

## Social media addiction in medical faculty students; the relationship with dissociation, social anxiety, and alexithymia

*Tıp fakültesi öğrencilerinde sosyal medya bağımlılığı; dissosiyasyon, sosyal anksiyete ve aleksitimi ile ilişkisi*

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Received:30.06.2023

Accepted:31.07.2023

### Abstract

**Purpose:** The aim of this study was to evaluate social media addiction in medical faculty students and the relationships with dissociation and social anxiety experienced in social media use and the level of alexithymia.

**Materials and methods:** 329 students who agreed to participate in the research completed the following scales; Bergen Social Media Addiction Scale (BSMAS), Toronto Alexithymia Scale (TAS-20), Van Online Dissociative Experiences Scale (VODES), Social Anxiety Scale for Social Media Users (SAS-SMU). The 4 sub-scales of the SAS-SMU, the 3 sub-scales of the TAS, and the VODES were analyzed as independent variables and the BSMAS was evaluated as a dependent variable.

**Results:** Social media addiction was affected by the shared content anxiety and self-assessment anxiety sub-scale points of the SAS-SMU, and by the VODES points. Shared content anxiety was determined to predict social media addiction positively and significantly ( $\beta=0.264$ ,  $t(320)=3.16$ ,  $p=0.002$ ). Self-assessment anxiety was determined to predict social media addiction positively and significantly ( $\beta=0.169$ ,  $t(320)=2.23$ ,  $p=0.026$ ). Online dissociative experiences was determined to predict social media addiction positively and significantly ( $\beta=0.217$ ,  $t(320)=4.15$ ,  $p<0.001$ ).

**Conclusion:** It has been shown that the risk of social media addiction is predicted in young people who are prone to dissociation, have difficulties in social relations, and have social anxiety, but alexithymia does not predict social media addiction. There is a need for further experimental and longitudinal studies to establish the potential causative link between social anxiety, dissociation, and social media addiction.

**Keywords:** Social media addiction, social anxiety, dissociation, alexithymia, psychiatry.

Aktas Terzioglu M, Toker Ugurlu T. Social media addiction in medical faculty students; the relationship with dissociation, social anxiety, and alexithymia. Pam Med J 2023;16:580-592.

### Öz

**Amaç:** Tıp fakültesi öğrencilerinde sosyal medya bağımlılığı ve sosyal medya kullanımında yaşanan dissosiyasyon ve sosyal kaygı ve aleksitimi düzeyi arasındaki ilişkiyi değerlendirmektir.

**Gereç ve yöntem:** Çalışmaya katılmayı kabul eden 329 öğrenci Bergen Sosyal Medya Bağımlılığı Ölçeği (BSMBÖ), Toronto Aleksitimi Ölçeği (TAS-20), Van Çevrimiçi Disosiyatif Yaşantılar Ölçeği (VÇDYÖ), Sosyal Medya Kullanıcıları için Sosyal Anksiyete Ölçeği (SMKSKÖ) ve sosyodemografik veri formunu eksiksiz doldurmuştur. SMKSKÖ'nin 4 alt ölçeği, TAS-20'nin 3 alt ölçeği ve VÇDYÖ bağımsız değişken olarak, BSMBÖ bağımlı değişken olarak değerlendirildi.

**Bulgular:** Sosyal medya bağımlılığı, SMKSKÖ'nin paylaşılan içerik kaygısı ve kendini değerlendirme kaygısı alt ölçek puanlarından ve VÇDYÖ puanlarından etkilenmektedir. Paylaşılan içerik kaygısı sosyal medya bağımlılığını olumlu ve anlamlı olarak yordamaktadır ( $\beta=0,264$ ,  $t(320)=3,16$ ,  $p=0,002$ ). Kendini değerlendirme kaygısı sosyal medya bağımlılığını olumlu ve anlamlı olarak yordamaktadır ( $\beta=0,169$ ,  $t(320)=2,23$ ,  $p=0,026$ ). Çevrimiçi disosiyatif yaşantılar da sosyal medya bağımlılığını olumlu ve anlamlı olarak yordamaktadır ( $\beta=0,217$ ,  $t(320)=4,15$ ,  $p<0,001$ ).

**Sonuç:** Disosiyasyona yatkın, sosyal ilişkilerde zorluk yaşayan, sosyal kaygıları bulunan gençlerin sosyal medya bağımlılığı riskinin arttığı ancak aleksitiminin ise sosyal medya bağımlılığını predikte etmediği gösterilmiştir. Sosyal anksiyete ve dissosiyasyon ile sosyal medya bağımlılığı arasında potansiyel bir nedensel bağlantı kurmak için daha fazla araştırma deneysel ve boylamsal çalışmalar yapılması gerekmektedir.

**Anahtar kelimeler:** Sosyal medya bağımlılığı, sosyal anksiyete, dissosiyasyon, aleksitimi, psikiyatri.

Aktaş Terzioğlu M, Toker Uğurlu T. Tıp fakültesi öğrencilerinde sosyal medya bağımlılığı; dissosiyasyon, sosyal anksiyete ve aleksitimi ile ilişkisi. Pam Tıp Derg 2023;16:580-592.

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## Introduction

Social media has become the currently most used communication tool of adolescents and young adults, with communication through social media preferred to almost all face-to-face communication [1]. Social media addiction associated with increased use and symptoms of addiction has become conceptualised as a series of disorders originating from social media such as social media disorder and excessive social media use [2, 3]. In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) of the American Psychiatry Association, there is as yet no place for social media addiction although it is felt to be a problem [4].

As there is no common definition for problematic social media use, it is difficult to estimate the extent [5]. There may be several reasons why social media use is so high among young people. It is important for young people to want to show themselves and be noticed, and social media can be used anonymously or using different names. By making adjustments to both the image and surroundings of images used on social media, photographs and videos with idealised properties can be uploaded. These images or written texts can reach a very large mass. If accepted by peer groups, this plays a role in structuring the social identity in terms of popularity [6]. Therefore, it is both important and necessary for mental health professionals dealing with adolescents and young adults to have knowledge of social media and its use.

Normative dissociation is thought to be related to people's experience of excessive technology use. Loss of control and awareness described by users, and the question of "what just happened?" after scrolling through social media are characteristic of normative dissociation. Every stimulus outside the area of attention with narrow and deep focus is discounted [7, 8]. Previous studies have reported that social media users experience "internet blackout" and go into a trance of social media use [9, 10]. Although not only stated as social media, previous studies have determined a high-level positive correlation between the time spent on the internet and dissociation [11-13]. Similarly, Olson et al. [14] reported a positive relationship between smartphone addiction and being able to be hypnotised. Hypnosis is accepted as a dissociative status [8].

Social anxiety generally starts in adolescence when acceptance by friendship groups and peers, and the impressions made on others become more important, and in most cases continues through the university period. Although it is thought that social anxiety will be seen less in social media use for reasons such as not being in the same physical environment and the opportunity to remain anonymous, as the boundaries in social media relationships have not been clearly drawn, this lack of boundaries leads to anxiety in some individuals. Therefore, it is thought that communication established on social media can increase social anxiety [15].

Alexithymia is defined as difficulty in describing and expressing emotions [16]. Those with high-level alexithymia try to regulate emotional states behaviourally. There are many studies proving that alexithymia plays an important role in the etiology of behavioral addictions [13, 17, 18]. As technology facilitates interpersonal relationships, this can lead to abuse and addiction in individuals with high-level alexithymia [19-21]. In addition, alexithymia is accepted as a predictor of dissociative experiences. There has been shown to be a strong relationship between alexithymia and disassociation in addiction [16, 22].

In the light of this information, the hypothesis of this study was that individuals with social media addiction would be predisposed to dissociation, and have high levels of social anxiety and alexithymia.

The aim of this study was to evaluate social media addiction in medical faculty students and the relationships with dissociation and social anxiety experienced in social media use and the level of alexithymia. Our study investigated social media addiction in three dimensions: social anxiety experienced in social media use, dissociation and alexithymia.

## Materials and methods

### Study design

The study is a cross-sectional epidemiological study. The population consisted of all students (n=1514) enrolled in the 2022-2023 academic year of a medical school located in Denizli. An online questionnaire was sent to medical faculty students (1<sup>st</sup> -6<sup>th</sup> grade students) via WhatsApp between 15 December 2022 and 1 January

2023. Students who agreed to participate in the research completed the questionnaire and the following scales; Bergen Social Media Addiction Scale (BSMAS), Toronto Alexithymia Scale (TAS-20), Van Online Dissociative Experiences Scale (VODES), Social Anxiety Scale for Social Media Users (SAS-SMU), and a Sociodemographic Form prepared by the researchers.

To avoid repeat submissions, the online questionnaire system used accepted only one form from an IP address. The questionnaire did not allow the respondent to pass to another question without completing the previous one. The forms of all the participants who completed all the items were included for analysis. The questionnaire was distributed to a total of 1514 students, of which 503 opened the questionnaire attachment and consented to participate in the study. Of these 503, all the questionnaire items were fully completed by 329, so the responses of a total of 329 medical students were analyzed and evaluated.

#### **Sociodemographic data form**

This form was designed by the researchers to obtain the information of age, gender, year of study, social media applications used, and the time spent on the internet.

#### **Bergen Social Media Addiction Scale (BSMAS)**

The BSMAS was developed by Andreassen et al. [23], and validity and reliability studies for the Turkish version were conducted by Demirci [24]. Each of the 6 items of the scale corresponds to the 6 basic measurements of addiction; mental distraction, mood change, tolerance, deprivation, conflict, and failure to quit. The items are answered on a 5-point likert-type scale graded from 1=very rarely to 5=very often, to give a total score in the range of 6-30 points [24].

#### **Van Online Dissociative Experiences Scale (VODES)**

The VODES was designed by Boysan et al. [25] to evaluate the degree to which an individual tends to experience various dissociative symptoms during online activities. The 62 items of the scale are scored with likert-type scoring from 0=never to 10=always, with higher points

indicating a greater intensity of dissociative experiences.

#### **Social Anxiety Scale for Social Media Users (SAS-SMU)**

Although various scales have been developed to measure certain levels of social anxiety of students, none of those studies addressed the measurement of social anxiety in social media. SAS-SMU developed by Alkis et al. [26] can be used to measure the social anxieties of university students. The scale is formed of 21 items in 4 sub-scales of shared content anxiety, privacy anxiety, interaction anxiety, and self-assessment anxiety. With alpha coefficients for these dimensions ranging between 0.80 and 0.92, satisfactory reliability has been determined. Each item in the scale is scored with a 5-point likert-type scale from 1 to 5 points, with higher points indicating a higher level of anxiety.

#### **Toronto Alexithymia Scale (TAS-20)**

The 20-item TAS was developed by Bagby et al. [27], and the Turkish adaptation validity and reliability studies were conducted by Güleç et al. [28]. It is a likert-type self-assessment scale. Item numbers 4, 5, 10, 18, and 19 are reverse scored. The sub-scale of difficulty in describing emotions includes 7 items (#1, 3, 6, 7, 9, 13, 14) defined as difficulty in identifying emotions and distinguishing them from the physical sensations that accompany emotional stimulation. The difficulty in verbalizing emotions sub-scale consists of 5 items (items 2, 4, 11, 12, 17), defined as difficulty in transferring emotions to others. The externally-oriented thinking sub-scale consists of 8 items (items 5, 8, 10, 15, 16, 18, 19, 20), defined as the presence of an extroverted cognitive structure and the weakness of the power of introspective thinking and imagination. The subject is instructed to mark each item with the most appropriate response; never, occasionally, sometimes, often, always. Higher points indicate a higher level of alexithymia.

#### **Statistical analysis**

Data obtained in the study were analyzed statistically using SPSS vn. 22.0 software. Conformity of the data to normal distribution was assessed with the Kolmogorov-Smirnov test and Skewness-Kurtosis coefficients. The difference

in measured variables between independent groups was evaluated using the Student's t-test. Correlations between variables were examined with the Pearson correlation test. Multiple linear regression analysis was performed to evaluate the risk of independent variables. Results were given in a 95% confidence interval and statistical significance was accepted as  $p < 0.05$  in all tests.

Approval for the study was granted by the Non-Interventional Clinical Research Ethics Committee of Pamukkale University Medical Faculty (decision no:18, dated:13.12.2022), and permission to conduct the study was received from the Dean's Office of Pamukkale University Medical Faculty.

## Results

### Sociodemographic data

The distribution of the sociodemographic data of the 329 medical students included in the study is shown in Table 1. The students comprised 215 (65.3%) females and 114 (34.7%)

males. The grades of study of the students were determined as grade 1 for 58 (17.6%), grade 2 for 53 (16.1%) grade 3 for 56 (17%), grade 4 for 60 (18.2%), grade 5 for 49 (14.9%) and grade 6 for 53 (16.1%). It was stated by 255 (77.5%) students that they did not live on campus.

### Characteristics associated with social media use

When the rates of social media use were examined, 148 (45%) students reported that they generally used Instagram, and 110 (33.4%) stated that they never used Twitter, 269 (80.5%) Facebook, 161 (48.9%) Snapchat, 270 (82.1%) Tiktok, 284 (86.3%) LinkedIn, and 263 (79.9%) Twitch. Other than these social media sites, 219 (66.6%) students stated that they did not use any other program, and 80 (24.3%) reported that they used YouTube. The time spent per day on social media was determined to be mean 1-3 hours by 147 (44.7%) students, and 3-5 hours by 111 (33.7%). The distribution of the characteristics related to social media use of the students is shown in Table 2.

**Table 1.** The distribution of the sociodemographic data

		n	%
<b>Gender</b>	Female	215	65.3
	Male	114	34.7
<b>Grade</b>	Grade 1	58	17.6
	Grade 2	53	16.1
	Grade 3	56	17.0
	Grade 4	60	18.2
	Grade 5	49	14.9
	Grade 6	53	16.1
<b>Place of residence</b>	Live on campus	74	22.5
	Did not live on campus	255	77.5

**Table 2.** Characteristics associated with Social Media Use

		n	%
<b>Average time spent on social media per day</b>	<1 hour	37	11.2
	1-3 hour	147	44.7
	3-5 hour	111	33.7
	5-7 hour	33	10.0
	>7 hour	1	0.3

**Table 2.** Characteristics associated with Social Media Use (continued)

<b>Average time spent on the Internet excluding social media per day</b>	<1 hour	110	33.4
	1-3 hour	123	37.4
	3-5 hour	62	18.8
	5-7 hour	27	8.2
	>7 hour	7	2.1
<b>Frequency of Instagram usage</b>	None	29	8.8
	Rarely	13	4.0
	Sometimes	48	14.6
	Generally	148	45.0
	Always	91	27.7
<b>Twitter usage frequency</b>	None	110	33.4
	Rarely	69	21.0
	Sometimes	59	17.9
	Generally	42	12.8
	Always	49	14.9
<b>Facebook usage frequency</b>	None	265	80.5
	Rarely	44	13.4
	Sometimes	15	4.6
	Generally	4	1.2
	Always	1	0.3
<b>Snapchat usage frequency</b>	None	161	48.9
	Rarely	38	11.6
	Sometimes	42	12.8
	Generally	46	14.0
	Always	42	12.8
<b>TikTok usage frequency</b>	None	270	82.1
	Rarely	24	7.3
	Sometimes	15	4.6
	Generally	12	3.6
	Always	8	2.4
<b>LinkedIn usage frequency</b>	None	284	86.3
	Rarely	35	10.6
	Sometimes	7	2.1
	Generally	3	0.9
	Always	0	0
<b>Twitch usage frequency</b>	None	263	79.9
	Rarely	30	9.1
	Sometimes	20	6.1
	Generally	10	3.0
	Always	6	1.8
<b>Other social media platforms used</b>	None	219	66.6
	Pinterest	7	2.1
	Youtube	80	24.3
	Other	23	7.0



### Scale evaluations

The total scale and sub-scale points of the students are shown in Table 3. The total scale points for all the students were determined to be mean  $6.67 \pm 5.15$  (6-30) for the BSMAS,  $76.63 \pm 70.84$  (0-423) for the VODES,  $54.55 \pm 17.10$  (21-105) for the SAS-SMU, and  $51.64 \pm 10.92$  (30-87) for the TAS.

In the comparisons of the scale points according to gender, the mean points were found to be similar for both genders for the TAS ( $p=0.850$ ), the difficulty in describing emotions sub-scale ( $p=0.156$ ), difficulty in verbalizing emotions sub-scale ( $p=0.600$ ), and the VODES ( $p=0.106$ ). The TAS externally-oriented thinking sub-scale points were determined to be statistically significantly higher in males than females ( $p=0.002$ ). The total and sub-scale points of the BSMAS and the SAS-SMU were determined to be statistically significantly higher in females than males ( $p<0.05$ ). The comparisons of the scales and sub-scales according to gender are shown in Table 4.

A moderate level positive correlation was determined between the BSMAS points and the SAS-SMU points ( $r=0.489$ ,  $p<0.001$ ). As social media addiction increased, there was determined to be a statistically significant increase in social anxiety. When the sub-scale correlations were examined, all the correlations were positive at a strong level with shared context anxiety ( $r=0.524$ ,  $p<0.001$ ), at a weak level with privacy anxiety ( $r=0.235$ ,  $p<0.001$ ), and at a moderate level with interaction anxiety ( $r=0.342$ ,  $p<0.001$ ) and self-assessment anxiety ( $r=0.488$ ,  $p<0.001$ ). A moderate level positive correlation was determined between the TAS scale and the difficulty in describing emotions and difficulty in verbalizing emotions sub-scales ( $r=0.293$ ,  $r=0.313$ ,  $r=0.274$ , respectively) ( $p<0.001$ ). No correlation was determined with the TAS externally-oriented thinking sub-scale ( $p>0.05$ ). A moderate level positive correlation was determined between the BSMAS and the VODES ( $r=0.488$ ,  $p>0.001$ ). All the correlations are shown in Table 5.

**Table 3.** The total scale and sub-scale points of the students

Scales	Mean $\pm$ SD	min-max
<b>BSMAS</b>	16.67 $\pm$ 5.15	6-30
<b>VODES</b>	76.63 $\pm$ 70.84	0-423
<b>SAS-SMU Total</b>	54.55 $\pm$ 17.10	21-105
<b>SAS-SMU Shared content anxiety</b>	16.14 $\pm$ 6.90	7-35
<b>SAS-SMU Privacy anxiety</b>	16.79 $\pm$ 5.39	5-25
<b>SAS-SMU Interaction anxiety</b>	15.15 $\pm$ 6.18	6-30
<b>SAS-SMU Self-assessment anxiety</b>	6.49 $\pm$ 2.78	3-15
<b>TAS-20 Total</b>	51.64 $\pm$ 10.92	30-87
<b>TAS-20 Difficulty identifying feelings</b>	17.23 $\pm$ 6.17	7-35
<b>TAS-20 Difficulty describing feelings</b>	13.72 $\pm$ 3.72	5-25
<b>TAS-20 Externally-oriented thinking</b>	20.69 $\pm$ 3.84	12-32

**SD:** Standart Deviation, **Min-max:** minimum-maximum, **BSMAS:** Bergen Social Media Addiction Scale

**VODES:** Van Online Dissociative Experiences Scale, **SAS-SMU:** Social Anxiety Scale for Social Media Users

**TAS-20:** Toronto Alexithymia Scale

**Table 4.** The comparisons of the scales and sub-scales according to gender

Scales	Female	Male	t	p*
<b>BSMAS</b>	17.52±4.91	15.08±5.23	4.183	<b>&lt;0.001</b>
<b>VODES</b>	71.73±65.22	85.87±79.86	-1.625	0.106
<b>SAS-SMU Total</b>	57.89±16.57	48.25±16.36	5.043	<b>&lt;0.001</b>
<b>SAS-SMU Shared content anxiety</b>	17.08±6.94	14.38±6.48	3.435	<b>0.001</b>
<b>SAS-SMU Privacy anxiety</b>	17.61±4.99	15.25±5.80	3.694	<b>&lt;0.001</b>
<b>SAS-SMU Interaction anxiety</b>	16.51±6.14	12.58±5.42	5.975	<b>&lt;0.001</b>
<b>SAS-SMU Self-assessment anxiety</b>	6.68±2.80	6.04±2.71	1.992	<b>0.047</b>
<b>TAS-20 Total</b>	51.56±11.02	51.80±10.78	-0.189	0.850
<b>TAS-20 Difficulty identifying feelings</b>	17.59±6.23	16.57±6.00	1.423	0.156
<b>TAS-20 Difficulty describing feelings</b>	13.80±3.91	13.58±3.35	0.525	0.600
<b>TAS-20 Externally-oriented thinking</b>	20.18±3.51	21.65±4.24	-3.172	<b>0.002</b>

\*p<0.05 statistically significant, \*T test, **BSMAS**: Bergen Social Media Addiction Scale, **VODES**: Van Online Dissociative Experiences Scale  
**SAS-SMU**: Social Anxiety Scale for Social Media Users, **TAS-20**: Toronto Alexithymia Scale

**Table 5.** Distribution of the relationship between BSMAS and other scale points

		<b>BSMAS</b>
<b>VODES</b>	r	0.380
	p	<b>&lt;0.001</b>
<b>SAS-SMU Total</b>	r	0.489
	p	<b>&lt;0.001</b>
<b>SAS-SMU Shared content anxiety</b>	r	0.524
	p	<b>&lt;0.001</b>
<b>SAS-SMU Privacy anxiety</b>	r	0.235
	p	<b>&lt;0.001</b>
<b>SAS-SMU Interaction anxiety</b>	r	0.342
	p	<b>&lt;0.001</b>
<b>SAS-SMU Self-assessment anxiety</b>	r	0.488
	p	<b>&lt;0.001</b>
<b>TAS-20 Total</b>	r	0.293
	p	<b>&lt;0.001</b>
<b>TAS-20 Difficulty identifying feelings</b>	r	0.313
	p	<b>&lt;0.001</b>
<b>TAS-20 Difficulty describing feelings</b>	r	0.274
	p	<b>&lt;0.001</b>
<b>TAS-20 Externally-oriented thinking</b>	r	0.064
	p	0.250

\*p<0.05 statistically significant, r: Pearson Correlation, **BSMAS**: Bergen Social Media Addiction Scale  
**VODES**: Van Online Dissociative Experiences Scale, **SAS-SMU**: Social Anxiety Scale for Social Media Users  
**TAS-20**: Toronto Alexithymia Scale

### Multiple linear regression model

The 4 sub-scales of the SAS-SMU, the 3 sub-scales of the TAS, and the VODES were analyzed as independent variables and the BSMAS was evaluated as a dependent variable. As a result of the analysis, a significant regression model,  $F(8, 320)=21.38$ ,  $p<0.001$  and 33% of the variance in dependent variable ( $R^2_{\text{adjusted}}=0.33$ ) was explained by independent variables. According to this, social media addiction was affected by the shared content anxiety and self-assessment anxiety sub-scale

points of the SAS-SMU, and by the VODES points. Shared content anxiety was determined to predict social media addiction positively and significantly ( $\beta=0.264$ ,  $t(320)=3.16$ ,  $p=0.002$ ). Self-assessment anxiety was determined to predict social media addiction positively and significantly ( $\beta=0.169$ ,  $t(320)=2.23$ ,  $p=0.026$ ). Online dissociative experiences were determined to predict social media addiction positively and significantly ( $\beta=0.217$ ,  $t(320)=4.15$ ,  $p<0.001$ ). Alexithymia had no effect on the model. The results of the linear regression analysis are shown in Table 6.

**Table 6.** Results of multiple linear regression analysis regarding the prediction of social media addiction by social anxiety, alexithymia and dissociative experiences scale points

Scales	BSMAS				
	B	SE	$\beta$	95% CI	p
SAS-SMU Shared content anxiety	0.197	0.062	0.264	0.075-0.319	<b>0.002</b>
SAS-SMU Privacy anxiety	-0.023	0.052	-0.024	-0.125-0.79	0.655
SAS-SMU Interaction anxiety	0.072	0.050	0.087	-0.027-0.171	0.151
SAS-SMU Self-assessment anxiety	0.313	0.140	0.169	0.037-0.589	<b>0.026</b>
TAS-20 Difficulty identifying feelings	0.051	0.056	0.061	-0.059-0.160	0.364
TAS-20 Difficulty describing feelings	0.019	0.091	0.013	-0.160-0.198	0.838
TAS-20 Externally-oriented thinking	-0.033	0.064	-0.025	-0.160-0.093	0.604
VODES	0.016	0.004	0.217	0.008-0.023	<b>&lt;0.001</b>

$F(8, 320)=21.38$ ,  $p<0.001$ - ( $R^2_{\text{adjusted}}=0.33$ ), \* $p<0.05$  statistically significant; 95% C.I: Confidence Interval, SE: Standard Error, BSMAS: Bergen Social Media Addiction Scale, VODES: Van Online Dissociative Experiences Scale, SAS-SMU: Social Anxiety Scale for Social Media Users TAS-20: Toronto Alexithymia Scale

### Discussion

In this study, the social media addiction of medical faculty students was evaluated together with the dissociation and social anxiety experienced in social media use, and the alexithymic personal characteristics of the students, and the relationships between these.

The hypothesis of the study was that social anxiety, alexithymia, and online dissociative experiences would be factors increasing social media addiction. In the advanced statistical analysis, in the model which examined the effect of dissociation, social anxiety, and alexithymia on social media addiction, it was determined that dissociation and social anxiety predicted the risk of social media addiction, and alexithymia had no effect.

Social media addiction has been found to be statistically significantly higher in females. Studies in literature have reported higher use of social media at the level of addiction by females

and females have been reported to be more prone to developing addiction behaviours in activities involving social interaction [2, 29].

Female social media users were determined to have statistically significantly higher social anxiety total and all sub-scale points than male social media users. In a previous review that investigated gender differences in social anxiety, it was reported that social anxiety was seen more often and at a greater level in females [30].

Results of previous studies have shown no difference between the genders in respect of dissociation. Similarly in the current study of university students in Türkiye, no statistically significant difference was determined between the genders in respect of dissociation [31].

No significant difference was observed between the genders in respect of alexithymia in the current study. Similarly, Pasini et al. [32] observed no difference in alexithymia between



the genders, and that study in Italy was also conducted on healthy volunteers. Another community-based study in Finland reported that although the frequency of alexithymia was higher in females, the difference between the genders was not statistically significant [33, 34]. These different findings in literature related to gender can be attributed to different samples and methods used, sample size, and time differences.

The current study results showed that dissociation predicted social media addiction. In literature, a connection has been indicated between normative separation and social media use [7]. There are studies in literature that have shown a positive correlation between internet addiction and dissociation [11-13]. It has also been reported that hypnosis is a dissociative state and there is a positive relationship between smartphone addiction and the ability to be hypnotised [7, 8, 14]. Tran et al. [35] reported that the study subjects described a feeling of disgust when they realized how long they spent and did not realize how time passed when they went on to their phone briefly to check social media. The current study results were consistent with the findings in literature. The few studies in literature that have examined the relationship between dissociation and social media addiction have been discussed above. There are also studies in the literature that have examined dissociation and internet addiction without differentiation as social media addiction. Studies which have been conducted in university students in Türkiye to examine the relationship between dissociation and internet addiction have determined a positive correlation [11]. In a study of adults which examined dissociative symptoms and accompanying psychological disorders, dissociative symptoms were reported to show a positive correlation with the severity of internet addiction [12]. In another study of young adults aged 18-21 years, dissociation was shown to play a role in internet addiction [13]. The results of the current study showed that dissociative processes predicted social media addiction. This showed that an individual with dissociative processes while scrolling social media can be more easily removed from external stimuli, can pass into a trance, may experience blackout, and these processes can increase social media addiction.

In the study, a scale was used which was developed to evaluate social anxiety in social media users and this scale is formed of 4 sub-scales [26]. The content sharing anxiety sub-scale which determines social anxiety originating from sharing their own content or content shared by others related to themselves on social media platforms predicted social media addiction, and the self-assessment anxiety sub-scale, which evaluates social anxiety originating from how the individual evaluates themselves and how they think they are seen by others on social media platforms predicted social media addiction. There has been shown to be a relationship between anxiety level and the behaviour patterns of individuals in the social media environment [26]. Studies have reported a relationship between depression and social anxiety and aimless use such as surfing the internet [36], and it has been shown that intense inactive computer use leads to depression and anxiety disorders [37]. It has been shown that individuals with social anxiety can feel more comfortable in online interaction rather than face-to-face interaction as they can preserve their anonymity and think that they are less exposed to negative evaluations [38]. Various studies have stated that the internet can meet the social needs of some people, especially those who have difficulty in establishing social relationships, thereby helping social cohesion and providing a feeling of belonging [39, 40]. In this context it has been suggested that the internet can be used as a means of improving low self-esteem, depression, anxiety, and loneliness by individuals with social anxiety [38, 41, 42]. It has been reported that individuals who feel uncomfortable in face-to-face interaction use the internet more for social interaction, and those who feel more comfortable in offline interaction use the internet more to obtain information [43]. In a recent study of adults aged 18-35 years, social anxiety was shown to be a predictor of social media addiction [44]. The reason that sharing content anxiety and self-assessment anxiety increase social media addiction could be that these individuals prefer online communication because of difficulties in face-to-face communication, fear of being rejected or disliked, and self-confidence problems. The current study results and literature findings support the hypothesis that social media may be used intensely by individuals with social anxiety

to regulate their emotions and reduce social anxieties. However, the ruminative thoughts and anxieties related to what they have shared on social media platforms, what has been shared by others related to them, and what others think of them as a result of this shared material, can trigger social media addiction in these individuals.

The total points of the alexithymia scale used in the study were found to be positively correlated with social media addiction, dissociation and the social anxiety scale points. In the advanced statistical analysis when the factors affecting social media addiction were evaluated, alexithymia was not seen to have a predictive effect. In literature, alexithymia has been reported to be associated with overuse or problematic internet use and internet addiction [13, 17, 19, 20].

However, in contrast to several studies showing a relationship between alexithymia and internet addiction, two different studies of adults aged 18-35 years, have shown that alexithymia does not predict social media addiction [44, 45]. Individuals with a high level of alexithymia have difficulties in personal relationships and do not like or avoid close relationships [46, 47], and this therefore seems compatible with the absence of a positive relationship between alexithymia and social media use [44, 45].

In the study, there was determined to be a positive correlation between the total points of the TAS-20 and the 3 sub-scales and dissociation, and similarly in literature a positive correlation has been shown between alexithymia and dissociation [22, 48, 49]. The difficulty in describing emotions and difficulty in verbalising emotions sub-scales of the TAS-20 were found to be positively correlated with the SAS-SMU points. Consistent with these findings, Panayiotou et al. [50] showed that alexithymia predicted social anxiety and there was a positive relationship between them.

Due to the cross-sectional design of the study, the sample size, that the majority of the participants were female, and that a specific group were studied, the sample of this study cannot represent the general population. The study was conducted by filling out an online form, and participants were not subjected to a psychiatric evaluation or asked about their psychiatric history. Despite these limitations,

our study is the first to investigate social media addiction in three dimensions: social anxiety experienced in social media use, dissociation and alexithymia.

Consequently, in the study has been shown that the risk of social media addiction is predicted in young people who are prone to dissociation, have difficulties in social relations, and have social anxiety, but alexithymia does not predict social media addiction. Young people with social anxiety who experience difficulty in social relationships are at great risk because of their intense social media use in an effort to be active in social areas and to control social relationships. The results obtained in this study showed that individuals with social anxiety tend to prefer online interaction to face-to-face interaction and are at risk of social media addiction. Therefore, it is thought that recognizing social anxiety in young people by both educators and health professionals working with young people and making appropriate referrals for treatment may be protective in the development of social media addiction. In the study, a strong relationship was determined between dissociation and social media addiction. Young people who are prone to dissociation can easily get out of the moment and get away from stimuli while browsing social media, which increases social media addiction. If we want to address social media addiction, we need to keep in mind the susceptibility to dissociation and investigate whether the young person has symptoms of dissociation. Although one of the hypotheses of our study was that alexithymia could predict social media addiction, it was found that alexithymia was not a predictor of social media addiction. The size and characteristics of the sample may have influenced the results; therefore, further experimental and longitudinal studies with much larger samples and diverse study groups are needed to establish the potential causal relationship between social anxiety, dissociation, alexithymia and social media addiction.

**Conflict of interest:** No conflict of interest was declared by the authors.

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### **Ethical aspect of the study**

Approval for the study was granted by the Non-Interventional Clinical Research Ethics Committee of Pamukkale University Medical Faculty (decision no:18, dated:13.12.2022), and permission to conduct the study was received from the Dean's Office of Pamukkale University Medical Faculty.

### **Authors' contributions to the article**

M.A.T. constructed the main idea and hypothesis of the study. M.A.T. and T.T.U. developed the theory and arranged/edited the material and method section. M.A.T. and T.T.U. have done the evaluation of the data in the Results section. Discussion section of the article written by M.A.T. and T.T.U.

M.A.T. and T.T.U. reviewed, corrected and approved. In addition, all authors discussed the entire study and approved the final version.