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Effect of Automatic Thoughts on Social Media Addiction in University Students

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ABSTRACT

This study aimed to determine the effect of automatic thoughts on social media addiction (SMA) in university students. The current research is descriptive. The study population consisted of all students studying at Iğdir University in the 2022–2023 academic year (N=14.000); the sample consisted of 631 people. Data were collected using a general information form, the SMA Scale (SMAS), and the Automatic Thoughts Scale (ATS). Descriptive statistical analyses (percentage, minimum, maximum, and mean), independent sample t-test, one-way analysis of variance Pearson correlation, and multivariate linear regression analysis were used to evaluate the data. The mean age of the students in the sample was 20.71±1.99, and 67.5% were female. The students were less dependent on social media (SM) and the level of negative automatic thoughts was above average. A significant difference was found between ATS and gender, family income status, psychiatric disorder status, and duration of SM use ($p<0.05$). The difference between SMAS and gender, psychiatric disorder status, years of SM use, and duration of use was statistically significant ($p<0.05$). A moderately significant relationship was statistically determined between ATS and SMAS ($r=0.423$; $p<0.05$). Finally, it was determined that automatic thoughts significantly predicted SMA ($F_{(2-436)}=136.929$; $p<0.05$). Consequently, it was determined that as automatic thoughts increase, SMA increases and automatic thoughts predict SMA. Furthermore, providing students with training programs that develop functional automatic thoughts instead of dysfunctional automatic thoughts and reduce their SM use may be important.

Keywords: Automatic thoughts, social media addiction, university students.

ÖZ

Üniversite Öğrencilerinde Otomatik Düşüncelerin Sosyal Medya Bağımlılığı Üzerine Etkisi

Bu çalışma, üniversite öğrencilerinde otomatik düşüncelerin Sosyal Medya Bağımlılığı (SMB) üzerindeki etkisini belirlemek amacıyla yapıldı. Bu tanımlayıcı nitelikte yapılan çalışmanın evrenini 2022-2023 eğitim öğretim yılında Iğdır Üniversitesi'nde öğrenim gören tüm öğrenciler (N=14.000), örneklemini ise 631 kişi oluşturdu. Veriler genel bilgi formu, Sosyal Medya Bağımlılığı Ölçeği (SMBÖ) ve Otomatik Düşünceler Ölçeği (ODÖ) kullanılarak toplandı. Verilerin değerlendirilmesinde betimsel istatistiksel analizler (yüzde, minimum, maksimum, ortalama), bağımsız örneklem t testi, tek yönlü ANOVA, Pearson korelasyon ve çok değişkenli doğrusal regresyon analizi kullanıldı. Örneklemdeki öğrencilerin yaş ortalamasının 20,71±1,99 ve %67,5'inin kadın olduğu tespit edildi. Öğrencilerin Sosyal Medyaya (SM) daha az bağımlı oldukları ve olumsuz otomatik düşünce düzeylerinin ortalamanın üzerinde olduğu görüldü. ODÖ ile cinsiyet, aile gelir durumu, psikiyatrik bozukluk durumu ve SM kullanım süresi arasında anlamlı bir fark olduğu bulundu ($p<0,05$). SMBÖ ile cinsiyet, psikiyatrik bozukluk durumu, SM kullanım yılı ve kullanım süresi arasındaki farkın istatistiksel olarak anlamlı olduğu tespit edildi ($p<0,05$). ODÖ ve SMBÖ arasında istatistiksel olarak pozitif yönde orta düzeyde anlamlı

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bir ilişki saptandı (r=0,423; p<0,05). Son olarak, otomatik düşüncelerin SMB'yi anlamlı şekilde yordadığı belirlendi ($F_{[2-436]}$=136,929; p<0,05). Sonuç olarak, otomatik düşünceler arttıkça SMB'nin arttığı ve otomatik düşüncelerin SMB'yi yordadığı belirlendi. Ayrıca öğrencilere işlevsiz otomatik düşünceler yerine işlevsel otomatik düşünceler geliştiren ve SM kullanımlarını azaltan eğitim programlarının uygulanması önemli olabilir.

Anahtar Kelimeler: Otomatik düşünceler, sosyal medya bağımlılığı, üniversite öğrencileri.

INTRODUCTION

Social media (SM) is an information technology-based platform that enables users to communicate and exchange information with each other (Aslan & Tolan, 2022; Huang et al, 2023). SM use is increasing daily, especially among young people (Aksu et al, 2019; Michikyan & Suárez-Orozco, 2016). According to data from We Are Social 2024, there are more than 5.04 billion active SM users, who spend an average of 2 h 23 min a day on SM. The report also states that SM users in Turkey spend an average of 2 h and 44 min a day on SM (We Are Social, 2024). As SM has become easily accessible and widespread worldwide, it negatively affects interpersonal relationships, psychological health, and private life (Doğan & Tosun, 2016; Acılar & Mersin, 2015; Aslan & Tolan, 2022). When the amount and duration of young people's use of SM networks are high, the phenomenon of addiction comes to the fore (Aslan & Tolan, 2022). Studies indicate that SM use can result in addiction risk and mental health problems (Kuss & Griffiths, 2017; Duan et al, 2020). SMA is defined as people's inability to control their use of SM to the extent that it interferes with other life tasks (Ryan et al, 2014; Andreasen 2015). Davis (2001) states that individuals with negative thoughts in daily life reveal these thoughts by hiding themselves on SM platforms and that these thoughts cause abnormal behaviors. Moreover, Davis states that the dysfunctional thinking in the mind leads the person to problematic Internet and SM use. People who have a negative attitude toward themselves use SM to get positive responses from others. They have automatic thoughts such as "I am good on SM," "I am worthless when I am not on SM," "I am a failure when I am not on SM," "SM is the only place I respect," "SM is my only friend," and "People treat me badly outside SM" (Şenormancı et al, 2010). Cognitive theory states that the basis of psychological disorders is the wrong, distorted interpretations of the individual; dysfunctional attitudes are accepted as the source of automatic thoughts (Yığman et al, 2021; Aslan and Tolan 2022). Automatic thoughts "are situation-specific cognitions that come to mind spontaneously, occur in certain situations, and take place in the flow of mind" (Türkçapar, 2018). Negative automatic thoughts have been reported as a crucial risk factor for maladaptive coping strategies and problematic behaviors (Lian et al, 2023; Hou et al, 2021; Nie et al, 2021). Individuals may turn to the virtual world (e.g., SM) to remove such negative emotions. Over time, these individuals become addicted to SM and spend more time on it, finding it difficult to free themselves from this situation (Liu et al, 2023). Studies have indicated that SM is widely used as a tool to spend time and eliminate negative emotions (Aslan & Tolan, 2022; Balıkçı et al, 2020; Pantic, 2014; Spada et al, 2015). In particular, "individuals with high automatic thoughts are more likely to form automatic and passive thoughts when faced with disappointment," which triggers unrealistic behavior and SMA. Previous studies have shown that automatic thoughts play a key role in avoiding reality and indulging in the Internet (Geng et al, 2009; Nie et al, 2021). Recent research has focused on assessing the link between positive metacognitive beliefs and SMA (Casale et al, 2018; Marino et al, 2016). Within the scope of the above concepts, it was considered that problematic SM use may be related to automatic thoughts. In this context, the beneficial use of SM is predicted to contribute to the literature as well as reduce its negative aspects. Although there is evidence that problematic SM use negatively affects mental health, very few studies have examined the mechanisms underlying this relationship. This study aimed to determine the effect of automatic thoughts on SM addiction. Therefore, the research questions developed based on this study's general purpose are listed below.

1. "Is there a significant difference between the demographic characteristics of the students and their automatic thoughts?"
2. "Is there a significant difference between the demographic characteristics of the students and the SMA?"
3. "Is there a significant relationship between the automatic thoughts and SMA?"
4. "Do automatic thoughts significantly predict SMA?"

METHOD

Design and Participants

This research was conducted using a cross-sectional design. The universe of research consisted of 14.000 students studying Iğdır University in undergraduate and associate degree programs between 2022 and 2023. For the study

sample, the minimum sample size was calculated as 372 students using the sample width formula, where the number of individuals in the universe is known. However, considering the possible losses, 700 students were included in the study, 69 studentswere excluded from the study because they left the scales incomplete, and the study was completed with 631 students. The inclusion criteria for the study were students using SM, agreeing to participate in the study, and signing informed consent. The exclusion criteria of the research were incomplete questionnaires and wanting to leave the study. Before starting the study, ethics committee approval was obtained from Iğdır University ethics committee (date: 25.05.2023 number: 2023/10). Before the study data were collected, written informed consent was obtained regarding the purpose, duration, and withdrawal from the study, and confidentiality was guaranteed. The research data were gathered by administering questionnaires in the classroom environment, and data collection took one hour. The researchers first informed the participants about the research and then distributed the questionnaires to those who volunteered. This study was conducted in accordance with the ethical standards of the Declaration of Helsinki (October 2013).

Data Collection Methods

Information Form: This form was created by the researcher in the form of a nine-question form that includes the demographic characteristics of students (such as gender, age, class, family income status, mother and father education status, and psychiatric disorder status) and SM usage (year and duration of SM use) in line with the literature review (Tutgun Ünal, 2015; Durar & Daştan, 2018).

Social Media Addiction Scale (SMAS): The SMAS, developed by Tutgun Ünal (2015), was used to measure students' SMA. The SMAS comprises 41 items and employs a five-point Likert-type response scale. The lowest possible SMAS score is 41, and the highest is 205. The scoring scale is as follows: 41–73 = "no addiction," 74–106 = "slightly dependent," 107–139 = "moderately dependent," 140–172 = "highly dependent," and 173–205 = "very highly dependent." The SMAS contains four subdimensions: "occupation," "mood regulation," "repetition," and "conflict." As per the Cronbach's alpha value (0.967), the scale is valid and reliable (Tutgun Ünal, 2015). In this study, the alpha values for the SMAS subdimensions were 0.86–0.94.

Automatic Thoughts Scale (ATS): Hollon and Kendall created the negative ATS to assess the severity of negative thoughts and negative self-evaluations. It is a Likert-type scale with 30 items and a score range of 30–150. The Cronbach alpha coefficient is 0.98. Şahin and Şahin (1992), (39) conducted the Turkish validity and reliability research. According to the results of the factor analysis, the scale has five elements (39).

Table 1. Frequency and percentage distribution of demographic characteristics of individuals participating in the study

	n	%
Gender		
Male	205	32.5
Female	426	67.5
Age		
17–20	329	52.1
21–35	302	47.9
Classroom		
First class	422	66.9
Second class	209	33.1
Family income status		
Good	137	21.7
Medium	169	26.8
Bad	325	51.5
Mother's educational status		
Illiterate	274	43.3
Primary	303	48.0
High school	42	6.7
Associate degree	5	0.8
Undergraduate	7	1.2
Father's educational status		
Illiterate	59	9.4
Primary	424	67.2
High school	111	17.6
Associate degree	17	2.7
Undergraduate	16	2.5
Illiterate	4	0.6
Psychiatric disorder status		
Yes	29	4.6
No	602	95.4
Year of SM use		
Less than 1 year	110	17.4
1–3 years	184	29.2
4–6 years	203	32.2
More than 7 years	134	21.2
Duration of SM usage		
Less than 1 h	134	21.2
1–3 h	302	47.9
4–6 h	149	23.6
More than 7 h	46	7.3
Total	**631**	**100.0**

SM: Social media.

The scale's subdimensions are personal maladjustment and desire for change (items 9, 26, and 29), loneliness/isolation (items 1, 4, 10, 2, and 8), and hopelessness (items 6, 11, 12, and 25). The Cronbach alpha coefficient is 0.93. In this study, the alpha values for the ATS ranged from 0.79 to 0.97; when the entire alpha value was analyzed, it was shown to be extremely reliable.

Data analysis

Data were analyzed using the Statistical Package for the Social Sciences v.23 program. Descriptive parameters, such as number, percentage, mean, and standard deviation, were employed to evaluate the data. In the paired groups, the independent group t-test was employed, as was one-way analysis of variance in groups of three or more, Pearson correlation to assess the link between variables, and multiple linear regression analysis for predictive analysis.

RESULTS

Table 1 shows the demographic features of the patients participating in the trial. The table shows that 32.5% of the students were male and 67.5 % were female. The students were minimum 17 and maximum 35 years old, 66.9% were in the first grade, and 95.4% did not have psychiatric disorders. The family income status of the students was poor (51.5%), and the majority of their mothers (48.0%) and fathers (67.2%) were primary school graduates. It was found that 32.2% of the students used SM between 4 and 6 years of age and 47.9% of them used it daily for between 1 and 3 h.

The analysis revealed that automatic thoughts did not differ according to age, class, education level, and years of SM use ($p>0.05$). The difference between the groups was statistically significant in the total ATS score and in the subdimensions of "Self-oriented," "Prone to Confusion and Escapism," "Prone to Personal Incompatibility," and "Prone to Loneliness" in the gender variable ($p<0.05$). According to the significant difference, women had a higher mean than men. The difference between the groups was statistically significant in the subdimensions of Prone to Personal Incompatibility and Prone to Loneliness in the variable of family income status ($p<0.05$). According to the significant differences, a difference was found between those with poor income and those with moderate income, and the average of those with moderate income was lower. The difference between the groups was statistically significant ($p<0.05$) in the total ATS score, in the subdimensions of Prone to Confusion–Escapism and Prone to Despair, and in the variable of having psychiatric disorder. According to the significant differences, there was a difference between those with and without psychiatric disorders, and the means of those with psychiatric disorders were higher. In the ATS total score and all subdimensions, the difference between the groups was found to be statistically significant in the variable of the duration of SM use ($p<0.05$). According to the significant differences that emerged, there was a difference between those who used SM for more than 7 h and those who used it for 1–3 h and less than 1 h, and the average of people who used SM for more than 7 h was higher. Another result is that there is a difference between those who use SM between 4–6 h and those who use it between 1–3 h and less than 1 h, and the average of those who use it between 4–6 hours is high (Table 2).

The analysis revealed that SMA did not differ according to age, class, family income, and education level ($p>0.05$). In the mood regulation subdimension of the SMAS, the difference between the groups in the variables of gender and psychiatric disorder was statistically significant ($p<0.05$). According to the significant differences, women had a higher mean than men. Another result is that the average number of people with psychiatric disorders is higher than those without psychiatric disorders. The difference between the groups was statistically significant in the SMAS total score and all subdimensions and in the variable of the year of SM use ($p<0.05$). According to the significant differences, it was determined that there was a difference between those who used SM for less than 1 year and those who used SM for 1–3 years, 4–6 years, and more than 7 years in the total score, preoccupation, and mood regulation subdimensions of the SMAS; and that the mean scores of those who used SM for less than 1 year were lower than those who used SM for 1–3 years, 4–6 years, and more than 7 years. Another result is that there is a difference between those who use SM for less than 1 year and those who use SM for 1–3 years and 4–6 years in the subdimensions of repetition and conflict; the mean scores of those who use SM for less than 1 year are lower than those who use SM for 1–3 years and 4–6 years. In the SMAS total score and all subdimensions, the difference between the groups in the variable of time spent on SM was statistically significant ($p<0.05$). According to the significant differences, it was determined that the averages of those who used SM for less than 1 h were lower than those who used SM for 1–3 h, 4–6 h, and more than 7 h; those who used SM for 1–3 h were lower than those who used SM for 4–6 hours and more than 7 h; and those who used SM for 4–6 h were lower than those who used SM for more than 7 h (Table 3).

The Pearson correlation analysis was performed to determine the relationship between ATS and SMAS (Table 4). A positive, moderately significant relationship was detected between ATS and SMAS ($r=0.423$; $p<0.05$). In terms of the ATS subdimensions, the highest relationship is between the "Prone to Confusion and Escapism" subdimension and the "Prone to Despair" subdimension ($r=0.869$), and the lowest correlation is between the "Prone to Personal Incompatibility" subdimension and the "Self-oriented" subdimension ($r=0.751$).

Table 2. Comparison of the mean scores of the Automatic Thoughts Scale and its subdimensions according to the descriptive characteristics of the participants

Variables	Self-oriented Mean±SD	Prone to confusion and escapism Mean±SD	Prone to personal incompatibility Mean±SD	Prone to loneliness Mean±SD	Prone to despair Mean±SD	ATS total Mean±SD
Gender						
(1) Male	18.45±9.103	13.28±6.244	7.39±3.341	9.10±3.856	8.30±4.074	62.54±27.052
(2) Female	20.06±9.297	14.46±6.769	8.13±3.368	9.85±4.129	8.95±4.370	67.88±28.550
Test	**T=2.046 p<0.05 1<2**	**T=2.100 p<0.05 1<2**	**T=2.587 p<0.05 1<2**	**T=2.184 p<0.05 1<2**	**T=1.791 p>0.05**	**T=2.227 p<0.05 1<2**
Age						
(1) 17–20	19.29±9.098	14.05±6.500	7.85±3.351	9.58±3.973	8.55±4.100	65.67±27.485
(2) 21–35	19.83±9.437	14.00±6.766	7.94±3.405	9.65±4.150	8.95±4.476	66.72±28.930
Test	T=–0.727 p>0.05	T=0.280 p>0.05	T=–0.344 p>0.05	T=–0.232 p>0.05	T=–1.183 p>0.05	T=–0.468 p>0.05
Clasroom						
(1) First class	19.91±9.368	14.33±6.635	7.97±3.364	9.75±4.016	8.81±4.251	67.16±28.200
(2) Second class	18.79±9.028	13.55±6.601	7.72±3.405	9.33±4.141	8.58±4.368	64.10±28.120
Test	T=1.423 p>0.05	T=1.389 p>0.05	T=0.857 p>0.05	T=1.211 p>0.05	T=0.634 p>0.05	T=1.277 p>0.05
Family income status						
(1) Good	19.81±10.359	14.25±6.923	8.05±3.666	9.62±4.208	8.89±4.496	66.85±30.372
(2) Medium	18.17±9.025	13.27±6.672	7.32±3.215	8.96±3.875	8.27±4.339	62.04±27.940
(3) Bad	20.16±8.822	14.44±6.449	8.12±3.300	9.95±4.052	8.92±4.157	68.04±27.150
Test	F=2.646 p>0.05	F=1.792 p>0.05	**F=3.335 p<0.05 2<3**	**F=3.323 p<0.05 2<3**	F=1.382 p>0.05	F=2.581 p>0.05
Mother's educational status						
(1) Illiterate	20.17±9.62	14.68±6.63	8.05±3.40	9.79±4.11	9.06±4.39	68.27±28.80
(2) Primary	18.97±8.94	13.54±6.45	7.72±3.30	9.41±3.92	8.44±4.11	64.22±27.16
(3) High school	19.86±9.45	13.97±7.37	8.06±3.78	9.79±4.55	8.90±4.73	66.76±31.21
(4) Associate degree	23.20±10.70	20.00±7.24	10.20±2.38	11.80±3.96	11.40±4.27	83.60±29.15
(5) Undergraduate	15.80±6.49	10.70±4.59	6.50±2.95	7.80±3.73	6.60±3.43	52.60±19.82
Test	F=1.182 p>0.05	F=2.677 p>0.05	F=1.355 p>0.05	F=1.202 p>0.05	F=1.858 p>0.05	F=1.768 p>0.05
Father's educational status						
(1) Illiterate	20.38±9.90	14.83±6.51	7.98±3.27	9.57±4.13	9.08±4.33	68.11±28.54
(2) Primary	19.63±9.06	14.14±6.64	7.98±3.38	9.65±3.99	8.79±4.28	66.59±27.99
(3) High school	19.60±9.97	13.75±6.66	7.63±3.47	9.52±4.33	8.59±4.45	65.19±29.66
(4) Associate degree	16.25±9.40	13.70±8.72	7.58±3.89	9.23±4.95	7.76±4.45	59.17±31.93
(5) Undergraduate	17.90±7.01	12.85±4.29	7.50±2.46	9.80±3.01	8.45±3.11	62.90±18.49
Test	F=0.833 p>0.05	F=0.449 p>0.05	F=0.340 p>0.05	F=0.072 p>0.05	F=0.384 p>0.05	F=0.456 p>0.05

Table 2 (cont). Comparison of the mean scores of the Automatic Thoughts Scale and its subdimensions according to the descriptive characteristics of the participants

Variables	Self-oriented Mean±SD	Prone to confusion and escapism Mean±SD	Prone to personal incompatibility Mean±SD	Prone to loneliness Mean±SD	Prone to despair Mean±SD	ATS total Mean±SD
Psychiatric disorder status						
(1) Yes	21.62±8.73	17.44±6055	9.06±3.31	10.89±4.20	10.86±4.67	76.89±27.71
(2) No	19.45±9.27	13092±6058	7.83±3.36	9.55±4.04	8.64±4.24	65.66±28.10
Test	T=1.233	**T=2.813**	T=1.950	T=1.743	**T=2.506**	**T=2.104**
	p>0.05	**p<0.05**	p>0.05	p>0.05	**p<0.05**	**p<0.05**
		1<2			**1<2**	**1<2**
Year of SM use						
(1) Less than 1 year	19.94±8.71	14.00±6.50	7.81±2.88	9.43±3.83	8.56±4.01	65.92±26.37
(2) 1–3 years	19.81±9.73	14.03±657	7.75±3.63	9.70±4.16	8.74±4.51	66.35±29.61
(3) 4–6 years	19.94±9.46	14.53±7.03	8.00±3.48	9.79±4.09	8.98±4.41	67.64±29.22
(4) More than 7 years	18.27±8.65	13.54±6.15	7.99±3.22	9.37±4.04	8.54±3.99	63.92±25.96
Test	F=1.083	F=0.610	F=0.221	F=0.385	F=0.366	F=0.469
	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05
Duration of SM usage						
(1) Less than 1 h	18.19±8.68	13.10±6.51	7.41±3.34	9.08±3.94	8.16±4.19	61.79±27.26
(2) 1–3 h	18.69±8.22	13.48±6.15	7.46±3.12	9.32±3.73	8.28±3.85	63.32±25.25
(3) 4–6 h	21.53±10.55	15.33±6.93	8.79±3.48	10.25±4.34	9.36±4.61	72.36±30.70
(4) More than 7 h	23.02±11.31	17.11±7.71	9.36±3.82	11.36±4.93	10.75±5.24	78.77±34.41
Test	**F=6.285**	**F=6.812**	**F=9.199**	**F=4.640**	**F=7.571**	**F=7.674**
	p<0.05	**p<0.05**	**p<0.05**	**p<0.05**	**p<0.05**	**p<0.05**
	1<3	**1 < 3**	**1<3**	**1<3**	**1<3**	**1<3**
	1<4	**1 < 4**	**1<4**	**1<4**	**1<4**	**1<4**
	2<3	**2 < 3**	**2<3**	**2<3**	**2<3**	**2<3**
	2<4	**2 < 4**	**2<4**	**2<4**	**2<4**	**2<4**

SD: Standard deviation; ATS: Automatic Thoughts Scale.

In terms of the SMAS subdimensions, the highest relationship is between the "Conflict" subdimension and the "Repetition" subdimension (r=0.680), and the lowest relationship is between the "Repetition" subdimension and the "Emotion State Regulation" subdimension(r=0.505).

Table 5 presents the results of the multiple linear regression analysis on whether automatic thoughts predict SM addiction. The multiple linear regression model established to examine the effect of automatic thoughts on SMA was found to be significant (F(2–436)=136.929; p<0.05). Furthermore, there is no multicollinearity and autocorrelation problem in the established model (Durbin Watson=1.396; VIF<5). These variables together explain 17.9% of the change in the SMA level (R=0.423; R2(Adjusted)=0.179).

DISCUSSION

This study examined the effect of automatic thoughts on SMA in university students. In addition, the study also examined the differences in automatic thoughts and SMA levels among university students according to various demographic variables. The study observed that automatic thoughts and SMA variables were interrelated. Additionally, automatic thoughts were found to have the power to predict SM addiction. Very few comprehensive studies have examined the effect of automatic thoughts on SMA in university students. Therefore, it is thought that the study will contribute to the literature.

Significant differences were observed between the demographic characteristics of the students and their mean

Table 3. Comparison of the mean scores of the SMA Scale and its subdimensions according to the descriptive characteristics of the participants

Variables	Occupation Mean±SD	Mood regulation Mean±SD	Repetition Mean±SD	Conflict Mean±SD	SMAS total Mean±SD
Gender					
(1) Male	26.71±9.29	10.91±4.54	9.08±4.19	31.99±12.76	78.71±25.99
(2) Female	28.04±10.50	11.74±5.13	9.33±4.25	33.67±14.16	82.80±29.61
Test	T=1.536	**T=2.039**	T=0.689	T=1.439	T=1.681
	p>0.05	**p<0.05**	p>0.05	p>0.05	p>0.05
		1<2			
Age					
(1) 17–20	28.20±10.26	11.55±4.97	9.27±4.28	33.15±13.16	82.18±28.16
(2)21–35	26.99±9.99	11.39±4.96	9.23±4.18	33.11±14.36	80.73±28.98
Test	T=1.498	T=0.402	T=0.113	T=0.036	T=0.636
	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05
Clasroom					
(1) First class	27.85±10.45	11.52±5.00	9.16±4.20	33.17±13.61	81.72±28.58
(2) Second class	27.10±9.50	11.37±4.91	9.42±4.29	32.94±13.98	80.85±28.50
Test	T=0.869	T=0.349	T=–0.729	T=0.202	T=0.359
	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05
Family income status					
(1) Good	28.66±10.81	12.22±5.26	9.13±4.28	33.71±13.97	83.74±29.00
(2) Medium	26.76±9.38	11.00±4.64	9.40±4.37	32.00±12.86	79.17±27.07
(3) Bad	27.61±10.22	11.40±4.97	9.23±4.14	33.47±14.08	81.73±29.09
Test	F=1.338	F=2.393	F=0.159	F=0.803	F=1.004
	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05
Mother's educational status					
(1) Illiterate	27.45±10.49	11.58±5.09	9.22±4.09	33.38±12.73	81.64±27.98
(2) Primary	27.45±9.47	11.31±4.83	9.31±4.40	32.93±14.67	81.02±28.79
(3) Highschool	29.60±12.50	12.11±5.26	9.02±3.86	33.06±13.89	83.81±31.81
(4) Associate degree	33.20±9.62	12.40±1.81	11.40±5.54	36.60±13.46	93.60±20.65
(5) Undergraduate	23.40±7.56	9.10±4.90	7.30±3.05	28.20±10.28	68.00±22.84
Test	F=0.849	F=0.430	F=0.471	F=0.197	F=0.417
	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05
Father's educational status					
(1) Illiterate	26.59±11.43	10.77±5.07	8.25±3.34	34.06±14.27	79.69±30.45
(2) Primary	27.79±10.06	11.43±4.95	9.47±4.26	33.21±13.81	81.91±28.57
(3) High school	27.61±10.07	12.32±5.16	9.12±4.53	33.10±13.99	82.17±29.06
(4) Associate degree	26.00±9.63	9.52±3.59	8.47±4.17	28.52±8.53	72.52±19.40
(5) Undergraduate	28.50±9.33	11.45±4.24	9.10±3.99	32.75±13.20	81.80±26.74
Test	F=0.456	F=1.416	F=1.031	F=0.480	F=0.466
	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05

Table 3 (cont). Comparison of the mean scores of the SMA Scale and its subdimensions according to the descriptive characteristics of the participants

Variables	Occupation Mean±SD	Mood regulation Mean±SD	Repetition Mean±SD	Conflict Mean±SD	SMAS total Mean±SD
Psychiatric disorder status					
(1) Yes	29.13±9.36	13.82±4.65	10.00±4.18	33.20±12.73	86.17±23.33
(2) No	27.54±10.18	11.36±4.95	9.22±4.23	33.13±13.80	81.26±28.77
Test	T=0.824	**T=2.622**	T=0.966	T=0.028	T=0.904
	p>0.05	**p<0.05**	p>0.05	p>0.05	p>0.05
		2<1			
Year of SM use					
(1) Less than 1 year	21.81±8.97	9.55±4.51	7.91±3.60	29.08±11.68	68.37±25.37
(2) 1–3 years	29.04±10.95	11.93±5.19	9.65±4.26	35.35±15.58	85.98±31.55
(3) 4–6 years	28.18±9.04	11.89±4.81	9.61±4.37	33.29±12.92	82.98±26.24
(4) More than 7 years	29.56±9.83	11.79±4.89	9.27±4.27	33.13±13.14	83.77±27.01
Test	**F=16.138**	**F=6.863**	**F=4.765**	**F=4.911**	**F=10.181**
	p<0.05	**p<0.05**	**p<0.05**	**p<0.05**	**p<0.05**
	1<2	**1<2**	**1<2**	**1<2**	**1<2**
	1<3	**1<3**	**1<3**	**1<3**	**1<3**
	1<4	**1<4**			**1<4**
Duration of SM usage					
(1) Less than 1 h	20.16±7.12	8.99±4.30	7.35±3.22	26.77±10.25	63.29±21.21
(2) 1–3 h	26.23±7.25	11.01±4.14	9.07±3.86	32.79±13.44	79.12±23.83
(3) 4–6 h	33.14±10.18	13.19±5.07	10.75±4.62	36.27±13.13	93.38±28.31
(4) More than 7 h	41.75±11.35	16.59±6.07	11.40±5.27	44.61±16.76	114.36±33.53
Test	**F=102.952**	**F=39.897**	**F=21.123**	**F=25.143**	**F=60.372**
	p<0.05	**p<0.05**	**p<0.05**	**p<0.05**	**p<0.05**
	1<2 2<3	**1<2 2<3**	**1<2 2<3**	**1<2 2<3**	**1<2 2<3**
	1<3 2<4	**1<3 2<4**	**1<3 2<4**	**1<3 2<4**	**1<3 2<4**
	1<4 3<4	**1<4 3<4**	**1<4 3<4**	**1<4 3<4**	**1<4 3<4**

SD: Standard deviation; SMAS: Social Media Addiction Scale.

ATS scores. According to the significant difference, women had a higher average than men. Gül et al. (2014) stated that automatic thought scores were significantly higher in female individuals. Karahan et al. (2016) reported that automatic thoughts in female students were higher than those in male students. Güloğlu Soysal (2021) reported that automatic thought subdimensions and total scores did not differ significantly according to gender. It can be seen that there are similar and different study results with our study findings. This may be owing to the sample group's personal characteristics, gender roles, the way they reacted to any situation, and the number of participants. Statistically significant differences were observed in the scores of the ATS subdimensions of Prone to Personal Incompatibility and Prone to Loneliness according to family income status. According to the significant differences, the average of students with a medium family income was low. In the related literature, no study has examined the significant difference between family income status and automatic thoughts. Statistically significant differences were observed in the ATS subdimensions of Prone to Confusion and Escapism and Prone to Despair and the total score according to the presence of psychiatric disorder. According to the significant differences, the mean of the participants with psychiatric disorders was higher. In the related literature, no study has examined the significant difference between psychiatric disorder and automatic thoughts. This may be owing to the sample

Table 4. Correlation test results for the relationship between the scales used in the study

	1	2	3	4	5	6	7	8	9	10	11
(1) Self-oriented	1										
(2) Prone to confusion and escapism	0.840*	1									
(3) Prone to personal incompatibility	0.751*	0.845*	1								
(4) Prone to loneliness	0.820*	0.841*	0.820*	1							
(5) Prone to despair	0.838*	0.869*	0.806*	0.818*	1						
(6) ATS total	0.946*	0.946*	0.880*	0.910*	0.928*	1					
(7) Occupation	0.323*	0.323*	0.333*	0.322*	0.294*	0.345*	1				
(8) Mood regulation	0.395*	0.408*	0.378*	0.406*	0.388*	0.428*	0.701*	1			
(9) Repetition	0.280*	0.255*	0.229*	0.221*	0.256*	0.281*	0.601*	0.505*	1		
(10) Conflict	0.375*	0.345*	0.313*	0.352*	0.344*	0.382*	0.639*	0.584*	0.680*	1	
(11) SMAS total	0.406*	0.390*	0.369*	0.387*	0.375*	0.423*	0.874*	0.779*	0.777*	0.911*	1

*: P<0.05; ATS: Automatic Thoughts Scale; SMAS: Social Media Addiction Scale.

Table 5. Results of multiple linear regression analyses on the prediction social media addiction of automatic thoughts

Variable	B	SE	β	t	p	VIF
Constant	53.137	2.633		20.179	0.000*	
ATS total	0.428	0.037	0.423	11.702	0.000*	1.000
R=0.423	$R^2_{(Adjusted)}$=0.179					
$F_{(2-436)}$=136.929	p=0.000	Durbin Watson=0.328				

SE: Standard error; ATS: Automatic Thoughts Scale; VIF: Variance inflation factor.

group's personal characteristics and the very small number of participants reporting psychiatric disorders. Statistically significant differences were observed in all subdimensions and the total ATS score according to the duration of SM use. According to the significant differences, it was determined that people who use SM for more than 7 h and between 4 and 6 h have more automatic thoughts. In the related literature, no study has examined the significant difference between the time used in SM and automatic thoughts. Students who encounter disappointment are more likely to form automatic and passive thoughts and therefore spend more time on SM.

In this study, statistically significant differences were observed in the mood regulation subdimension of the SMAS according to gender when the comparison of the demographic characteristics of the students and the mean scores of the SMAS was examined. According to the significant difference, women had a higher mean than men. In the literature, it has been observed that SMA differs according to gender and that women have higher SMA levels than men (Andreassen, 2015; Daşlı & Baloğlu, 2020; İnce & Koçak, 2017; Martinez-Ferrer et al, 2018; Yüksel-Şahin & Öztoprak, 2019). Some studies have found that male students' SMA levels were higher than those of female students (Aslan & Tolan, 2022; Bağatarhan et al, 2022; Cheng et al, 2021; Demircan et al, 2022; Yüksel et al, 2020; Göksel, 2018). The reason for this difference is that women are more mentally connected to SM than men and receive more emotional support from SM (Tutgun-Ünal & Deniz, 2016). Furthermore, gender distribution has often been unbalanced owing to the over-representation of women in studies evaluating different aspects of SM addiction. As a result, SM is thought to have a high impact on university students. A statistically significant difference was observed in the mood regulation subdimension of the SMAS according to the presence of a psychiatric disorder. According to the significant differences, the mean of people with psychiatric disorders was higher than those without psychiatric disorders. In the related literature, no study has examined the significant difference between the status of psychiatric disorder and SMAS. However, some studies have shown a significant negative relationship between SMA and psychological well-being (Kim & Lee, 2011; Brooks, 2015; Sabik et al, 2020). According to Yang et al. (2018), smartphone addiction is associated with mental health. Bian and Leung (2014) reported that factors such as social isolation, loneliness, communication problems, intense anxiety, and stress are effective sources of technological addictions. Because SMA is a technological addiction, these studies support our findings. When the SM usage characteristics of the students were examined, the SMA scores of the participants differed according to the duration of daily SM use and the year used. As the duration of SM use and the year of use increased, the SMA of the participants also increased. When the relevant literature is examined, the studies are similar to the findings obtained from the current study (Aktan, 2018; Radmard et al,

2020; Tutgun-Ünal & Deniz, 2016; Aslan & Tolan, 2022). People use SM for various purposes, such as sharing photos, having fun, using leisure time, accessing information, communicating, and being up-to-date (Solmaz et al, 2013). Such intensive use in daily life is thought to depend on the ease of access and use of SM, its ability to quickly deliver the messages desired to be conveyed to large masses, and the fact that it is completely free of charge. This study examined the relationship between automatic thoughts and SMA in university students. According to the results obtained, it was found that SMA increases as automatic thoughts increase. When the relevant literature is examined, the studies are compatible with the findings obtained from the current study (Aslan and Tolan 2022; Aksu et al, 2019). In addition, Chou and Edge (2012) stated that young people with high SMA levels have more intense thoughts of being wronged. In another study, Yığman et al. (2021) reported that SMA is positively related to dysfunctional attitudes and that automatic thoughts mediate the relationship between SMA and dysfunctional attitudes. Huang et al. (2023) reported that negative emotions are positively correlated with SM addiction. Some studies have stated that dysfunctional metacognitive beliefs are associated with SMA among young people (Casale et al, 2018; Marino et al, 2016; Huang et al, 2023; Lian et al, 2023). Some studies have found a significant positive relationship between Internet addiction and cognitive distortions (Demir, 2019; Özparlak, 2020; Yıldız, 2019). The fact that dysfunctional thoughts and attitudes have a significant relationship with SMA strengthens the findings of this study. Furthermore, the fact that cognitive distortions that form the basis of automatic thoughts are associated with Internet addiction, including SMA, supports the finding obtained in our study. Considering this finding, individuals with a high tendency toward automatic thoughts turn to SM to get rid of the anxiety caused by automatic thoughts.

According to the multiple linear regression analysis conducted in this study, automatic thoughts were found to be a significant predictor of SM addiction. When the related literature is examined, Aslan and Tolan (2022) stated that automatic thoughts significantly predicted SMA and explained 21% of the total variance in their study titled "social appearance anxiety, automatic thoughts, psychological well-being, and SMA in university students." Yığman ve ark. (2021) stated that dysfunctional attitudes and automatic thoughts positively predicted SMA. Ünal Aydın et al. (2021) reported that all factors related to metacognitions predicted problematic SM use. Keleş (2020) found that cognitive distortions were a significant predictor of secondary school students' problematic SM use. Similarly, cognitive distortions predict problematic Internet use in different studies (Çelik & Odacı, 2013; Şahan & Eraslan Çapan, 2017). Individuals with automatic thoughts tend to use the Internet, and problematic SM use increases as the Internet, which is necessary for SM access, is used. Accordingly, the person continues to use SM uncontrollably over time (Caplan, 2002). These findings support Young's (1999) view that negative core beliefs may be associated with pathological Internet use to overcome perceived inadequacies. According to Davis (2001), the fact that people with socialization problems and maladaptive cognitions prefer online social interactions are the basic elements of SMA. In the light of this information, the Internet and SMA should not only be seen as a behavioral problem but also as cognitive processes that play a major role in the background of behavior (Dinç, 2020). The stronger the beliefs about the positive effects of Internet, SM, and smartphone use on emotions and cognitions, the higher the tendency to engage in these behaviors (Casale et al, 2018). While negative automatic thoughts can result in the overuse of smartphones and SM platforms as a self-soothing behavior, positive automatic thoughts can also play an important role in the development of smartphone and SM addiction. People may engage in SM use as a means of cognitive-emotional self-regulation. The presence of negative automatic thoughts suggests that psychological distress rises to higher thresholds (e.g., deep thinking and anxiety may have become persistent), increasing the likelihood of engaging in problematic SM use as a way to escape from such persistent ways of thinking (Ünal Aydın et al, 2021).

Limitations

The study's limitation is that the sample group consists only of university students. Because the results obtained from the study can only be generalized to this group, conducting similar studies with individuals of different ages and educational levels would be useful."

CONCLUSION

When the results of the research are evaluated in general, it is observed that SM has an important place in the lives of young people. It was determined that as the automatic thoughts of the students increased, the SMA level increased, and automatic thoughts predicted SM addiction. To protect and prevent the harmful effects of the Internet and SM, seminars should be given to students in the risk group, academic and administrative staff working at the university, and parents about purposeful use and the positive and negative consequences of excessive use; posters should be hung in places determined by the university administration to raise awareness, and articles on this subject should be published on websites. Furthermore, it is recommended that psychoeducation studies be conducted for people with automatic thoughts and SM addiction. In this sense, cognitive and behavioral processes may be useful for treating SMA, and cognitive behavioral therapies may be a practical option.

Ethics Committee Approval: The Haliç University Social and Human Sciences Research Ethics Committee granted approval for this study (date: 10.07.2024, number: 06).

Informed Consent: Before the study data were collected, written informed consent was obtained regarding the purpose, duration and withdrawal from the study.

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