

Social media use among Tunisian adolescents: The role of attachment to parents and peers

Attachement et usage des réseaux sociaux chez les adolescents Tunisiens

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ABSTRACT

Introduction: The use of social networks has grown exponentially and social media addiction has become a global concern. According to the literature, attachment disorders are described as predictors of this condition. The main objective of this study was to assess the relationship between social network use and the quality of attachment among college students in Tunisia.

Methods : It was a cross-sectional study conducted among adolescents aged between 11 and 18, recruited from six colleges in Tunisia. Participants were selected by convenience sampling based on the type of college (private or public) and socio-economic level. We used three instruments : a clinical file, the Bergen Social Media Addiction Scale (BSMAS) and the Inventory of Parent and Peer Attachment (IPPA-R).

Results: A total of 1008 adolescents were recruited. The average age of the participants was 13.4 years with a female-to-male ratio of 1.05. The prevalence of social media addiction was 7.5% according to the conservative approach and increased to 41.2% using the liberal approach. A negative and statistically significant correlation was demonstrated between the global BSMAS scores and IPPA scores corresponding to the parents ($p < 0.0001$).

Conclusion: Among Tunisian adolescents, lower quality of attachment was associated with increased levels of addiction to social networks. The implementation of preventive strategies is essential in order to mitigate this problematic use.

Keywords: Attachment, adolescents, problematic use, addiction, social networks, social media.

RÉSUMÉ

Introduction: L'utilisation des réseaux sociaux a connu une croissance exponentielle, et l'addiction aux réseaux sociaux est devenue une préoccupation mondiale. Selon la littérature, les troubles de l'attachement sont décrits comme des prédictors de cette condition. L'objectif principal de cette étude était d'évaluer la relation entre l'utilisation des réseaux sociaux et la qualité de l'attachement chez les adolescents en Tunisie.

Méthodes : Il s'agissait d'une étude transversale menée auprès d'un échantillon de 1008 adolescents âgés de 11 à 18 ans, recrutés dans six collèges en Tunisie. Les participants ont été sélectionnés par échantillonnage de convenance en fonction du type d'établissement (privé ou public) et du niveau socio-économique. Nous avons utilisé trois instruments : une fiche clinique, le Bergen Social Media Addiction Scale (BSMAS) et l'Inventory of Parent and Peer Attachment-Revised (IPPA-R).

Résultats : L'âge moyen des participants était de 13,4 ans avec un sex-ratio : 1,05 (filles/garçons). La prévalence de l'addiction aux réseaux sociaux était de 7,5 % selon l'approche conservatrice et a augmenté à 41,2 % selon l'approche libérale. Une corrélation négative et statistiquement significative a été démontrée entre les scores globaux BSMAS et les scores IPPA correspondant aux parents ($p < 0,0001$).

Conclusion : Les adolescents tunisiens ayant une faible qualité d'attachement présentaient des taux plus élevés d'addiction aux réseaux sociaux. La mise en œuvre de stratégies préventives est essentielle pour réduire ce comportement addictif.

Mots-clés : Attachement ; Adolescents ; Usage problématique ; Addiction ; Réseaux sociaux.

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INTRODUCTION

Adolescents and young adults are the main users of social networks and the most vulnerable population to addictive use [1]. According to Zivnuska et al. social media addiction (SMA) has been defined as “the excessive use and habitual monitoring of social media, manifested in compulsive usage that comes at the expense of other activities” [2]. It is currently considered as a major health problem in several countries around the world [3] associated with numerous risks such as low academic and work performances [4], cyberbullying [5], social anxiety, sleep problems [6] and mood disorders [7].

Few studies have explored the factors involved in the problematic use of social networks, including both contextual factors such as the family environment and individual factors such as dysfunctional personality traits [6]. Regarding the environment, most publications have supported that the prevalence of problematic Internet use, including social media use, is higher in urban areas [7,8]. On the other hand, divergent results have been found concerning the association between this use and the family type, whether single or two-parent [9–11]. Some studies have found a higher risk of SMA in cases where the adolescent comes from a single-parent family [10,12]. In this context, Ni X. explained that this type of use is linked to a lack of interpersonal skills and that adolescents living in single-parent families use this virtual space as an alternative to a missing real relationship [13]. According to the literature, adolescents use the Internet more frequently than other age groups [14,15] and given that this period is marked by social, cognitive and emotional development [16], they are considered an at-risk group for problematic Internet use, particularly social networks [15,17,18]. Indeed, adolescence is characterized by significant vulnerability, especially due to the lack of self-regulation strategies [19], leading adolescents to often resort to social media to cope with problems and negative feelings [20]. This virtual space also represents a privileged setting for experiments that address various issues related to this life stage for the majority of adolescents. These explanations justify our choice of the study population.

Recently, the relationship between attachment and SMA has been receiving an increasing attention, particularly among adolescents, by evaluating the links between this disorder and the type of attachment, whether secure or insecure [19]. Attachment theory explains the nature of the relationship with parents and peers and provides a better understanding of its role in emotionally challenging situations for adolescents [19]. This theory generally refers to the conceptualization developed by John Bowlby [21] who postulated that if the attachment figure is good enough, it will provide a secure base for the child. A secure attachment will thus enable the child to develop the necessary skills to establish social bonds, particularly with peers. However, if the attachment is insecure, the child can develop long-term emotional, social and cognitive problems [21,22].

Recent studies have found that attachment disorders

among adolescents are associated with problematic use of social networks, where insecure attachment to parents [23] and peers [24] has been shown to be a predictor of such use and a good attachment quality, or secure attachment, is a protective factor [23].

In Tunisia, internet usage, particularly of social networks has grown exponentially over the past few years. According to the International Telecommunication Union, Tunisia's internet usage has increased from 17% to 52.1% [25]. In fact, social media usage represents the primary form of online engagement among Tunisians, with an estimated participation rate of 89.1% [25]. Previous research has shown that over two-thirds (74%) of Facebook users and approximately 80% of Instagram users fall within the 13–34 age group [26]. Additionally, 12% of Tunisian adolescents aged 13 to 17 reportedly used Facebook, 10% used Messenger, and 13% used Instagram, as these platforms were among the most commonly used social networks at that time [27]. Prior studies conducted in the Tunisian context have predominantly focused on problematic Internet use, including social media networks, and have reported elevated prevalence rates of such use. A cross-sectional study conducted in Sfax found that 43.9% of 253 adolescents surveyed in public areas met the diagnostic criteria for Internet addiction [28]. Similarly, a study conducted in Sousse among 556 university students revealed even a higher prevalence rate of 54% [28].

Given the elevated prevalence rates of SMA among Tunisian adolescents, the scarcity of studies in Tunisia on factors predisposing to problematic social media use, and the absence of research on its association with the quality of attachment among adolescents, we were motivated to conduct this study on social network use and attachment to parents and peers among Tunisian adolescents. The objectives of our study were to determine among middle school students: the prevalence of problematic social network use, the quality of attachment to parents and peers and the relationship between social network site use and the quality of attachment.

METHODS

Sample

A descriptive cross-sectional study was conducted among students from six colleges in the Governorate of Tunis. Only those who provided informed consent were included in the study. Participants who did not complete the questionnaire were excluded from the study. The final sample comprised 1008 students, recruited between October 2018 and March 2019 through a non-probability, purposive sampling method. Selection was based on the type of institution (public or private) and the students' socio-economic status, as defined by the National Institute of Statistics (INS). The sample included : one public college in a middle-to-high-income area (274 participants), another public college in a low-income area (269 participants), one private college in a middle-to-high-income area (309 participants), and three

private secondary schools in a low-income area (156 participants).

A purposive sampling method was chosen over random sampling to ensure the inclusion of students from diverse socio-economic backgrounds and to enhance the feasibility of data collection within the study's constraints.

Measures

A structured data collection form was used to obtain information on socio-demographic characteristics and patterns of social network usage. The collected data included the duration and method of use, estimated daily usage time, most frequently visited platforms, and the specific interests associated with these platforms. SMA was assessed using the Bergen Social Media Addiction Scale (BSMAS), developed by Griffiths in 2005 and adapted from the Bergen Facebook Addiction Scale [29]. In the current version of the BSMAS, the term « Facebook » has been replaced with « social media » or « social networks » encompassing platforms such as Facebook, Twitter, and Instagram [29]. The BSMAS is a six-item self-report questionnaire rated on a five-point Likert scale, ranging from 1 (very rarely) to 5 (very often) [29]. It assesses social media use over the past year by applying the six core characteristics of SMA: salience, mood modification, tolerance, withdrawal, conflict and relapse [6,30]. To measure addiction to social networking sites, Griffiths suggests two approaches, a conservative one and a liberal one. The conservative approach is described in the literature as more reliable [26]. Usage is considered problematic if a score of three or higher is obtained on at least four of the six items under the liberal approach, and if a score of three or higher is achieved on all items under the conservative approach [26].

The quality of attachment to parents and peers was assessed using the Inventory of Parent and Peer Attachment in its revised version (IPPA-R). This instrument was developed by Armsden and Greenberg in 1984 and revisited by the same authors in 1989 [31,32]. It assesses the overall quality of attachment and its three dimensions: trust, communication and alienation [32]. It consists of three sections assessing relationships with the mother, father and peers, each comprising 25 items. The 75 items are rated on a five-point Likert scale ranging from 1 (almost always or always true) to 5 (almost never or never true) [32]. Each section provides an overall attachment security score along with three subscale scores corresponding to the previously mentioned dimensions. The total score for the mother, father, and peers is calculated by summing the scores for the trust and communication dimensions, while the scores for the alienation dimension are reversed before inclusion [32].

Validation of the scales IPPA-R and BSMAS

We conducted the key steps of the validation process, including translation, content validation, and internal consistency assessment. Authorization was obtained from the original authors of each scale used. The IPPA-R and BSMAS were translated into Arabic using the

translation/back-translation method recommended in validation protocols [33]. A pre-test was administered to 111 adolescents with an average age of 13 years, enrolled in a secondary school that was not among the target schools for this study. The pre-test results indicated that the questionnaire was accessible and comprehensible to all students, with a very low non-response rate. A panel of five experts, including two child and adolescent psychiatrists (co-authors) and three child and adolescent psychiatry residents, evaluated the translated instrument by assessing each item. Their suggestions enabled us to refine the translated version.

The internal consistency of the BSMAS and IPPA-R scales was assessed using Cronbach's alpha coefficients, which measure the degree of internal reliability by aggregating individual item scores into a single overall score for each instrument. In the present study, the Cronbach's alpha coefficients for the BSMAS (6 items) and IPPA-R (75 items) were 0.66 and 0.69 respectively, indicating acceptable internal consistency. While a Cronbach's alpha of 0.7 is commonly recommended as the minimum threshold for reliability [34], some researchers consider a value as low as 0.6 to be acceptable [35].

Statistical analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows. Simple frequencies and relative frequencies (percentages) were calculated for categorical variables. For continuous variables, means, standard deviations (SD) and extreme values (minimum and maximum) were determined. To analyze the data, comparisons of percentages were made using the chi-square test. Mean comparisons were conducted using the Student's t-test or analysis of variance (ANOVA). Correlations were assessed using the Pearson correlation coefficient. A statistical significance level of 0.05 was adopted.

Ethical considerations

The research protocol for the present study was approved in advance by the ethics committee of Mongi Slim Hospital. Additionally, authorizations to conduct the survey were obtained from the regional education delegation of the Tunis governorate, the Directorate of School Medicine and the principals of the schools involved in the study.

RESULTS

A total of 1048 students were initially sampled, of whom 40 were excluded due to incomplete questionnaires. Thus, the final sample size consisted of 1008 students. The participants' ages ranged from 11 to 18 years, with a mean (SD) of 13.47 (1.35). The female-to-male ratio was 1.05.

Characteristics of use of social networks

The results are summarized in Table 1. Social media was used by 90.9% of the students. Nearly two-thirds (67.1%) had been using these platforms for 3 years or more. The average daily use was estimated at 2.8 hours (SD = 5.9) and 63.9% of the students reported using social media daily. In terms of the specific platforms, Facebook and Instagram had the highest usage rates at 80.9% and 67.8%, respectively. A total of 83% of the students accessed to social media via their mobile phones. Regarding student interests, instant messaging was the most popular activity, with 55.1% of adolescents mentioned it as their primary interest.

Table 1. Characteristics of Use of social networks

Characteristics of use of social networks	N (%)
Social media use	
Yes	916(90.9%)
No	92(9.1%)
Social media daily use	
Yes	586(63.9%)
No	330(36.1%)
Social media use for 3 years or more	
Yes	615(67.1%)
No	301(32.9%)
Websites used	
Facebook	739(80.9%)
Instagram	620(67.8%)
Whatsapp	62(6.8%)
Twitter	42(4.6 %)
Others (You Tube, etc..)	212(23.2%)
Means of use	
Mobile phone	759(83%)
Computer	342(37.4%)
Tablet	167(18.3%)
Publinet	49(5.4%)
Interests on social media	
Instant messaging	504(55.1%)
Games	381(41.7%)
Videos	501(54.8%)
News	247(27%)
Friends's news	420(46%)
Average daily use	Mean (SD)
	2.8 hours (5.9)

The prevalence of problematic use of social networking sites

Based on the BSMAS scores in our sample, the prevalence of problematic social media use was 7.5% using the conservative approach, and it increased to 41.2% with the liberal approach. Notably, private secondary schools located in modest neighborhoods had the highest percentage of problematic use according to the

conservative approach, with an estimated prevalence of 10.3%.

IPPA-R and the quality of attachment

The mean IPPA-mother score (SD) was 88.97 (11.58) [49; 121]. The mean IPPA-father score (SD) was 86.29 (12.74) [7; 111], and the mean IPPA-peer score (SD) was 80.30 (11.58) [45; 108]. Only the attachment score for the mother differed significantly based on the college ($p < 10^{-4}$).

Analytical study

The correlation between the BSMAS total score and socio-demographic characteristics is presented in Table 2. The BSMAS score increased significantly with age ($p = 0.043$) and was significantly higher in schools with lower social status ($p < 10^{-4}$). No significant variation according to gender was observed ($p = 0.10$).

Table 2. Socio-demographic characteristics associated to BSMAS

	Effective	Mean	SD	p
Gender				0.10
Boys	444	15,21	4,9	
Girls	472	15,77	5,35	
Age				0.043
11-12 ans	253	15,05	5,13	
13-15 ans	555	15,51	5,24	
16-18 ans	108	16,54	4,5	
Social status of school				$<10^{-4}$
Medium to well to do	530	14,9	5,11	
Modest	386	16,33	5,09	

The association between the total BSMAS score, the sites used, the interests, and the means of use of social networks is presented in Table 3. A statistically significant difference in the BSMAS score was found among middle school students who were interested in instant messaging, news from their friends, and news in general ($p < 10^{-4}$, $p < 10^{-4}$ and $p = 0.02$, respectively).

The association between the IPPA score and sociodemographic characteristics is presented in Table 4. The total IPPA-father score was significantly higher in males ($p = 0.051$). The IPPA-peer score varied significantly by gender, with higher scores in girls ($p = 0.004$). However, none of these scores showed significant variation with age. The IPPA-mother and IPPA-father scores were significantly influenced by the mother's educational level ($p = 0.003$; $p = 0.026$, respectively), with the highest values observed in participants whose mothers had a university-level education.

Table 3. Association between total BSMAS score, sites used, means of use and the interests

Variable		Effective	Mean	SD	p
Sites					
Facebook use	Yes	735	15.61	4.9	0.40
	No	172	15.25	5.8	
Instagram use	Yes	617	16	5	0.96
	No	290	16	5	
Whatsapp use	Yes	62	15.7	5.1	0.71
	No	845	15.5	5.1	
Twitter use	Yes	41	15.7	4.9	0.8
	No	866	15.5	5.1	
Other sites use	Yes	209	15.8	5.4	0.26
	No	698	15.4	4.9	
		Effective	Mean	SD	p
Means of use					
Telephone use	Yes	754	15.6	5.1	0.29
	No	153	15.1	5.1	
Computer use	Yes	340	15.3	4.9	0.44
	No	567	15.6	5.2	
Tablet use	Yes	166	15.4	5.2	0.84
	No	741	15.5	5.0	
Publinet use	Yes	48	15.2	5.2	0.65
	No	859	15.5	5.1	
		Effective	Mean	SD	p
Interests					
Instant messaging	Yes	500	16.2	4.8	<10 ⁻⁴
	No	407	14.6	5.2	
Videos	Yes	498	15.6	5.1	0.51
	No	409	15.4	5	
Games	Yes	380	15.3	4.7	0.31
	No	527	15.6	5.3	
Freinds'news	Yes	418	16.2	5.1	<10 ⁻⁴
	No	489	14.9	5	
News	Yes	246	14.9	5	0.02
	No	661	15.7	5	

The association between IPPA dimensions and gender is presented in Table 5. In this study, significant variations were observed in the dimensions of trust and communication for the father according to gender ($p = 0.002$; $p = 0.003$, respectively), with higher scores for girls. Regarding peers, significant variations were found in the dimensions of trust, communication, and alienation, with higher scores for girls ($p = 0.002$; $p = 0.003$; $p = 0.024$, respectively).

Table 4. Socio-demographic characteristics associated to IPPA

		Effectif	Mean	SD	P
IPPA-Father	Gender				
	Boys	491	87	11.5	0.051
	Girls	516	85.5	13.8	
	Age	1008	1.8	0.6	
IPPA-Mother		Effectif	Mean	SD	P
	Gender				
	Boys	491	89.3	10.1	0.27
	Girls	516	88.5	12.8	
Age	1008	1.8	0.6		
		Effectif	Mean	SD	P
IPPA-Peers	Gender				
	Boys	491	79.2	11.3	0,004
	Girls	516	81.3	11.7	
	Age	1008	1.8	0.6	
IPPA-Father	Social status	Effectif	Mean	SD	P
	Medium to well to do	583	86.9	12.3	0.06
	Modest	425	85.4	13.2	
			Effectif	Mean	SD
IPPA-Mother	Social status				
	Medium to well to do	583	89.7	11.5	0,01
	Modest	425	87.8	11.5	
		Effectif	Mean	SD	P
IPPA-Peers	Social status				
	Medium to well to do	583	80.5	10.9	0.53
	Modest	425	80	12.4	

Table 5. Association between IPPA dimensions and gender

	Gender	Effectif	Mean	SD	p
IPPA-Father					
Trust	Boys	491	33.9	8.8	0.002
	Girls	516	35.6	8.9	
Communication	Boys	491	23.4	5.4	0.003
	Girls	516	24.5	5.9	
Alienation	Boys	491	15.1	4	0.63
	Girls	516	15.2	4	
	Gender	Effectif	Mean	SD	p
IPPA-Mother					
Trust	Boys	491	37.7	5.48	0.52
	Girls	516	37.5	6.52	
Communication	Boys	491	30.6	5.6	0.17
	Girls	516	30.1	6.8	
Alienation	Boys	491	15	3.8	0.76
	Girls	516	15.1	3.8	
	Gender	Effectif	Mean	SD	p
IPPA-Peers					
Trust	Boys	491	33.9	8.8	0.002
	Girls	516	35.6	8.9	
Communication	Boys	491	23.4	5.4	0.003
	Girls	516	24.5	5.9	
Alienation	Boys	491	20.2	4.8	0.024
	Girls	516	20.8	4.2	

The association between attachment to parents and problematic use of social networks was analyzed. A negative and statistically significant correlation was found between the BSMAS total score and both the mother and father attachment scores ($r = -0.17$; $r = -0.13$, $p < 10^{-4}$, respectively). Additionally, a negative and significant correlation was observed between the BSMAS total score and the dimensions of trust and communication for both the father ($p = 0.02$ and $p = 0.001$, respectively) and the mother ($p = 0.01$; $p < 10^{-4}$, respectively). Furthermore, a positive and significant correlation was found between the BSMAS total score and the dimensions of alienation for both parents ($p < 10^{-4}$).

Regarding the association between attachment to peers and problematic use of social networks, no significant association was found between the overall peer attachment score and the BSMAS total score. However, a positive and significant correlation was observed between the BSMAS total score and the dimension of alienation ($p < 10^{-4}$), as well as the dimension of communication ($p = 0.042$).

DISCUSSION

To our knowledge, there are no studies in Tunisia that evaluate the relationship between attachment and social media use in the general population, particularly among adolescents. Furthermore, in continuity with previous research on cyberaddiction in Tunisia, our study provides a detailed description of social media use, which plays a significant role in the lives of Tunisian adolescents and aims to determine the prevalence of problematic social media use within this population.

Problematic use of social networks

According to the BSMAS addiction score and using the conservative approach, the prevalence of problematic social media use was 7.5%, which is consistent with the prevalence rates reported in the existing literature. However, this percentage increased to 41.2% when assessed using the liberal approach.

Indeed, there is limited information regarding the prevalence of SMA specifically among adolescents. Most previous studies have focused on problematic internet use in general. In any case, the reported prevalence rates are highly variable across the literature. This variability can be attributed to several methodological differences, including variations in measurement tools, the diverse settings in which studies were conducted, differences in the time frame for data collection, sampling techniques and variations in the populations studied [18,36]. According to Bányai et al., the prevalence of problematic social media use could either be under or overestimated, which can be attributed to differences in study frameworks and assessment tools used [37]. Regarding internet addiction, a recent literature review found that the prevalence in large samples (>1000 participants) ranged from 1% to 27% [38]. These variations in prevalence rates depend on the definitions, assessment tools, and cutoffs applied in

different studies [38]. Using the BSMAS as a tool, a study conducted on 5,961 Hungarian adolescents found that 4.5% of participants were classified as being at risk for SMA [37]. In contrast, a lower prevalence of 2.6% was reported for German adolescents when the Social Media Disorder Scale was used as the assessment measure [39]. A similar finding was reported by Dagona et al., who observed a 2.8% prevalence of problematic social media use among Nigerian college students [40]. Nevertheless, a Japanese study using the Young's Addiction Scale, reported a higher prevalence which was estimated at 7.9% [41]. Similarly, Li et al. reported an estimated frequency of 8.8% in their study of 910 college students using the Social Networking Activity Intensity Scale [42]. In a more recent study included 6468 adolescents, the prevalence of Internet addiction assessed using the Internet Addiction Scale was 26.5% knowing that 94.7% of the participants were users of social media [43]. Given Facebook's prominent position among social networks at that time, several studies focused specifically on assessing the prevalence of Facebook addiction. According to a review of the literature, prevalence rates ranged from 2% to 10% [41,44,45].

Regarding recent studies on cyberaddiction among adolescents and young adults, prevalence rates have been reported to range from 1% to 40%, depending on the study population and the diagnostic criteria employed [28].

The link between attachment to parents and the problematic use of social media

Most previous studies on this subject have explored the association between problematic social media use and attachment, particularly by examining the link between this disorder and the type of attachment, whether secure or insecure [19]. In our study, we found a statistically significant negative correlation between the BSMAS score and parental attachment scores. Specifically, higher attachment quality was associated with a lower risk of problematic social media use. Our findings align with those reported by Ballarotto et al., who conducted a study with a sample of 1105 adolescents using the same tool, the IPPA-R [19]. Similarly, other studies have highlighted that low-quality attachment to parents is associated with various addictive behaviors, including SMA [46,47].

In the literature, numerous authors have investigated the relationship between attachment styles and Internet use, consistently reporting a significant negative association between secure attachment and problematic Internet use, particularly in the context of social networks [6,48,49]. Bifulco hypothesized that individuals with secure attachment generally exhibit high self-esteem and are more inclined to seek intimate social relationships [50]. They are able to share their emotions with others with ease and tend to seek social support when needed. Moreover, they typically regulate their use of social networks effectively, without exhibiting signs of addictive behaviors [51].

However, other authors have found no association between these two constructs [52]. Instead, they have

shown that individuals with a secure attachment tend to have greater access to social media [53], and that this attachment style serves as a predictive factor for seeking social connections online, particularly among adolescents [54]. Conversely, a significant positive association has been identified between problematic Internet use and insecure attachment [4,7,46,55]. In line with these findings, one study reported a positive relationship between low-quality parental attachment and increased time spent on social media [19].

Moreover, increased Internet use has been associated with lower-quality parent-adolescent relationships [56], particularly in relation to the mother-child bond [57]. Yen [47] reported that problematic social media use is frequently linked to conflictual dynamics within the parent-adolescent relationship. Nickerson and Nagle [58] clearly stated that adolescents who report emotional unavailability from their parents are more prone to developing SMA, primarily using these platforms as a means to seek social support, particularly from their peers. With regard to the different forms of insecure attachment, some authors have suggested that only anxious attachment predisposes individuals to this problematic use [7,56,57], whereas others have identified avoidant attachment as the only significant predictor [58]. However, the majority of studies indicate that all insecure attachment styles are involved, with anxious and avoidant types being particularly implicated [7,59,60]. Individuals with insecure attachment often struggle with self-image and/or perceptions of others, which may contribute to difficulties in establishing and maintaining direct interpersonal relationships [51]. Consequently, they may prefer indirect, online forms of interaction through social media rather than face-to-face relationships, which can lead to increased time spent on these platforms and a heightened risk of Internet addiction [51,60]. However, Monacis [6] suggested that the avoidant attachment style may in some cases, serve as a protective factor. This could be attributed to the use of deactivating strategies by avoidantly attached individuals, such as avoiding proximity, suppressing attachment needs, and distancing themselves from emotional closeness and interdependence in relationships [60].

The link between attachment to peers and the problematic use of social media

In the present study, no significant association was found between peer attachment and SMA. The literature on this topic remains inconclusive. While some studies have reported that high-quality peer attachment is associated with excessive social media use [61,62], other research has indicated that poor peer attachment predisposes adolescents to increased Internet use, particularly for online communication [6]. From an attachment style perspective, insecure peer attachment has been identified as a risk factor for SMA, whereas secure peer attachment appears to serve as a protective factor [24,60].

According to Blais et al [63], the specific type of social media use, such as engaging in instant messaging, may have a greater impact on the quality of peer relationships

than the overall amount of time spent online. Another study suggested that poor peer attachment could not only be a cause but also a consequence of problematic Internet use [24]. Soh et al. [64] compared attachment to parents and peers, concluding that low-quality attachment to peers is associated with SMA.

Limitations

Despite the findings, this study has several limitations. First, its cross-sectional design provides only a snapshot of Internet use at a specific moment in time, and does not allow for the assessment of usage patterns over time. This is particularly important in a young population, which is inherently subject to rapid developmental changes. Second, we used purposive sampling based on school type and the socio-economic profile of the target population, as this was more practical given time constraints and the fact that data collection was conducted by a single investigator. Due to low enrollment, three private schools in modest areas of Greater Tunis were added to increase the sample size. Moreover, the adapted BSMAS version used had a low level of reliability, with a Cronbach's alpha of less than 0.7.

Furthermore, the instrument used evaluated attachment quality in a general, non-specific manner. Specifically, we did not fully assess the family environment, including factors such as upbringing conditions, family dynamics, potential exposure to parental mistreatment, single-parent status, the presence of alternative attachment figures, and the quality of those relationships.

CONCLUSION

Social media has become an almost inevitable part of the lives of adolescents and young adults. While it serves as an important source of knowledge and communication, it can also lead to problematic use, particularly among vulnerable adolescents with insecure attachment styles. Our findings regarding the relationship between SMA and the quality of attachment to parents and peers in a population of college students in Tunisia are consistent with the majority of previous studies, particularly those employing similar assessment tools. Specifically, previous research has been demonstrated that poor attachment quality is associated with an increased risk of SMA. Therefore, the implementation of preventive strategies is crucial to mitigate addictive social media use. In this regard, parents play a significant role, particularly in monitoring and regulating access to social networks. Furthermore, educational programs in colleges and high schools, delivered by teachers and supported by school health services, should be developed with the active involvement of parents. Regarding future research, longitudinal studies are needed to extend our findings and provide a more comprehensive understanding of the role that attachment quality plays in SMA.

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