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# Problematic social networking site use in Turkey: A large-scale national survey study

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**Citation:** Ünübol, H., Sayar, G. H., Hussain, Z., Savcı, M., Kircaburun, K., Griffiths, M.D. (2024). Problematic social networking site use in Turkey: A large-scale national survey study. *Journal of Concurrent Disorders*.

**Founding Editor-in-Chief:** Masood Zangeneh, Ph.D.

**Editor:** Fayez Mahamid, Ph.D.

**Received:** 05/07/2024  
**Accepted:** 07/02/2024  
**Published:** 08/04/2024



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**Abstract.** The current research landscape has witnessed a marked increase in investigations concerning problematic social networking site use (PSNSU). However, prior studies exploring the prevalence and determinants of PSNSU have predominantly relied on limited and diverse participant samples. To address this gap, the present study examined the measurement dimensions and psychological correlates – namely psychiatric distress, alexithymia, attachment, and wellbeing – of PSNSU within a large number of Turkish community individuals (N=24,380, 50% men,  $M_{age}=31.79$  years,  $SD=10.86$ ). Participants completed a survey comprising psychometric scales regarding the aforementioned variables. Utilizing item response theory, 2.8% of the participants were found to exhibit susceptibility to PSNSU. Hierarchical regression analysis showed significant positive associations between PSNSU and factors including younger age, single marital status, alcohol consumption, cigarette smoking, psychiatric distress, affective states, and attachment styles. These findings underscore the importance of research regarding PSNSU among individuals in the Turkish community and highlights the involvement of various socio-demographic and adverse psychological factors in driving this problematic behavior.

**Keywords:** Social Media, Addiction, Social Networking, Psychiatric Distress, Attachment, Affect.

## Introduction

The number of social networking site (SNS) users worldwide has grown to 4.9 billion people globally (Wong & Bottorff, 2023). Over 50% of the global population now uses SNSs (60%) and the average daily time spent using SNSs is more than two hours (Chaffey, 2023). These figures demonstrate the popularity of social media and show that such sites are important tools and serve an important purpose. SNSs primarily enable individuals to connect and foster positive relationships through text, photos, and videos, irrespective of geographical or other hindrances. Using SNSs can also be used to support educational and occupational purposes, boost globalization, and encourage creativity (Pham 2020). Moreover, the use of SNSs can trigger the release of oxytocin, which lowers stress and fosters happiness (Pham 2020). However, the pervasiveness of social media has led to increased interest into the psychological mechanisms of social media and its potential negative effects. Some researchers have argued that increased use of social media may potentially result in problematic social networking site use (PSNSU) among specific members of the community (Kuss & Griffiths, 2017).

The phenomenon of PSNSU has been defined by researchers as an excessive engagement with SNSs, characterized by a compelling urge to use them and a significant investment of time and effort to the extent that it detrimentally affects an individual's education, occupation, interpersonal relationships, social activities, and psychological well-being (Andreassen & Pallesen, 2014). A plethora of terms has surfaced to describe PSNSU (Andreassen et al., 2017; De Cock et al., 2014; Griffiths & Szabo, 2014; Holmgren & Coyne, 2017; Hussain et al., 2020; Hussain & Griffiths, 2018; Meena et al., 2012; Savci et al., 2018, 2022a). This diversity in terminology has ignited discussions regarding the appropriateness of these different terms to characterize the same behavior. Concerns regarding social networking and PSNSU, alongside accumulating research evidence, has led some researchers to consider PSNSU as a behavioral addiction (Andreassen et al., 2012). However, the behavior is yet to be formally recognized as an addictive disorder in any official diagnostic text. What constitutes a disorder and whether addiction to social media qualifies for a disorder remains debatable (Hussain & Starcevic, 2020). Given there is no consensus, the term 'problematic social networking site use' (PSNSU) is used in the present study.

### Assessment of problematic social networking site use

When examining problematic social networking site use (PSNSU) from a theoretical standpoint, it aligns with the core criteria outlined in the components model of addiction (Griffiths, 2005). These components include tolerance, salience, conflict, mood modification, relapse, and withdrawal. Numerous scales have been devised to investigate these symptoms within the framework of PSNSU. Hussain and Griffiths (2018) conducted a systematic review of studies exploring PSNSU and noted that

the majority of large-scale investigations employed the Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016) or its precursor, the Bergen Facebook Addiction Scale (Andreassen et al., 2012). Notably, the BSMAS comprises six items reflecting the aforementioned core components of addiction.

In addition, Hussain and Griffiths (2018) highlighted two studies that utilized the Social Media Use Scale (Xanidis & Brignell, 2016). This scale's items are derived from symptoms of gambling addiction outlined in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013), as well as items from the Internet Addiction Test (IAT; Young, 1998), and the Compulsive Internet Use Scale (Meerkerk et al., 2009). However, it should be noted that none of these scales specifically assess PSNSU. Moreover, the Social Media Disorder Scale (van den Eijnden et al., 2016), based on the DSM-5 criteria for internet gaming disorder (American Psychiatric Association, 2013), has emerged as a promising tool for assessing PSNSU.

Although this list is not exhaustive, it illustrates the fact that different psychometric tools have been developed and used to assess PSNSU with an increasing number of studies making use of scales that are aligned with the components model of addiction. The conceptualization, assessment, and etiology of PSNSU is important from a prevention and treatment perspective. Furthermore, it is important to know what constitutes problematic behavior for future research and classification.

### **Nationally representative studies examining the prevalence of problematic social networking site use**

Viewed through an epidemiological lens, PSNSU has been investigated in various ways with a focus being on prevalence estimates, distribution, determinants, and comorbidity usually in non-representative samples. However, there have been a few nationally representative studies. For instance, research by Wartberg et al., (2020) investigated PSNSU comprising a sample of German adolescents that was representative (n=1,001). The prevalence of PSNSU was reported to be 2.6%, and regression analysis showed significant associations between PSNSU and depressive symptoms, as well as lower levels of interpersonal trust and family functioning. Banyai et al., (2017) reported that 4.5% of adolescents were at-risk of PSNSU in their nationally representative Hungarian sample (n=5,961). Members of this cohort exhibited diminished self-esteem, heightened levels of depressive symptoms, and increased engagement with social networking sites.

De Cock et al., (2014) examined PSNSU among a representative sample of Belgian SNS users (n=1,000). The study reported a prevalence of 2.9% classed as problematic SNS users. Regression analysis found that the factors of gender, age, attitude toward school and income were significant predictors of PSNSU. Shensa et al., (2017) examined PSNSU and depression symptoms among a nationally representative U.S. sample

(n=1,749). The results indicated that 14% of the sample reported PSNSU and that it was strongly associated with increased depression symptoms. Research by Müller et al., (2016) investigated intense use of SNSs among a representative sample of German adolescents (n=9,173). Although the study did not directly investigate PSNSU, the results showed that SNS intensity was associated with internet addiction. The reported prevalence of internet addiction was 4.1% among males and 3.6% among females.

Addictive use of the internet has been associated with psychosocial distress. Milošević-Đorđević and Žeželj (2014) reported a 3% prevalence rate of PSNSU among a representative sample of Serbians (n=2,014) and path analysis found associations between PSNSU and factors such as diminished self-esteem, reduced self-efficacy, and heightened introversion. Taken together, these few studies investigating epidemiological factors using representative samples have shown a number of different risk factors relating to PSNSU. However, there are other factors that need investigating.

### **Factors associated with problematic social networking site use**

PSNSU has been associated with a variety of factors. Heightened SNS use, for instance, has been associated with adverse mental health outcomes (McCrae et al., 2017; Raudsepp & Kais, 2019). More specifically, it has been associated with various mental health symptoms, including anxiety (Andreassen et al., 2016; Dhir et al., 2018; Pontes, 2017), depression (Dhir et al., 2018; Donnelly & Kuss, 2016; Worsley et al., 2018), stress (Atroszko et al., 2018), attention-deficit hyperactivity disorder (Hussain & Griffiths, 2019), and obsessive-compulsive disorder (Andreassen et al., 2016). PSNSU has also been associated with diminished psychological well-being (Satici, 2019), disrupted sleep patterns (Vernon et al., 2017), and reduced self-esteem (Hawi & Samaha, 2016). Individuals exhibiting high levels of negative emotions often gravitate toward online interactions (Caplan, 2007), particularly when PSNSU arises as a consequence of such negative emotions (He & Li, 2022). It appears that individuals may utilize SNSs as a maladaptive coping mechanism to address psychological and emotional challenges, inadvertently exacerbating issues related to PSNSU (Pontes, 2017).

Blackwell et al. (2017) reported that fear of missing out (FoMo) emerged as a predictor of PSNSU. Interestingly, the study also found that attachment anxiety and avoidance initially correlated with PSNSU, yet this association became non-significant upon the inclusion of FoMo. Moreover, attachment styles have been associated with both excessive and dysfunctional internet and social media usage. A systematic review of literature analyzing 32 studies spanning from 2000 to 2018 concluded that individuals with insecure attachment tend to resort to PSNSU as a means of substituting and compensating for the lack of affection from those in their immediate surroundings (D'Arienzo et al., 2019). Similarly, Pontes et al. (2018) highlighted significant associations between FoMo, maladaptive cognitions, psychiatric distress, and PSNSU.

Specific factors have received less attention in research compared to others. For example, alexithymia has been examined in relation to smartphone use (Gao et al., 2018; Hao et al., 2019) and internet addiction (Baysan-Arslan et al., 2016; Bolat et al., 2017; Dalbudak et al., 2013; Mahapatra & Sharma, 2018). However, only a limited number of studies have examined the relationship between alexithymia and PSNSU. One such study found that alexithymia was indirectly associated with PSNSU through body dissatisfaction among social media users with low self-esteem (Gori & Topino, 2023). Additionally, while alexithymia has been positively correlated with internet addiction, its association with PSNSU among young adults was not significant when considering narcissism and social anxiety symptoms in hierarchical regression analysis (Lyvers et al., 2022). Consequently, the relationship between alexithymia and PSNSU remains less understood and necessitates further investigation. In summary, the existing research indicates variations in the level of exploration among different factors, emphasizing the need for further examination. Given the scarcity of large-scale studies, delineating the roles of various factors and their associations with PSNSU remains crucial.

### **The present study**

With the widespread use of SNSs, understanding potential factors associated with PSNSU has become increasingly imperative, given the relatively undetermined health implications. As SNS use proliferates and platforms continue to evolve, it is important to investigate and comprehend the assessment and prevalence of PSNSU. However, empirical research utilizing latent profile analysis to explore SNS use remains scarce. Therefore, the present study investigated the assessment aspects, prevalence, and psychological correlates – namely psychiatric distress, alexithymia, attachment, and wellbeing – of PSNSU. More specifically, the study validated and employed the Social Media Addiction Risk Questionnaire (SMARQ). Drawing from existing literature, it was hypothesized that factors such as gender (male), younger age, higher education level, cigarette smoking, alcohol consumption, psychiatric distress, diminished personal wellbeing, affective states, alexithymia, and insecure attachment styles would exhibit positive correlations with PSNSU.

## **Methods**

### **Participants**

The sample comprised 24,380 participants (12,249 males and 12,131 females) with an average age of 31.79 years ( $SD=10.86$ , range=18 to 81 years). Table 1 displays the demographic characteristics of the study cohort. The sample was subsequently randomly divided into two distinct subsamples in order to conduct exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) using separate samples. The research procedure involved the distribution of paper-based surveys to individuals residing in 79 distinct cities throughout Turkey by the research team. Prior

to participation, individuals provided informed consent. Ethical clearance for the study was obtained from Üsküdar University's ethics committee, ensuring compliance with the principles outlined in the Declaration of Helsinki (Document Number: 2018/800). The data utilized in the study were sourced from a comprehensive epidemiological investigation encompassing various addictive behaviors. This larger study, detailed in previously published studies (Kircaburun et al., 2020, 2023; Ünübol et al., (2021), examined multiple facets of addiction. The data concerning PNSNU have not previously been published.

Table 1. *Demographic characteristics of the study group (N=24,380)*

Variable		N	%
Gender	Men	12249	50.2
	Women	12131	49.8
Age group	18-23 years	6327	26
	24-29 years	6523	26.8
	30-38 years	5459	22.4
	39 years and older	6016	24.7
Education	Primary school	1510	6.2
	Secondary school	1433	5.9
	High school	6355	26.1
	Bachelor	13333	54.7
	Post-graduate	1735	7.1
Marital status	Married	10533	43.2
	Single	13828	56.8
Cigarette smoking	Yes	10640	43.7
	No	13718	56.3
Alcohol use	Yes	8249	33.8
	No	16130	66.2

### Measures

Participant demographic information (e.g., gender, age, education, marital status, cigarette use, and alcohol use) was obtained from the participants.

*Social Media Addiction Risk Questionnaire (SMARQ)*: The present study developed the unidimensional Social Media Addiction Risk

Questionnaire (SMARQ) to evaluate PSNSU. The scale comprises six items designed to assess six addiction-like symptoms as outlined by Griffiths (2005). Participants rate each item on a 10-point Likert scale ranging from 0 (*never*) to 10 (*always*). Overall scores range from 0 to 60, with higher scores indicating a greater risk of PSNSU. Notably, the scale exhibited excellent internal consistency in the present study (Cronbach's  $\alpha=.91$ ).

*Brief Symptom Inventory (BSI)*: Psychiatric distress was assessed using the Turkish version of the 53-item Brief Symptom Inventory (BSI) (Derogatis & Spencer, 1993), adapted by Sahin and Durak (1994). Sample items from the BSI include queries including "*Thoughts of ending your life*", "*Feelings of worthlessness*", "*Pains in the heart or chest*", and "*Temper outbursts that you could not control*". Notably, the Turkish adaptation of the BSI incorporates a negative self-concept subscale, which was included based on bidirectional translation by bilingual translators during the adaptation process (Sahin & Durak, 1994). Participants rated each item on a five-point Likert scale, ranging from 1 (*almost never*) to 5 (*almost always*). Item scores were averaged to compute the Global Severity Index (GSI), reflecting overall psychiatric distress. GSI scores range from 53 to 265, with higher scores indicating greater general psychiatric distress. It is noteworthy that the scale demonstrated excellent internal consistency in the present study ( $\alpha=.95$ ).

*Toronto Alexithymia Scale (TAS-20)*: To assess alexithymia, the Turkish version of the 20-item Toronto Alexithymia Scale (TAS-20), developed by Güleç et al. (2009), was employed. This scale, adapted from Bagby et al. (1994), comprises 20 items assessing three sub-dimensions of alexithymia: difficulty identifying feelings (e.g., "*I am often confused about what emotion I am feeling*"), difficulty describing feelings (e.g., "*It is difficult for me to find the right words for my feelings*"), and externally-oriented thinking (e.g., "*Being in touch with emotions is essential*"). Participants rated each item on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The items were averaged to generate an index of alexithymia, with total scores ranging between 20 and 100. Higher scores indicate a greater degree of alexithymia. Notably, the scale demonstrated very good internal consistency in the present study ( $\alpha=.83$ ).

*Positive and Negative Affect Schedule (PANAS)*: To assess positive and negative affect, the Positive and Negative Affect Schedule (PANAS), developed by Watson et al. (1988), was employed. This scale consists of 20 items, with sample items including "*interested*", "*distressed*", "*irritable*", and "*alert*". Participants rated each item on a five-point Likert scale, ranging from 1 (*very slightly*) to 5 (*extremely*). Total scores on the PANAS range from 20 to 100, with higher scores indicating higher levels of both positive and negative affect. The Turkish version of the PANAS, validated by Gençöz (2000), demonstrated optimal validity and reliability, maintaining a two-factor structure. In the present study, Cronbach's alphas

for both positive and negative affect were found to be very good ( $\alpha=.85$  and  $.83$  respectively).

*Experiences in Close Relationships-Revised (ECR-R)*: To assess anxious and avoidant attachment, the Experiences in Close Relationships-Revised (ECR-R), developed by Fraley et al. (2000), was employed. This scale comprises 36 items, with sample items including “*I’m afraid that I will lose my partner’s love*” and “*I prefer not to be too close to romantic partners*”. Participants rated each item on a seven-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Total scores on the ECR-R fall between 36 and 252, with higher scores indicating greater levels of anxious and avoidant attachment. The Turkish version of the scale, validated by Selçuk et al. (2005), demonstrated optimal validity and reliability, maintaining a two-factor structure. In the present study, Cronbach’s alphas for both anxious and avoidant attachment were found to be very good ( $\alpha=.83$  and  $.85$  respectively).

### **Statistical analysis**

Initially, the SMARQ's psychometric properties underwent assessment using classical test theory (CTT), specifically through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The CFA evaluated goodness of fit using various metrics including root mean square residuals (RMSEA), standardized root mean square residuals (SRMR), comparative fit index (CFI), and goodness of fit index (GFI). RMSEA and SRMR values below  $.05$  indicated a good fit, while values below  $.08$  suggested an acceptable fit. CFI and GFI scores above  $.95$  were considered good, and scores above  $.90$  were deemed acceptable (Hu & Bentler, 1999). Subsequently, Pearson’s correlations were employed to explore correlation coefficients between variables. Additionally, *t*-tests were conducted to examine gender differences. Finally, hierarchical regression analyses were carried out separately for males, females, and the entire sample to ascertain the predictive role of independent variables in PSNSU. All statistical analyses were conducted using SPSS 23. Furthermore, AMOS was utilized to perform the CFA.

## **Results**

### **Scale development**

The factor structure of the SMARQ was examined using EFA with Sample 1 ( $N=12,096$ ). The principal axis factoring estimation method was applied during EFA. A Kaiser-Meyer-Olkin measure of  $.88$  and Bartlett’s test of sphericity ( $p<.001$ ) indicated a robust unidimensional structure. The one-factor solution extracted explained 68% of the variance, demonstrating strong explanatory power (Kline, 2011). Communalities ranged from  $.61$  to  $.76$ , while factor loadings varied between  $.72$  and  $.85$ , indicating high loadings for all scale items. Subsequently, the factor structure obtained from EFA was validated through CFA using Sample 2 ( $N=12,284$ ). The maximum likelihood discrepancy estimation method was utilized during CFA.



Goodness of fit indices indicated a mostly favorable fit to the data ( $\chi^2=792.13$ ,  $df=5$ ,  $p<.001$ , Root Mean Square Residuals [RMSEA]=.11, Confidence Interval [CI] 90% [.11, .12], Standardized Root Mean Square Residuals [SRMR]=.02, Comparative Fit Index [CFI]=.98, Goodness of Fit Index [GFI]=.98). Standardized factor loadings ranged from .69 to .87, affirming the significant contribution of all items to the scale.

### Prevalence and correlates of problematic social networking site use

Through item response analysis, it was determined that individuals scoring 58 or higher on the SMARQ were classified as at risk of PSNSU. Applying this scoring criterion, 2.8% of participants were identified as being at high risk of PSNSU. Table 2 displays the mean scores, standard deviations, and correlation coefficients of the variables. PSNSU exhibited positive correlations with psychiatric distress ( $r=.28$ ,  $p<.001$ ), positive affect ( $r=.05$ ,  $p<.001$ ), negative affect ( $r=.20$ ,  $p<.001$ ), alexithymia ( $r=.14$ ,  $p<.001$ ), avoidant attachment ( $r=.07$ ,  $p<.001$ ), and anxious attachment ( $r=.22$ ,  $p<.001$ ). Notably, all these correlations were characterized as weak.

Table 2. Mean scores, standard deviations, and Pearson's correlations coefficients of the study variables

	1	2	3	4	5	6	7
1. Problematic social networking site use	-						
2. Psychiatric distress	.28*	-					
3. Positive affect	.05*	-.15*	-				
4. Negative affect	.20*	.58*	-.10*	-			
5. Alexithymia	.14*	.51*	.05	.32*	-		
6. Avoidant attachment	.07*	.24*	-.28*	.23*	.01	-	
7. Anxious attachment	.22*	.44*	-.10*	.37*	.30*	.21*	-
<i>M</i>	21.15	98.20	30.42	19.46	50.20	60.27	60.21
<i>SD</i>	16.37	29.04	7.97	6.83	10.80	19.23	18.36

Note. \* $p<.001$

### Hierarchical regression analysis

Table 3 presents the outcomes of the hierarchical regression analysis. In Block 1, gender, age, education, marital status, cigarette use, and alcohol use were regressed to forecast PSNSU, explaining 10% of the variance ( $F[6,24179]=424.08$ ,  $p<.001$ ). Psychological factors were integrated into the equation in Block 2. Being younger ( $\beta=-.22$ ,  $p<.001$ ), single ( $\beta=.03$ ,  $p<.001$ ), a cigarette user ( $\beta=-.02$ ,  $p<.001$ ), and an alcohol user ( $\beta=-.04$ ,  $p<.001$ ), along with psychiatric distress ( $\beta=.18$ ,  $p<.001$ ), positive affect ( $\beta=.09$ ,  $p<.001$ ), negative affect ( $\beta=.02$ ,  $p<.01$ ), and anxious attachment ( $\beta=.12$ ,  $p<.001$ ), were

positively correlated with heightened PSNSU. However, it is important to note that the effect sizes were small. The examined model accounted for 16% of the variance in PSNSU.

Table 3. Hierarchical regression analysis predicting problematic social networking site use

Model	B	SE	$\beta$	<i>t</i>	$R^2_{Adj}$
<b>Block 1</b> ( $F_{[6,24179]}=424.08$ ; $p<.001$ )					.10
Gender <sup>a</sup>	-.34	.20	-.01	-1.71	
Age	-.34	.01	-.22	-32.31***	
Education <sup>b</sup>	.03	.11	.00	.31	
Marital status <sup>c</sup>	.79	.20	.03	3.95***	
Cigarette use <sup>d</sup>	-.61	.17	-.02	-3.57***	
Alcohol use <sup>d</sup>	-1.51	.22	-.04	-6.91***	
<b>Block 2</b> ( $F_{[12,24173]}=378.73$ ; $p<.001$ )					.16
Psychiatric distress	.10	.01	.18	20.82***	
Positive affect	.19	.01	.09	14.55***	
Negative affect	.05	.02	.02	2.66**	
Alexithymia	-.01	.01	-.01	-1.05	
Avoidant attachment	-.03	.10	.00	-.27	
Anxious attachment	1.86	.11	.12	17.22***	

Note: B=unstandardized regression coefficient; SE=Standard error;  $\beta$ =standardized regression coefficient; <sup>a</sup>1=Men, 2=Women; <sup>b</sup>1=Primary school, 5=Graduate school; <sup>c</sup>1=Married, 2=Single; <sup>d</sup>1=Yes, 2=No; \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$

## Discussion

The present study investigated assessment aspects, prevalence, and psychological correlations (i.e., psychiatric distress, alexithymia, attachment, well-being) of PSNSU among a large Turkish sample. The findings of the present study are discussed in four categories: (i) validity and reliability of the Social Media Addiction Risk Questionnaire (SMARQ), (ii) the prevalence of the PSNSU, (iii) the correlations between PSNSU and other variables, and (iv) predictive factors of PSNSU.

First, the structure of the newly developed SMARQ was examined, which comprised six items, with EFA and CFA. The EFA results showed that the SMARQ had a single-factor structure. This single-factor structure accounted for a significant amount of the total variance (68%). This variance is acceptable for single factor scales (Kline, 2011; Tabachnick & Fidell,

2013). The single-factor structure was then tested utilizing CFA. As a result of the CFA, it was found that the SMARQ model had relatively acceptable fit index values (Hu & Bentler, 1999). However, the  $\chi^2$  goodness-of-fit value was relatively high. The  $\chi^2$  goodness-of-fit is sensitive to sample size and the sample size in the present study was very large. The degrees of freedom (df) value also increases in large samples. This situation caused the  $\chi^2/df$  value to increase and therefore other fit indices should be taken into account (Hu & Bentler, 1999). The results showed that SMARQ is a valid scale.

Second, the study found that those who scored 58 and higher on the SMARQ could be categorized as being at risk of PSNSU. Based on this scoring, 2.8% of the participants were classed as being at high risk of PSNSU. Although there are many representative studies on the prevalence of internet addiction (e.g., Tang et al., 2014) and internet gaming disorder (IGD; e.g., Fam, 2018), representative studies on the prevalence of PSNSU are limited. It is arguably difficult to compare the prevalence of PSNSU across studies due to different assessment tools and the lack of a consensual description of PSNSU (Bányai et al., 2017). However, as noted earlier, there are a few studies that have assessed the prevalence of PSNSU among nationally representative samples. The prevalence rates of PSNSU in these studies was 2.6% among German adolescents (Wartberg et al., 2020), 4.5% among Hungarian adolescents (Bányai et al., 2017), 2.9% among Belgian adults (De Cock et al., 2014), 14% among U.S. adults (Shensa et al., 2017), and 3% among Serbian adults (Milošević-Đorđević & Žeželj, 2014). Apart from the U.S. study (which used a very low cut-off in assessing PSNSU), the prevalence rate in the present sample (2.8%) is broadly similar to the other four studies (2.6%-4.5%).

Third, the study found that PSNSU was positively correlated with psychiatric distress, anxious attachment, negative affect, alexithymia, avoidant attachment, and positive affect. However, all the aforementioned correlations were weak. Moreover, the large sample size in the present study may have influenced the statistical significance regarding the association between positive affect and avoidant attachment with PSNSU. Similar to the findings here, many previous studies have found a positive relationship between PSNSU and psychiatric distress (e.g., Pontes, 2017), anxious attachment (e.g., Worsley et al., 2018), negative affect (e.g., Acar et al., 2022), alexithymia (e.g., Barbar et al., 2020), and avoidant attachment (e.g., Monacis et al., 2017). On the other hand, the literature does not support the finding here relating to the correlation between PSNSU and positive affect. In the present study, the large sample size most likely made this relationship statistically significant. Indeed, the literature shows that PSNSU is negatively associated with positive affect (e.g., Savci et al., 2018).

Moreover, regression analysis showed that psychiatric distress, positive affect, negative affect, and anxious attachment, significantly and positively predicted PSNSU. Again, the predictive effects of positive affect and negative affect might have become statistically significant due to the large sample size. The most significant contribution to PSNSU comes from

psychiatric distress. Psychiatric distress was followed by anxious attachment, positive affect, and negative affect. As aforementioned, these predictive variables are often associated with PSNSU. Although the predictive effect of these variables was weak, they may still be risk factors for PSNSU.

The analysis also showed that gender, age, education, marital status, cigarette use, and alcohol use significantly predicted PSNSU. More specifically, being younger, being an alcohol user, being single, and being a cigarette smoker positively predicted PSNSU. The most significant contribution was being younger. Being younger was followed by being an alcohol user, being single, and being a cigarette smoker. Gender did not make a statistically significant contribution to the prediction of PSNSU. These demographic variables accounted for one-tenth of PSNSU. However, it should be noted that the effect sizes were small. Although the predictive effects of regression coefficients for alcohol use, marital status, and cigarette use were relatively low, their statistical significance was most likely due to the sample size. The regression coefficients are sensitive to the sample size and low regression coefficients can be statistically significant in large samples (Maas & Hox, 2005).

In many studies, being young has been reported as a critical risk factor for PSNSU (i.e., Andreassen et al., 2017; Kuss & Griffiths, 2011). This may be due to several reasons. First of all, the majority of SNS users are young individuals (Kemp, 2020). Second, young individuals are more vulnerable to PSNSU (Abbasi, 2019). When intensive SNS use is combined with vulnerability to PSNSU, the high prevalence of PSNSU among youth appears logical. Previous studies highlight that alcohol use (e.g., Hormes, 2016) and cigarette smoking (e.g., Merelle et al., 2017) are risk factors for PSNSU. Finally, previous studies consistently show that being single or lonely may be a risk factor for PSNSU (e.g., Andreassen et al., 2017; Savci et al., 2018). Being single is associated with PSNSU for several reasons. Firstly, lonely individuals experience less face-to-face social communication, and these individuals often tend to make and maintain friendships on SNSs (Nowland et al., 2017). Secondly, SNS use for socializing is considered a risk factor for PSNSU (Tosuntaş et al., 2024). Indeed, being single contributes to SNSs being used to satisfy social relationships. Finally, lonely individuals have less social support, and low social support and loneliness are considered risk factors for intensive SNS use (Lee et al., 2013; Savci et al., 2022b).

### **Limitations and conclusions**

While this study contributes valuable insights into the prevalence and risk factors associated with PSNSU in Turkish society, several limitations warrant consideration when interpreting the findings. Firstly, all assessment instruments relied on self-report measures, which are susceptible to well-known methodological biases. Additionally, the correlation and regression coefficients observed in the study were weak, and their statistical

significance may be attributed to the large sample size, although the overall findings generally align with previous research, with the exception of positive affect. Despite these limitations, the study demonstrates that a minority of Turkish adults are susceptible to PSNSU, with socio-demographic and adverse psychological factors playing a contributory or exacerbating role in this behavior. These insights have implications for the development of preventive and intervention strategies aimed at addressing PSNSU in Turkish society.

**Funding**

The authors declare that this study received no financial support.

**Availability of data and material**

Data will be made available upon reasonable request.

**Conflict of Interest**

No conflict of interest is declared by the authors.

**Author's contributions**

Hüseyin Ünübol, Gökben Hızlı Sayar collected the data. Zaheer Hussain and Mustafa Savcı wrote the first draft of the manuscript. Mark Griffiths revised and edited the manuscript. Kagan Kircaburun conceptualized the paper and carried out the data analysis.

**Informed Consent**

Informed consent was provided by all participants in the classroom environment.

**Ethics Approval**

Ethics committee approval was obtained for this study. The authors report that the study was conducted in accordance with the Helsinki Declaration.

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