, this study only examined mediators; subsequent research might focus on moderating variables.

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