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Mediating effects of self-esteem in the links of attachment styles with social media addiction among university students

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Üniversite öğrencileri arasında bağlanma stillerinin sosyal medya bağımlılığı ile ilişkilerinde öz saygının aracı rolleri

Özet

Amaç: Günümüzde internet ve sosyal medya yaşamlarımızın inkar edilemez parçalarıdır. Sosyal medyanın belli avantajları olmasına rağmen, bazı bireyler akademik bağlamda ve/veya iş bağlamlarında işlevsizlikle ilişkili olan Sosyal Medya Bağımlılığı (SMB) geliştirmeye ve bu bağımlılıktan zarar görmeye başlamıştır. SMB'nin sonuçlarının görece daha fazla araştırılmış olmasına karşılık, öncülleri henüz yeterince çalışılmamış bir konudur. Bu çalışmanın amacı güvenli, korkulu ve saplantılı bağlanma stillerinin SMB üzerindeki etkilerini ve bağlanma stillerinin SMB ile ilişkilerinde öz saygının aracı rolünü araştırmaktır.

Yöntem: Veri SMB Ölçeği, İlişkiler Anketi ve Rosenberg Öz Saygı Ölçeğini içeren anket paketini tamamlamaya gönüllü olmuş 455 üniversite öğrencisinden (300 kadın, 155 erkek) toplanmıştır.

Bulgular: Veri, Yapısal Eşitlik Modellemesi (YEM) ve düzenleyicili çoklu regresyon analizleri kullanılarak analiz edilmiştir. Bulgular saplantılı ve korkulu bağlanma stillerinin SMB üzerinde doğrudan, anlamlı ve pozitif etkileri olduğunu göstermiştir. Öz saygının, saplantılı bağlanma stili ve SMB ilişkisinde kısmi aracı rol oynadığı; güvenli bağlanma ve SMB arasındaki ilişkide ise tam aracı rol oynadığı bulunmuştur. Ek olarak, açımlayıcı analizler öz saygı ve SMB arasındaki ilişkide cinsiyetin düzenleyici rol oynadığını göstermiştir.

Sonuç: Bu çalışmanın bulguları, üniversite öğrencileri arasında korkulu ve saplantılı bağlanma stillerinin SMB için risk faktörleri olabileceğini göstermiştir. Diğer yandan, güvenli bağlanma stili ve yüksek seviyede öz saygı SMB için koruyucu faktörler olabilmektedir.

Anahtar Kelimeler: Sosyal medya bağımlılığı, yetişkin bağlanma stilleri, öz saygı, cinsiyet

Mediating effects of self-esteem in the links of attachment styles with social media addiction among university students

Abstract

Objective: Today, internet and social media are indispensable parts of our lives. Besides the advantages of social media, some individuals have begun to develop and suffer from Social Media Addiction (SMA) which was associated with dysfunctions in academic and/or work domains. Although outcomes of SMA are relatively investigated more widely, antecedents of it have not been studied extensively yet. The aim of the present study was to investigate the effects of secure, fearful, and preoccupied attachment styles on SMA and the mediating role of self-esteem in the links of attachment styles with SMA.

Method: Data were collected from 455 university students (300 females, 155 males) who volunteered to complete the survey packages which included Social Media Addiction Scale, Relationships Questionnaire and Rosenberg Self-Esteem Scale.

Results: The data were analyzed by using Structural Equation Modeling (SEM) and moderated multiple regression. The results revealed that preoccupied and fearful attachment had significant positive direct effects on SMA. While the link of preoccupied attachment with SMA was partially mediated, the relationship between secure attachment and SMA was fully mediated by self-esteem. In addition, exploratory analyses revealed that gender moderated the relationship between self-esteem and SMA.

Conclusion: The findings of current study suggested that among university students, fearful attachment and preoccupied attachment can be the risk factors for SMA. On the other hand, being securely attached and having high self-esteem can be protective factors for SMA.

Keywords: Social media addiction, adult attachment styles, self-esteem, gender

INTRODUCTION

Social media is nearly an inevitable part of our lives. It is a crucial part of daily life as well as a vital means of functioning for some individuals. According to Turkish Statistics Institute (TUIK) 2019 data, the purpose of 81.4% of internet users is to participate in social networks (e.g., creating user profile, posting messages or other contributions) (1). Recent studies have revealed that although social media has certain advantages such as increased communication and knowledge sharing, some individuals are likely to develop and suffer from social media addiction (SMA) (2). SMA can be differentiated from regular or non-problematic social media use which refers to the inability to control using social media and using social media enough to interfere with individuals' social and professional functioning (3). In another conceptualization, SMA was defined as being overly concerned about social media, having a strong urge to log into and/or use social media and impairments in social functioning, academic or work life, interpersonal relationships and/or psychological well-being due to excessive social media use (4). Although few in number, there are studies that have focused on personality traits (5), self-esteem (6), and attachment (7) as antecedents of SMA. For example, in one study, secure attachment style was found to be a protective factor for SMA and insecure attachment styles were found to be among the antecedents of SMA (8). The aim of the present study was to examine the effects of attachment styles on SMA and to investigate the mediating role of self-esteem in the proposed links. It was suggested that insecure attachment styles would be both directly and indirectly associated with SMA through their negative effects on self-esteem; whereas secure attachment would be both directly and indirectly related to SMA via its positive influence on self-esteem.

Attachment can be defined as the bond established through relationship between newborn and caregiver or the urge of newborn to establish a relationship with caregiver (9). Caregiver's emotional accessibility from the newborn's perspective and the newborn's expectation regarding his or her worthiness of love and care determine the newborn's attachment style (10). Bowlby (9) defines these two independent dimensions as "model of others" and "model of self" respectively. These two dimensions are used to form "Four Category Model of Attachment" including secure, preoccupied, dismissive-avoidant, and fearful-avoidant attachment styles (11). Securely attached individuals' model of others and model of self are both positive. Preoccupied, dismissive and fearful attachment styles are insecure attachment styles. Preoccupied attachment style is characterized by positive model of others and negative model of self. Individuals with preoccupied attachment generally ruminate about their relationships, their self-esteem is fragile, and they desperately desire acceptance and approval by others. In dismissive attachment, individual's model of self is positive while model of others is negative. They generally tend to avoid intimacy and close relationships because of their belief of others' unworthiness of being loved. Lastly, in fearful attachment style both model of self and model of others are negative. They tend to think that they are not worthy of being loved by others and generally fear to establish close relationships (11). Early attachment styles established with the primary caregiver (most of the time with the mother) that shape the future are prototypes of the adult relationships and adult attachment styles (12).

It is suggested that the individuals with insecure attachment styles are more likely to have the fear of failure in actual or real-world social interactions than those with secure attachment (13). Moreover, they tend to avoid face-to-face communication because of their self and other schemas, and are more likely to prefer social relationships formed via social media over face-to-face communications (14). In time, their behavior is likely to be reinforced through relatively more successfully established social interactions on social media where they can even pretend to be someone else with socially desired characteristics when compared to their social relationships in real settings.

Individuals with preoccupied attachment may seek reassurance to switch their negative image of self to positive with the help of positive feedback. Furthermore, these individuals have the opportunity to think more about what they want to say when communicating through social media and they can express themselves better; in this way, their view of themselves can be more positive (7). Individuals with fearful avoidant attachment style tend to have high level of anxiety related to the possibility of rejection by others (11) and using social media to communicate may provide them with an opportunity to increase acceptance. Furthermore, being rejected on social media may be less harmful than being rejected in face-to-face relations for these individuals. The idea that receiving an acceptance instead of a rejection is very likely may sweeten up negative image of self.

Thus, individuals with insecure attachment styles are more likely to be at risk of excessive social media use and addiction than those with secure attachment style. In line with these propositions, previous studies revealed that attachment anxiety was an antecedent of excessive Facebook use (15) and the individuals with insecure attachment styles used Facebook more frequently than those who were securely attached (16). In addition, among late adolescents, insecure attachment was an antecedent of SMA (17). Furthermore, anxious and avoidant attachment styles were reported to be risk factors for SMA (7). Studies that examine the links of different types of insecure attachment with SMA are very rare. In one of these studies Jenkins-Guarnieri and colleagues (18) reported that there was no significant association between dismissing attachment and SMA. Nitzburg and Farber (19) suggested that avoidant attachment style may be linked to SMA only when it is accompanied by attachment anxiety. Therefore, in the present study it is hypothesized that the association between SMA and secure attachment would be negative while it is positive with preoccupied and fearful attachment.. The relationship between dismissive attachment and SMA is expected to be non-significant.

Self-esteem can be defined as a general assessment of one's own worth and global feelings of competence and self-acceptance (20). Low self-esteem leads to negative consequences such as depression, anxiety, nicotine dependence (21); on the other hand, high self-esteem is related to happiness (22), life satisfaction, and well-being (23). When looking at the antecedents of self-esteem, it was found that parent–child closeness and affection expressed by parents are associated with high self-esteem (24). Furthermore, there are a lot of studies which revealed the significant links between attachment styles and self-esteem (25-28). These links are explained by schema or model of self characterizing attachment styles. Positive and trust-based relationship with parents (or with the attachment figure) helps individual develop and internalize ‘self’ as competent and loveable (27). ‘Model of self’ is positive for individuals with secure attachment while it is negative for both individuals with fearful and preoccupied with

attachment styles. Therefore, it is expected that the association between self-esteem and secure attachment style would be positive whereas it is negative with preoccupied and fearful attachment styles.

According to Sociometer theory, humans have a congenital desire to contact others due to the need of acceptance and belonging (29) and regardless of their self-esteem levels, individuals have the desire to connect (30). Individuals having high level of self-esteem satisfy this desire through daily and face-to-face relations easily. It is much more difficult for individuals with low self-esteem to take care of it in the same way. The reason for this is that in contrast to people with high self-esteem, they have high levels of social anxiety, and are likely to be more introverted and shyer (31). Social media can help the individuals with low self-esteem to sustain a better social life (32) by providing self-disclosure opportunity (33). In addition, it may increase the possibility of getting positive answers or comments from others since even an ideal-self can be easily presented on social media. Consistently, individuals who have low self-esteem may use social media to increase their feelings of self-worth via positive comments. In line with these propositions, previous studies revealed negative links of self-esteem level with social media use (32, 34, 35) and with SMA (36). Therefore, in the present study it is suggested that self-esteem would be negatively associated with SMA and that self-esteem would partially mediate the links of secure, preoccupied and fearful attachment styles with SMA (Figure 1).

-Insert Figure 1 about here-

METHOD

Participants and the Procedure

The approval for the study was obtained from Çankaya University Sceintific Research and Publication Ethics Committee. Data were collected from 470 individuals; but 15 of them were excluded from the data in the main analyses because of incomplete data. Consequently, 455 university students (155 males [34%], 300 females [66%]) enrolled in six different universities in Turkey were included in the study. The students in the different departments of two foundation universities in Ankara, Turkey were recruited as participants and those who volunteered to participate were given extra course credit. In order to provide the students with the equal opportunity for extra course credit, students who did not want to participate were given an opportunity to get the same credit either by providing contact information of their friends who would like to be participants or making a five-minute course-relevant presentation. Informed consents of all the participants were obtained with the help of the forms. The survey package included the sections regarding the measures of SMA, adult attachment styles, self-esteem and a demographic information section which included questions regarding age, gender, major, the most preferred social networking site, duration of using social media, and (average) daily time spent on social media. The ages of the participants ranged from 18 to 42, with a mean of 21.36 (SD=2.20). The demographic characteristics of the participants, information regarding the most preferred social networking site, and descriptive statistics regarding the duration of using social media, and (average) daily time spent on social media are presented in Table 1.

-Insert Table 1 about here-

Measures

Social media addiction scale: SMA was measured using 41-item SMA scale developed in Turkish (37) and the responses were given using 5-point Likert scale ranging from "1 = never" to "5 = always". The scale consists of 4 subscales which are preoccupation, mood modification, relapse and conflict/problems. Preoccupation subscale includes 12 items and a sample item is "I spend more time on social media than I intent to". Mood modification subscale consists of 5 items and a sample item is "I spend time in social media when I feel alone". Relapse subscale includes 5 items and a sample item is "I try to stop using social media, but I cannot". Finally, conflict/problems subscale consists of 19 items and a sample item is "I neglect school or work-related tasks to spend more time on social media.". The Cronbach's alpha coefficient of the scale was 0.96.

Relationships questionnaire (RQ): Adult attachment styles were measured with RQ (11) which was adapted to Turkish by Sümer and Güngör (38). The scale consists of 4 items and each item corresponds to one of the four attachment styles. Participants reported their answers using a 7-point Likert-type scale ranging from "1 = does not describe me at all" and "7 = fully describes me". The questionnaire was conducted in various cultural contexts for several studies (39; 40; 41) as well as in Turkey (42; 43; 44). This indicates that it can be considered as a valid measure of adult attachment.

Rosenberg self-esteem scale: Self-esteem was measured using 10-items self-esteem subscale of the Rosenberg Self-Esteem Scale (20) which was adapted to Turkish by Çuhadaroğlu (45). A sample item of the subscale is "I have a positive attitude toward myself". Participants reported their answers via a 4-point Likert-type scale ranging from "1 = strongly disagree" to "4 = strongly agree". The Cronbach's alpha coefficient of the subscale was 0.86.

Statistical Analysis

Data were analyzed using SPSS-24 and AMOS 24.0 (46). Before the scale scores were calculated, descriptive statistical analyses and reliability analyses of the measures were performed and Cronbach's alpha reliabilities of the scales were estimated. Means, standard deviations of the scores and correlation matrix were analyzed by SPSS-24 and it was noted that p value was greater than 0.95 indicating acceptable threshold for significance . Then, Structural Equation Modeling (SEM) technique was utilized in order to test the hypothesized mediated model by using AMOS 24.0 (46).

RESULTS

Descriptive Statistics and Correlations Among the Study Variables

Means, standard deviations of the scores and the correlation matrix are given in Table 2. The relationship between secure attachment and SMA was not significant; therefore, Hypothesis 1a was not

supported. Supporting Hypothesis 1b and 1c, fearful and preoccupied attachment was found to be positively associated with SMA ($r=0.20$, $p<0.01$; $r=0.22$, $p<0.01$, respectively). Dismissive attachment was not significantly associated with SMA; thus, Hypothesis 1d was also supported. Secure attachment had positive correlation with self-esteem ($r=0.22$, $p<0.01$); fearful and preoccupied attachment had negative correlation with self-esteem ($r=-0.19$, $p<0.01$; $r=-0.24$, $p<0.01$, respectively). These results point out that Hypothesis 2 was fully supported. Furthermore, consistent with Hypothesis 3a, self-esteem and SMA were found to be negatively correlated ($r=-0.32$, $p<0.01$). As explained below, Hypothesis 3b, which suggested that the links of secure, fearful and preoccupied attachment styles with SMA would be partially mediated by self-esteem, was tested with structural equation modeling technique.

-Insert Table 2 about here-

Testing the Proposed Mediated Model

SEM was used in order to test the hypothesized heuristic model (M1) and the modified model (M2). In the literature, CFI, NFI and the TLI were the most common fit indices which were reported to test the model (47). In addition, Chi-Square statistics, its degrees of freedom and p value, and the RMSEA should be used while reporting the results and acceptable thresholds which were suggested to be greater than 0.95 for CFI, NFI and TLI; lower than 0.07 for RMSEA; and p value should be greater than 0.05 (48). The scaled chi-square was not used since the analyses were run with AMOS 24.0.

The initial results regarding M1 showed that the proposed model poor fit to the data ($\chi 2$ ($n=455$, $df=3$) = 75.59, TLI=0.62, CFI=-0.28, NFI=0.62, RMSEA=0.23; $p<0.00$). The modification indices suggested that the error term of precoccupied attachment style should be allowed to covary with the error term of fearful attachment style; and the error term of fearful attachment style should be allowed to covary with the error term of secure attachment style. After correlating the error terms which were mentioned above, the M1 fit the data well ($\chi 2$ ($n=455$, $df=3$) = 0.63, TLI=1.02, CFI=1.00, NFI=0.99, RMSEA = 0.00; $p>0.05$). However, only the paths from secure attachment and preoccupied attachment to self-esteem ($\beta=0.19$, $p<0.001$; $\beta=-0.22$, $p<0.001$; respectively), from fearful attachment, preoccupied attachment and self-esteem to SMA were significant ($\beta=0.13$, $p<0.01$; $\beta=0.12$, $p<0.01$; $\beta=-0.28$, $p<0.001$, respectively) and since the model was a saturated model no modification indices were obtained. The second model (M2) after removing the non-significant paths provided good fit to the data as well ($\chi 2$ ($n=455$, $df=3$) =3.72, TLI=0.99, CFI=0.99, NFI=0.98, RMSEA=0.02; $p>0.05$), and was accepted as the final model (Figure 2). Partially supporting the hypotheses, the links of preoccupied attachment with SMA was partially mediated by self-esteem. In addition, self-esteem fully mediated the relationships of secure attachment with SMA. Furthermore, preoccupied attachment and secure attachment had significant indirect effects on SMA (indirect effect size for preoccupied attachment = 0.04, $p<0.05$; indirect effect size for secure attachment = 0.03, $p<0.05$).

-Insert Figure 2 about here-

In addition to the main analyses, a series of post-hoc analyses were conducted. Firstly, gender differences in the scores of the main variables were examined by conducting independent samples t-tests. The results showed that gender had significant main effect on SMA, self-esteem, preoccupied attachment and fearful attachment scores. That is to say females scored significantly higher than males on SMA, self-esteem and fearful attachment; while males scored significantly higher than females on preoccupied attachment (Table 3)*.

-Insert Table 3 about here-

*The female and male sample sizes in the present study were not equal. However, many studies tested gender effects with unequal sample sizes (49). Therefore, exploratory analyses which tested the moderating effects of gender in the links of attachment styles with SMA and in the links of self-esteem with SMA were conducted with the data of the original sample, rather than randomly deleting participants for the analysis to bring the sample sizes in line.

Secondly, as gender had main effects on four of the main variables, moderating roles of gender in the links of attachment styles and self-esteem with SMA were examined by conducting moderated multiple regression analyses. The findings revealed that gender moderated the relationship between self-esteem and SMA in such a way that females who had high levels of self-esteem were less likely to score high on SMA than females with low self-esteem ($F(1, 450) = 30.31$, $p < 0.05$). Females with both low and high self-esteem scored higher on SMA than males and males reported similar SMA scores regardless of their self-esteem level (Figure 3).

-Insert Figure 3 about here-

DISCUSSION

Considering that SMA is a problemthat becomes widespread in most of the cultural contexts and that attachment is likely to significantly contribute to our understanding of underlying mechanisms of SMA, it is important to empirically investigate the links of attachment styles with SMA. The general aims of using social media are to establish and maintain social relations on online platforms. Adult attachment styles based on early attachment experiences (50) are likely to explain the main patterns of social relationship formations.In this respect, they are also likely to affect both the extent of social media use as well as attitudes towards and aims of using social media. Although recent research confirmed that there were differential links between specific attachment styles and SMA (7,51,52), these studies are limited in number. In the same way, there are only a few research attempts that focus on these relationships in Turkey (53). The present study aimed at investigating the direct links of adult insecure attachment styles with SMA; and also, revealing the indirect effects of adult attachment styles on SMA

through their influences on self-esteem. As expected, preoccupied and fearful attachment were significant predictors of SMA. Moreover, self-esteem partially mediated the link of preoccupied attachment with SMA. That is to say individuals who were high in preoccupied and fearful attachment style were more likely to engage have high scores on SMA. In addition, individuals who had preoccupied attachment style were likely to have low levels of self-esteem, which, in turn, was positively associated with SMA. Furthermore, the relationship between secure attachment and SMA was fully mediated by self-esteem. It can be argued that, secure attachment may be a protective factor for SMA only through its positive effect on self-esteem. Thus, the present study contributes to the literature by revealing one of the key psychological mechanisms (i.e., self-esteem) that would explain the negative link of secure attachment with SMA.

In previous studies, the findings investigating the relationship between attachment styles and behavioral addictions (internet addiction and SMA) were complicated. In adolescences, secure attachment was found as a protective factor for internet addiction, on the other hand, insecure attachment styles were found as risk factors for internet addiction (54). Similarly, it was found that insecurely attached individuals' tendency to pathological internet usage is significantly higher than securely attached individuals (55). In another research, it was found that secure attachment was negatively associated with internet and social media addiction. However, preoccupied attachment was not found to be significantly associated with internet and social media addiction (52,56). In a relatively recent study, among attachment styles, only preoccupied attachment style was found as an antecedent of problematic internet use (57).

In the present study, as expected, preoccupied attachment was found to be positively associated with SMA both directly and through its negative effect on self-esteem. However, although bivariate correlation between fearful attachment and self-esteem was negative and significant; self-esteem did not (either partially or fully) mediate the link of fearful attachment style with SMA. In addition, fearful attachment was directly and negatively associated with SMA. To explain that, the different combinations of working models of self and others characterizing these two insecure attachment styles underlie these findings. Individuals with both attachment styles have negative models of self. However, different from preoccupied individuals who have positive working model of others, fearful individuals' working model of others is negative and this is argued to make them likely to deliberately avoid intimate personal relationships in an attempt to avoid being hurt or rejected (58). This tendency independent of their level of self-esteem is likely to make them more vulnerable for SMA since social media provides them a relatively more "secure" interpersonal context than offline, face-to-face relationships. In other words, not low levels of self-esteem but fearfully attached individuals' negative model of others may be the main risk factor for their vulnerability for SMA.

Consistent with the present research, previous studies also revealed that preoccupied attachment was an antecedent of SMA in late adolescence (15). The present study contributed to the literature by revealing the significant main effects of both preoccupied and fearful attachment styles on SMA in young adulthood and by unfolding the fully mediated relationship between secure attachment and SMA via self-esteem. Previous studies revealed the directions of the associations of insecure and secure attachment with SMA; however, underlying mechanisms by which these attachment styles were related

to SMA were not fully understood . By pointing out to self-esteem as one of the key mechanisms involved in the links of attachment styles with SMA, this study is supposed to be one of the first attempts in this direction. Further research is needed to reveal other mediating factors in the links of attachment styles with SMA. To illustrate, self-esteem stability or motivational tendencies such as need for affiliation and/or need for approval can be examined as potential mediators of the links between attachment styles and SMA.

Another contribution of the present study is revealing significant gender differences in SMA through exploratory analyses. Women's SMA scores were significantly higher than men's. This finding implies that females may form the main risk group for SMA. However, the underlying psychological mechanisms that contribute to this gender difference should be explored in further research. In addition, future studies are suggested to focus on the purposes of using social media to understand the possible reasons of this gap between females and males. Finally, males who seem to be less likely to be at risk for SMA may be at the risk group for another online addiction, namely, online gaming addiction. To illustrate, in a study conducted in Norway, Andreassen and colleagues (59) found that males were significantly more likely to be addicted to playing video games than females; while females were significantly more likely to be addicted to social media use than males. The findings of the present research are consistent with Andreassen and colleagues' (59) results. However, the number of empirical studies focusing on effects of gender on addictive online behaviors are relatively few and future research is suggested to replicate and elaborate on previous findings by employing various research designs and samples from other cultural contexts.

Furthermore, it was found that the link between self-esteem and SMA was moderated by gender. That is to say females generally had higher SMA scores than males and females with low self-esteem got significantly higher scores on SMA than women with high self-esteem. On the other hand, males with low and high self-esteem got similar SMA scores. These findings may imply that low self-esteem significantly contributes to females' over-involvement in social media probably serving as a practical and reinforcing alternative to face-to-face communications for females with low self-esteem. In other words, females with low self-esteem may be likely to avoid direct communication channels which they perceive as highly stressful. In line with the propositions of the reinforcement theory (60), social media providing them with opportunities for less stressful and more rewarding communication experience may gradually become the primary communication tool.

In the current study, the findings regarding the positive links of fearful and preoccupied attachment with SMA were generally consistent with the pervious literature. However, contrary to the previous studies which revealed direct association between secure attachment and SMA and/or internet addiction, the present study revealed that self-esteem fully mediated the relationship between secure attachment and SMA. As suggested above, the present finding is suggested to contribute to our understanding of the underlying psychological mechanism in the link of secure attachment and SMA. Nevertheless, although secure attachment seems to be a protective factor for internet addiction and/or SMA, securely attached people may be more likely to use social media extensively as well in order to empower their actual relations. Therefore, future studies are suggested to focus on the relationships between attachment styles and the aims of using social media.

With the increasing use of social media, SMA is argued to have potential adverse effects. Determination of the possible causes of SMA will not only contribute to existing scientific knowledge but also help practitioners to design and implement successful interventions. One of the practical implications of the study may be to direct practitioners towards insecure attachment styles in their attempts to intervene with SMA. In addition, taking the mediating roles of self-esteem on the links of attachment styles and SMA into consideration, practitioners are suggested to focus on the problems related to self-esteem in their attempts to eliminate SMA among both adolescents and adults.

Just like every research, the present study has certain limitations. First, the sample is moderate in size and the data were based on self-report. The future studies are proposed to gather both self-report data and data from significant others of participants on the measures of SMA. Second, the study is employed cross-sectional design and attempted to reveal causal relationships. However, because self-esteem and attachment styles are stable characteristics developed in early ages (9,61), individuals' attachment styles and self-esteem levels are more likely to affect SMA rather than vice versa. Yet, future studies are suggested to examine the proposed model by employing longitudinal design. Third, the age range of the participants was limited as they were just undergraduate students. Nevertheless, the previous studies showed that the highest prevalence rate of SMA was found among this age group (62). Yet, future studies can benefit from testing the proposed model with samples of various age groups.

In conclusion, the present study is a humble attempt to investigate the effects of attachment styles on SMA and the mediating role of self-esteem in the proposed relationships. By revealing the positive direct effects of fearful and preoccupied attachment styles on SMA and the mediating roles of self-esteem in the links of secure attachment and preoccupied attachment with SMA, the study is inclined to contribute to the SMA literature and its practice.

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Table 1. Descriptive statistics of participants (n=455)

	Frequency	Percentage	Mean ± SD
Gender			
Female	300	66	
Male	155	34	
Duration of using social media			
Less than 1 year	18	4.0	
1-2 years	37	8.1	
3-4 years	103	22.6	
Greater than 5 years	292	64.2	
Missing	5	1.1	
Daily time spent on social media			
Less than 1 hour	108	23.7	
1-3 hour	248	54.5	
4-6 hour	81	17.8	
More than 7 hours	13	2.9	
Missing	5	1.1	
Most preferred social networking site			
Instagram	363	79.8	
Twitter	43	9.5	
Facebook	23	5.1	
Others	26	5.6	
Age			21.36 ±2.20

Table 2. Descriptive statistics, intercorrelations, and internal consistencies of the study variables (N = 455)

	Mean	SD	1	2	3	4	5	6
1. Secure Attach.	3.64	1.90	-					
2. Fearful Attach.	3.70	1.88	-0.29*	-				
3. Preoccupied Attach.	3.21	1.80	-0.04	0.27*	-			

4. Dismissive Attach.	3.20	1.84	0.04	0.22*	0.04	-		
5. Self-Esteem	3.11	0.58	0.22*	-0.19*	-0.24*	-0.05	(0.86)	
6. Social Media Addiction	2.18	0.70	-0.07	0.20*	0.22*	0.03	-0.32*	(0.96)

Note. Numbers on the Diagonal are Cronbach's Alpha coefficients. * Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 3. Independent Sample T-Test Comparing Gender and Social Media Addiction, Self-Esteem, Preoccupied Attachment and Fearful Attachment

Variable	Gender	*N*	*M*	*SD*	*t*
Social Media Addiction	female	300	2.28	0.72	4.29**
	male	155	1.98	0.62	
Self-Esteem	female	300	3.15	0.58	1.99*
	male	155	3.03	0.57	
Preoccupied Attachment	female	300	3.03	1.72	-2.70**
	male	155	3.53	1.91	
Fearful attachment	female	300	3.94	1.87	3.93**
	male	155	3.21	1.81	

Note. * Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.001 level.