

**Original article / Araştırma****The prevalence and risk factors of Facebook addiction: does Facebook addiction is related with depression and PTSD?****Mehmet ÇAKICI,<sup>1</sup> Asra BABAYİĞİT,<sup>1</sup> Meryem KARAAZİZ,<sup>1</sup> Özlem CUMHUR<sup>1</sup>****ABSTRACT**

**Objective:** Studies show that Facebook usage has negative effects on depression, post-traumatic stress disorder (PTSD) and dependencies. In this study, the relationship between probable Facebook addiction with PTSD, depression and sociodemographic variables in North Cyprus (NC) was investigated. **Methods:** The study was applied between May and June 2016. Sample of the study consists of the individuals between 18 and 88 years living in NC. Multi-stage stratified quota was used in the survey and 982 people were selected according to the 2011 census. The evaluation tool consists of the sociodemographic data, Traumatic Stress Symptom Scale, Facebook Addiction Scale and Beck Depression Inventory. Analyzes of findings were done by comparing the two groups: Probable Facebook addicted individual (PFAI) and Facebook non-addicted individual (FNAI). In the analysis of the data, chi-square test, logistic regression and correlation analysis were used. **Results:** In the study, PFAI was determined as 35.7%. Probable major depression current prevalence was 23.5% and prevalence of probable PTSD was found as 19%. Depression and PTSD were found to be higher in PFAI than FNAI. The risk of Facebook dependence is more prevalent among the individuals without substance use, young, unmarried and non-childbearing people, and without any physical illness participants. **Conclusion:** Depression and PTSD is more prevalent among PFAI, similar with drug addiction researches. The reason of high Facebook level of use among these people may be suggested that Facebook addiction is a form of behavior that arises as a means of self-healing to get rid of negative affect. (*Anatolian Journal of Psychiatry* 2020; 21(3):245-252)

**Keywords:** Facebook addiction, depression, PTSD, risk factors

**Facebook bağımlılığının yaygınlığı ve risk etkenleri: Facebook bağımlılığı depresyon ve TSSB ile ilişkili midir?****ÖZ**

**Amaç:** Çalışmalar Facebook kullanımının depresyon, travma sonrası stres bozukluğu (TSSB) ve bağımlılık üzerinde negatif etkilerinin olduğunu göstermiştir. Bu çalışmada Kuzey Kıbrıs'taki olası Facebook bağımlılığı ile TSSB, depresyon ve sosyodemografik değişkenler arasındaki ilişki incelenmiştir. **Yöntem:** Çalışma Mayıs-Haziran 2016 tarihinde yapılmıştır. Çalışmanın örneklemini 18-88 yaşları arasındaki Kuzey Kıbrıs'ta yaşayan bireyler oluşturmuştur. Araştırmada çok tabakalı örnekleme yöntemi kullanılmış ve 2011 nüfus sayımına göre 982 kişi seçilmiştir. Değerlendirme araçları sosyodemografik veriler, Travmatik Stres Belirti Ölçeği, Facebook Bağımlılık Ölçeği ve Beck Depresyon Ölçeğinden oluşmuştur. Bulguların analizi olası Facebook bağımlılığı olan bireyler (OFBB) ve Facebook bağımlılığı olmayan bireyler (FBOB) olmak üzere iki grup karşılaştırılarak yapılmıştır. Verilerin analizinde ki-kare testi, lojistik regresyon ve korelasyon analizi kullanılmıştır. **Bulgular:** Çalışmada, olası Facebook bağımlılığı %35.7 oranında saptanmıştır. Olası majör depresyon nokta yaygınlığı %23.5 ve olası TSSB yaygınlığı %19 oranında bulunmuştur. Depresyon ve TSSB'nin, OFBB'de FBOB'ye göre daha yüksek olduğu bulunmuştur. Facebook bağımlı-

<sup>1</sup> Near East University, Faculty of Arts and Sciences, Department of Psychology, Nicosia, TRNC

**Correspondence address / Yazışma adresi:**

Mehmet ÇAKICI, Prof., MD, Near East University, Faculty of Arts and Sciences, Department of Psychology, Nicosia, TRNC  
Mersin 10 Turkey

**E-mail:** mehmet.cakici@neu.edu.tr

**Received:** September 19<sup>th</sup>, 2019, **Accepted:** January 24<sup>th</sup>, 2020, **doi:** 10.5455/apd.2020101

*İliğında bireylerin genç olması, madde kullanmaması, bekar olması, çocuğunun olmaması ve herhangi fiziksel hastalığının bulunmaması risk etkenleri olarak saptanmıştır. Sonuç: Psikoaktif madde bağımlılığı araştırmalarına benzer şekilde, OFBB grubunda depresyon ve TSSB daha yaygındır. Bu kişiler arasında Facebook kullanımının yüksek olmasının nedeni, Facebook kullanımının olumsuz etkilerden kurtulmak için iyileştirme aracı olarak kullanılabilmesidir. (Anadolu Psikiyatri Derg 2020; 21(3):245-252)*

**Anahtar sözcükler:** Facebook bağımlılığı, depresyon, PTSD, risk etkenleri

## INTRODUCTION

Social network websites such as Facebook have become global phenomena and have developed into a core element of communication in the modern era.<sup>1,2</sup> Today, Facebook is considered as the most popular social network, with over 500 million registered users.<sup>3</sup> As the number of active users increases on a daily basis, Facebook has reached 85% of the population in the United States.<sup>4</sup> According to Operational and Other Financial Highlights, number of daily average Facebook users were 1.47 billion for June 2018, and number of monthly average users were 2.23 billion for June 30<sup>th</sup>, 2018.<sup>5</sup> It was found that internet penetration rate in Turkey is 67%.<sup>6</sup> In the same report Turkey ranks ninth with 51 million active Facebook users. More than 68.5% of the young population regularly uses Facebook.<sup>2</sup>

Facebook was created collaboratively by Zuckerberg et al., who were all Harvard undergraduate students at Harvard University in 2004.<sup>7,8</sup> It had originally been established as a portal that enabled Harvard students with e-mail addresses to communicate with each other. However, in 2006, it developed into a network covering a significantly larger proportion of the population over 13 years of age.<sup>9-11</sup>

Facebook can be used for entertaining purposes, it can also become time-consuming and dangerously addictive when misused.<sup>12</sup> In a similar manner to other addictions, Facebook addiction can be defined as the inability to cease the activity, increasing the time spent both participating on Facebook and thinking about the social media.<sup>13</sup> When the international literature is examined, despite the many research studies conducted on Internet addiction,<sup>14-18</sup> the number of empirical studies that have focused on Facebook dependency is relatively limited.<sup>19</sup> Additionally, there is a limited amount of studies that have investigated the probability of Facebook usage becoming addictive.<sup>20</sup> Although there is scarce empirical research that has investigated the relationship between overuse and Facebook abuse, it is possible that this may cause habitual or excessive Facebook use, motivated by an

impulse to dispel negative emotions.<sup>21</sup> The literature illustrates that there is a relationship between dependency, PTSD and depression.<sup>22,23</sup> Facebook addiction has been found to be related with mental health problems.<sup>24-26</sup> Considering that these addictions are used for relief purposes, Facebook addiction is believed to be related to PTSD and depression, in a similar manner to gambling and substance addiction.<sup>27,28</sup> Addictive behaviors could result from the need to minimize distressing symptoms such as nightmares, flashback memories and negative moods.<sup>29</sup>

Facebook has become an increasingly prevalent choice in the lives of individuals, driven by the communications technologies that have developed over recent years. For this reason, the number of studies examining Facebook addiction is increasing rapidly. The hypothesis of this study is Facebook addiction is related with probable PTSD and major depression disorder. This is the first study about the Facebook addiction prevalence and its effects, in Cyprus. In this study, the relationship between the frequency level of Facebook addiction with probable PTSD, depression and sociodemographic variables in NC was investigated.

## METHODS

### Participants

The population of the study consists of Turkish-speaking individuals between 18 and 88 years of age living in North Cyprus. A multi-stage stratified (randomized) quota was used to achieve a representative sample of the adult population in the survey, and 982 people were consequently selected for household interview. The sample size was calculated by sampling formula of known population ( $n = \frac{Nt^2pq}{d^2(N-1) + t^2pq}$ )<sup>30</sup> where n was the sample size; N was the population size; and t was the value for selected alpha level of 0.025 in each tail=2.58 (the alpha level indicates the level of risk the researcher is willing to take that true margin of error that may exceed the acceptable margin of error). Besides, (p) (q) was the estimate of variance which was 0.25 (maximum possible proportion 0.5) \* 1 (maximum

possible proportion 0.5) which produce maximum possible sample size. Finally,  $d$  was the acceptable margin of error for proportion being estimated at 0.05 (error a researcher is willing to accept). The selected participants were tabulated according to gender (male/female), age (18-19, 20-29, 30-39, 40-49, 50-65, 65 and above) and geographical region (village/city). The statistics considered for sampling were based on the national census conducted on December 4<sup>th</sup>, 2011.<sup>31</sup> Based on the census data, five principal regions, namely, Nicosia, Famagusta, Kyrenia, Morfou, and İskele, were examined in terms of the main characteristics of their populations. These five central areas were divided into quarters in the urban areas and villages in the rural areas. In total, 16 quarters, 17 villages and 5 cities were selected randomly in the study.

### Instruments

**Survey Form:** A Sociodemographic Data Form consisting of 21 questions, the Turkish version of the Facebook Addiction Scale, the Turkish version of the Beck Depression Inventory (BDI) and Traumatic Stress Symptom Scale were used to collect profile data.

**Facebook Addiction Scale (FAS):** FAS, which was developed by Andreassen et al.<sup>32</sup> consists of a total of 18 items and is a five-point Likert scale. The self-evaluation ranges responses from 1 (strongly disagree) to 5 (totally agree). It consists of six factors, which are listed as salience, mood modification, tolerance, withdrawal, conflict and relapse. Akin et al. conducted the Turkish validity and reliability studies of the Facebook Addiction scale. In this context, high scores indicate an elevated level of Facebook addiction. The Cronbach's alpha coefficient was calculated as 0.85.<sup>33</sup>

**Traumatic Stress Symptom Scale (TSSS):** Başıoğlu et al. developed and conducted reliability and validity studies for TSSS. It is a 4-point Likert scale, which consists of 23 items. The scale contains questions that participants evaluate themselves on based on their activity in the previous month. The points of the items are between 0-3. The first 17 items are questions related to the symptoms of PTSD and the last 6 items questions concern the symptoms of depression. Scores of 25 or higher for these 17 items indicate the possibility of PTSD. The ideal cut-off score for PTSD is 22 and the cut-off score for depression is 38. Sensitivity and specificity of the scale is stated as %81.<sup>34</sup>

**Beck Depression Inventory (BDI):** The BDI

was first introduced in 1961 by Beck et al.,<sup>35</sup> and subsequently underwent revisions in 1978 (BDI-IA) and 1996 (BDI-II). The original BDI form consists of 21 questions, where each item is associated with a behavioral characteristic of depression. The 4-degree scale that accompanies the self-evaluation has responses that range from 0 (no symptoms) to 3 (symptoms highly observed) in terms of the emotional, cognitive and motivational symptoms of depression. The internal consistency of the study in 1978 revealed that two BDI forms were equivalently reliable. BDI observes emotional, cognitive and motivational symptoms in depression.<sup>36</sup> The Turkish version of BDI also consists of 21 questions. The total score range is between 0-63, and the cut-off point is 17, which indicates clinical depression. A cut-off score of 17 yielded a sensitivity of 50% and specificity of 92%. The Turkish version of the BDI has been validated. In the sample of Turkish validation study of BDI (n=108), the Cronbach's alpha coefficient was calculated as 0.91.<sup>37</sup>

### Ethical considerations

The study was approved by the Social and Science Institute Ethical Board at Near East University in NC and was conducted according to the ethical standards established in the 1964 Declaration of Helsinki and its later amendments. Written informed consent was obtained from all participants.

### Data collection

The fieldwork was conducted from May to June 2016. Starting points were randomly selected on particular streets for cities, and in village centers (coffee houses and village mosques) with directions to the north, south, east and west established for the villages. Interviewers attempted to draw squares in their movements, starting with the lowest house numbers. One house in three was added to the study, with the interviewers taking the first right turn each case in order to complete the square. After one square had been completed, a new start point was defined and the creation of a new square commenced. Gender and age quotas were considered in every house entered. Only one person was added to the study in each house, alternating between men and women. If there was more than one candidate in a home, the occupant whose birthday was closest was selected. A total of 40 volunteer interviewers participated, after receiving training about the questionnaire and the interview process. Each interviewer administered 25 questionnaires. In this manner, it was anticipated that

the margin of error that resulted from the variations in interviewer application would be minimized. After detailed information was provided to the participants, they were asked to sign a consent form signaling their agreement to participate in the study.

### Analysis of data

Analysis of the findings was conducted by comparing the two groups: probable Facebook addicted individual (PFAI) ( $FBS > 11$ ) and Facebook non-addicted individual (FNAI) ( $FBS \leq 11$ ) as a polythetic scoring. Polythetic scoring is a cut-score which is set to  $> 3$  on at least four of the six subscale which are named as salience, mood modification, tolerance, withdrawal, conflict and relapse.<sup>32</sup> The effects of risk factors such as sociodemographic variables, PTSD and depression symptoms on the occurrence of high risk Facebook addiction were investigated. In the analysis of the data, the chi-square test was applied to compare the frequencies of the PFAI and FNAI with the sociodemographic data. Multivariate logistic regression was used to determine the relationship between the dependent variable probable Facebook addiction (PFA) and the risk factors, including sociodemographic variables, depression and PTSD (independent variables). SPSS version 23.0 was used for conducting the analysis.

### RESULTS

Although there was a total of 994 participants in the study, only 982 (98%) of the forms were used for statistical analysis as 12 (2%) of them had inconsistent or inconclusive answers. In total, 456 (46.4%) of the participants were female and 526 (53.6%) were male. The mean age of the participants with PFA was  $40.60 \pm 315.32$ , and the mean was  $31.44 \pm 10.67$  for those FNAI ( $t = -9.24, p < 0.001$ ). The distribution of the birthplace of the participants was 478 (48.9%) in Cyprus, 447 (45.7%) in Turkey, 13 (1.3%) in the UK and 40 (4.1%) in other countries. In terms of educational level, 50 (5.1%) were illiterate, 144 participants (14.7%) were elementary school graduates, 135 (13.8%) were secondary school graduates, 274 (28.0%) were high school graduates and 375 (38.3%) were university graduates. With regard to marital status, 523 (53.5%) participants were married, 261 (26.7%) were single, 64 (6.5%) were in relationships, 52 (5.3%) were widowed, 46 (4.7%) were engaged and 27 (2.8%) were divorced. A total of 579 (59.3%) of the participants lived in urban areas, while 256 (26.2%) lived in rural areas and 142 (14.5%)

lived in towns.

97.9% ( $n = 32$ ) of the participants have stated that they were using Facebook. 35.7% ( $n = 350$ ) of the Facebook user were FAI and 82.4% ( $n = 632$ ) FNAI. Participants in the 25 and below age groups had significantly higher Facebook addiction levels than the older age groups. Participants who had no children had higher rates of PFA than participants who had children. Participants who lived with mother/father/siblings had higher rates of PFA than those living with alone/spouse/partner. Participants with physical illnesses had higher PFA rates than those without any illness. Participants who used psychoactive drugs also had higher rates of PFA, but there was no significant difference for depression rate in terms of the use of alcohol or cigarettes. Participants who had probable depression or probable PTSD had higher Facebook addiction rates than those who had no depression or PTSD (Table 1).

There was a low positive correlation between FAS scores and BDI ( $r = 0.007, p = 0.822$ ) and TSSS ( $r = 0.099, p = 0.003$ ) scores. When FAS scores increased, BDI and TSSS scores also increased (Table 2).

The risk factors of FAI are more prevalent in individuals without substance abuse, as well as the 25 and below age, single and non-child-bearing people, participants who have physical illnesses, participants who has monthly income less than 3400 TL, and who had higher probable depression and PTSD (Table 3).

### DISCUSSION

In the present study, PFAI was determined as 35.7% and it is found that there is a relationship between PFA and probable major depression and PTSD symptoms. Other prevalence studies showed different results on Facebook addiction but in those studies methodology were not the same and different scales were used in different studies. In a study, the prevalence of Facebook addiction in a sample of German university students was found to be 8.6%.<sup>38</sup> Moreover, among Filipino university students, the prevalence of Facebook dependence was found to be 4.2%,<sup>39</sup> and in another study the prevalence of FB addiction among Turkish undergraduate students was found to be 7.6%.<sup>40</sup>

In addition to PFA prevalence, the probable major depression point prevalence was found to be 23.5% and the prevalence of probable PTSD was found to be 19%. In this study, probable

**Table 1.** Demographic of Facebook addicted individual (FAI) and Facebook non-addicted individual (FNAI) in North Cyprus

Demographic variables		FAI (12-90) %	FNAI (1-11) %	$\chi^2$	p
Gender	Female	45.7	54.3	0.33	0.568
	Male	43.9	56.1		
Age	25 and below	60.7	39.3	28.87	<b>&lt;0.001</b>
	25 and above	40.0	60.0		
Birth place	Cyprus	41.1	58.9	5.47	0.141
	Turkey	47.5	52.5		
	Britain	46.2	53.8		
	Other	55.0	45.0		
Marital status	Married	37.5	62.5	6.97	0.073
	Single	50.9	49.1		
	Divorced	44.4	55.6		
	Widow	42.0	58.0		
Having children	No children	55.8	44.2	37.53	<b>&lt;0.001</b>
	Have children	34.5	65.5		
Living place	Village	40.1	59.9	3.55	0.060
	City	47.3	52.7		
Employment status	Employed	44.4	55.6	0.02	0.882
	Unemployment	44.9	55.1		
Education level	Illiterate	27.1	72.9	11.85	<b>0.003</b>
	Primary + secondary school	39.7	60.3		
	High school and above	48.2	51.8		
Household monthly income	1700 TL and beloved	47.8	52.2	2.22	0.329
	1701-10000 TL	43.3	56.7		
	10000 TL and more	39.0	61.0		
Physical illness	Have physical disease	47.0	53.0	21.58	<b>&lt;0.001</b>
	Doesn't have physical disease	20.9	79.1		
Whom living with	Alone	46.2	53.8	22.91	<b>&lt;0.001</b>
	Spouse / partner / lover	38.1	61.9		
	Mother / father / brother	56.6	43.4		
	Other	52.7	47.3		
Alcohol use	Non-user	43.4	56.6	0.47	0.789
	1-40 times	46.4	53.6		
	40 times and above	44.5	55.5		
Smoking	Non-user	45.0	55.0	0.84	0.658
	1-40 times	0.0	100.0		
	40 times and above	44.5	55.5		
Drug use	Non-user	50.2	49.8	26.75	<b>&lt;0.001</b>
	User	32.1	67.9		
Probable depression	Yes	42.5	57.5	6.27	<b>0.012</b>
	No	52.0	48.0		
Probable PTSD	Yes	42.7	57.3	5.64	<b>0.018</b>
	No	52.5	47.5		

**Table 2.** Correlations among Facebook Addiction Scale (FAS), Beck Depression Inventory (BDI), and Traumatic Stress Symptom Scale (TSSS)

		FAS	TSSS	BDI
FAS	r	1	0.099	0.007
	p		<b>0.003</b>	0.822
TSSS	r	0.099	1	0.008
	p	<b>0.003</b>		0.806
BDI	r	0.007	0.008	1
	p	0.822	0.806	

**Table 3.** OR and CI of some demographic variables obtaining from multivariate logistic regression

Demographic variables	FBS>11 / FBS≤11 OR (95% CI)
Gender (female / male)	1.042 (0.905-1.200)
Age (25 and below / over)	1.519 (1.321-1.746)**
Birth place (Turkey / Cyprus)	1.295 (0.994-1.686)
With whom living (alone / family - others)	1.037 (0.848-1.267)
Education (high school and over / under high school)	1.773 (0.896-3.506)
Tobacco use (more than 40 / less)	1.010 (0.876-1.164)
Alcohol use (more than 40 / less)	1.018 (0.788-1.314)
Drug use (user / non-user)	1.411 (1.223-1.628)**
Having child (no / yes)	1.615 (0.591-0.773)**
Frequent living place (urban / rural)	1.179 (0.988-1.408)
Marital status (single / married)	1.873 (1.446-2.427)**
Working status (not working / working)	1.020 (0.786-1.324)
Monthly income (less than 3400 TL / more)	1.184(1.001-1.400)*
Physical illness (yes / no)	2.248 (1.482-3.410)**
Probable depression (Yes / no)	1.370 (1.019-1.843)*
Probable post-traumatic stress disorder (yes / no)	1.488 (1.071-2.067)*

\*:  $p < 0.05$ ; \*\*:  $p < 0.001$ ; OR: Odds Ratio; CI: Confidence Interval

major depression and PTSD were found to be higher in PFAI than in FNAI. Similar to the present study results, other research suggests that PTSD and depression are closely and directly related to each other and also to dependencies in general.<sup>21,34,35</sup> The concept of depression and PTSD can be considered both as a cause and as a result in addictions. The person who has depressive or traumatic symptoms due to other sociological or psychological factors may become dependent on Facebook for these reasons or depressive or traumatic symptoms may be observed due to addiction after being addicted.<sup>41</sup> For example the usage of substance to relieve the distressing symptoms of PTSD may increase the likelihood of the development of other type of dependencies; major depression may develop as a result of PTSD and its associated impairment.<sup>42</sup>

Similar to the results of the present study, recent studies also indicate that there is a relationship between Facebook addiction and probable major depression.<sup>43</sup> Internet addiction was found to be related with depression.<sup>44-46</sup> Depressive individuals exhibit passive behavior when they experience stressful conditions in order to find relief. Rather than developing appropriate coping skills, they are inclined to develop addictive behaviors that enable them to manage stress.<sup>47</sup> Facebook, which has a high risk of developing addiction, is an example of such passive behaviors. Moreover similar with the study results related with other types of addic-

tion, present study indicates that having a physical illness is a possible risk factor for developing PFA.<sup>48</sup> It is believed that individuals who have a medical problem tend to spend more time at home and use Facebook as a socialization tool.

According to the present study, an increased level of Facebook addiction was more prevalent among people who live with mother/father/sibling. Another study also found a significant relationship between Facebook addiction and loneliness.<sup>49</sup> Being young, single and non-child-bearing were the characteristic of PFAI's. Similar research has shown that people with a high risk of Facebook addiction are more socially isolated, are lonely, have low self-confidence and are younger in comparison to individuals with a lower risk of Facebook addiction.<sup>30</sup> PFAI found to use higher rates of substance than FNAI. In other studies it has been reported that dependencies are influential and are related to each other. As in this case, not only Facebook addiction but also other addictive types such as substance addiction or gambling addiction are associated with PTSD and depressive symptoms.<sup>50</sup>

Similar to the findings of the present study other study results have shown that Facebook is convenient for all age groups, but it is observed that 32% of these masses are composed of 18-24 year-olds.<sup>4</sup> The research conducted on 2,057 people in the 25-29 age range by the Ministry of Youth and Sports in Turkey in 2013, which involved 26 provinces, found that Facebook is

the most used social media channel.<sup>38</sup>

In conclusion, addictions are closely associated with psychological factors and psychiatric disorders in the academic literature. Depression and PTSD are more prevalent among individuals with a high risk of Facebook addiction, a result that is similar to research on drug addiction. The problem-solving mechanisms and decision making abilities decrease among the individuals with depression and PTSD. Reactions in order to induce passive transient relaxation are used instead of appropriate coping skills among addictive people. The reason why Facebook addiction is elevated for these individuals could be that Facebook addiction is a form of behavior that arises as a means of self-healing in order to dispel negative emotions.

However, the present study also has several limitations. First, the Facebook addiction scale, similar to other self-reporting instruments, is not complete in terms of measuring Facebook addiction. Secondly, it is not possible to ascertain the direction of the relationship between the variables. Thirdly, in this study FAS is used which is developed in the young adult sample as there is only one Facebook Addiction Scale. Fourthly, the presence of a physical disease was evalu-

ated by the declaration of the participants and people who have a psychiatric disorder were not excluded from the study because of the procedure of the prevalence study. Finally, some population groups were not included in the sample, such as those in prisons, hospitals and military personnel.

The strengths of the present study are the adequateness of the sample size and the multi-stage stratified (randomized) quota. Improvement generalizability using a large sample is another advantage of the study. Moreover, the study evaluated the FB addiction level and its relationship with probable major depression and PTSD symptoms by using standardized tools. The results can provide comparable information to future related studies. It is believed that the findings of this study would provide guidance to other researchers by contributing to the scarcity of academic literature in this area. This study aims to reveal the importance and risks of the current concept 'Facebook addiction'. The number of researches about Facebook Addiction, which affects people's lives negatively similar with substance and alcohol addiction, needs to be increased and prevention programs should be developed.

## REFERENCES

1. Mahmood UF. Facebook addiction: a study of big-five factors and academic performance amongst students of IUB. *Global Journal of Management and Business Research* 2014; 14:14-15.
2. Kuss DJ, Griffiths MD. Online social networking and addiction. A review of the psychological literature. *Int J Environ Res Public Health* 2011; 9:3528-3552.
3. Manyika J, Lund S, Bughin J, Woetzel JR, Stamenov K, Dhingra D. *Digital globalization: The new era of global flows*. San Francisco: McKinsey Global Institute, 2016.
4. *Global Digital Statistics. Internet and Social Media Usage Statistics, 2014*. <http://www.digitalajanslar.com/internet-ve-sosyal-medya-kullanici-istatistikleri-2014/>, (Date of access August 2017.)
5. Menlo Park Calif. *Facebook Reports Second Quarter 2018 Results*, 2018. <https://www.prnewswire.com/news-releases/facebook-reports-second-quarter-2018-results-300686623.html>, (Date of access May 2018.)
6. *Digital Report 2018. Global Digital Report, 2018*. <http://digitalreport.wearesocial.com/>, (Date of access May 2018.)
7. Lampe C, Ellison N, Steinfield C. A Face (book) in the crowd: Social searching vs. social browsing. 20<sup>th</sup> Anniversary Conference on Computer Supported Cooperative Work (4-8 November 2006, New York), *Complete Text Book, 2006*, p.167-170, New York.
8. Hablemitoğlu Ş, Yıldırım F. Gençlerin gözünden sanal bir sosyal capital olarak "Facebook". *Ankara Sağlık Bilimleri Dergisi* 2012; 1:1-20.
9. Caruso JB, Salaway G. *The ECAR Study of Undergraduate Students and Information Technology, 2007*. <https://library.educause.edu/resources/2007/9/the-ecar-study-of-undergraduate-students-and-information-technology-2007>, (Date of access December 2018.)
10. Stutzman F. An evaluation of identity-sharing behavior in social network communities. *Journal of the International Digital Media and Arts Association* 2006; 3:10-18.
11. Okur H, Özkul M. Modern iletişim ara yüzü: Sanal iletişim sosyal paylaşım sitelerinin toplumsal ilişki kurma biçimlerine etkisi (Facebook Örneği). *Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 2015; 21:213-246.
12. Arabacıoğlu T, Gökdaş İ. Öğretmen adaylarının internet ve facebook kavramlarına ilişkin mecazları. *Eğitim Teknolojileri Araştırmaları Dergisi* 2015; 6:1-36.
13. Crandell T, Crandell C, Vander Zanden J. *Human Development. Tenth ed.*, London: McGraw-Hill, 2012.
14. Harzadin T. Facebook, 2012. <http://www.pskolojikterapi.com/facebook-bagimliliği.html>, (Date of access July 2017.)
15. Simkova B, Cincera J. Internet addiction disorder and chatting in the Czech Republic. *CyberPsychology & Behavior* 2004; 7:536-539.
16. Young KS, Rogers RC. The relationship between depression and Internet addiction. *Cyberpsychology & Behavior* 1998; 1:25-28.

17. Chou C, Condrón L, Belland JC. A review of the research on Internet addiction. *Educational Psychology Review* 2005; 17:363-388.
18. Niemz K, Griffiths M, Banyard P. Prevalence of pathological Internet use among university students and correlations with self-esteem, the General Health Questionnaire (GHQ), and disinhibition. *Cyberpsychology & Behavior* 2005; 8:562-570.
19. Zaremohzzabieh Z, Samah BA, Omar SZ, Bolong J, Kamarudin NA. Addictive Facebook use among university students. *Asian Social Science* 2014; 10:107.
20. Griffiths MD. Facebook addiction: concerns, criticism, and recommendations-a response to Andreassen and colleagues. *Psychol Rep* 2012; 110:518-520.
21. Ryan T, Chester A, Reece J, Xenos S. The uses and abuses of Facebook: A review of Facebook addiction. *J Behav Addict* 2014; 3(3):133-148.
22. Babayiğit A, Okray Z. Relationship between depressive symptoms and life satisfaction among university students. *Cyprus Turkish Journal of Psychiatry and Psychology* 2019; 1:5-13.
23. Prout TA, Gerber LE, Gottdiener WH. Trauma and substance use: the role of defenses and religious engagement. *Mental Health, Religion & Culture* 2015; 18:123-133.
24. Hanprathet N, Manwong M, Khumsri J, Yingyeun R, Phanasathi M. Facebook addiction and its relationship with mental health among Thai high school students. *J Med Assoc Thai* 2015; 98:81-90.
25. Lee-Won RJ, Herzog L, Park SG. Hooked on Facebook: the role of social anxiety and need for social assurance in problematic use of Facebook. *Cyberpsychol Behav Soc Netw* 2015; 18:567-574.
26. Norman P, Elavarasan K, Dhandapani T. Facebook addiction and depression in adults. *Int J Community Med Public Health* 2017; 4:2999-3004.
27. Çakıcı M, Çakıcı E, Karaaziz M, Babayiğit A. A review of problem and pathological gambling in North Cyprus. *Cyprus Turkish Journal of Psychiatry & Psychology* 2019; 1:123-128.
28. Walsh K, Elliott JC, Shmulewitz D, Aharonovich E, Strous R, Frisch A, et al. Trauma exposure, posttraumatic stress disorder and risk for alcohol, nicotine, and marijuana dependence in Israel. *Compr Psychiatry* 2014; 55:621-630.
29. Masedu F, Mazza M, Di Giovanni C, Calvarese A, Tiberti S, Sconci V, et al. Facebook, quality of life, and mental health outcomes in post-disaster urban environments: the L'Aquila earthquake experience. *Frontiers in Public Health* 2014; 2:286.
30. Yazicioglu Y, Erdoga S. *SPSS Applied Scientific Research Methods*. Ankara: Detay Publishing, 2004.
31. Census of Population. *Social and economic characteristics of population December 4, 2011*. North Cyprus, State Institute of Statistics, Printing Division, 2011.
32. Andreassen CS, Torsheim T, Brunborg GS, Pallesen S. Development of a Facebook addiction scale. *Psychol Rep* 2012; 110(2):501-517.
33. Akin A, Demirci İ, Kara S. Facebook Bağımlılığı Ölçeği'nin Türkçe formunun geçerlik ve güvenilirliği. *Akademik Bakış Dergisi* 2017; 59:65-72.
34. Başoğlu M, Şalçıoğlu E, Livanou M, Özeren M, Aker T, Kılıç C, et al. A study of the validity of a screening instrument for traumatic stress in earthquake survivors in Turkey. *J Trauma Stress* 2001; 14:491-509.
35. Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry* 1961; 4:561-571.
36. Beck AT, Steer RA, Ball R, Ranieri WF. Comparison of Beck Depression Inventories-IA and-II in psychiatric outpatients. *J Pers Assess* 1996; 67:588-597.
37. Hisli N. Beck A study on the validity of Beck Depression Inventory. *Turkish Journal of Psychology* 1988; 6:118-122.
38. Wolniczak I, Caceres-DelAguila JA, Palma-Ardiles G, Arroyo KJ, Solis-Visscher R, Paredes-Yauri S, et al. Association between Facebook dependence and poor sleep quality: a study in a sample of undergraduate students in Peru. *PLoS one* 2013; 8:e59087.
39. Marcial DE. Are you a Facebook addict? Measuring Facebook addiction in the Philippine University. *Int Proc Econ Dev Res* 2013; 66:12-15.
40. Akyıldız M, Argan M. Using online social networking: Students' purposes of Facebook usage at the university of Turkey. *Journal of Technology Research* 2012; 3:1.
41. Günüş S, Kayrı M. Türkiye'de internet bağımlılık profile ve internet bağımlılık ölçeğinin geliştirilmesi: Geçerlik-güvenirlilik çalışması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi* 2010; 39:220-232.
42. Breslau N. Epidemiologic studies of trauma, posttraumatic stress disorder, and other psychiatric disorders. *Can J Psychiatry* 2002; 47:923-929.
43. Farahani HA, Kazemi Z, Aghamohamadi S, Bakhtiarvand F, Ansari M. Examining mental health indices in students using Facebook in Iran. *Procedia-Social and Behavioral Sciences* 2011; 28:811-814.
44. Lou LL, Yan Z, Nickerson A, McMorris R. An examination of the reciprocal relationship of loneliness and Facebook use among first-year college students. *Journal of Educational Computing Research* 2012; 46:105-117.
45. Yen JY, Ko CH, Yen CF, Wu HY, Yang MJ. The comorbid psychiatric symptoms of Internet addiction: attention deficit and hyperactivity disorder (ADHD), depression, social phobia, and hostility. *J Adolesc Health* 2007; 41:93-98.
46. de Wit L, van Straten A, Lamers F, Cuijpers P, Penninx B. Are sedentary television watching and computer use behaviors associated with anxiety and depressive disorders? *Psychiatry Res* 2011; 186:239-243.
47. Lou LL. *Loneliness, Friendship, and Self-esteem: First-year College Students' Experience of Using Facebook*. Unpublished Doctoral Dissertation, New York, University at Albany, 2009.
48. Igarashi T, Motoyoshi T, Takai J, Yoshida T. No mobile, no life: Self-perception and text-message dependency among Japanese high school students. *Computers in Human Behavior* 2008; 24(5):2311-2324.
49. Kim J, LaRose R, Peng W. Loneliness as the cause and the effect of problematic Internet use: The relationship between Internet use and psychological well-being. *Cyber Psychology & Behavior* 2009; 12:451-455.
50. Müller M, Christian M. The relationship between internet addiction and alcohol consumption is influenced by the smoking status in male online video gamers. *Clinical Neuropsychiatry* 2017; 14:34-43.