

The Relationship Between Fear of Missing Out and Loneliness Among Adolescents in the Digital Age: The Mediating Roles of Emotion Dysregulation and Social Media Addiction

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ABSTRACT

Adolescence is a critical developmental period marked by increased stress and vulnerability to mental health issues. Meaningful peer relationships are known to protect against these challenges, but the rise of technology and social media use has impacted how adolescents form connections. Research indicates that adolescents' preference for social networks over face-to-face interactions may contribute to loneliness, emotion dysregulation, social media addiction, and the fear of missing out (FoMO). This study aims to examine the mediating role of emotion dysregulation and social media addiction in the relationship between loneliness and FoMO among adolescents. A sample of 342 students (mean age: 12.72, 171 girls, 171 boys) from a public secondary school in Istanbul was surveyed. The UCLA Loneliness Scale-Short Form, the Difficulty in Emotion Regulation Scale-Short Form, the Social Media Addiction Scale for Adolescents, and the Fear of Missing Developments in Social Media Scale were used to collect data. Descriptive statistics and structural equation modeling (SEM) were applied for data analysis. Results showed that both emotion dysregulation and social media addiction fully mediated the relationship between loneliness and FoMO. Bootstrap analyses with 5,000 resamples confirmed the significance of both direct and indirect effects. The findings suggest that greater loneliness is linked to higher emotion dysregulation, increased social media addiction, and heightened FoMO. Interventions aimed at improving social skills, emotion regulation, and reducing social media addiction could help mitigate these effects and support adolescent mental well-being.

Keywords: Adolescence, fear of missing out, loneliness, emotion dysregulation, social media addiction.

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INTRODUCTION

Adolescence represents a pivotal stage of development, marked by significant physical, psychological, and emotional growth. The World Health Organization (2023) defines adolescence as the transitional phase between childhood and adulthood, typically between the ages of 10 and 19. This period is crucial for

establishing fundamental health principles. Maintaining well-being during adolescence is particularly important due to the physical, psychological, and emotional changes that characterize this stage of life. Adolescence also demands increased attention to mental health issues, as many mental disorders that emerge during this time often persist into adulthood, leading to chronic conditions and imposing a significant social burden (Blakemore, 2019). Nevertheless, mental illnesses, which affect 10-20% of children and adolescents globally, are often overlooked in low- and middle-income countries (Kieling et al., 2011). Given that 75% of mental illnesses manifest before the age of 25, it is crucial to enhance adolescents' capacity to cope with challenges and expand their access to professional support services (Burns et al., 2007).

Loneliness and Fear of Missing Out (FoMo)

During adolescence, friends and peers become the central social context, and establishing strong, quality connections with peers is essential for promoting psychological well-being and adjustment (Delgado et al., 2022). Furthermore, adolescence is a developmental stage during which peer relationships are closely linked to experiences of loneliness (Woodhouse et al., 2012). Loneliness is defined as individuals' subjective experiences of shortcomings in their social relationships (Russell et al., 1984). For adolescents, peer relationships are a primary focus (Brown & Klute, 2003), with young people spending approximately one-third of their waking hours with friends (Hartup & Stevens, 1997). Schools serve as crucial environments for adolescents in terms of peer interactions, as they provide opportunities for young people to meet others, form friendships, and become integrated into social groups (Rubin et al., 2006). Therefore, understanding adolescent loneliness within the context of school peer relationships is essential. School-related loneliness has been identified as a significant predictor of low well-being and depression among adolescents (Arslan, 2021). Moreover, loneliness has adverse effects on adolescents' well-being and is a risk factor for developing emotional and behavioral problems (Cacioppo et al., 2006). Some studies suggest that increases in adolescent loneliness and depression may be associated with greater use of digital media, such as smartphones and social media platforms (Luby & Kertz, 2019; Spiller et al., 2019). Additional research has found that individuals who spend more time on social media are more likely to experience loneliness and lower well-being (Primack et al., 2017; Song et al., 2014). There are growing concerns that adolescents' communication through digital channels may be supplanting face-to-face interactions (Manago et al., 2020). Increasing reliance on digital communication may indicate that adolescents experience a fear of missing out on important developments. For instance, data from the Turkish Statistical Institute indicate that 91.3% of children aged 6-15 use the internet, and 79% of those aged 11-15 are active on social media platforms, demonstrating a high level of digital engagement among this age group in Turkey (Turkish Statistical Institute Report 2024). One possible reason for this high rate of usage may be the desire to stay updated with current trends and developments, especially considering the importance of peer relationships during adolescence. Excessive use of social media and the constant urge to stay informed about the latest trends may gradually lead to the development of a fear of missing out (FoMO) (Beyens et al., 2016). Fear of missing out (FoMO) refers to the anxiety associated with the inability to stay informed about events and experiences occurring in one's social circles (Tanhan et al., 2022). This phenomenon often leads individuals to remain active on social media, resulting in a significant increase in the time spent on these platforms (Tanhan et al., 2022). Moreover, individuals experiencing high levels of FoMO tend to spend more time on social media, which can negatively impact their overall life satisfaction and contribute to a decline in mood and well-being (Przybylski et al., 2013). Those who experience FoMO tend to feel pervasive anxiety regarding the possibility that others may be enjoying rewarding experiences in their absence (Przybylski et al., 2013). We hypothesize that adolescents who feel increasingly lonely are more likely to develop a fear of missing out on updates, driven by a strong desire to stay connected with their peers. In other words, the starting point of this research is the assumption that rising levels of loneliness among adolescents may contribute to an increased fear of missing out.

The Mediating Role of Emotion Dysregulation and Social Media Addiction

Adolescence is a critical period for the development of emotion regulation skills. Emotion regulation refers to the processes that influence both the nature of emotions individuals experience and how they perceive and express these emotions (Karababa, 2020). Strong emotion regulation skills promote positive relationships with friends and partners, enhancing overall interpersonal interactions (Beames et al., 2019). Adolescence is a crucial period for emotion regulation. Many individuals experience a significant enhancement in emotion regulation skills, while others may encounter difficulties leading to the development of psychopathology (Silvers, 2022). Research has indicated that effective strategies for managing psychological distress and negative emotions during this developmental stage can significantly reduce risky behaviors (Espeleta et al., 2018; Houck et al., 2016). Conversely, deficiencies in emotion regulation skills can result in a range of difficulties for adolescents, including internalizing and externalizing disorders, academic underachievement, low well-being, heightened levels of depression and anxiety, and increased problem behaviors (Aldao et al., 2010; Deplus et al., 2016; Ehring et al., 2010; Shapero et al., 2016; Silk et al., 2003; Schäfer et al., 2017). The recognition that self-harm behavior is often viewed as an alternative form of emotion regulation and that effective emotion regulation serves as a protective factor against suicide attempts underscores the critical need for positive emotion regulation skills in adolescents experiencing emotional difficulties (Sim et al., 2009; Pisani et al., 2013). Beyond strategies aimed at managing negative emotions, the development of skills to enhance positive emotions plays a crucial role in maintaining and promoting psychological well-being in adolescents (Quoidbach, 2015). Positive affect has also been linked to a reduction in depression levels (Fussner et al., 2015). Furthermore, emotion regulation capacity is a significant predictor of resilience, which acts as a protective factor against psychological issues (Mestre et al., 2017). Individuals who experience difficulties with emotion regulation are at an increased risk of developing both chemical and behavioral addictions (Williams & Grisham, 2012). The social context hypothesis suggests that the social environment shapes emotion regulation strategies, serving as a framework within which individuals manage their emotions. In this context, the absence of a supportive social environment during adolescence could significantly hinder an individual's ability to manage their emotions effectively, particularly during moments of heightened emotional intensity. This lack of social context may limit opportunities for emotional support and feedback, thereby increasing the likelihood of difficulties in emotion regulation.

Impaired emotion regulation skills are recognized as a significant risk factor for the development of addictive behaviors (Aldao et al., 2010). Increasing evidence suggests that excessive engagement with social media platforms may lead to symptoms resembling those associated with substance addiction (Andreassen, 2015). A meta-analysis study on digital addictions revealed that ¼ of the general population has digital addiction and that addiction is higher in low/middle-income countries (Meng et al., 2022). In addition, it has been determined that the most used social platform in Turkey is Instagram, and the age group with the highest social media addiction levels is 14-18 years old (Uslu, 2021). These data show that adolescents are particularly vulnerable to social media addiction, which has become a global problem all over the world. There is a moderate positive relationship between social media addiction and depression, anxiety, and stress (Shannon et al., 2022). It has also been found that social media addiction is associated with risky behaviors of adolescents (Vannucci et al., 2022). Problematic social media use has a negative relationship with mental health and a positive relationship with loneliness (Huang et al., 2022). In other words, high levels of social media/internet addiction are also associated with high inaccuracy (Zhang et al., 2022).

Social media addiction and fear of missing out (FoMo) are interrelated (Brailovskaia et al., 2024; Fioravanti et al., 2021), and social media addiction is also shown among the causes of fear of missing out (FoMo) (Oberst et al., 2017). Research indicates that individuals who seek to maintain strong social

connections tend to continuously monitor updates and developments, driven by a desire to stay informed and not miss out on any social happenings (Przybylski et al., 2013). Higher levels of FoMO have been associated with increased engagement on Facebook, as well as declines in overall mood, well-being, and life satisfaction (Przybylski et al., 2013). Furthermore, research highlights a strong correlation between FoMO and social media addiction (Al-Menayes, 2016; Gil et al., 2016). In addition, the number of social media accounts and the frequency of checking these accounts have also been found to be associated with fear of missing out (Hosgor et al., 2017).

Fear of missing out (FoMo) has a negative relationship with social ties (Roberts, 2020). This situation actually emphasizes the role of loneliness in this relationship. Problematic use of social media can lead to a cycle that can be called fear of missing updates on social media after a while (Chan et al., 2022). Social media often elicits the fear of missing out. This is because social media platforms provide ease and abundance of access to other people's positive and beautiful experiences (Midgley et al., 2021).

The Present Study

Adolescence is considered to be a transition period from childhood to adulthood; it could be suggested that research that helps to illuminate the psychological background of adolescents in this stormy period is considered to be essential. In the era of rapidly advancing technology, social media platforms have introduced a new dimension to communication. Recent statistics from Turkey indicate that the most widely used social media and messaging platforms among individuals are WhatsApp (86.2%), YouTube (71.3%), and Instagram (65.4%) (Turkish Statistical Institute Report 2023). Social media addiction has been identified as one of the primary contributors to the fear of missing out (FoMO) (Oberst et al., 2017). Moreover, both the number of social media accounts and the frequency with which these accounts are checked have been found to correlate with FoMO (Hosgor et al., 2017).

Numerous studies have identified positive associations between adolescents' frequent use of social media platforms and the development of addiction and behavioral problems. For instance, a study involving 851 adolescents found a significant positive relationship between the frequency of social media use and heavy drinking behaviors (Brunborg et al., 2017). Adolescents frequently use social media platforms to maintain connections with their peers and others. Although existing literature explores topics such as loneliness, emotion dysregulation, social media addiction, and the fear of missing out (FoMO) during adolescence, no studies to date have examined these four variables collectively. In this context, it is hypothesized that difficulties in emotion regulation and social media addiction will mediate the relationship between loneliness in adolescence and the fear of missing out on developments.

In this context, our research framework is based on the premise that adolescents have a strong need to establish and maintain relationships with their peers. We propose that adolescents who struggle to form such connections and experience heightened levels of loneliness may turn to social media platforms as an alternative means of interaction. We further hypothesize that excessive social media use among adolescents may lead to increased anxiety over staying informed and involved in every development, thereby linking loneliness with elevated levels of FoMO. Additionally, we hypothesize that adolescents who feel lonely may exhibit lower coping and emotion regulation skills when faced with intense emotions, placing them at greater risk of developing addictive behaviors through excessive social media use.

In summary, we predict that increased loneliness in adolescents will contribute to a heightened fear of missing out, driven by the desire to stay connected. This relationship is expected to be mediated by difficulties in emotion regulation and the development of social media addiction.

In this context, based on previous findings in the literature, the following research questions (RQs) were investigated:

RQ1. What is the mediating role of emotion dysregulation in the relationship between loneliness and fear of missing out in adolescents?

RQ2. What is the mediating role of social media addiction in the relationship between loneliness and fear of missing out in adolescents?

RQ3. What is the mediating role of emotion dysregulation and social media addiction in the relationship between loneliness and fear of missing out in adolescence?

RESEARCH METHOD

Participants and Procedure

Data were collected in person from a public school in Istanbul. Exclusion criteria for participants included having a psychiatric diagnosis, a learning disability, any form of intellectual disability, or a lack of full proficiency in the Turkish language. Prior to the study, an informed consent form detailing the study's purpose and the scales to be administered was provided to the parents of the students, from whom written approval was obtained. Additionally, students participating in the study were also given an informed consent form and were informed that they could withdraw from the study at any time. A total of 342 secondary school students participated in the study (age range: 10-14, mean age: 12.72, standard deviation: 1.10), with 171 (50%) girls and 171 (50%) boys. The research scales were distributed to the students, and the researchers helped those who needed help answering the questions. The research design employed in this study is correlational. Correlational studies are characterized by the examination of variable levels without any manipulation by the researcher (Tabachnick and Fidell, 2013).

The study sample was selected through the cluster sampling method from adolescents aged 10 to 14 years. The cluster sampling method involves randomly selecting 30 clusters based on the defined age groups of interest and subsequently selecting at least 7 individuals of the appropriate age from each of these clusters to obtain the desired individual data (Henderson et al., 1982). The research was conducted in a school consisting of 30 classrooms. From each of these classrooms, 12 students were randomly selected, with careful consideration given to maintaining gender balance in the sample. This resulted in an initial selection of 360 students. However, 18 students chose to withdraw from the study, either voluntarily or due to the lack of parental consent. Consequently, the final sample for the study consisted of 342 students who remained actively involved in the research.

Ethics

The study procedures were conducted in accordance with the Declaration of Helsinki and received approval from [edited for blind review]. Furthermore, an informed consent form was provided to all participants prior to administering the scales.

Measures

UCLA Loneliness Scale Short Form (ULS-8)

The short form of the scale, developed by Hays and Dimetto (1987), was adapted from the original 20-item long form. The 8-item scale, which was translated into Turkish by Doğan et al. (2011), is a self-report measure containing 2 reverse-scored items. After reversing these items, higher total scores indicate greater levels of loneliness. The items are rated on a 4-point Likert scale ranging from 1 (not at all appropriate) to 4

(completely appropriate). In the Turkish adaptation, the Cronbach's alpha internal consistency coefficient was calculated as 0.72. For the present study, Cronbach's alpha was found to be 0.70.

Difficulties in Emotion Regulation Scale Brief Form (DERS-16)

The scale developed by Bjureberg et al. (2016) serves as a short form of the Difficulties in Emotion Regulation Scale (DERS) created by Gratz and Roemer (2004) and was adapted into Turkish by Yiğit and Güzey Yiğit (2019). This 16-item self-report measure assesses emotional dysregulation across five sub-dimensions: lack of clarity in emotional reactions (measured by "clarity"), lack of acceptance of emotional reactions (measured by "lack of acceptance"), limited access to effective emotion regulation strategies (measured by "strategies"), difficulties in controlling impulses while experiencing negative emotions (measured by "impulses"), and challenges in engaging in goal-directed behaviors during negative emotional experiences (measured by "goals"). The items are rated on a 5-point Likert scale, ranging from 1 (almost never) to 5 (almost always), with higher scores indicating greater emotional dysregulation. In the dataset for this study, the Cronbach's alpha coefficient was found to be .87.

Fear of Missing Out Scale (FoMos)

The scale is a self-report measure consisting of 10 items developed by Przybylski et al. (2013). The Turkish version of this scale was adapted by Can and Satici (2019) and is designed to assess individuals' fear of missing out on developments in social environments. It features a single-factor structure and contains no reverse-scored items. The items are rated on a 5-point Likert scale, with responses ranging from 1 (not at all true) to 5 (absolutely true). Higher scores indicate an increased level of fear of missing out on developments. In the Turkish version, the Cronbach's alpha internal consistency coefficient was calculated to be 0.90, while for the current study, it was found to be 0.68.

Social Media Addiction Scale for Adolescents

The scale is a self-report measure consisting of 9 items developed by Özgenel et al. (2019) and is designed to assess adolescents' social media addictions in accordance with DSM-5 diagnostic criteria. It features a single-factor structure and does not include any reverse-scored items. The items are rated on a 5-point Likert scale, with responses ranging from 1 (never) to 5 (always). An increase in scores indicates a higher level of social media addiction. The Cronbach's alpha internal consistency coefficient was calculated as .90 by the scale developers, while in the current study, it was found to be .78.

Data Analysis

The data were analyzed using IBM SPSS Statistics version 26 and AMOS Graphics version 22. In the data analysis, the normality assumption was evaluated through skewness and kurtosis values. After confirming normality, descriptive statistics were calculated, and Pearson correlation coefficients among loneliness, emotional dysregulation, fear of missing out, and social media addiction in adolescents were analyzed. Furthermore, reliability analyses were conducted for all scales using Cronbach's alpha (α) and Guttman's lambda (λ), and confirmatory factor analyses (CFA) were also carried out. Subsequently, the structural model was tested using the two-stage approach proposed by Anderson and Gerbing (1988). The fit of these models to the data was assessed by evaluating goodness-of-fit indices against predetermined acceptance criteria: $2 \leq \chi^2/df \leq 3$; $0.05 \leq RMSEA \leq 0.08$; $0.90 \leq IFI \leq 0.95$; $0.90 \leq CFI \leq 0.95$; $0.90 \leq GFI \leq 0.95$; $0.85 \leq AGFI \leq 0.90$ (Bentler & Bonett, 1980; Kline, 2015; Schermelleh et al., 2013). Furthermore, the mediating roles of loneliness, emotional dysregulation, fear of missing out, and social media addiction in adolescents

were examined using bootstrap analysis. A 95% bias-corrected confidence interval (CI) with 5000 resamples was employed to estimate indirect effects.

FINDINGS

First, a preliminary analysis of the data was conducted. Within the scope of these preliminary analyses, normality assumption and multicollinearity were examined. For normality tests, skewness values ranged between 0.55 and 0.28, and kurtosis values ranged between 0.05 and -0.28 (see Table 1). According to Tabachnick and Fidell (2013), skewness and kurtosis values between -1.5 and +1.5 indicate that the data are normally distributed. The correlation values of the study are presented in Table 1. The Mahalanobis distance was calculated, revealing four values below 0.01. These data points were retained in the dataset, as they were deemed unlikely to significantly impact the overall mean. Accordingly, all variables in the study were positively correlated with each other. Specific details of the relationships between the subscales are given in Table 1. Furthermore, the results of the reliability analysis and confirmatory factor analysis of the scales are presented in Table 2 and Table 3.

Table 1. Descriptive Statistics

Variables	Descriptive Statistics and Reliabilities					Correlations		
	Mean	SD	Skewness	Kurtosis	α	1	2	3
1. Loneliness	16.14	4.38	0.36	-0.20	.70	–		
2. Emotion Dysregulation	40.51	12.76	0.55	-0.08	.87	0.47**	–	
3. Social Media Addiction	22.02	7.07	0.52	-0.28	.78	0.47**	0.49**	–
4. Fear of Missing Out	23.42	6.24	0.28	0.51	.68	0.28**	0.54**	0.47**

Note. * $p < .05$, ** $p < .01$

Table 2. Cronbach's alphas and Guttman lambda Reliability Test

Scale	α	λ
ULS-8	0.70	0.72
DERS-16	0.87	0.88
Social Media Addiction	0.78	0.79
FoMos	0.68	0.70

Table 3. Factor loadings, descriptive statistics, and item-total correlations

Item	Factor Loadings	Mean	SD	Item Total Correlations	Factor
ULS8-1	0.463	1.85	0.96	0.214	ULS8 PARCEL 1
ULS8-2	0.528	1.85	0.86	0.278	
ULS8-3	0.108	2.10	0.94	0.012	
ULS8-4	0.732	2.06	0.93	0.536	
ULS8-5	0.670	1.88	0.94	0.449	ULS8 PARCEL 2
ULS8-6	0.137	2.37	0.95	0.019	
ULS8-7	0.391	2.02	1.11	0.153	
ULS8-8	0.713	1.99	0.93	0.508	
DERS16-CLARITY	0.615	5.00	2.15	0.378	DERS-16
DERS16-GOALS	0.675	9.32	3.27	0.455	
DERS16-IMPULSES	0.680	7.29	3.61	0.462	
DERS16-STRATEGIES	0.812	12.09	4.57	0.660	
DERS16-NON ACCEPTENCE	0.595	6.49	3.13	0.353	
SOCIAL MEDIA ADDICTION-1	0.538	2.00	1.12	0.290	SOCIAL MEDIA ADDICTION PARCEL 1
SOCIAL MEDIA ADDICTION-2	0.372	2.29	1.09	0.138	
SOCIAL MEDIA ADDICTION-3	0.323	1.86	1.15	0.104	
SOCIAL MEDIA ADDICTION-4	0.694	3.12	1.25	0.481	
SOCIAL MEDIA ADDICTION-5	0.618	2.57	1.36	0.381	
SOCIAL MEDIA ADDICTION-6	0.621	2.78	1.39	0.386	SOCIAL MEDIA ADDICTION PARCEL 2
SOCIAL MEDIA ADDICTION-7	0.712	2.94	1.40	0.506	
SOCIAL MEDIA ADDICTION-8	0.421	2.18	1.40	0.177	
SOCIAL MEDIA ADDICTION-9	0.444	2.24	1.41	0.197	
FoMo1	0.643	1.61	1.02	0.414	FoMo PARCEL 1
FoMo2	0.794	1.59	0.92	0.630	
FoMo3	0.491	2.23	1.35	0.241	
FoMo4	0.364	2.00	1.04	0.132	
FoMo5	0.183	3.24	1.41	0.033	
FoMo6	0.227	2.37	1.24	0.051	FoMo PARCEL 1
FoMo7	0.215	3.18	1.42	0.046	
FoMo8	0.159	1.96	1.33	0.025	
FoMo9	0.174	3.29	1.30	0.030	
FoMo10	0.373	1.91	1.12	0.139	

Measurement Model

The measurement model includes 4 latent variables (loneliness, emotion dysregulation, social media addiction, fear of missing out). The goodness of fit values of the measurement model are acceptable. The fit indices for the measurement model are as follows: χ^2 (28, N=342) = 106.721; χ^2/df = 2.808; CFI = 0.950; GFI = 0.948; AGFI = 0.910; TLI = 0.928; IFI = 0.951; SRMR = 0.0383; RMSEA = 0.073). Furthermore, the standardized factor loadings of the measurement model ranged from 0.58 to 0.92, and all t-values were significant. These findings suggest that the observed variables in the current study significantly represent the latent variables and thus validate the measurement model.

Structural Model

A serial mediation model was designed to analyze the variables of the study. At this stage, the full mediation model was used to examine direct and indirect effects. Accordingly, the mediating roles of emotion dysregulation and social media addiction in the relationship between loneliness and fear of missing out in adolescents were examined. As a result of the analyses, it was found that the full mediation model showed good fit (χ^2 [27, N = 342] = 109.839; χ^2/df = 2.816; CFI = 0.949; GFI = 0.946; AGFI = 0.909; NFI = 0.924; TLI = 0.928; IFI = 0.949; SRMR = 0.0397; RMSEA = 0.073). In conclusion, emotion dysregulation and social media addiction fully mediate the relationship between loneliness and fear of missing out in adolescents. The full mediation model shows that higher levels of loneliness in adolescents can predict higher emotion dysregulation (γ = .60, p < .01) and higher social media addiction (γ = .34, p < .01) (Figure 1). Furthermore, higher emotion dysregulation may be associated with higher social media addiction (γ = .58, p < .01). As expected, higher social media addiction could predict higher fear of missing out on developments (γ = .30, p < .01). The path coefficients statistics are shown in Figure 1.

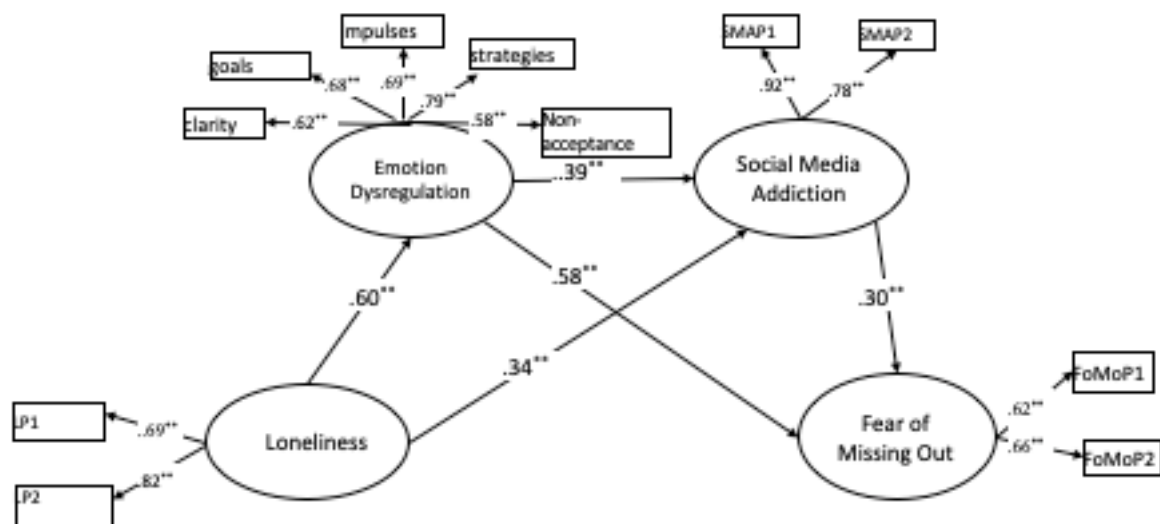


Figure 1. Structural equation modeling for the serial mediation model.

Note. * p < .05, ** p < .01, LP: Parcel of Loneliness, SMAP: Parcel of Social Media Addiction, FoMo: Parcel of Fear of Missing Out

Bootstrap Analysis

The mediating roles of emotional dysregulation and social media addiction in the relationship between loneliness and fear of missing out in adolescents were tested for significance using bootstrapping. A bootstrap sample size of 5000 was used to generate confidence intervals for asymmetric coefficient multiplication, thus increasing the precision of estimating the indirect relationship. An effect is considered statistically significant when the 95% confidence interval for the parameter estimate does not include zero. Table 4 presents the data for both direct and indirect roles with 95% confidence intervals. Considering all the results, it was found that emotional dysregulation and social media addiction fully mediate the relationship between loneliness and fear of missing developments in adolescents.

Table 4

Parameters and 95% CI for the paths of the final model

Model Pathways	Estimated	95% CI	
		Lower	Upper
Direct link			
Loneliness→Emotion Dysregulation	0.605	0.510	0.693
Loneliness →Social Media Addiction	0.349	0.192	0.509
Emotion Dysregulation → Social Media Addiction	0.392	0.211	0.252
Social Media Addiction →Fear of Missing Out	0.307	0.094	0.551
Indirect link			
Loneliness→Emotion Dysregulation → Social Media Addiction →Fear of Missing Out	0.534	0.445	0.629

DISCUSSION

Adolescence is a critical developmental phase characterized by the search for identity, marked by a turbulent transition from childhood to adulthood. Adolescence is a stormy period of transition from childhood to adulthood for individuals. This period includes the search for identity characterized by biological transition. Adolescents may experience adaptation problems from time to time. The impact of the rapid development of technology on adolescence has been a popular research topic. This study aimed to examine the mediating roles of emotion dysregulation and social media addiction in the relationship between loneliness and fear of missing out on developments in adolescents. The results revealed both direct and indirect relationships between loneliness, fear of missing out, emotion dysregulation, and social media addiction in adolescence. In other words, higher loneliness may be associated with higher emotion dysregulation, higher social media addiction, and higher fear of missing out. The existing literature supports the findings of the study. In a study conducted with Turkish adolescents, emotion regulation strategies were found to manage the relationship between trait anger and loneliness (Karababa, 2020). In a longitudinal study, emotion regulation was found to mediate the relationship between loneliness and depression and stress (Velotti et al., 2021). In addition, positive relationships were found between loneliness and lack of emotion regulation strategies and food addiction (Tatsi et al., 2019). In another study, difficulties in emotion regulation were positively associated with adolescent cyberbullying, and loneliness and depression mediated this relationship (Jiang et al., 2022). It is thought that the lack of social support in adolescents leads to ineffective use of emotion regulation strategies, and this situation leads to emotion regulation difficulties. When the relationship between loneliness and social media addiction in adolescents is examined, it is seen

that the existing literature supports the results of the research. In a study, it was found that loneliness mediated the relationship between peer bullying and social media addiction (Xu et al., 2022). In another study conducted with adolescents, it was found that interpersonal competence, loneliness, fear of negative evaluation, and reward and punishment significantly predicted social media addiction (Savcı et al., 2018). Again, a strong positive correlation was found between smartphone addiction and loneliness (Hidayati, 2019). Moreover, another study found that higher levels of FoMO among adolescents were associated with a decrease in self-worth and an increase in feelings of loneliness (Çiftçi & Kumcağız, 2023). Another study conducted during the pandemic period revealed that promoting the use of messaging applications over social networking platforms was linked to reduced levels of loneliness and FoMO among individuals (Fumagalli et al., 2021). Findings from another study conducted with adolescents indicated that problematic internet use fully mediated the relationship between loneliness and FoMO (Tatlı & Ergin, 2023). Furthermore, FoMO levels in adolescents were positively correlated with peer exclusion and emotional symptoms (Marengo et al., 2021), while being negatively correlated with psychological well-being and positive interpersonal relationships (Sutanto et al., 2020).

The findings of this study reveal that emotional dysregulation and social media addiction serve as mediating factors in the positive association between loneliness and fear of missing out (FoMO) among adolescents. Specifically, as loneliness increases during adolescence, individuals are more likely to experience heightened difficulties in regulating their emotions. This dysregulation may drive adolescents to seek solace or connection through social media platforms, which, when used excessively, can result in social media addiction. Consequently, adolescents who face challenges in emotion regulation and develop addictive behaviors towards social media may become increasingly vulnerable to experiencing FoMO, particularly as they strive to maintain connections with their peers and stay informed about social developments.

These results underscore the intricate interplay between loneliness, emotional dysregulation, and social media behaviors during this critical developmental period. Adolescence is marked by a heightened need for peer relationships and social validation, as emphasized in prior literature. The findings of this study suggest that disruptions in these processes—such as difficulty in forming meaningful connections or over-reliance on virtual interactions—may exacerbate psychological vulnerabilities, including FoMO.

Given the developmental importance of peer interactions, it is imperative to implement targeted interventions aimed at fostering adolescents' emotional regulation skills and promoting healthier socialization practices. For instance, programs that encourage active participation in peer group activities, support the development of face-to-face social skills, and provide education on mindful social media use could mitigate the risks associated with loneliness and FoMO. Furthermore, preventive strategies should also consider the role of family and school environments in shaping adolescents' emotional and social experiences. Strengthening these protective factors may help adolescents build resilience against the negative outcomes highlighted in this study, contributing to their overall psychological well-being.

Limitations

The present study has certain limitations. First, the use of self-report questionnaires may introduce subjective biases. Second, the cross-sectional design of the study limits the ability to establish causal relationships. Future research should employ experimental and longitudinal designs to more effectively investigate causal relationships. Finally, as there are no scales adapted to Turkish that specifically measure loneliness, emotion dysregulation, and FoMO in this age group, scales designed for adults were utilized following reliability and validity assessments.

Implications

This study demonstrated that loneliness predicts FoMO in adolescents through the mediating roles of emotion dysregulation and social media addiction. Accordingly, loneliness, emotion dysregulation, and social media addiction can be identified as risk factors contributing to fear of missing out. Mental health professionals working with adolescents are encouraged to integrate both protective and risk factors into their interventions. Moreover, considering the turbulent nature of adolescence as a transitional phase, preventive measures should be prioritized. Developing and implementing psycho-educational programs aimed at enhancing social support resources to mitigate loneliness, improving emotion regulation skills, and monitoring social media usage duration may prove particularly effective. Such initiatives would not only address immediate psychological challenges but also foster long-term resilience and emotional maturity in adolescents.

Conclusion

Peer relationships hold significant importance for children during adolescence, a critical developmental stage characterized by heightened sensitivity to social connections. This study focused on the potential consequences faced by adolescents who experience loneliness during this period. The findings indicate that loneliness in adolescence contributes to difficulties in emotion regulation and an increased susceptibility to the fear of missing out, mediated through social media addiction. The results underscore the importance of fostering protective factors such as meaningful peer relationships, enhanced emotion regulation skills, and balanced social media use. Adolescents who maintain meaningful peer connections were found to effectively manage their emotional challenges and avoid the fear of missing out, likely due to their developed emotion regulation capacities and controlled use of social media platforms. These findings suggest that mental health professionals, particularly those working in school settings, should remain vigilant about adolescents who struggle to form meaningful social bonds with their peers. Such difficulties may place these individuals at greater risk of emotional dysregulation, social media dependency, and heightened anxiety. Preventive interventions targeting these vulnerabilities could prove highly effective. School-based programs designed to strengthen peer relationships, increase social support networks, and promote healthy emotional coping strategies could address the root causes of these issues. Additionally, psycho-educational initiatives focusing on the responsible use of social media and the development of emotion regulation skills may serve as valuable tools to mitigate the adverse effects of loneliness and social media addiction.

In conclusion, addressing these challenges through targeted, school-based interventions can contribute to improved psychological well-being and resilience in adolescents, equipping them to navigate the complex social dynamics of this transitional phase.

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