

Research Article

10.33897/fujp.v10i1.852

Predicting the Addiction to Social Media in Adolescents: Examining the Role Fear of Missing Out (FoMO), Phubbing Behavior, and Attachment with Parents

Tayyaba Noreen¹, Dr Shazia Qayyum²

¹University of Management and Technology, Lahore

²Institute of Applied Psychology University of The Punjab, Lahore

For correspondence: Tayyaba Noreen. Email: tayyabanoreen81@gmail.com

Abstract

Background. In this digital age, the eye-catching features of social media have taken control of the lives of the young population to such an extent that teens are getting prone to getting addicted to their virtual worlds. In order to study the impact of social media and smartphones on adolescents and their relationship with parents, the current study examined the association between fear of missing out (FoMO), phubbing, social media addiction, and parental attachment.

Method. The study followed a correlational research design and enrolled 200 adolescents (100 males and 100 females) through purposive sampling strategy. The age of the participants ranged between 14-19 years. The study sample was recruited from both public and private schools and colleges in the Lahore city.

Results. The findings of the study showed that FoMO (both trait & state), phubbing behavior, and angry-distress subscale of parental attachment were positively associated with social media addiction. Additionally, social media addiction found to be predicted by FoMO (state), phubbing behavior, and angry distress. Further, on the relationship between FoMO and social media addiction as well as between phubbing behavior and social media addiction, attachment with parental figures (angry distress, goal-corrected partnership, & availability) showed no moderating impact.

Conclusion. The study concluded that adolescents with angry distress (with parents) are more likely to develop FoMO, phubbing behavior, and social media addiction.

Implications. The study findings help understanding the issues experienced by adolescents following the use of social media, FoMO, and phubbing behavior. This research would be fruitful in counselling settings as it focuses on parental attachment that is an important aspect in adolescents' life.

Keywords. Trait-FoMO, State-FoMO, Adolescence, Attachment, Parents, Social Media Addiction



Foundation University Islamabad

© The Author(s). 2020 Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

Introduction

The virtual world of social media where everything seems perfect and attractive; from entertainment to latest gossip, from trends to online shopping stores, and from social media influencers' reviews of products bought online to ongoing trolling/viral memes, the young population has been observed to keep track of everything going online. The multiple sources of information available on social media platforms have given rise to the Fear of Missing Out (FoMO) in the young generation. Przybylski et al. (2013) referred to FoMO as the "pervasive apprehension that others might be having rewarding experiences from which one is absent". The phenomenon can be best understood in reference to using social media as they serve the best platforms to make connections and FoMO is referred to the need to stay connected to others. Fear of being missed out develops when people's needs of "competence" and "relatedness" are not fulfilled (Deci & Ryan, 2010). Trait-FoMO refers to as a predisposition trait while state-FoMO refers to a state particular to usage of communication platforms of internet (Elhai et al., 2020).

The eye-popping features of smartphones have developed this tendency in the young population to repeatedly check their phones instead of communicating with the other person that leads to phubbing behavior. The term phubbing has been defined as a new mode of communication when an individual snubs other by using his phone instead of talking to that person (Chotpitayasunondh & Douglas, 2016). The word "phubbing" was invented by Macquarie Dictionary in 2012 for behavior of snubbing a communication partner with one's phone. Consequently, phubbing is a blend of terms, "phone" and "snubbing" that refers to the behavior when in social settings, someone keeps using the phone instead of talking to others.

Franchina et al. (2018) investigated the relationship between FoMO, social media use, and problematic social media use (PSMU), and phubbing behavior in 2663 adolescents. They found that FoMO predicted phubbing among adolescents through PSMU. In addition, the former predicted the frequency of using social media platforms and the

number of platforms actively used by adolescents. In particular, fear of being left out strongly predicted the use of media forums that offered privacy, for instance, Snapchat and Facebook as compared to more searchable and open networking platforms such as YouTube and Twitter.

More than three decades ago, Bowlby (2008) described attachment as a fundamental bond between parents and infants that is considered vital for the survival and development of infant. The phenomenon of attachment is presented on the basis of objective study of animal behavior and certain biological behaviors (e.g., infant's crying, smiling, clinging and proximity seeking etc.) make up the concept of attachment.

The way children experience their attachment in relationships becomes stronger in to "internal working model" through the nature of care they receive from each parent (Bowlby, 1973).

Availability

In addition to being available, attachment figure has to efficiently deal with attachment related distress and anxiety by acting responsively (Bowlby, 1973)

Angry-Distress

Anger directed towards parental/attachment figures emerges from the frustration as a result of unmet needs and desires. Children become hostile when they see their attachment figure as unresponsive or unavailable in time of need (Bowlby, 1973).

Goal-Corrected Partnership

The relationship between parent and child progresses to "goal-corrected partnership" when a child begins to perceive and attends parents as separate individuals with their own needs and goals. The child becomes empathetic to parental figures when he/she shows responsiveness to their feelings (Bowlby, 1969; Marvin, 1977).

Alt and Boniel-Nissim (2018) analyzed how parent-child communication that is an integral part in the framework of parental support/control is directly linked with problematic internet use and indirectly through FoMO as a mediator between this relationship. The sample consisted of middle

school students (13 to 15 years old) and high school students (15.5 to 18 years old). The findings showed that children were likely to experience less FoMO and less problematic internet use when parents tried to understand their feelings and listened to them. Similarly, Santana-Vega et al. (2019) examined the problematic use of mobile phones, FoMO, and the communication between parents and children in adolescents. Results showed that increased problematic use of mobile phone had positive correlation with fear of missing out, the participants had high scores averagely on mobile phones related experiences questionnaire and questionnaire of fear of missing out as they used the mobile phone frequently and communicated more with their friends. It was also revealed that those participants who used mobile phones for less time communicated better with their both parents.

Social media addiction is one of the types of internet addiction in which individuals are compelled to use social media to an excessive degree (Starcevic, 2013). People who have an addiction to social media are excessively involved in using it; thus possess an uncontrollable desire to open social media and use it (Andreassen & Pallesen, 2014). Research has differentiated between social media and messaging only applications such as WhatsApp because of its sole function as a text messaging tool that makes it a separate domain from social media (Kapoor et al., 2018).

Young et al. (2020) explained the relationship between social media use and mental health outcomes with two moderators; effect of having anxious and avoidant attachment style on adults. They highlighted that problematic use of social media resulted in adverse outcomes for the psychological well-being and life satisfaction of young adults. In addition, it was reported that psychological wellbeing was poorer among the individuals who scored higher on anxious style of attachment and lower on avoidant style of attachment.

Facebook has taken the credit of most used social media application (Alexa, 2017). One of the reasons for its massive use is its attractive features among all age groups. Twitter allows its users the facility of reading and posting tweets with a maximum limit of 280 characters. Liu et al. (2010) has reported

the use of twitter for sharing information, engaging in interaction with others, seeking information, following trends and gratifying use of technology. Snap chat, an application used for instant messaging, has the provision of sharing pictures and short videos (also called snaps). With its tremendous use reaching more than 0.1 billion users, it is the most famous social media application following Facebook and Instagram (Utz et al., 2015). Instagram has become popular rapidly among youth i.e. adolescents and young adults (Alhabash & Ma, 2017). YouTube is the second most visited site on the internet with the ranking of first in video sites (Xu et al., 2016). It offers its users with the options of liking/disliking, uploading, commenting and sharing videos. Users can actively and passively participate and interact with others on many levels (Khan, 2017). One of the most famous social media applications, TikTok offers a marked platform in many parts of the world to create short videos. TikTok is best known to set a trend of creating and sharing a short video of 15 to 60 seconds among adolescents along with selection of songs or effects after its emergence from the app Musical.ly. Another top noted feature of the application is that it allows users to create video in response to another video, thus forming a chain of responses without any limit (Jaffar et al., 2019).

Theoretical Framework

The theory of parental attachment is referred to as being emotionally attached to another person for a long period of time. Most children may differ in forming attachment with each parent but evidence says that children possess the same possibility of forming attachment with both parents. It is very important to see how family members respond as it would determine the quality of emotions especially in case of adolescents. Families that can help adolescents having stable emotions are those who support, foster personal development and set rules to control behavior. As it has been seen, children are at risk of developing internet addiction if they are poorly attached with their parents. Research has shown that the risk of internet abuse can be reduced by determining the quality of father's trust in his child and adolescents' problematic internet use can be increased if parents follow the same pattern of

ignoring their child (Cacioppo et al., 2019).

Self-determination theory emphasizes that instead of extrinsic motivation, intrinsic motivation for obtaining reward is more important to promote mental health and for that case, feeling socially connected to others plays a key role. Therefore, intrinsic motivation can be driven by social relatedness in self-determination theory that promotes positive mental health. Przybylski et al. (2013) applied self-determination theory to FoMO stating it as a negative emotional state that results from social relatedness needs that are unmet. The theory conceptualizes that the individuals who experience negative affect from fear of missing out as a result of unfulfilled social needs is congruent to the theories that emphasize social ostracism's negative emotional effects.

Katz et al. (1973) proposed uses and gratification theory to study about the individuals' motives to engage with media to satisfy their needs. This theory, in spite of its conceptualization before the modern-day advances in technology and presence of social media, can efficiently deal with motives behind using social media and explain addiction that is likely a threat of using social media. As this theory incorporates social media, individuals can access a number of social media platforms that suit their needs. Phubbing behavior can also be explained using uses and gratification theory as this theory has attempted previously to explain the reasons of smartphone use and social media (Ifinedo, 2016).

The current research is aimed to examine the role of FoMO and phubbing behavior on social media addiction in adolescents with the moderating role of parental attachment. According to above mentioned theories, adolescence might be a critical age for developing issues like addiction to social media. Fear of missing out arises out of unmet psychological needs leading towards social media addiction, therefore highlighting the important role of parental attachment. On the other hand, Shams et al. (2019) conceptualized that the individuals who are securely attached engage in less phubbing behavior because of their contentment with their surroundings and they remain satisfied in their relationships so there might be lower chances of developing social media addiction; there is a need to see what role parental

attachment plays especially in adolescence as the individuals of age 13 to 17 years have been reported to use social media heavily (Lenhart et al., 2015).

Hypotheses

- There would be a negative association between FoMO, phubbing behavior, parental attachment (angry distress dimension), and addiction to social media in adolescents.
- There would be a positive association between parental attachment (goal-corrected partnership & availability dimensions), FoMO, phubbing behavior, and addiction to social media.
- Social media addition among adolescents would be predicted by FoMO, phubbing behavior, and parental attachment.
- The pattern of parental attachment in adolescents would moderate the relationship between FoMO and social media addiction, as well as between phubbing behavior, and social media addiction.

Method

This section highlights the research design and research sample.

Research Design

Correlation research design was used to assess the association between FoMO, phubbing, and addiction to social media in relation to parental attachment among adolescents. The sampling strategy used for collecting data from adolescents was a purposive sampling strategy. Adolescents living with both parents were included. Adolescents having their own smartphone were included. Adolescents having any physical disability were excluded. Sample ($N=200$) consisted of both males and females.

Table 1*Personal Characteristics of the Sample (N=200)*

Variables	<i>M</i>	<i>SD</i>	<i>f</i>	%
Age	17.35	1.14		
Gender				
Male			100	50
Female			100	50
Education				
Matric			9	4.5
Inter			145	72.5
Undergraduate			46	23.0
Number of Social Media Platforms used	4.13	1.29		
Intensity of Social Media Use				
Facebook use	2.80	1.99		
Instagram use	3.34	1.82		
Twitter use	0.87	1.59		
Snap chat use	2.73	1.96		
Tiktok use	2.10	2.09		
YouTube use	3.74	1.36		

Note, M=Mean; SD= Standard Deviation; f= Frequency; %= Percentage

Personal Information Sheet. The personal information sheet collected information of participants including age, gender, number of social media platforms used (Facebook, Instagram, Twitter, Snapchat, TikTok, Youtube), and intensity of each social media platform used rated on a 1 = *Less than once per week* to 5 = *Multiple times a day* scale. To assess the frequency and intensity of social media platforms used, questions were implemented from the variables “breadth of social media platforms used,” and “depth of social media platforms used,” respectively from the research work of Franchina, et al. (2018). However, only five social media platforms (Facebook, Instagram, Twitter, Snap Chat, YouTube) were selected for current study from a list of 25 social media platforms (TikTok was added by the researcher) as they are mostly used in Pakistani society.

Fear of Missing Out Questionnaire. This questionnaire is used to determine the two factors of the construct “FoMO” based on the original questionnaire by Przybylski et al. (2013). In this version, Wegmann et al. (2017) added the two factors (subscales) to assess state- (7 items) and trait- FoMO (5 items) that measures items having a

five point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*). The calculation for the dimension, “trait-FoMO” is based on the mean score of the following items: 1, 2, 3, 4, 6. The calculation for the dimension, “state-FoMO” is based on the mean score of the following items: 5, 7, 8, 9,10, 11, 12. For both subscales, score is obtained by summing all items. The Cronbach’s alpha for trait-FoMO was .61, and .66 for state-FoMO in the present study.

Generic Scale of Phubbing (GSP). Chopitayasunondh and Douglas (2016) developed this scale to assess phubbing behavior. This scale comprising 15 items and has four factors. Factor one is nomophobia (reliability .84), consisting of 4 items such as; “I cannot stand leaving my phone alone.” The second factor is termed as interpersonal conflict (reliability .87) and also consists of 4 items such as; “I have conflicts with others because I am using my phone.” The third factor is termed social isolation (reliability .83) comprising 4 items such as; “I feel content when I am paying attention to my phone instead of others.” The fourth factor is named as problem acknowledgment (reliability .82) which consists of 3 items such as “I pay attention to my phone for longer than I intend to do so.” The scale

items are measured on a seven-point Likert scale (1 = *Never* to 7 = *Always*). The scale score is calculated by summing all individual items' score. In present study, GSP scored the reliability of .83.

Adolescent Attachment Questionnaire (AAQ). The AAQ is a short scale to measure characteristics of attachment in adolescents developed by West et al. (1998). It consists of three subscales with three statements each (total 9 items), with five-point Likert-type responses from 0 = *strongly disagree* to 4 = *strongly agree*. The availability scale (reliability of .80) examines the confidence of adolescents for attachment figure's availability and responsiveness such as "I talk things over with my parent". The goal-corrected partnership scale (reliability of .74) measures the degree to which the adolescents show consideration and empathy for attachment figure's feelings and needs such as "I feel for my parent when he/she is upset". The angry distress scale (reliability of .62) assesses how much the adolescent feels anger towards the parental figure such as "My parent only seems to notice me when I am angry". In the present study, researchers have used term "parents" instead of parent in items as current study focuses on adolescents living with both parents. For all three scales, higher scores indicate more problems with respect to the dimension measured. Reverse coding was done for availability and goal-corrected partnership. The Cronbach alpha for angry distress, availability, and goal-corrected partnership scored .66, .75 and, .77 respectively.

The Bergen Social Media Addiction Scale (BSMAS) . It is adapted from Bergen Facebook Addiction Scale (BFAS; Andreassen et al., 2012), comprising six items with each item reflecting the core elements of addiction (Griffiths, 2005). The scale items are rated on a five-point Likert scale that ranged from 1 = *very rarely* to 5 = *very often*; making a total summative score from 6 to 30. The items tap on concerned experiences of addiction during the past year (e.g., "How often during the last year have you tried to cut down on the use of social media without success?"). The adapted version of this scale mentions social media in terms of multiple forums like Facebook, Twitter, Instagram, and the like" as compared to previous version, which only

referred to Facebook usage. The BSMAS showed a reliability of .67 in the current study.

Procedure

The first step to conduct this research was to seek the approval of the Institute of Applied Psychology. The authors of scales were contacted through email to obtain permission to use their scales. They were briefed about the researcher's introduction, purpose of the study and significance of their scale in current study. A permission letter consisting of title and purpose of the research was obtained from the department. It was presented to authorities of educational institutes to obtain their permission to conduct research. The researcher briefly described the nature and significance of the research.

Ethical Considerations

The participants were then provided with informed consent, demographic information sheet, and other four questionnaires. They were ensured about their rights of participation and withdrawal from the research at any time. Their rights to confidentiality and privacy were also explained to them. It took 20 -25 minutes to complete questionnaires. It was also ascertained that the information obtained will only be used for academic purposes.

Results

Relationship Between Study Variables and Demographics

Pearson product moment correlation was carried out to study the association between study variables and demographic variables.

Table 1

Pearson Product Moment Correlation between Fear of Missing Out (Trait & State), Phubbing Behavior, Parental Attachment (Angry Distress, Availability, & Goal-corrected Partnership), Social Media Addiction, and Demographic Variables (N=200)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Trait-FoMO	-	.29**	.32**	.28**	.03	-.09	.27**	-.05	-.01	.20**	.07	.14**	.07	.19**	.20**	.07
2.State-FoMO	-	-	.49**	.45**	.04	.22**	.48**	.15**	-.04	.17*	.13	.13	.09	.23**	.21**	.00
3.Phubbing Behavior	-	-	-	.39**	.07	.12	.51**	.00	.05	.19**	.10	.13	.11	.28**	.22**	.00
4.Angry Distress	-	-	-	-	.06	.15	.44*	.20*	.03	.08	.06	.00	.10	.07	.11	-.04
5.Availability	-	-	-	-	-	.56	.09	-.06	-.08	.05	.13	.01	.08	.08	.05	-.10
6.Goal-corrected partnership	-	-	-	-	-	-	.14*	.04	-.19**	.08	.15*	.03	.08	.12	.22**	-.07
7. Social Media Addiction	-	-	-	-	-	-	-	.21	-.02	.16*	.17*	.12	.23**	.20**	.10	-.03
8.Age	-	-	-	-	-	-	-	-	-.10	.06	.20	.04	.14	-.00	.03	-.06
9.Gender	-	-	-	-	-	-	-	-	-	-.15*	-.43**	.00	-.04	.12	-.17*	-.10
10. Number of social media platforms used	-	-	-	-	-	-	-	-	-	-	.40**	.44**	.49**	.57**	.60**	.22**
11.Facebook use	-	-	-	-	-	-	-	-	-	-	-	.03	.18**	.12	.22**	.06
12.Instagram use	-	-	-	-	-	-	-	-	-	-	-	-	.21**	.36**	.19**	.23**
13.Twitter use	-	-	-	-	-	-	-	-	-	-	-	-	-	.34**	.17*	.22**
14.Snapchat use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.33*	.08
15.Tiktok use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.09
16 Youtube use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note. *. $p < .05$; **. $p < .01$; Coding of variables: Gender (male=1, female=2); FoMO=Fear of Missing Out

The findings from the correlation analysis showed that both trait and state components of FoMO had a positive relationship with each other, as well as with phubbing behavior and social media addiction. Where state-FoMO showed a significant positive association with angry distress and goal corrected partnership components of parental attachment, while trait-FoMO only showed a positive association with angry distress. Phubbing behavior also had a significant positive correlation with angry distress and social media addiction. Angry distress was positively correlated with social media addiction. Gender was negatively associated with goal-corrected partnership that meant males share more goal-corrected partnership with their parents. Number of social media platforms used had positive correlation with trait FoMO, state FoMO, phubbing behavior, and addiction to social media. Facebook use was observed to have a positive link to social media addiction and goal-corrected partnership. Instagram use was positively correlated with Trait FoMO, while Twitter use had a positive correlation with social media addiction and number of media platforms. TikTok use had a positive association with trait FoMO, state FoMO and phubbing behavior, whereas Snapchat use showed a positive correlation with trait FoMO, state FoMO, phubbing behavior, and social media addiction.

Hierarchical Multiple Regression

In addition, hierarchical multiple regression was employed to assess social media addiction as an outcome of FoMO (state & trait), phubbing behavior, and parental attachment. Furthermore, the moderating impact of dimensions of parental attachment on social media addiction was also explored.

Table 3. Predictive Relationship and Moderation*Hierarchical Multiple Regression Examining the Factors Contributing to Social Media Addiction (N=200)*

Social Media Addiction		
Step 1		
Variables	ΔR^2	B
Number of Social Media Platforms used		-.28
Facebook use		.28
Twitter use		.49*
Snapchat use		.43*
Step 2		
	.29***	
Trait FoMO		.42
State FoMO		1.42**
Phubbing Behavior		.09***
Angry Distress		.27**
Availability		.07
Goal-Corrected Partnership		-.01
Step 3		
	.02	
Trait FoMO \times Angry Distress		.17
State FoMO \times Angry Distress		-.07
Phubbing Behavior \times Angry Distress		-.00
Trait FoMO \times Availability		-.05
State FoMO \times Availability		-.24
Phubbing Behavior \times Availability		.00
Trait FoMO \times Goal-corrected partnership		-.03
State FoMO \times Goal-corrected partnership		.09
Phubbing Behavior \times Goal-corrected partnership		.02
Total R ²		.42

Note. * $p < .05$; ** $p < .01$; *** $p < .001$;

The model 1 of hierarchical multiple regression showed that demographic factors contributed to almost 11% variance in contribution to social media addiction among adolescents with $F(5,194) = 5.15$, $p = .000$. Among the factors entered in the model at this step 1, use of Twitter and Snapchat emerged as positive predictors of addiction to social media. In the later step, state-FoMO, trait FoMO, and phubbing behavior, and dimensions of parental attachment were entered as independent predictors. It was observed that the angry distress component of parental attachment, state-FoMO, and phubbing positively predicted social media addiction. These factors described approximately 29% variance in the outcome, with $F(11,188) = 12.17$, $p = .000$. Lastly, in the third model, addition of interaction terms accounted for about 2% variance of social media addiction with $F(20, 179) = 7.00$, $p = .000$. It was observed that none of these dimensions predicted addiction to social media, suggesting no moderating impacts of parental attachment.

Discussion

The present study examined the association between FoMO, phubbing, and social media addiction in relation to the pattern of parental attachment among adolescents. The study hypothesized a relationship among FoMO (trait & state), phubbing, parental attachment (angry distress, goal-corrected partnership, & availability), and addiction to social media. It was found that trait FoMO and state-FoMO are significantly correlated with each other. The FoMO represents a fear generally experienced by an individual for missing out on anything that is rewarding. The definition encapsulates trait-FoMO because of it being an individual trait/characteristic that remains stable. On the other hand, State-FoMO is specifically crucial to social media usage where communication takes place and it can lead to increase in trait FoMO (Wegmann et al., 2017). Both trait and state components were found to have positive correlation with phubbing behavior. Balta et al. (2020) investigated the mediating role of state-FoMO and problematic Instagram use in relationship between neuroticism, trait-FoMO and phubbing. They found trait and state-FoMO to be highly correlating with phubbing behavior. Both these dimensions of FoMO also showed a positive association with angry distress component of adolescent attachment. Alt and Boniel-Nissam (2018) found out that parents' ways of communication that are positive such as attempting to listen to their children and understanding their feelings were related to lesser FoMO. Angry distress measures the degree of anger that an adolescent perceives to be present in relationship with his/her parents that depicts lack of communication. For example, one of the items of sub-scale is, "I get annoyed at my parents because it seems I have to demand his/her caring and support." That could mean the communication problems that adolescents experience in their relationship with their parents.

Trait- FoMO and state-FoMO were found to be positively correlated to social media addiction that is in line with previous literature. Yin et al. (2021) examined addiction to social networking sites and FoMO with envy and need to belong as mediator and moderator respectively in Chinese adolescents.

They reported that addiction to social networking sites was positively correlated to FoMO. Phubbing behavior was found to be positively correlated to angry distress sub-scale.

Phubbing behavior was found to be in high correlation with social media addiction. In research on emotional support from social media and phubbing behavior in college students with FoMO and problematic social media use acting as mediators, Fang et al. (2020) found that participants who obtained emotional support from social media were more prone to experience increased fear to be left out, indulging in higher problematic use of social media and engaging in more phubbing behavior; phubbing behavior was likely to be higher as the problematic use of social media increased.

Angry distress subscale was revealed to have positive association with social media addiction. Asyriati (2020) did a literature review, summarizing 25 articles on the relationship between parental attachment and problematic internet use of adolescents from various countries. It reflected that nevertheless technology has helped parents to form attachment with their children yet lack of parental attachment was still a major factor in problematic internet use.

Goal corrected partnership was positively related to state FoMO and social media addiction. The finding might be contradictory to previous literature as goal corrected partnership emphasize on adolescents' ability to understand parents' needs and desires whereas social media addiction is an urge to use social media excessively and state FOMO is developed while using internet applications. Putri and Khairunnisa (2019) found that higher family function was associated with less addiction to social media in teenagers. However, there is no doubt that social media offers a variety of platforms to engage in addictive behaviors because of their attractive features and a captivating environment where adolescents can communicate with their peers through behaviors such as tagging, sharing and liking etc. Moreover, the handy nature and unrestricted use of smartphones have made it far easier to use social media uncontrollably just as Facebook use and TikTok use have positive correlations with social media addiction.

Gender was negatively correlated to goal corrected partnership subscale. That implies males scored higher in goal-corrected partnership than females. This finding is contrary to previous literature. West et al. (1998) found that females reported to experience more angry towards their attachment figure, yet having greater goal corrected partnership too, particularly with their mothers.

Number of social media platforms used was positively correlated with trait and state -FoMO. Anwar et al. (2020) reported a significant association between FoMO and usage intensity of social media; more FoMO a person experiences, higher would be his social media usage. A person who experiences more trait-FoMO who consistently worries about missing out something that is rewarding for others, might feel connected to their lives, as FoMO results from unmet social relatedness through using social media platforms. Similarly, state-FoMO that is positively associated with number of social media platforms used can be explained through the phenomenon that a person who feels connected with others through social media might use more social media platforms to meet psychological needs.

The number of social media platforms had positive relationship with phubbing behavior, meaning that an individual who uses more social media platforms is likely to engage in phubbing behavior. The social media applications offer individuals a virtual world to live and keep a track of their virtual world by showing them their activity in that virtual world. Thus, people forget their surroundings and continue to phub others in social setting (Nazir & Bulut, 2019). Similarly, the number of social media platforms used had positive correlation with social media addiction. Though, there is not any study that measures the relationship between the number of social media platforms used and social media addiction. Aydin et al. (2021) reported that participants who spend more time on daily social media scored higher on depression and social media addiction. This finding too is in line with current research's result.

Facebook use, Twitter use and Snapchat use had positive link with social media addiction. The theoretical background of this study includes uses and gratification theory for social media addiction.

The findings about frequency of social media use will be discussed in light of uses and gratification theory.

In past studies, from the perspective of uses and gratification theory, individuals who use Facebook reported motivations behind it that are entertainment, socialization, a platform to express themselves, share information, and document themselves and a medium that appeals to them (Alhabash et al., 2014). Twitter, a platform that offers its users with attractive features of liking, replying and retweeting etc., has been found by past research that its use was linked to the gratification received by connecting to others, according to uses and gratification theory (Chen, 2011). Using Snapchat from the perspective of uses and gratification theory has found in past studies the motives behind it such as users get entertained, become convenient, attracted to the application, express themselves, interact and navigate others, have account's privacy, and appealed towards application's modality (Alhabash & Ma, 2017). Instagram use was positively associated with trait-FoMO, Salim et al. (2017) analyzed how self-presentation of Instagram users would be influenced by friendship-contingent self-esteem and fear of missing out. The results indicated that Instagram users who experienced FoMO were inclined to have their self-presentation influenced. The other variable friendship-contingent self-esteem had its effect on fear of missing out. TikTok use was also positively correlated to trait-FoMO, state-FoMO, and phubbing behavior. There are no studies available on TikTok use related to FoMO or phubbing behavior. Individuals join TikTok as it offers them a platform to engage, share, and socialize with others in addition to providing information. Considering the virtual world of TikTok, individuals are bound to conform to norms, possess a desire for self-expression, get recognized and supported from their interaction, just like in the real world (Yang & Zilberg, 2020).

The second hypothesis proposed that FoMO (trait & state), phubbing behavior, and parental attachment (angry distress, goal-corrected partnership, & availability) would predict social media addiction. In the first step, demographics (age, number of social media platforms used, Facebook use, Twitter use, & Snapchat use) significantly

correlated with social media addiction were added. In the second step, independent variables/predictors were added. It was revealed that age, twitter use and snap chat use predicted social media addiction.

The finding that age positively predicts social media addiction in adolescents is supported by the evidence that the middle adolescents (15 to 16 years old) were found to be highly addicted to internet as compared to early adolescents (11 to 12 years old) who were least addicted (Karacic & Oreskovic, 2017). It can be related to in Pakistani society, adolescents as they age or head towards late adolescents, they achieve more independence from parental control and engage more in communication with peers through online networks.

In current study, only Snapchat use and Twitter use predicted social media addiction. This finding stands partially in line with existing literature as one of the most widely used social media platforms is Facebook. Dailey et al. (2020) showed that intense use of Facebook, Snapchat, and Twitter is predictor of addiction to social media. It can be assumed that twitter is the most accessible platform when it comes to share information and making funny content. According to the perspective of uses and gratification theory, past literature has shown the use of Snapchat for the purpose of entertaining, expressing, interacting and privacy etc. (Alhabash & Ma, 2017).

The second step of hierarchical regression revealed that state-FoMO, Phubbing behavior and angry distress (subscale) positively predicted social media addiction. Tunc-Aksan & Akbay (2019) in their study on the smartphone addiction, FoMO, and perceived social and academic competence that predict social media addiction on sample of high school students found that FoMO predicted social media addiction along with smartphone addiction and perceived academic competence. However, here FoMO directs only on its trait dimension. Thus, state-FoMO that is developed using online applications is found to predict social media addiction; that is significant because there is scarcity of literature on this relationship.

Phubbing behavior predicted social media addiction. Examining the relationship between phubbing, social media addiction, and structures

of narcissism of bodybuilders, Argan et al. (2019) found that there existed a positive relationship between phubbing, social media addiction and levels of narcissism of body builders. No research that supported the finding of phubbing behavior being the predictor of social media addiction was found. It can be said that this research is the first to study this relationship in a sample of adolescents. Phubbing behavior is about constantly using smartphones in presence of conversation partners who are ignored by phubber, and this behavior can lead to addiction to social media.

Angry distress predicted social media addiction; adolescents who feel anger towards parents because of their unavailability are more likely to have addiction to social media. This finding is supported by previous literature as Ballarotto et al. (2018) found that among adolescents, parental attachment significantly resulted in using internet.

Thirdly, it was hypothesized that parental attachment (angry distress, goal-corrected partnership, & availability) would moderate the relationship between FoMO (trait & state) and social media addiction. The present research did not find a moderating effect of parental attachment (angry distress, goal-corrected partnership, & availability) between the relationship of FoMO (trait & state) and social media addiction. Bloemen and De Coninck (2020) examined FoMO among 831 adolescents in the context of family characteristics. They reported a significant association between FoMO and use of social media. Beside this, they found parenting style and structure of family are primary contributors towards developing FoMO. For example, perceiving a positive relationship with parents, father's style of parenting, and belonging from non-intact family acted as protective factors for FoMO. Contrary to this, , perception of a good relationship between parents was found to be a risk factor for developing FoMO.

Furthermore, it was hypothesized that parental attachment (angry distress, availability, & goal-corrected partnership) would moderate the relationship between phubbing behavior and social media addiction. In current research, parental attachment was not found to moderate the relationship between phubbing behavior and

social media addiction. Bai et al. (2020) revealed that parental phubbing had positive association with adolescent phubbing. Parental phubbing and adolescent phubbing had a positive relationship with depressive symptoms of adolescents. Attachment avoidance acted as a moderator between the relationship of congruent and incongruent phubbing of parents and adolescents and depressive symptoms of adolescents. It can be said that relationship phubbing behavior and social media addiction is not affected by attachment to parents. The reason could be that smartphones allow users to access social media to such an extent that they can fulfill their immediate gratification, independent of their attachment to parents.

Conclusions

The study concluded that adolescents with trait-FoMO can also experience state-FoMO, along with phubbing behavior and social media addiction and angry distress. Having state-FoMO can lead to phubbing behavior, angry distress, and social media addiction. Similarly, engaging in phubbing behavior can lead to angry distress and addiction to social media in adolescents. In addition, angry distress in adolescents may result in social media addiction. Furthermore, adolescents using multiple social media platforms may experience trait-FoMO, state-FoMO, phubbing behavior, and social media addiction. State-FoMO, phubbing behavior, and angry distress positively predicted social media addiction. Finally, in the context of gender, males shared more goal-corrected partnership with their parents.

Limitations and Suggestions

The sample was not large enough because of the ongoing situation of COVID-19. The research was conducted during COVID-19 so researcher faced some restrictions. For parental attachment, the scale used did not analyze attachment for father and mother separately. Further work can be done with parental attachment measuring for father and mother separately. Peer attachment can be assessed too as it is vital in adolescence. Parental control can be analyzed too as it is significant during adolescence.

Implications

The research might add in indigenous literature. The research might be helpful in

understanding adolescents' issues of social media use, FoMO and phubbing behavior. This research may be proved fruitful in counselling settings as it focuses on parental attachment that is considered important aspect in adolescents' life.

Funding: Not Applicable

Conflict of Interest: The authors declare that there is no conflict of interest.

Ethical Approval: Ethical approval was gained from Institute of Applied Psychology, University of the Punjab, Lahore, Pakistan

Data Availability: The data that supports the findings of this study are available on request from the corresponding author.

References

- Alexa. (2017). *The top 500 sites on the web*. <https://www.alexa.com/topsites>
- Alhabash, S., & Ma, M. (2017). A tale of four platforms: Motivations and uses of Facebook, Twitter, Instagram, and Snapchat among college students? *Social Media + Society*, 3(1). <https://doi.org/10.1177/2056305117691544>
- Alhabash, S., Chiang, Y. H., & Huang, K. (2014). MAM & U&G in Taiwan: Differences in the uses and gratifications of Facebook as a function of motivational reactivity. *Computers in Human Behavior*, 35, 423–430. <https://doi.org/10.1016/j.chb.2014.03.033>
- Alt, D., & Boniel-Nissim, M. (2018). Parent–Adolescent communication and problematic internet use: The mediating role of fear of missing out (FoMO). *Journal of Family Issues*, 39(13), 3391–3409. <https://doi.org/10.1177/0192513X18783493>
- Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook Addiction Scale. *Psychological Reports*, 110(2), 501–517. <https://doi.org/10.2466/02.09.18.PR0.110.2.501-517>
- Andreassen, C., & Pallesen, S. (2014). Social network site addiction—an overview. *Current pharmaceutical design*, 20(25), 4053–4061.
- Anwar, Z., Fury, E. D., & Fauziah, S. R. (2020). The fear of missing out and usage intensity of social media. In *5th ASEAN Conference on*

- Psychology, Counselling, and Humanities (ACPCH 2019)* (pp. 183-187). Atlantis Press. <https://doi.org/10.2991/assehr.k.200120.038>
- Argan, M., Köse, H., Özgen, C., & Yalınkaya, B. (2019). Do sports, take photo and share: Phubbing, social media addiction and narcissism of body builders. *European Journal of Physical Education and Sport Science*, 0. <http://dx.doi.org/10.46827/ejpe.v0i0.2472>
- Asyriati, R. (2020). Parent attachment and adolescent's problematic internet use: A literature review. In *5th ASEAN Conference on Psychology, Counselling, and Humanities (ACPCH 2019)* (pp. 124-128). Atlantis Press.
- Aydin, S., Koçak, O., Shaw, T.A., Buber, B., Akpınar, E.Z., & Younis, M.Z. (2021). Investigation of the effect of social media addiction on adults with depression. *Healthcare*, 9(4), 450.
- Bai, Q., Lei, L., Hsueh, F.-H., Yu, X., Hu, H., Wang, X., & Wang, P. (2020). Parent-adolescent congruence in phubbing and adolescents' depressive symptoms: A moderated polynomial regression with response surface analyses. *Journal of Affective Disorders*, 275, 127–135. <https://doi.org/10.1016/j.jad.2020.03.156>
- Ballarotto, G., Volpi, B., Marzilli, E., & Tambelli, R. (2018). Adolescent internet abuse: A study on the role of attachment to parents and peers in a large community sample. *BioMed research international*, 2018(1), <https://doi.org/10.1155/2018/5769250>.
- Balta, S., Emirtekin, E., Kircaburun, K., & Griffiths, M. D. (2020). Neuroticism, trait fear of missing out, and phubbing: The mediating role of state fear of missing out and problematic Instagram use. *International Journal of Mental Health and Addiction*, 18(3), 628-639. <https://doi.org/10.1007/s11469-018-9959-8>
- Bloemen, N., & De Coninck, D. (2020). Social media and fear of missing out in adolescents: The role of family characteristics. *Social Media+ Society*, 6(4). <https://doi.org/10.1177/2056305120965517>
- Bowlby, J. (1969). Attachment and loss. vol. 1 and vol. 2. New York, 1973.
- Bowlby, J. (1973). *Attachment and loss, vol. II: Separation*. Basic Books.
- Bowlby, J. (2008). *A secure base: Parent-child attachment and healthy human development*. Basic books.
- Cacioppo, M., Barni, D., Correale, C., Mangialavori, S., Danioni, F., & Gori, A. (2019). Do attachment styles and family functioning predict adolescents' problematic internet use? A relative weight analysis. *Journal of Child and Family Studies*, 28(5), 1263-1271. <https://doi.org/10.1007/s10826-019-01357-0>
- Chen, G. M. (2011). Tweet this: A uses and gratifications perspective on how active Twitter use gratifies a need to connect with others. *Computers in Human Behavior*, 27(2), 755–762. <https://doi.org/10.1016/j.chb.2010.10.023>
- Chotpitayasunondh, V., & Douglas, K. M. (2016). How “phubbing” becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, 63, 9-18. <https://doi.org/10.1016/j.chb.2016.05.018>
- Dailey, S. L., Howard, K., Roming, S. M., Ceballos, N., & Grimes, T. (2020). A biopsychosocial approach to understanding social media addiction. *Human Behavior and Emerging Technologies*, 2(2), 158-167. <https://doi.org/10.1002/hbe2.182>
- Deci, E. L., & Ryan, R. M. (2010). Intrinsic motivation. The corsini encyclopedia of psychology (pp. 1–2). *Online Library: Wiley*.
- Elhai, J. D., Yang, H., & Montag, C. (2020). Fear of missing out (FOMO): Overview, theoretical underpinnings, and literature review on relations with severity of negative affectivity and problematic technology use. *Brazilian Journal of Psychiatry*, 43(2), 203-209. <https://doi.org/10.1590/1516-4446-2020-0870>
- Fang, J., Wang, X., Wen, Z., & Zhou, J. (2020). Fear of missing out and problematic social media use as mediators between emotional

- support from social media and phubbing behavior. *Addictive behaviors*, 107, 106430. <https://doi.org/10.1016/j.addbeh.2020.106430>
- Franchina, V., Vanden Abeele, M., van Rooij, A. J., LoCoco, G., & De Marez, L. (2018). Fear of missing out as a predictor of problematic social media use and phubbing behavior among Flemish adolescents. *International Journal of Environmental Research and Public Health*, 15(10), 2319. <https://doi.org/10.3390/ijerph15102319>
- Griffiths, M. (2005). A 'components' model of addiction within a biopsychosocial framework. *Journal of Substance use*, 10(4), 191-197. <https://doi.org/10.1080/14659890500114359>
- Ifinedo, P. (2016). Applying uses and gratifications theory and social influence processes to understand students' pervasive adoption of social networking sites: Perspectives from the Americas. *International Journal of Information Management*, 36(2), 192-206. <https://doi.org/10.1016/j.ijinfomgt.2015.11.007>
- Jaffar, B. A., Riaz, S., & Mushtaq, A. (2019). Living in a moment: Impact of TikTok on influencing younger generation into micro-fame. *Journal of Content, Community and Communication*, 10(5), 187-194. <https://doi.org/10.31620/JCCC.12.19/19>
- Kapoor, K. K., Tamilmani, K., Rana, N. P., Patil, P., Dwivedi, Y. K., & Nerur, S. (2018). Advances in social media research: Past, present and future. *Information Systems Frontiers*, 20, 531-558. <https://doi.org/10.1007/s10796-017-9810-y>
- Karacic, S., & Oreskovic, S. (2017). Internet addiction through the phase of adolescence: A questionnaire study. *JMIR mental health*, 4(2), e5537. <https://doi.org/HYPERLINK> "https://doi.org/10.2196/mental.5537"10.2196/mental.5537
- Katz, E., Blumler, J., & Gurevitch, M. (1973). Uses and gratifications research. *The Public Opinion Quarterly*, 37(4), 509-523. <http://www.jstor.org/stable/2747854>
- Khan, M. L. (2017). Social media engagement: What motivates user participation and consumption on YouTube? *Computers in Human Behavior*, 66, 236-247. <https://doi.org/10.1016/j.chb.2016.09.024>
- Lenhart, A., Smith, A., Anderson, M., Duggan, M., & Perrin, A. (2015). *Teens, technology & friendship*. Pew Research Center. <https://apo.org.au/node/58859>
- Li, X., & Hao, C. (2019). The relationship between parental attachment and mobile phone dependence among Chinese rural adolescents: The role of alexithymia and mindfulness. *Frontiers in Psychology*, 10, 598. <https://doi.org/10.3389/fpsyg.2019.00598>
- Liu, I. L. B., Cheung, C. M. K., & Lee, M. K. O. (2010). Understanding twitter usage: What drive people continue to tweet. In PACIS 2010 proceedings (p. 92). Pacific Asia Conference on Information Systems: Kaohsiung, Taiwan
- Marvin, R. S. (1977). An ethological—cognitive model for the attenuation of mother—child attachment behavior. In *Attachment behavior* (pp. 25-60). Boston, MA: Springer US.
- Nazir, T. & Bulut, S. (2019). Phubbing and what could be its determinants: A dugout of literature. *Psychology*, 10(6), 819-829. <https://doi.org/HYPERLINK> "https://doi.org/10.4236/psych.2019.106053"10.4236/psych.2019.106053
- Paikoff, R. L., & Brooks-Gunn, J. (1991). Do parent-child relationships change during puberty? *Psychological bulletin*, 110(1), 47.
- Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841-1848. <https://doi.org/10.1016/j.chb.2013.02.014>
- Putri, A. A. H., & Khairunnisa, H. (2019). The relationship of family function and social media addiction among adolescents. In *4th ASEAN Conference on Psychology, Counselling, and Humanities (ACPOCH*

- 2018) (pp. 127-130). Atlantis Press. <https://doi.org/HYPERLINK> "https://doi.org/10.2991/acpch-18.2019.32"10.2991/acpch-18.2019.32
- Reid Chassiakos, Y. L., Radesky, J., Christakis, D., Moreno, M. A., Cross, C., Hill, D., ... & Swanson, W. S. (2016). Children and adolescents and digital media. *Pediatrics*, 138(5). <https://doi.org/10.1542/peds.2016-2593>
- Salim, F., Rahardjo, W., Tanaya, T., & Qurani, R. (2017). Are self-presentation of instagram users influenced by friendship-contingent self-esteem and fear of missing out. *Makara Hubs Asia*, 21(2), 70-82. <https://doi.org/10.7454/mssh.v21i2.3502>
- Santana-Vega, L. E., Gómez-Muñoz, A. M., & Feliciano-García, L. (2019). Adolescents' problematic mobile phone use, Fear of Missing Out and family communication. *Comunicar*. 27(59), 39-47.
- Shams, M., Iftikhar, U., & Raja, A. A. (2019). Impact of attachment styles on relationship satisfaction: Mediating role of phubbing behavior. *IBT Journal of Business Studies (JBS)*, 15(1).
- Starcevic, V. (2013). Is internet addiction a useful concept? *Australian & New Zealand Journal of Psychiatry*, 47(1), 16-19. <https://doi.org/10.1177/0004867412461693>
- Tunc-Aksan, A., & Akbay, S. E. (2019). Smartphone addiction, fear of missing out and perceived competence as predictors of social media addiction of adolescents. *European Journal of Educational Research*, 8(2), 559-566. <https://doi.org/10.12973/eu-jer.8.2.559>
- Utz, S., Muscanell, N., & Khalid, C. (2015). Snapchat elicits more jealousy than Facebook: A comparison of Snapchat and Facebook use. *Cyberpsychology, Behavior, and Social Networking*, 18(3), 141-146. <https://doi.org/10.1089/cyber.2014.0479>
- Wegmann, E., Oberst, U., Stodt, B., & Brand, M. (2017). Online-specific fear of missing out and internet-use expectancies contribute to symptoms of internet-communication disorder. *Addictive Behaviors Reports*, 5, 33-42. <https://doi.org/10.1016/j.abrep.2017.04.001>
- West, M., Rose, M. S., Spreng, S., Sheldon-Keller, A., & Adam, K. (1998). Adolescent attachment questionnaire: A brief assessment of attachment in adolescence. *Journal of Youth and adolescence*, 27(5), 661-673. <https://doi.org/10.1023/A:1022891225542>
- Xu, W. W., Park, J. Y., Kim, J. Y., & Park, H. W. (2016). Networked cultural diffusion and creation on YouTube: An analysis of YouTube memes. *Journal of Broadcasting & Electronic Media*, 60(1), 104-122. <https://doi.org/10.1080/08838151.2015.1127241>
- Yang, Y., & Zilberg, I. E. (2020). *Understanding Young Adults' TikTok Usage*. [Undergraduate Honors Thesis, UCSD Department of Communication]. https://communication.ucsd.edu/_files/undergrad/yang-yuxin-understanding-young-adults-tiktok-usage.pdf
- Yin, L., Wang, P., Nie, J., Guo, J., Feng, J., & Lei, L. (2021). Social networking sites addiction and FoMO: The mediating role of envy and the moderating role of need to belong. *Current Psychology*, 40(8), 3879-3887. <https://doi.org/10.1007/s12144-019-00344-4>
- Young, L., Kolubinski, D. C., & Frings, D. (2020). Attachment style moderates the relationship between social media use and user mental health and wellbeing. *Heliyon*, 6(6), e04056. <https://doi.org/10.1016/j.heliyon.2020.e04056>