The Mediating Effect of Loneliness on the Relationship Between Social Media Addiction and Attachment Styles: A Multiple Mediation Model Study[1]

Yalnızlığın Sosyal Medya Bağımlılığı ve Bağlanma Stilleri Arasındaki İlişkide Aracı Etkisi: Çoklu Aracılık Modeli Çalışması

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Öz

İnsanlar, sosyal varlıklar olarak, doğal olarak başkalarıyla etkileşime girer ve bu etkileşimleri farklı şekillerde sürdürürler. Teknolojik ilerlemeyle birlikte, sosyal medya platformları insanların iletişim ihtiyaçlarını karşılamak için vazgeçilmez araçlar haline gelmiştir. Sosyal medya platformlarına ve çeşitli uygulamalara kolay erişim, daha sık kullanıma yol açmaktadır. Sosyal medyanın bağımlılık gibi olumsuz yönleri de belirginleşmektedir. Sosyal medyada sık sık olumsuz etkileşimler yaşayan bireyler, yüz yüze iletişim yerine çevrimiçi iletişimi tercih etme eğilimindedir; bu da yalnızlık duygularının artmasına yol açabilir. Olumsuz çocukluk deneyimleri veya ebeveynlerle güvenli bağlar kurmada yaşanan zorluklar, ileriki yaşamda artan risklere ve azalan psikolojik dayanıklılığa neden olabilir. Bu nedenle, bu araştırma bağlanma stilleri ile sosyal medya bağımlılığı arasındaki ilişkide yalnızlığın aracı rolünü incelemeyi amaçlamıştır. Çalışma grubu, 18 yaş ve üzeri 554 katılımcıdan oluşmuştur (Ortalama = 25,10, Standart Sapma = 7,60). Araştırma, bağlanma stilleri, yalnızlık düzeyleri ve sosyal medya bağımlılığının farklı cinsiyetler, yaşlar, günlük internet ve sosyal medya kullanımı ve sosyal medya hesaplarının süresi açısından tutarlı olduğunu bulmuştur. Sosyal medya bağımlılığı, güvenli bağlanma ile negatif, diğer bağlanma stilleriyle ise pozitif bir ilişki göstermektedir. Yalnızlık ve bağlanma stilleri arasında da benzer korelasyonlar bulunmuştur. Sonuçlar, yalnızlığın güvenli bağlanma ve sosyal medya bağımlılığı arasındaki ilişkide aracı bir rol oynadığını göstermektedir. Bu çalışmanın bulguları oldukça önemlidir ve yalnızlığın zararlı etkilerini azaltmaya yönelik müdahalelerin sosyal medya bağımlılığına karşı önleyici bir önlem olarak kullanılabileceğini, böylece ruh sağlığı uzmanları ve politika yapıcılar için pratik sonuçlar doğurabileceğini düşündürmektedir.

Anahtar Kelimeler

Sosyal Medya, Sosyal Medya Bağımlılığı, Yalnızlık, Bağlanma Stilleri.

Abstract

Humans, as social beings, naturally engage with others and sustain these interactions in different ways. Alongside technological progress, social media platforms have become essential tools for meeting people's communication needs. Easy access to social media platforms and their various apps results in more frequent use. The negative aspects of social media, like addiction, become evident. Individuals who frequently experience negative interactions on social media tend to prefer online communication over in-person contact, which may lead to increased feelings of loneliness. Adverse childhood experiences or challenges in establishing secure attachments with parents may result in heightened risks and diminished psychological resilience in later life. Therefore, this research sought to examine the mediating role of loneliness in the relationship between attachment styles and social media addiction. The study group consisted of 554 participants aged 18 and above (M = 25.10, SD = 7.60). The research found that attachment styles, loneliness levels, and social media addiction were consistent across different genders, ages, daily internet and social media use, and the duration of social media accounts. Social media addiction is negatively associated with secure attachment and positively associated with other attachment styles. Similar correlations are found between loneliness and attachment styles. Results indicate that loneliness acts as a mediator in the relationship between secure attachment and social media addiction. The findings of the present study are of considerable significance and suggest that interventions designed to mitigate the detrimental effects of loneliness could serve as a preventive measure against social media addiction, thereby providing practical implications for mental health practitioners and policymakers.

Keywords

Social Media, Social Media Addiction, Loneliness, Attachment Styles.

Introduction

Humans are a social entity that creates bonds with others (Nas & Sak, 2021; Vangölü & Tanhan, 2025). Social media constitutes a communication platform characterized by an extensive network of users who share audio, text, images, or videos through user-generated content with people (Semiz & Bora, 2014). The ability to easily connect to the internet using devices such as phones and tablets has made the use of social media applications more accessible, increasing the number of users and making social media a vital part of daily life (Altan, 2024). The increasing usage and frequency have led to a rise in the time individuals spend on social media (İnce & Koçak, 2017). The increase in the time individuals spend in virtual environments also increases the likelihood of excessive use and addiction to social media (Çömlekçi & Başol, 2019) and digital addictions (Kaya et al., 2023). Spending a long time on social media, feeling an intense desire and wish to spend time on it, and making an effort in this direction can be called social media addiction (Tayhan, 2023). Social media addiction is a growing problem (Sezgin et al., 2024; Vangölü et al., 2025). The addiction to social media has introduced numerous issues, including the substitution of in-person communication with social networks (Baz, 2018). The increasing use of social media in contemporary society has led to a notable decline in face-to-face interpersonal communication (Babacan, 2016).

The degree of loneliness that accompanies moving away from social interactions also increases. Individuals may use social media platforms to fulfill their communication needs and reduce feelings of loneliness (Eni, 2017). Loneliness is described as an uncomfortable emotional state that occurs when a person's current relationships fall short of their desired relationships (Peplau & Perlman, 1982). Upon review of the literature, it is observed that the concept of loneliness is discussed within two sub-dimensions: social loneliness and emotional loneliness (Eminoğlu, 2018). While social loneliness is characterized by the absence of social relationships, including challenges in forming general connections such as friendships and neighborly interactions, as well as the individual's lack of acceptance within society, emotional loneliness is defined as the absence of close, intimate, and special relationships (Kalınkara & Sarı, 2019; Şişman & Turan, 2004). Weiss (1973) emphasized that environmental factors play a significant role in an individual's experience of loneliness and also noted that emotional loneliness is closely tied to attachment.

Attachment constitutes a consistent and enduring emotional bond that persists throughout the human lifespan. It is founded on the relationship between the caregiver and the child and is characterized by the child's pursuit of closeness (Kesebir et al., 2011). In essence, the concept of attachment elucidates the positive relationship that begins with the infant's orientation toward the caregiver and extends to its emotional aspect (Soysal et al., 2005; Tüzün & Sayar, 2006). This becomes especially clear during stressful situations and greatly affects the social relationships a person builds and maintains throughout their life (Nacar & Gökkaya, 2019). Bowlby (2012) characterizes attachment behavior as the desire to establish and sustain closeness with another individual. An examination of the evolving attachment relationship, which takes into account individual differences, elucidated the observability and testability of attachment through the 'Strange Situation Procedure'. As a result of the experiment, three significant attachment styles were identified, distinguished by the differing responses of the infants: secure, anxious, and avoidant (Subaşı, 2012). The attachment style developed in the first few years of life influences the relationships that will be established later in life. For instance, individuals with secure attachment tend to become more genuine, self-confident, and sociable in their adult relationships. Conversely, those with insecure attachment may face difficulties in interpersonal adjustment and relationship stability during adulthood (Erözkan, 2011). People who experience insecure attachment might experience negative effects such as trouble forming close relationships, feelings of loneliness, and anxiety (Görür, 2019). Those who have not developed a secure attachment may develop addictions to objects, people, or substances later in life, struggle to regulate their emotions, and feel lonely (Dinç, 2017).

1. Literature

1.1. Social Media Addiction

The addiction is a chronic, regenerative brain disease characterized by an impulsive, irresistible desire and use for an object, person, or entity, despite its harmful consequences (Tarhan & Nurmedov, 2021). The reason it is referred to as a brain disease is that substances and virtual exercises progressively impair the structure and function of the brain over time. The concept of addiction includes substance-related addictions and non-substance-related behavioral addictions. For example, while alcohol, cigarettes, drugs, and stimulants fall into the category of substance addiction, addictions such as gambling addiction, social media addiction, sex addiction, shopping addiction, and internet addiction fall into the category of behavioral addictions (Söyler & Kaptanoğlu, 2018).

Social media addiction occurs when individuals spend excessive time on social media platforms, negatively impacting their daily activities and leading to a strong desire to remain connected to these platforms (Andreassen et al., 2014). Situations like not being able to quit or control a substance or behavior, feeling addicted to it as a habit, and damage to other life areas, seen in both substance and non-substance addictions (gambling, internet, social media), are also present in social media addiction (Candemir, 2022; Karadağ & Akçinar, 2019). A study highlighted that social media addiction is more harmful than cigarette and alcohol addiction, and that individuals' desire to stay on social networks exceeds their desire to rest and sleep (Ünal, 2015). Social media addiction constitutes a psychological and communicative issue characterized by cognitive, emotional, communicative, and behavioral disturbances. It can lead to various problems, including mood disorders, communication challenges, and loneliness, thereby disrupting an individual's work, social, and personal life (Ünlü, 2018). Social media addiction, a type of addiction similar to internet addiction in symptoms and diagnosis, has many causes at both the personal and social levels (Arklan et al., 2020; Kuss & Griffiths, 2012). Addictions result from the interaction of various factors, including an individual's biological and genetic predisposition, psychological structure (e.g., unconscious impulses, personality traits, expectations, attitudes, and beliefs), social conditions (situational factors), and the structural characteristics of the activity (Candemir, 2022).

1.2. Attachment

The concept of attachment, which is often employed to signify genuine feelings, intimacy, and affection among individuals throughout life's experiences, differs from the concept of attachment as defined within Attachment Theory (Yüksel, 2024). It emphasizes the relationship between the child and the caregiver (Doksat & Çiftçi, 2016). People need to live together in society and interact with others. Individuals' communication with others forms the basis for attachment theory (Güçlü, 2024).

Attachment theory, a psychological framework established by John Bowlby, elucidates the development of emotional bonds within individuals and examines the subsequent impact of these bonds in later stages of life (Kiraz, 2024). This theory highlights that a child's need for security forms through interactions with caregivers, linking instinctive responses such as sucking, clinging, following, crying, and smiling to attachment (Bowlby, 1958). Attachment is a concept that reflects early caregiver relationships, developed through interactions with innate traits, shaping future relationships (Kesebir et al., 2011). Based on this model, Bartholomew and Horowitz (1991) developed a two-dimensional and four-dimensional model of attachment style for adults, which combines mental representations of the self and others. The distinction between positive and negative models of self and others is articulated, indicating that individuals possessing a positive self-image perceive themselves as deserving of love. In contrast, those with a negative self-image regard themselves as unworthy (see Figure 1).
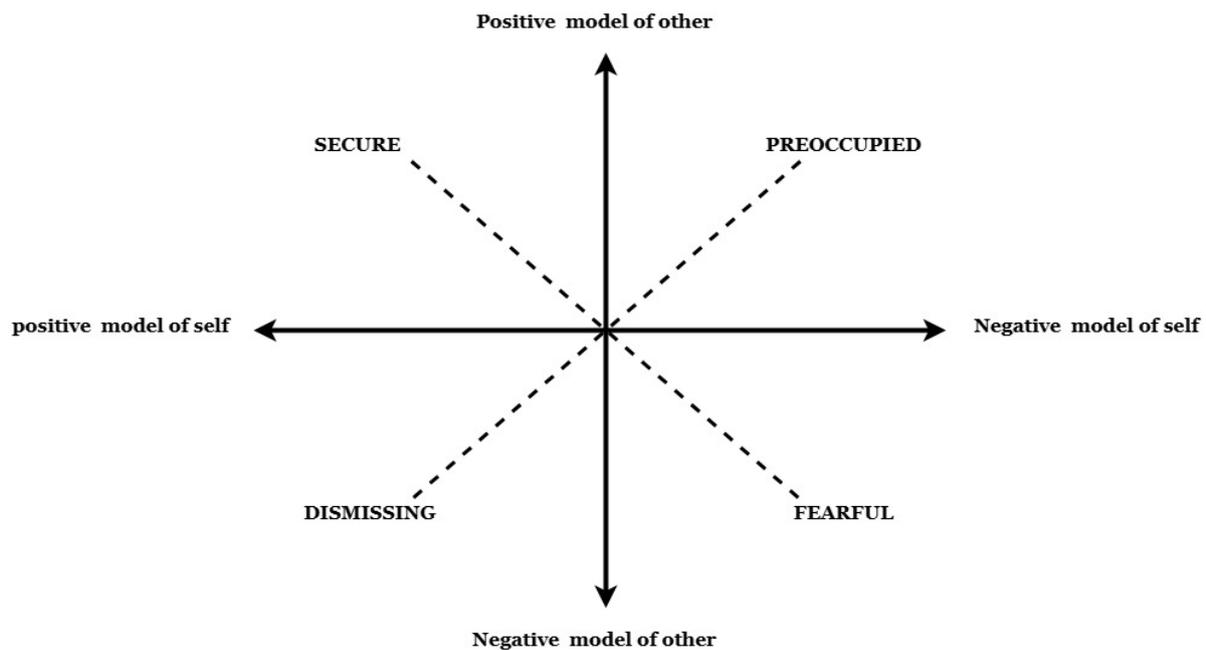

Figure 1. The model of adult attachment

Reference: Bartholomew, K., & Shaver, P. R. (1998). *Attachment Theory and Close Relationships: Methods for Assessing Adult Attachment.* New York: Guilford Press.

1.3. Loneliness

Loneliness is a general term for the unpleasant psychological state that arises from a discrepancy between the relationships an individual has and the relationships they wish to have (Peplau & Perlman, 1984). In an alternative definition, loneliness is regarded as a universally distressing emotion, although it lacks a clear, objective definition. It is characterized by a pattern of anxiety over whether the person's expectations about how others will behave are met, accompanied by feelings of social isolation (Eskin, 2001). This loneliness is explained by the emergence of a gap between ideal socialization and current socialization (Perlman, 2004). It is a feeling experienced when one is with others rather than simply being physically alone, and is based on the inadequacy of social relationships and their failure to provide sufficient satisfaction (Buluş, 1997). Weiss (1973) states that loneliness arises from a combination of personal deficiencies, such as a lack of social skills, and conditions like divorce and social mobility. Ponzetti (1990) listed the factors affecting loneliness as personal expectations for closeness and friendship, past experiences, personal needs, and normative cultural structures.

1.4. The mediating role of loneliness

Excessive use of social media may lead to addiction. Addiction is primarily caused by conflicting situations such as loneliness and separation, as well as environmental and biological factors (Dilsiz & Kandemir, 2020). Social media tools are employed for numerous purposes; however, their increased utilization gradually diminishes the sense of togetherness, leading individuals to experience loneliness (Türkel & Dilmaç, 2019). Loneliness, a problem associated with excessive social media use, is defined as an individual's separation from social ties (Güner et al., 2022). Individuals who feel lonely tend to spend more time on social media than others because it facilitates interaction (Bozkurt & Afacan, 2024). In summary, it is possible to claim that individuals who spend long periods on social media, while also experiencing loneliness, often relieve their feelings by increasing their social media use. Furthermore, individuals who have not developed a secure attachment early in life may face psychological issues such as addiction and loneliness due to dysfunctional reactions when dealing with problems in close relationships they form in adulthood or when under stress (Kocairi et al., 2020). Attachment styles are seen as one of the factors that influence a person's sense of loneliness (Bingül & Çelik, 2021). Those who have not developed secure attachments are more likely to become addicted to social media and experience stronger feelings of loneliness (Morsünbül, 2014). People who feel lonely often develop poor relationships and face negative outcomes such as depression, addiction, and suicide (Erözkan, 2010).

An examination of the literature on the concepts of social media addiction, loneliness, and attachment styles reveals that these concepts are interconnected and exert a mutual influence on one another. Individuals who have not formed a secure attachment might feel lonely as introverts later in life. Relationships formed due to an inability to connect securely can be insincere, leading individuals to spend more time on social media and potentially develop an addiction to these platforms. Based on theoretical frameworks and empirical research, this study aims to examine the relationships between attachment styles and loneliness, which are presumed to be associated with social media addiction. Additionally, it aims to address the following research questions:

(i)   RQ1 Is there a relationship between attachment styles and social media addiction?

(ii)   RQ2: Is there a relationship between loneliness and social media addiction?

(iii)   RQ3: Does loneliness mediate the relationship between social media addiction and attachment styles?

2. Method

2.1. *Participants*

The study sample consisted of a total of 632 individuals selected using the convenience sampling method, a non-random sampling technique. Sixty-four individuals who did not respond appropriately to the control items used in the scales were excluded from the study. Afterward, extreme value analysis was performed, and data from 14 individuals identified as outliers were excluded from the study. As a result, the study was conducted with a total of 554 participants, including 419 females and 135 males.

2.2. Measures

2.2.1 Social Media Addiction Scale (SMAS)

The original form of the SMAS was developed by Van Den Eijnden et al. (2016). Taş (2017) adapted the scale to Turkish culture. Responses to the 9-item scale are scored as "*yes=1* and *no=0*". Those who answer "*yes*" to 5 or more items are considered social media addicts. Confirmatory factor analysis was employed to validate the measurements obtained from the social media scale, while McDonald's omega and Cronbach's alpha coefficients were used to assess reliability. The CFA analysis performed for the measurement tool revealed RMSEA = 0.037, SRMR = 00.055, CFI = 0.98, NNFI = 0.98, NFI = 0.97, and GFI = 0.98. These findings indicate that the measurements obtained from the measurement tool are valid. McDonald's omega and Cronbach's alpha coefficients were used for reliability. Accordingly, ω = .83 and α =.83. In this context, it was concluded that the reliability values obtained from the social media scale met high reliability levels.

2.2.2 Relationship Scales Questionnaire (RSQ)

The Relationship Scales Questionnaire was developed by Griffin and Bartholomew (1994). It was adapted into Turkish by Sümer and Güngör (1999). It aims to measure adult attachment styles. An increase in the score on the scale indicates an increase in attachment style. This scale consists of 17 items and identifies four attachment styles: secure attachment, dismissive attachment, fearful attachment, and preoccupied attachment. As a result of the CFA analysis conducted for the measurement tool, RMSEA = 0.081, SRMR = 0.066, CFI = 0.95, NNFI = 0.94, NFI = 0.93, and GFI = 0.84 were found. These findings indicate that the measurements obtained from the measurement tool are valid. For fearful attachment, ω = .61 α = .60, for secure attachment ω = .66 α = .66, for dismissing attachment ω = .78 α = .79, and for preoccupied attachment ω = .64 α = .64. The reliability coefficients obtained for the measurement tool were found to vary between .60 and .79. In the literature, a reliability value of .70 and above indicates a high level of reliability (Salvucci et al., 1997), while values between .60 and .70 represent an acceptable level of reliability (Griethuijsen et al., 2014). In this context, it was concluded that the reliability values obtained from the measurement tool used met high and acceptable levels of reliability.

2.2.3 UCLA Loneliness Scale (ULS)

ULS was developed by Hays and DiMatteo (1987). Its Turkish adaptation was conducted by Yıldız and Duy (2014). The scale comprises seven items, with a minimum score of 7 and a maximum score of 28. A low score on the scale shows a low level of loneliness, while a higher score indicates a greater feeling of loneliness. The CFA analysis conducted for the measurement tool revealed RMSEA = 0.050, SRMR = 0.032, CFI = 0.96, NNFI = 0.95, NFI = 0.94, and GFI = 0.99. These findings indicate that the measurements obtained from the measurement tool are valid. McDonald's omega and Cronbach's alpha coefficients were used for reliability. Accordingly, ω = .66 and α = .63 were determined. In this context, it was concluded that the reliability values obtained from the loneliness scale met acceptable reliability levels.

2.3. Data Analysis

The data analysis for the study was carefully planned and carried out to achieve the study's objectives. In the initial phase, descriptive statistics were computed to outline the overall characteristics of the sample and the distribution of the main variables. Skewness and kurtosis values were analyzed to evaluate the distribution of measurements, ensuring the data's alignment with a normal distribution.

To evaluate the reliability of the measurement tool, both the McDonald Omega coefficient and Cronbach's Alpha were calculated to assess internal consistency. To address the main research question, mediation analysis was employed to identify the mediating effects among the variables. Within the scope of this analysis, a bootstrapping process based on a 95% confidence interval was employed to test the significance of indirect effects, with a bootstrap sample size of 10,000. The procedure recommended by Preacher and Hayes (2004) served as the basis for testing mediation effects. All analyses were conducted using SPSS (version 25) and Jamovi (version 2.6.13) packages.

3. Results

The relationships among the variables within the scope of the study were examined. The findings are presented in Table 1

Table 1. Correlations between variables

| Variables	1.	2.	3.	4.	5.
1. Fearful attachment	--				
2. Secure attachment	-.66**	--			
3. Dismissing attachment	.69**	-.76**	--		
4. Preoccupied attachment	.52**	-.52**	.53**	--	
5. Loneliness	.46**	-.46**	.67**	.53**	--
6. Social media addiction	.68**	-.20**	.43**	.39**	.31**

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

Following the analysis of the relationships between various variables, the results pertaining to the evaluation of the proposed hypotheses were carefully examined. The objective of the research was to investigate the mediating effect of loneliness on the association between each attachment style and social media usage. Four distinct models were systematically tested. Initially, a model was evaluated to determine the mediating role of loneliness in the relationship between fearful attachment and social media, with the findings detailed in Table 2.

Table 2. Mediation analysis for fearful attachment

Path	Effects	b	95% Confidence Interval		β	p
			Lower Limit	Upper Limit		
Indirect	Fearful attachment→ Loneliness → SMA	.00	-.01	.01	.00	.859
	Fearful attachment→ Loneliness	.17	.14	.20	.46	<.001
	Loneliness → SMA	-.01	-.06	.05	-.01	.859
Direct	Fearful attachment→ SMA	.21	.19	.23	.69	<.001
Total	Fearful attachment→ SMA	.21	.19	.23	.69	<.001

Note: SMA, Social media addiction

Examining Table 2 revealed that the direct impact of fearful attachment level on social media addiction was statistically significant (total effect, β = 0.69, $p<.05$). Additionally, fearful attachment level was a positive predictor of loneliness (direct effect, β = 0.46, $p <.001$). Then the effect of loneliness on social media addiction revealed that there was no statistically significant effect (direct effect, β=-.01, $p > .05$). When the mediator variable (loneliness) was included in the model, fearful attachment level was still found to be statistically significant on social media addiction (direct effect, β= .69, $p > .05$). Accordingly, it was determined that loneliness did not have a mediating role in the relationship between fearful attachment level and social media addiction (indirect effect, β= .00, $p > .05$). A visual representation of the tested model is presented in Figure 2.
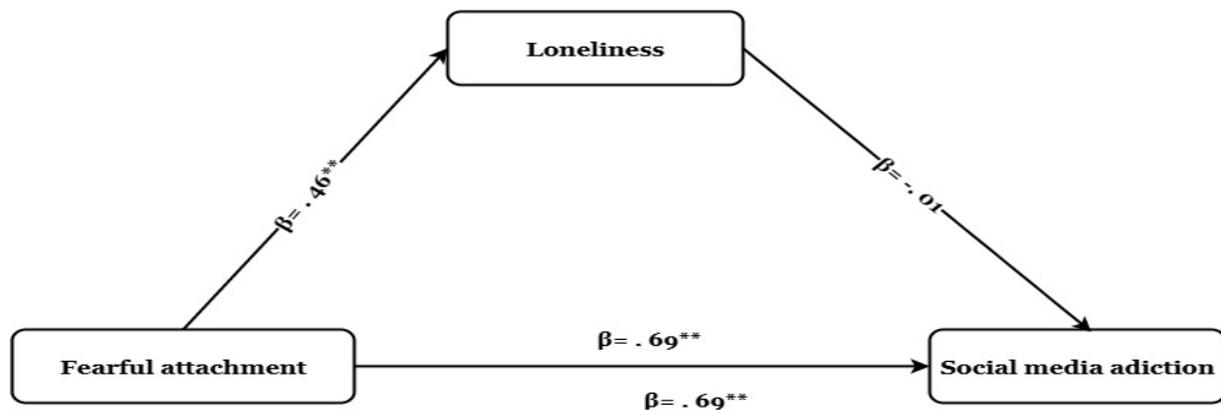
Note: **= p<.001

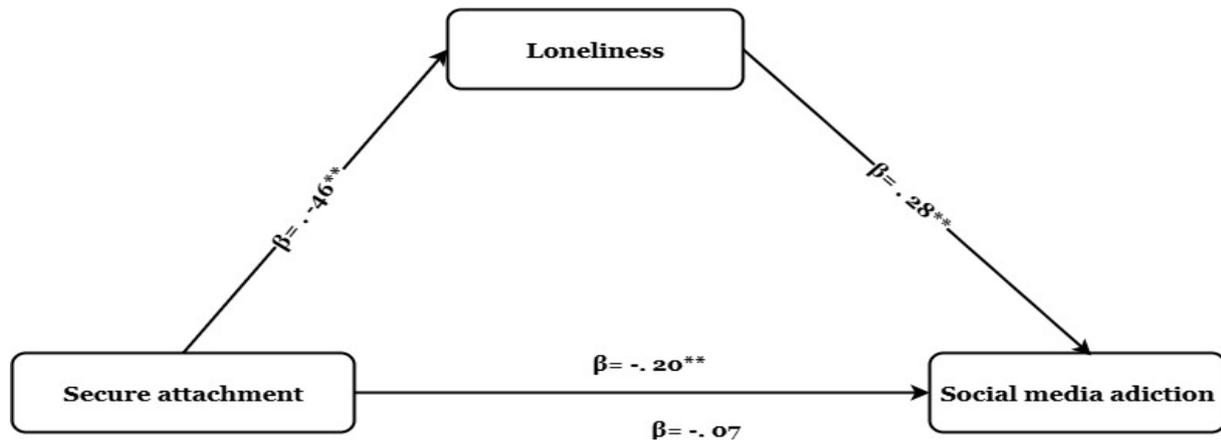Figure 2. Tested mediated model for fearful attachment.

After testing the mediating role of loneliness in the relationship between fearful attachment and social media addiction, the model for the mediating role of loneliness in the relationship between secure attachment and social media was tested, and the findings are given in Table 3.

Table 3. Mediation Analysis for Secure Attachment

Path	Effects	b	95% Confidence Interval		Path	p
			Lower Limit	Upper Limit		
Indirect	Secure attachment→ Loneliness → SMA	-0.04	-0.05	-0.02	-.13	<.001
	Secure attachment→ Loneliness	-0.16	-0.19	-0.14	-.46	<.001
	Loneliness → SMA	0.24	0.16	0.31	.28	<.001
Direct	Secure attachment→ SMA	-0.02	-0.05	0.01	-.07	.103
Total	Secure attachment→ SMA	-0.06	-0.08	-0.04	-.20	<.001

Note: SMA, Social media addiction

Upon examination of Table 3, it was determined that the direct effect of the secure attachment level on social media addiction was statistically significant (total effect, β =-.20, *p* <.05). Secure attachment was also a negative predictor of loneliness (direct effect, β =-.46, *p*<.001). The investigation into the impact of loneliness on social media addiction revealed that loneliness acts as a positive predictor (direct effect, β = .28, *p* <.05). When the mediator variable (loneliness) was included in the model, the level of secure attachment was found to be statistically insignificant in predicting social media addiction (direct effect, β =-.07, *p*> .05). Accordingly, it was determined that loneliness had a full mediating role in the relationship between secure attachment level and social media addiction (indirect effect, β =-.13, *p*<.05). The figurative representation of the tested model is given in Figure 3.

*Note: **= p<.001*

Figure 3. Tested mediated model for secure attachment.

Following the examination of loneliness as a mediating factor in the relationship between secure attachment and social media addiction, the model assessing loneliness as a mediator between dismissive attachment and social media was evaluated, with the results presented in Table 4.
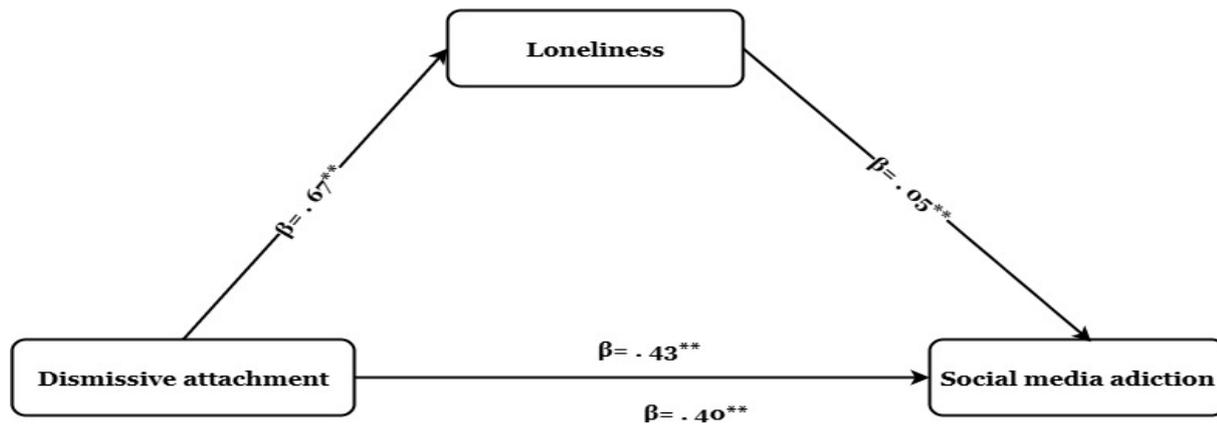
Table 4. Mediation Analysis for Dismissive Attachment

Path	Effects	b	95% Confidence Interval		Path	p
			Lower Limit	Upper Limit		

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Path	Effects	b	Lower Limit	Upper Limit	β	p
Indirect	Dismissive attachment → Loneliness → SMA	0.01	-0.01	0.03	.03	.383
	Dismissive attachment → Loneliness	0.22	0.20	0.24	.67	<.001
	Loneliness → SMA	0.04	-0.05	0.12	.05	.383
Direct	Dismissive attachment → SMA	0.11	0.08	0.14	.40	<.001
Total	Dismissive attachment → SMA	0.12	0.10	0.14	.43	<.001

Note: SMA, Social media addiction

Examining Table 4 reveals that the direct impact of dismissive attachment level on social media addiction is statistically significant (total effect, β = 0.43, *p* <0.05). Dismissive attachment level was also a positive predictor of loneliness (direct effect, β = 0.67, *p* <0.001). When the impact of loneliness on social media addiction was examined, it was found to have no statistically significant effect (direct effect, β= .05, *p* ˃ .05). When the mediator variable (loneliness) was included in the model, dismissive attachment level was still found to be statistically significant on social media addiction (direct effect, β= .40, *p* ˃ .05). Accordingly, loneliness was found to have no mediating role in the relationship between dismissive attachment level and social media addiction (indirect effect, β= .03, *p* ˃ .05). A visual representation of the tested model is shown in Figure 4.

*Note: **= p<.001*

Figure 4. Mediated model tested for dismissive attachment.

After testing the mediating role of loneliness in the relationship between dismissive attachment and social media addiction, the model for the mediating role of loneliness between preoccupied attachment and social media was also tested, and the findings are presented in Table 5.

Table 4. Mediation Analysis for Dismissive Attachment

Path	Effects	b	95% Confidence Interval		β	*p*
			Lower Limit	Upper Limit		
Indirect	Preoccupied attachment→ Loneliness → SMA	0.02	0.01	0.04	0.08	.002
	Preoccupied attachment→ Loneliness	0.20	0.17	0.22	0.53	<.001
	Loneliness → SMA	0.12	0.04	0.20	0.14	.002
Direct	Preoccupied attachment→ SMA	0.10	0.07	0.13	0.32	<.001
Total	Preoccupied attachment→ SMA	0.12	0.10	0.15	0.39	<.001

Note: SMA, Social media addiction

When Table 5 was examined, it was found that the direct effect of preoccupied attachment level on social media addiction was statistically significant (total effect, β = .39, *p* <.05). Preoccupied attachment level was also a positive predictor of loneliness (direct effect, β = .53, *p* <.001). When the effect of loneliness on social media addiction was examined, it was found to be a positive predictor (direct effect, β = .14, *p* <.05). When the mediator variable (loneliness) was included in the model, preoccupied attachment level still showed a statistically significant effect on social media addiction (direct effect, β = .32, *p* <.05). Accordingly, loneliness was found to mediate the relationship between preoccupied attachment level and social media addiction (indirect effect, β = .08, *p* <.05). A visual representation of the tested model is shown in Figure 5.

4. Discussion

Despite increased awareness and numerous studies on behavioral addictions, particularly social media addiction, the full scope remains unclear due to challenges in defining its impact area. Existing studies explore social media addiction in conjunction with loneliness or attachment styles, but no research has combined all three. It is anticipated that these variables may be directly or indirectly linked to each other. Therefore, defining these concepts, establishing their relationships, and conveying their nature will raise scientific and social awareness. This study aims to support preventive research on the development of social media addiction and contribute to closing the existing gap in the literature by raising awareness.

This study first focused on exploring the relationship between attachment style and social media addiction. The study found a low, negative link between secure attachment and social media addiction, aligning with research showing that those with high self-esteem, close relationships, and emotional expressiveness tend to have secure attachments and less social media addiction (Bowlby, 1969; 1982). Monacis et al. (2017), Demircioğlu and Güncü Köse (2018), Özmen (2019), and Dilsiz and Kandemir (2020) found that individuals with a secure attachment style tend to exhibit lower social media addiction, prefer face-to-face communication, and use the internet for various purposes. Research shows that social media addiction is associated with the early stages of life, and that individuals with secure attachments use social media more positively (D'Arienzo et al., 2019). Securely attached individuals' emotional regulation may protect against social media addiction (Sümer et al., 2015). Additionally, Shaver and Brennan (1992, as cited in Güçlü, 2024) suggest that their positive emotions and beliefs might make them less likely to accept negative situations like addiction. Research indicates that individuals with a secure attachment style have broad social networks, a lower risk of social media addiction, and healthier social media use (Taluy, 2021). Those from families with strong emotional bonds and communication are more likely to develop secure attachments and less dependent traits later (Anlı, 2019).

The relationship between secure attachment and loneliness is weakly negative. Individuals who are securely attached tend to experience loneliness less frequently because they cope well with negative emotions, seek and offer social support, and do not avoid close relationships or prefer loneliness (Karakuş, 2012). Akbağ and İmamoğlu (2010) found that increased secure attachment reduces loneliness, as securely attached individuals form good relationships through positive self-perceptions and perceptions of others. Özdemir and İlhan's (2012) study also supports these findings.

The study finds a moderate positive correlation between insecure attachment styles and social media addiction. Insecurely attached individuals often ignore their emotional needs, avoid relationships because of negative self-views, and turn to online interactions to satisfy communication needs. A positive relationship exists between insecure attachment and social media addiction (Taluy, 2021). Many studies support this, aligning with current findings (Güçlü, 2024; Özmen, 2019; Şenormancı et al., 2014). However, a review of the literature reveals that the triadic attachment model is more frequently used in research. Preoccupied attachment in the triadic attachment model resembles anxious attachment, while dismissive attachment resembles avoidant attachment (Taluy, 2021). Results are presented based on both models. Studies show anxious attachment predicts social media addiction, with a positive link between them (Blackwell et al., 2017; Chen, 2019; Dilsiz & Kandemir, 2020). Rao and Madan (2012) found that individuals with insecure attachment styles tend to use social media to seek attention. Anxiously attached individuals strive to maintain a perfect self-image, which is associated with an increased risk of social media addiction (Dungo, 2018). Morsünbül (2014) and Kılıç and Koç (2024) linked social media addiction to anxious and avoidant attachment styles. Blackwell et al. (2017) suggested that social media, which allows avoidant individuals to connect without face-to-face contact and maintain privacy, may increase its use for these reasons. Özkan (2013) found that individuals with a fearful attachment style can be highly addicted to the internet and social media. Demircioğlu and Köse (2018) also reported a positive correlation between fearful attachment and social media addiction, suggesting that such individuals may prefer social media over face-to-face interactions due to fear of failure and rejection.

Research shows a positive, moderate link between insecure attachment styles (fearful, dismissive, preoccupied) and loneliness. Heinrich and Gullone (2006) suggest that insecure early attachment may contribute to increased loneliness in young adults. Erözkan (2004) and Yıldız (2021) obtained similar results, indicating that insecure attachment is associated with increased feelings of loneliness. Insecure individuals often create unsafe environments through threatening, uninterested, or sarcastic behaviors, hindering healthy relationships and leading to loneliness (Göçener, 2010). Other studies have shown that fearful, avoidant, and preoccupied attachment styles are predictive of loneliness (Spence et al., 2018; Suri et al., 2019; Şeremet, 2019).

Fearful attachment, an insecure style, directly influences social media addiction and predicts loneliness. As fearful attachment rises, both social media addiction and loneliness increase. However, loneliness does not mediate the relationship between fearful attachment and social media addiction, meaning loneliness does not affect social media addiction levels. Increasing fearful attachment independently boosts social media addiction regardless of loneliness. Dismissive attachment directly influences social media addiction and predicts loneliness. When loneliness is a mediator, it shows no impact on the link between dismissive attachment and social media addiction. Increasing dismissive attachment raises social media addiction independently of loneliness. Changes in loneliness do not significantly affect social media addiction in anxiously attached individuals.

Finally, the findings show a strong link between preoccupied attachment and social media addiction, with loneliness mediating this relationship. As preoccupied attachment rises, loneliness and social media addiction increase. The study found a significant link between social media addiction and attachment styles: secure attachment correlates negatively, while other styles correlate positively. Similar patterns emerged with loneliness. Loneliness mediates the effect of secure and preoccupied attachments on social media addiction, but not dismissive or fearful styles.

4.1. *Limitations and Recommendations*

Despite the recent increase in research on social media addiction, the field remains insufficiently explored. Additionally, most studies focus mainly on adolescents or university students. More research involving different age groups is needed. Since young adulthood encompasses important phases such as starting a job, social changes, and beginning a family, further studies should investigate topics like technology use and positive addictions. With more research, more precise results and comprehensive information can be obtained. The continuous growth of technology, easy access to social media via smartphones, tablets, and other devices, and the rapid development of social media apps increase the risk of addiction. It can be argued that the engaging environment social media offers contributes to its rising use. Addressing addiction early might be easier. Future studies could also explore prevention and treatment strategies for social media addiction. Additionally, the study found that attachment style is a risk factor. Parents could receive guidance through educational programs on child development, potential risks of insecure attachment styles, and social media addiction. Programs that aim to strengthen interpersonal relationships could track social media addiction levels before and after. This extensive information on social media addiction can be added to existing research. The fact that participants were quite unbalanced in terms of gender may affect the research results. Therefore, considering the impact of these research findings on large sample sizes, it is important to interpret the findings of the current study in conjunction with their intended purpose.

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