

Attachment Insecurity and Social Media Fear of Missing Out: The Mediating Role of Intolerance of Uncertainty

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Abstract

Fear of Missing Out (FoMO) is an apprehension that others might be having rewarding experiences from which one is absent. Online social networking sites (SNS) exacerbate FoMO because they frequently expose users to what is happening in other people's lives, which is typically related to leisure activities, such as trips, vacations, and social events. Consequently, when disconnected from social media, users become plagued by a troublesome sense of missing important and exciting events. Recent research indicates that FoMO is associated with difficulties in interpersonal interactions and social relationships. Accordingly, the current study examined the association between individual differences in attachment patterns and FoMO. Participants ($N=264$) completed measures of adult attachment patterns, social media fear of missing out, as well as intolerance of uncertainty. Results indicated that high levels of attachment anxiety predict high levels of FoMO, and that this association is partially mediated by intolerance of uncertainty. These findings suggest that anxiously attached individuals may be more vulnerable to FoMO, as a result of their inability to tolerate uncertainty. Hence, stress the need for awareness and treatment when individual develop an excessive dependency on SNS.

Keywords: online social networks, Fear of Missing Out, attachment, intolerance of uncertainty

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1 Introduction

With growing exposure to and use of social media, the experience of "Fear of Missing Out" (FoMO) has become a target of social and psychological interest and research. FoMO is defined as "a pervasive apprehension that others might be having rewarding experiences from which one is absent, and is characterized by the desire to stay continually connected to what others are doing" (Przybylski, et al., p. 1841).

Although FoMO is not limited to the online world, social media use has made it an increasingly common and significant experience. Social networking sites (SNS) exacerbate FoMO because they expose users to what is happening in other people's lives, such as leisure activities, trips, vacations, and social events (Chou & Edge, 2012). As a result, when individuals are disconnected from social media, they become plagued by a troublesome sense of missing important and exciting events (Przybylski et al., 2013).

Recent research indicates that FoMO is associated with difficulties in interpersonal interactions and social relationships (e.g., Beyens, et al., 2016; Fabris, et al., 2020), and negative fam-

ily environments (Sela, et al., 2020). Accordingly, the current research examines how behavioral patterns in close interpersonal relationships, in specific attachment style, relates to experience of FoMO on social media. Attachment theory (Bowlby, 1969/1980, 1973, 1982) offers a model for understanding individual differences in interpersonal relations, and therefore seems to be a relevant theoretical framework for exploring the psychological mechanisms underlying FoMO.

In addition, the current research seeks to gain understanding of the psychological mechanism that underlies the predicted association between attachment patterns and social media FoMO, by exploring the mediating role of intolerance of uncertainty (IU) in this relation. IU is defined as the tendency to respond negatively to ambiguous situations that are characterized by the absence of crucial information about the potential consequences of the situation and its implications (Carleton, 2012; Carleton et al., 2016). IU is thought to be related to the experience of FoMO on social media, as FoMO is fundamentally an emotional response to an ambiguous situation in which desired information is unavailable.

2 Social Media FoMO

Although FoMO is not experienced exclusively by social media users, SNS users report increasing levels of FoMO as frequency of use rises (e.g., Baker, et al., 2016; Beyens et al., 2016; Blackwell, et al., 2017; Przybylski et al., 2013; Sela et al., 2020). The fact that SNS apps are available for use at all times through a smartphone may explain the associations found between FoMO and the addictive use of mobile phones (Coco et al., 2020; Elhai, et al., 2016; Oberst, et al., 2017; Wolniewicz, et al., 2018), social media addiction (Fabris et al. 2020; Fang, Wang, Wen, & Zhu 2020; Liu & Ma, 2018), and problematic Internet use in general (Alt & Boniel-Nissim, 2018; Blackwell et al. 2017; Wegmann, et al., 2017).

One of the key research findings on FoMO to date is that this experience is intensified by problems in interpersonal relationships. In a study among adolescents (ages 11-19), Fabris, et al. (2020) found an association between FoMO and sensitivity to stress associated with neglect and negative reactions by online peers. Similarly, Beyens et al. (2016) found an association between FoMO and stress related to Facebook use, when measured both in terms of popularity (number of likes, share, etc.) and belonging (number of friends).

Lai, et al. (2016) studied the association between FoMO and neural responses to stimuli of social inclusion and social exclusion. They found an association between FoMO and increased neural activity in the brain in response to social inclusion stimuli but not in response to social exclusion. Using both correlational and experimental study designs, Dugan (2019) found that people with interdependent self-construal (whose sense of self is embedded into the context of interpersonal relations and group affiliation) have a greater tendency to develop FoMO compared to people with independent self-construal (whose sense of self is more individualistic, egocentric, and idiocentric).

Sela, et al. (2020) found that FoMO mediates the association between negative family environment (characterized by low family expressiveness and high family conflict) and problematic Internet use in adolescents (ages 12–16). They also found an association between FoMO, depression, and duration of Internet use.

3 Attachment and Social Media FoMO

Although attachment theory refers to a categorical division of childhood attachment patterns (secure, avoidant, and anxious-ambivalent; Ainsworth, et al. (1978/2015), research on romantic attachment in adulthood typically refers to two dimensions: anxiety and avoidance (Bartholomew & Horowitz, 1991; Brennan, et al., 1998). High levels of attachment anxiety in adulthood are characterized by preoccupations with one's lovability, and concerns regards rejection and abandonment. High levels of attachment avoidance are characterized by compulsive self-

reliance and reluctance to engage in emotional involvement with others.

To date, the direct association between attachment patterns and FoMO was investigated in two empirical studies: Both Blackwell et al. (2017) and Liu and Ma (2019) found a positive association between attachment anxiety and FoMO. The study by Blackwell et al. (2017) found an association between attachment avoidance and FoMO, but this finding was not replicated by Liu and Ma (2019). In both studies, FoMO mediated the association between attachment anxiety and social media addiction.

Theoretically, an expected association between attachment insecurity and FoMO is based on several assumptions: First, as Blackwell et al. (2017) noted, when people have concerns about their relationships, it is reasonable to assume that they are concerned about social rejection. Individuals with high levels of attachment anxiety tend to fear rejection in their relationships, and such fear may be generalized to a fear of social rejection in broader contexts such as SNS (Rom & Alfasi, 2014). Therefore, FoMO may be an expression of their fear of rejection, which leads to an increased need to remain informed and continually connected to what is happening on SNS.

Moreover, research on the psychological motivations of SNS use (Chen, 2019; Lin, 2016) found that attachment anxiety is related to an unmet need for relatedness and social support. Studies show that FoMO is heightened by an unmet need for relatedness (Przybylski et al., 2013; Xie et al. 2018) and increased need for social support (Przybylski et al., 2013).

4 The current research: The mediating role of intolerance of uncertainty

The findings reviewed above offer preliminary support for the theoretical logic of the assumption that attachment insecurity will predict high levels of social media FoMO. Accordingly, the purpose of the current study is to explore this association and its underlying psychological mechanism. To this end, the mediating role of IU in the association between attachment patterns and social media FoMO is examined.

IU manifests as perceived lack of control over the occurrence of negative events, and the inability to prepare for them in a manner that might mitigate their negative effects. High levels of IU increase the perceived risk of external threats, and trigger and sustain a sense of anxiety (Dugas, et al., 2005; Dugas, et al., 2004). Consequently, people with high levels of IU tend to avoid ambiguous and uncertain situations as much as possible, and find it difficult to function in these situations (Buhr & Dugas, 2006; Dugas, et al., 2004).

Uncertainty is an inherent component of close relationships – from a child's uncertainty of the availability of their attachment figure when needed, to the uncertainty of the availability of the attachment figure in their close interpersonal relationships in adulthood. Research to date, on the association between IU and adult attachment patterns found an association between

IU and high levels of both attachment anxiety and attachment avoidance (Sternheim et al., 2017; Wright, et al., 2017). Similarly, Boelen, et al. (2014) found an association between IU and adult separation anxiety, which is characterized by excessive apprehensions of separation from close attachment figures.

So far, the association between IU and FoMO has not been investigated. Yet, the theoretical logic underlying the expectation of such an association is based on the notion that FoMO in its basis is an event of uncertainty: An individual who experiences FoMO is responding to an ambiguous situation in which the information that interests them is unavailable. Therefore, there are reasonable theoretical grounds to assume that the negative emotional effects that accompany the experience of FoMO are related to difficulties in coping with ambiguous situations and missing or incomplete information, which is characteristic of uncertainty.

The current research therefore examines the following hypotheses:

- H1.** Attachment anxiety and FoMO will be positively correlated.
- H2.** Attachment anxiety and IU will be positively correlated.
- H3.** IU and FoMO will be positively correlated.
- H4.** IU will mediate the association between attachment anxiety and FoMO.

In view of the fact that the findings concerning the association between attachment avoidance and FoMO (Blackwell et al., 2017; Liu & Ma, 2019) are not conclusive, hypotheses related to attachment avoidance were not formulated, and the current study examines the association between attachment avoidance and the remaining study variables for exploratory purposes only.

5 Method

5.1 Participants and procedure

Participants were Israeli Facebook users ($N=264$, 65% Female, $M_{age} = 30.2$, $SD_{age} = 9.55$, range: 18-49) recruited via advertisements on Facebook News Feed and academic Facebook groups designated for recruiting research participants. Participants received a URL link to the study's survey, which was created on the Google Forms platform. The survey included general demographic information, and measures of adult attachment patterns, IU, and social media FoMO. Participants received a detailed explanation of the study in the questionnaire and were informed that they could leave the study at any time. Participants were also given contact information if they wished to receive additional information on the study after its conclusion. The introduction to the electronic questionnaire stated that completing the questionnaire constitutes informed consent to participate in the study.

Post-hoc power analysis was calculated using Monte Carlo power analysis for indirect effects (Schoemann, et al., 2017).

With 1,000 power analysis replications, 2,000 Monte Carlo draws per replications, and 95% confidence interval, a power effect $> .99$ was detected, which exceeds the accepted $.80$ in the literature (MacCallum, et al., 1996).

5.2 Materials and descriptive statistics

Adult Attachment patterns were assessed by the Experiences in Close Relationship Scale (ECR)–Short Form (Wei, et al., 2007), which measures attachment patterns in adult romantic relationships. Participants were instructed to think about their prototype experiences in romantic relationships, and rate their agreement with each item on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). In total, six items assessed Attachment Anxiety (e.g., “I worry that romantic partners won’t care about me as much as I care about them.”; $M = 3.25$, $SD = 1.21$, Cronbach’s $\alpha = .84$) and six items assessed Attachment Avoidance (e.g., “I try to avoid getting too close to my partner”; $M = 2.44$, $SD = 1.13$, $\alpha = .86$).

Fear of Missing Out was assessed using seven items adapted from Wegmann, et al.’s (2017) Online-Specific FoMO measure. Participants were asked to indicate their agreement with statements such as “I continuously log-on to Facebook in order not to miss out on anything,” and “I fear not to be up-to-date with what’s going on Facebook.” To create clarity and consistency for the participants, items were rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), as in Brennan et al.’s (1998) attachment measure, with higher scores indicating higher levels of FoMO ($M = 2.80$, $SD = 1.23$, $\alpha = .83$).

Intolerance of Uncertainty was assessed using the Intolerance of Uncertainty Scale–Short Form (IUS-12; Carleton, et al., 2007). The IUS-12 is a 12-item abbreviated form of the original 27-item IU Scale (Freeston et al., 1994) that measures responses to uncertainty, ambiguous situations, and the future (sample items are “Unforeseen events upset me greatly” and “I must get away from all uncertain situations”). Items were scored on a 7-point Likert scale ranging from 1 (*not at all characteristic of me*) to 7 (*very characteristic of me*; $M = 3.54$, $SD = 1.20$, $\alpha = .91$).

6 Results

6.1 Preliminary analyses

Zero-order correlations between the study variables are presented in Table 1. Attachment anxiety was positively associated with IU and with FoMO. Attachment avoidance was also positively associated with IU, but not associated with FoMO. IU and FoMO were positively associated. Age was negatively associated with IU, and positively associated with FoMO. Male participants reported higher levels of FoMO ($M = 3.01$, $SD = 1.19$) than females ($M = 2.67$, $SD = 1.24$; $t(265) = 2.17$, $p = .031$). There were no gender differences in the remaining variables.

Table 1. Zero-order correlations for the study variables.

	1	2	3	4
1. Anxiety				
2. Avoidance	.29**			
3. IU	.39**	.29**		
4. FoMO	.29**	.08	.32**	
5. Age	-.10	-.08	-.15*	.25**

Notes: * $p < .05$; ** $p < .001$; Anxiety = Attachment anxiety; Avoidance = Attachment avoidance; IU = Intolerance of uncertainty; FoMO = Fear of Missing Out.

6.2 Hypotheses testing

To test for the mediation effect of IU in the association between attachment anxiety and FoMO, a mediation model analysis was performed (Baron & Kenny, 1986; Table 2) using the PROCESS add-on (V. 3.3) to SPSS (V. 25) (Hayes, 2009).

Results indicated that attachment anxiety (independent variable) predicted FoMO (dependent variable) while controlling attachment avoidance, age and gender ($\beta = .34, P = .000$). Additionally, attachment anxiety predicted IU (mediator), while controlling for attachment avoidance, age and gender ($\beta = .33, P = .000$), and IU predicted FoMO while controlling for attachment anxiety, attachment avoidance, age and gender ($\beta = .30, P = .000$). The effect of attachment anxiety on FoMO when adding IU to the model decreased but remained significant ($\beta = .24, P = .000$), indicating a partial mediation effect. To test for the significance of the mediation effect, a bootstrapping procedure was used to test the indirect effects (Figure 1). Results indicated a significant indirect effect of IU on the association between attachment anxiety and FoMO ($b = .10, se = .03, 95\%CI [.05, .16]$).

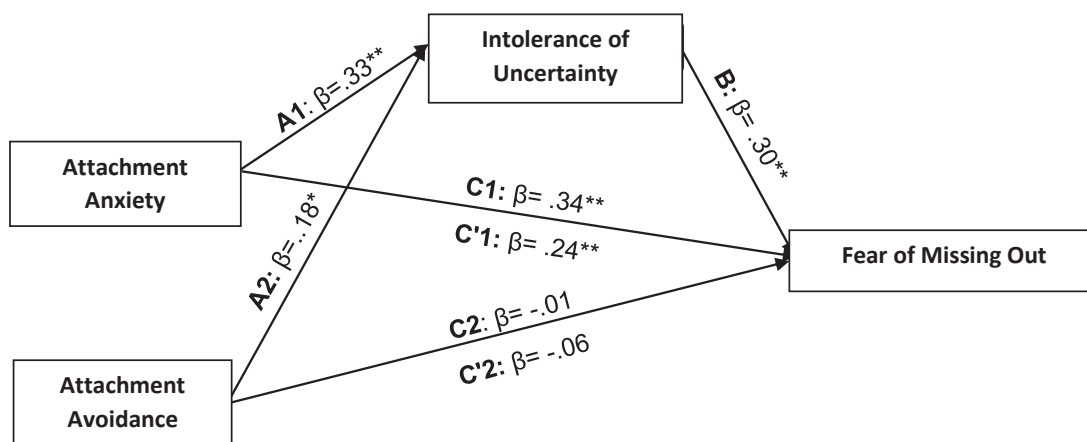
Table 2. Direct and indirect effects of attachment anxiety and avoidance, IU, age and gender, on FoMO.

Effect	b(se)	Beta	Significance	95% CI
Mediator Variable Model				
DV = IU				
$R^2 = .19, F(4,259) = 15.63, p < .001$				
Anxiety	.33(.06)	.33	<.001	[.21, .44]
Avoidance	.19(.06)	.18	.002	[.07, .32]
Gender	-.06(.14)	-.02	.68	[-.34, .22]
Age	-.01(.01)	-.10	.07	[-.03, .001]
Constant	2.45(.35)		<.001	[1.76, 3.13]
Dependent Variable Model				
DV = FoMO				
$R^2 = .26, F(5,258) = 17.73, p < .001$				
Anxiety	.25(.06)	.24	<.001	[.13, .37]
Avoidance	-.07(.06)	-.06	.28	[-.19, .06]
IU	.30(.06)	.30	<.001	[.18, .42]
Gender	-.30(.14)	-.11	.04	[-.58, -.02]
Age	.04(.01)	.30	<.001	[.03, .05]
Constant	.09(.37)		.81	[-.65, .82]

Notes: CI = Confidence interval; DV = Dependent variable; Anxiety = Attachment anxiety; Avoidance = Attachment avoidance; IU = Intolerance of uncertainty.
Gender: 0 = Male, 1 = Female.

In conclusion, higher levels of attachment anxiety predicted social media FoMO and IU, supporting Hypothesis 1 and Hypothesis 2. IU predicted social media FoMO, supporting Hypothesis 3. IU partially mediated the positive association between attachment anxiety and social media FoMO, partially supporting Hypothesis 4.

Figure 1. Mediation model of IU on the association between attachment anxiety and avoidance, and FoMO, controlling for age and gender.



Notes: * $p < .01$; ** $p < .001$; C1 = Total effect of attachment anxiety on FoMO; C'1 = Direct effect of attachment anxiety on FoMO; C2 = Total effect of attachment avoidance on FoMO; C'2 = Direct effect of attachment avoidance on FoMO.

7 Discussion

The aim of the current study was to examine the association between attachment insecurity and social media FoMO, and the mechanisms that underlies this association. The findings indicate that high levels of attachment anxiety predict high levels of FoMO, and that this association is partially mediated by IU. That is to say, people with high levels of attachment anxiety experience higher levels of social media FoMO, at least partially as a result of their difficulty to tolerate uncertainty.

The finding that indicates that high levels of attachment anxiety predict social media FoMO is consistent with findings of previous studies (Blackwell et al., 2017; Liu & Ma., 2019). The current findings add to previous research by providing evidence of an association between attachment anxiety and social media FoMO in an adult sample. In the current study, participants' mean age is 30.2, compared to 19.9 (Liu and Ma, 2019) and 22.1 (Blackwell et al., 2017) in previous studies.

The main contribution of the current research is by providing evidence that IU plays a role in the association between attachment anxiety and social media FoMO. This finding helps to better understand the psychological mechanism that leads to a more intense experience of FoMO in individuals with high levels of attachment anxiety. The positive association found in the current study between social media FoMO and IU provides empirical support for the theoretical premise that uncertainty is a component of the experience of FoMO. A significant aspect of FoMO is the individual's need to cope with a lack of information on "what is happening now." The need to be continually informed about what is happening on SNS apparently stems, at least partially, from individuals' need to alleviate the negative effects triggered by such lack of information.

The findings of the current study suggest that people with high attachment anxiety, who typically lack a sense of a secure base (Ainsworth, et al., 1978/2015; Mikulincer & Shaver, 2007), find it more difficult to tolerate the lack of knowledge that accompanies FoMO. The lower one's ability to tolerate the uncertainty of being uninformed, the stronger the experience of FoMO on social media. These findings support and provide a new context for the role of attachment security in ambiguous situations and the negative implications of its absence.

Another explanation for the mediating role of IU in the association between attachment anxiety and social media FoMO is found in the extensive literature on the association between attachment anxiety and emotional regulation mechanisms (e.g., Allen & Miga, 2010; Brenning & Braet, 2013; Mikulincer, & Shaver, 2007). The findings of the current study provide empirical support for the argument that people high in attachment anxiety find it difficult to regulate the negative emotions that stem from being uninformed, which intensifies their FoMO when they are not connected to or informed about what is happening. People high in attachment anxiety tend to fixate on or overestimate negative emotions. These individuals, whose emotional regulation strategy is "emotion-centered coping," find it

difficult to recruit the necessary mental resources to effectively resolve the problem that triggered their negative emotions (Mikulincer & Shaver, 2007). Instead, they focus and ruminate on the emotions themselves, which are powerfully experienced. According to response styles theory (Nolen-Hoeksema, 2004), rumination is a form of response to stress that includes repetitive speech or thoughts related to stress symptoms (the negative emotions and sensations). This is a passive response mechanism that does not involve active coping or attempts to resolve the causes of their stress. Rumination is a dysfunctional mechanism that is used when knowledge is lacking and increases the degree of stress one experiences (Yook, et al., 2010). A recent study on emerging adults – an age group that is especially relevant for the experience of FoMO – found that individuals high in attachment anxiety tend to make more use of rumination as a response strategy to stress events (Gardner, et al., 2020).

The current study supports the findings of Liu and Ma (2019) concerning the lack of association between attachment avoidance and social media FoMO. In effect, the correlation between attachment avoidance and social media FoMO in the current study is almost identical to the correlation obtained in the study by Liu and Ma (2019). These findings are inconsistent with the findings of the study by Blackwell et al. (2017), which found a positive, weak, yet statistically significant correlation between attachment avoidance and FoMO. This inconsistency may be attributed to the fact that the current study and the study by Liu and Ma (2019) used a similar instrument to assess attachment dimensions – the short form of ECR (Brennan et al., 1998), developed by Wei et al. (2007). In contrast, the study by Blackwell et al. (2017) used an instrument that was developed Baek, et al. (2014) and adapted to the context of SNS use.

In any case, there appears to be a weak association, at most, between attachment avoidance and social media FoMO, which may be attributed to the fact that people high in attachment avoidance primarily make instrumental use of SNS (Rom & Alfasi, 2014). Instrumental use is characterized by the use of SNS to search for and share information, and to a lesser degree with social and interpersonal communication needs – which is consistent with the deactivation strategy used by high attachment avoidance individuals to avoid interpersonal closeness and emotional involvement (Mikulincer & Shaver, 2007). Such use of SNS may trigger less FoMO because it is possible for them to gain information on their targets of interest in alternative ways (Such as newspapers and general websites).

The findings of the current study support evidence from previous research (e.g., Fabris et al., 2020; Lai et al., 2006) indicating that FoMO is typically experienced in a social context, and involves a fear of being socially disconnected or even rejected. The fact that an association was found between attachment anxiety – characterized by a strong desire for emotional engagement with others, combined with a fear of rejection – and FoMO, while no association was found between attachment avoidance – characterized by a tendency to retain a distance in interpersonal relations – and FoMO suggests that the key component in

the experience of FoMO is the fear of not being socially up-to-date.

Finally, interesting findings emerged with regards to the demographic variables: First, age and social media FoMO were positively correlated. This finding contradicts previous findings (e.g., Blackwell et al. 2017; Elhai et al., 2018) that indicated negative correlations between age and FoMO. An explanation for this might be that the current sample comprised older participants compared to previous studies. Indeed, an analysis of the association between age and social media FoMO for age subsamples of the current study revealed a positive association between age and FoMO in the upper age quartile of the sample, but no significant association was found in the lower three quartiles.

Furthermore, in the current study, men reported higher levels of social media FoMO than women, which contradicts findings from previous research (e.g., Beyens et al. 2016; Elhai et al. 2018), which reported higher FoMO scores for females compared to males. The relatively high age mean of the current sample may also explain this inconsistency: While a subsample of participants below the age median (ages 18–27) showed no gender effect on social media FoMO, in the subsample above the median (ages 28–49) men had significantly higher levels of social media FoMO than women.

Taken together, these findings suggest that the experience of FoMO on social media varies across age groups. This may be the case because young individuals use social media mainly to satisfy socioemotional needs, while older users do so for more instrumental purposes (Rom & Alfasi, 2014). If so, the current findings suggest that in this type of usage, women experience less social media FoMO than men. Additionally, the experience of social media FoMO becomes stronger with age, possibly as a result of comparisons with other members of one's online social network with respect to professional achievements, standard of living, and material assets.

8 Limitations and future directions

Despite the significance of the current study's findings for our understanding of the association between individual differences in attachment patterns and the experience of FoMO on social media, the current study has several limitations: First, the current study examined FoMO in the specific context of Facebook use, as Facebook is the SNS with the largest number of users (Alexa, 2018). Other SNS do, however, have unique features. For example, Instagram is an image-based SNS, whereas Twitter is based on brief textual messages. Therefore, a task for future research may be to examine whether fear or missing out is the result of the unique features of Facebook, or are the current findings related to FoMO generalizable to other SNS.

In addition, the current study had a correlational design that precludes causal interpretations. Therefore, future research may seek to examine whether an experimental induction of a sense of attachment security reduces social media FoMO. Priming at-

tachment security (e.g., by asking participants to visualize and write about a person with whom they have a secure attachment) can have an effect that is similar to dispositional attachment security in terms of influence on beliefs about the self and interpersonal relationships (Carnelley & Rowe, 2007).

9 Conclusion

FoMO is a phenomenon that is the target of increasing attention in public discourse in the social-cultural context of millennials, and has recently become the focus of academic research on online behaviors and their psychological implications. The current study contributes to the growing base of knowledge on FoMO by offering empirical support for the association between individual attachment patterns and the frequency and intensity of FoMO on social media. The findings of the current study suggest that people with a strong fear of rejection and abandonment may be more vulnerable to social media FoMO as a result of their inability to tolerate uncertainty or being uninformed. These findings expand our theoretical understanding of the psychological mechanisms underlying the phenomenon of FoMO on social media, and stress the need for awareness and treatment when individuals develop excessive dependency on SNS use.

10 References

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