



## An examination of smart phone use and addiction among final-year medical faculty students

Aysun Aras<sup>1</sup>, Nurdan Torun<sup>1</sup>

<sup>1</sup>Public Health Department, Ataturk University, Erzurum, Turkey.

\*Corresponding author, e-mail: [draysunaras@hotmail.com](mailto:draysunaras@hotmail.com)

### Abstract

The purpose of this study was to determine levels of smart phone addiction among final-year medical faculty students. One hundred eighty students participated in this cross-sectional study. The Smartphone Addiction Scale was used to evaluate smart phone addiction levels and participants' sociodemographic characteristics. Descriptive statistics and the chi-square Kruskal-Wallis and Mann-Whitney U tests were applied. The mean addiction score was significantly higher in women than in men ( $p \leq 0.05$ ). The students in the study mostly (71.1%) used smart phones to access the internet. Total addiction levels were significantly higher among participants who checked their phones immediately upon waking ( $p < 0.05$ ). Studies of smart phone addiction are insufficient, and different results may be yielded by studies on the subject from different universities.

**Keywords:** Smartphones, Addiction, Students

**How to Cite:** Aras, A. Torun, N. (2021). An examination of smartphone usage and addiction among final-year medical faculty students. *International Journal of Research in Counseling and Education*, 5 (1): pp. 1-6, DOI: <https://doi.org/10.24036/00364za0002>



This is an open access article distributed under the Creative Commons 4.0 Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. ©2021 by Author.

## Introduction

Smart phones are popular devices capable of processing more information than other phones. In addition to use for communication, they also allow game playing, access to the internet and social networks, texting, videos, use of multimedia, and navigation (Demirci, Akgönül, & Akpınar, 2015). These and many other features are making smart phones an increasing part of daily life. Smart phone addiction is emerging as a new concept, and the levels of this and associated factors are attracting the interest of researchers. The diagnostic category of 'substance misuse and dependence' used in previous psychiatric diagnostic systems was replaced by a single 'substance use and disorder' category in the latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM). With this change in DSM 5, the concept of addiction including substance use disorders alone has come to also include non-substance related behaviors. Although the non-substance related disorder in DSM-5 currently consists solely of 'gambling disorder,' it has been reported that 'internet gaming addiction' may be evaluated as a separate category with future clinical studies. (Association, 1995) Persisting in a behavior despite its adverse effects, insufficient ability to control participation in behavior, compulsive participation, and craving immediately before the behavior are the essential features of behavioral addiction. The rapid advances being made in technology have also led to the emergence of behavioral addictions such as smart phone addiction, defined as excessive smart phone use such as to impact on users' daily lives. (Roberts, Yaya, & Manolis, 2014) Mobile and smart phone use rates are increasing worldwide and also in Turkey. Global mobile phone use rates increased by 2% in 2019 compared to 2018, and smart phone use in Turkey increased from 67% to 77%. ("Dijital in 2019," 2019; "Dijital in 2019 in Turkey,") Studies from Taiwan, an Eastern Asian country with high rates of mobile phone use, have reported behaviors matching all diagnostic criteria of addiction, including withdrawal in 36% of adolescent smart phone users, tolerance in 30%, longer use than intended in 27%, unsuccessful attempts to reduce use in 18%, and impairment of close relationships in 10%. (Yen et al., 2009)

The number of studies of uncontrolled and excessive use of smart phones in Turkey, where use is increasing all the time, is limited. Studies concerning smart phone use and risk assessments are essential in order to be able to identify smart phone addiction and diagnostic criteria, to reveal risk factors, and produce preventive and therapeutic strategies. The purpose of this study was to determine levels of smart phone addiction in final-year medical faculty students.

## Method

This cross-sectional study was performed with final-year students at the Atatürk University Medical Faculty in the 2018-2019 academic year. The study sample was not selected, and the study population was planned to consist of 212 sixth-year students at the Atatürk University Medical Faculty in 2018-2019. We intended to contact the entire population, and finally contacted 85%. The requisite permission for the study were received from the Atatürk University Medical Faculty, and the research was approved by the Atatürk University Medical Faculty ethical committee. All students were informed about the study. A sociodemographic data form produced by the authors following a search of the literature and the Smartphone Addiction Scale short form were administered to the participants. The evaluation form inquired into sociodemographic characteristics such as smoking status, years of smart phone use, mean number of mobile phone use per week, reason for mobile phone use, turning the phone off when going to bed, checking the phone immediately upon waking, self-assessment of school performance, and membership of any social group. The short form of the Smartphone Addiction Scale developed by Kwon et al. was employed (Kwon et al., 2013)

**Smart Phone Addiction Scale Short Form:** This six-point Likert-type scale was developed by Kwon et al. and consists of 10 items. The validity and reliability of the Turkish-language version were established by Noyal et al. (NOYAN, ENEZ DARÇIN, NURMEDOV, YILMAZ, & DİLBAZ, 2015). Participants read the items and mark the option that applies to them from “1-I strongly disagree”, “2-I disagree,” “3-I weakly disagree”, “4-I weakly agree,” “5-I agree” and “6-I strongly agree.” Possible scores range between 0 and 100, with higher scores indicating a greater risk of addiction. The scale consists of a single factor with no subscales. The cut-off points are 31 for men and 33 for women (Kwon et al., 2013; Roberts et al., 2014). Men scoring above 31 and women scoring above 33 were defined as ‘smart phone addicted,’ while participants with scores below these values were defined as ‘non-smart phone addicted.’

**Statistical Analysis:** All data were analyzed on IBM SPSS Statistics version 24.0 software. The Kruskal-Wallis, Man-Whitney U, and chi-square tests were applied, and p values <0.05 were regarded as statistically significant.

## Results

Women comprised 52.2% of the students, and participants’ mean age was 24.55±1.13 years. Additionally, 63.4% of students were living with their families, 15.6% had a monthly family income less than 2500 Turkish Lira (TL), and 67.2% were non-smokers.

**Table 1:** Students’ sociodemographic characteristics

Sociodemographic characteristic	n	%
<b>Gender</b>		
Female	94	47.8
Male	86	52.2
<b>Family income</b>		
≤2500 TL	28	15.6
2501-3000 TL	35	19.4
3001-5000 TL	72	40.0
5001 TL or more	45	25.0
<b>Place of residence</b>		
Public student hostel	10	5.6
Private hostel	15	8.3
At home with friends	39	21.7
With family	116	64.4
<b>Smoking status</b>		
Currently smoking	41	22.8
Quit	18	10.0
Never smoked	121	67.2
<b>Monthly spending</b>		
<1000 TL	117	65.0
1000-3000 TL	61	33.9
>3001 TL	2	1.1

Analysis of mean scores by gender revealed that both sexes remained below the cut-off points in their own groups (mean score for men = 23.5, mean score for women = 30.1). The mean score among women was significantly higher than that for men. Students who had never smoked had significantly higher mean smart phone addiction scores (Table 2).

**Table 2:** Distribution of Smart Phone Addiction Scale scores in terms of students' sociodemographic characteristics

	N(%)	X ± SD	
<b>Gender</b>			
Female	94(47.8)	30.1 ± 9.5	*p≤0.05
Male	86(52.2)	23.5 ± 9.2	
<b>Family income</b>			
≤2500 TL	28(15.6)	26.8±7.4	**p>0.05
2501-3000 TL	35(19.4)	25.8±10.5	
3001-5000 TL	72(40.0)	28.1±10.9	
5000 or more	45(25.0)	25.9±10.5	
<b>Place of residence</b>			
Public hostel	10(5.6)	30.5±9.5	**p>0.05
Private hostel	15(8.3)	33.2±12.5	
At home with friends	39(21.7)	24.6±9.2	
With family	116(64.4)	26.5±9.5	
<b>Smoking status</b>			
Still smoking	41(22.8)	24.7±9.4	**p>0.05
Quit	18(10.0)	24.7±10.3	
Never smoked	121(67.2)	27.9±10.0	

\*\*Kruskal-Wallis, \*Man-Whitney U test, SD: Standard Deviation

Eighty percent of smart phone users reported checking their phones as soon as they woke up, while 83.3% of students did not turn their phones off when going to bed. Students most commonly used their smart phones to access the internet (71.1%), followed by for talking (16.1%), texting (8.3%) and finally, at the lowest level, for playing games (4.4%).

**Table 3:** Smart Phone Addiction Scale score in terms of phone use findings

	N(%)	X ± SD	
<b>For what purpose do you use your smart phone?</b>			
Speaking	29(16.1%)	24.6±6.4	**p>0.05
SMS	15(8.3%)	26.4±15.0	
Internet	128(71.1%)	27.4±10.1	
Playing games	8(4.4%)	27.1±5.3	
<b>Checking the phone before going to bed</b>			
Yes	30(16.7%)	23.9±10.6	*p≤0.05
No	150(83.3%)	27.5±9.7	
<b>Checking the phone on waking</b>			
Yes	144(80.0%)	28.4±9.6	*p≤0.05
No	36(20.0%)	20.8±9.0	
<b>How do you rate your school performance?</b>			
Below average	18 (10.0%)	26.1±3.2	**p>0.05
Average	98(54.4%)	28.1±0.93	
Above average	64(35.6%)	25.3±1.21	
<b>Do you belong to any social group at school?</b>			
Yes	29(16.1%)	24.3±10.8	*p>0.05
No	151(83.9%)	27.4±9.7	

\*\*Kruskal-Wallis, \*Man-Whitney U test, SD: Standard Deviation

Mean scores were insignificantly higher among students who used their smart phones for accessing the internet. Total addiction levels were significantly higher among students who checked their phones as soon as they woke up ( $p < 0.05$ ). No significant association was determined between total addiction scores and turning phone off before retiring ( $p \leq 0.05$ ) of family monthly income ( $p > 0.05$ ) (Table 3).

No statistical significant relationship was observed between students' monthly spending and total addiction scores ( $p > 0.05$ ). We also found that 78.8% of students had been users for 10 years or more, and 21.1% of less than 10 years. No correlation was observed between length of phone use and total addiction scores ( $p > 0.05$ ).

Positive moderate correlation at the  $r = 0.465$  level was determined between daily length of smart phone use and total addiction scores ( $p < 0.05$ ). This relationship was significant among those using their phones for less than 1 h and more than 4 h. Students most used their smart phones for 1-3 h daily, with 60.5% of male students and 41.5% of female students using their phones for that length of time. No correlation was determined between age and total addiction scores ( $p > 0.05$ ).

School performance was at an average level in 56.6% of students with no membership of any social group, while school performance was above average on 42.9% of students belonging to a social group (Table 4).

**Table 4:** Factors associated with students' school performance

	School Performance			Total	
	Below average N(%)	Average N(%)	Above average N(%)		
<b>Membership of a social group</b>					
Yes	4(11.4%)	16(45.7%)	15(42.9%)	35(100%)	$X^2 = 1.34$
No	14(9.7%)	82(56.6%)	64(33.8%)	145(100%)	$P = 0.52$
<b>Total</b>	18(10%)	98(54%)	64(35.6%)	180(100%)	180(100%)

## Discussion

The students in the present study most frequently used smart phones to access the internet (71.1%), followed by for talking (16.1%), texting (8.3%), and playing games (%4,4). In Taylan's study, higher education students most frequently used their phones for texting, social media, and talking, which is partially consistent with the present study (Taylan, 2016). The higher prevalence of smartphone addiction in persons indicating social networking as the most personally relevant function is in line with previous studies that showed that texting and use of messengers and social media sites were predictors of mobile phone or smartphone addiction.

In the present study, both men and women's addiction scores were below the cut-off points. However, female students' mean scores were significantly higher than those of the male students (women:  $30.1 \pm 9.5$ , men:  $23.5 \pm 9.2$ ). This also shows that female students are at greater risk in terms of addiction. Several studies have reported greater smart phone addiction among women (Error! Hyperlink reference not valid.; Martinotti et al., 2011). However, there are also studies reporting higher smart phone addiction among men (Taylan, 2016).

Smart phone addiction scores in the present study were higher among students who had never smoked than among smokers. In contrast to the present research, studies of students in Korea and Japan have reported higher addiction scores among smokers (Kwon et al., 2013; Luk et al., 2018). Addiction scores in this study also increased with length of smart phone use. This was consistent with Noyan et al.'s study (NOYAN et al., 2015). That finding is also supported by Meral et al. and Taylan (Meral, 2017; Taylan, 2016). Consistent with Yusufoglu, 59.0% of students living at home with friends in the present study used their smart phones for 4 h or more, showing smart phones are used for other purposes and needs that socializing (Error! Hyperlink reference not valid.). Studies of smart phone use show that the length of use decreases with age (Kuyucu, 2017; Mazaheri & Najarkolaei, 2014; Taylan, 2016). No association was observed between age and scale scores in the present study. This may be due to this study involving only one single class. In contrast to Özdemiş et al., turning phones off before retiring was significantly associated with scale scores in the present study ( $p \leq 0.05$ ) (Özdemir, ÇİFTÇİ, DAĞILGAN, & Eda).

## Conclusion

In conclusion, this study examined smart phone addiction levels and factors affecting that addiction among medical faculty students in terms of a number of variables. The results showed that students most used their smart phones to go online. Another finding of this research is that lengths of smart phone use were concentrated between 1 and 3 h. Awareness raising activities aimed at parents and students might be useful in the context. Our study identified differed between males and females. And results suggest the need for interventions to reduce smartphone addiction among medical students.

Due to the insufficient nature of studies regarding smart phone addiction, many factors associated with that addiction have not been revealed. We think that examination of other variables potentially associated with smart phone addiction may make a useful contribution to the relevant literature. In addition, further studies revealing how smart phone addiction impacts on work, school, and private life, and the probable adverse consequences of this, are now needed. Different results may also be yielded by studies performed in different universities.

## References

- Aktaş, H., & Yılmaz, N. (2017). Smartphone addiction in terms of the elements of loneliness and shyness of university youth. *International Journal of Social Sciences and Education Research*, 3(1), 85-100.
- Association, A. P. (1995). Association, AP Diagnostic and statistical manual of mental disorders. Arlington, VA, US. In: American Psychiatric Publishing, Inc.
- Demirci, K., Akgönül, M., & Akpınar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of behavioral addictions*, 4(2), 85-92.
- Dijital in 2019. (2019). Retrieved from <https://wearesocial.com/global-digital-report-2019>
- Dijital in 2019 in Turkey. Retrieved from <https://www.slideshare.net/DataReportal/digital-2019-turkey-january-2019-v01>.
- Kuyucu, M. (2017). Gençlerde akıllı telefon kullanımı ve akıllı telefon bağımlılığı sorunsalı: "Akıllı telefon (kolik)" üniversite gençliği. *Global Media Journal TR Edition*, 7(14), 328-359.
- Kwon, M., Lee, J.-Y., Won, W.-Y., Park, J.-W., Min, J.-A., Hahn, C., . . . Kim, D.-J. (2013). Development and validation of a smartphone addiction scale (SAS). *PloS one*, 8(2), e56936.
- Luk, T. T., Wang, M. P., Shen, C., Wan, A., Chau, P. H., Oliffe, J., . . . Lam, T. H. (2018). Short version of the Smartphone Addiction Scale in Chinese adults: Psychometric properties, sociodemographic, and health behavioral correlates. *Journal of behavioral addictions*, 7(4), 1157-1165.
- Martinotti, G., Villeda, C., Di Thiene, D., Di Nicola, M., Bria, P., Conte, G., . . . Janiri, L. (2011). Problematic mobile phone use in adolescence: a cross-sectional study. *Journal of Public Health*, 19(6), 545-551.
- Mazaheri, M. A., & Najarkolaei, F. R. (2014). Cell phone and internet addiction among students in Isfahan university of medical sciences-Iran. *Journal of Health Policy and Sustainable Health*, 1(3).
- Meral, D. (2017). *Ortaöğretim öğrencilerinde akıllı telefon bağımlılığının yalnızlık, yaşam doyumu ve bazı kişisel özellikler bakımından incelenmesi*. Yüksek Lisans Tezi, Erzincan Üniversitesi, Sosyal Bilimler Enstitüsü, Eğitim . . .
- NOYAN, C. O., ENEZ DARÇIN, A., NURMEDOV, S., YILMAZ, O., & DİLBAZ, N. (2015). Akıllı Telefon Bağımlılığı Ölçeğinin Kısa Formunun üniversite öğrencilerindeTürkçe geçerlilik ve güvenilirlik çalışması. *Anatolian Journal of Psychiatry/Anadolu Psikiyatri Dergisi*, 16.
- Özdemir, A., ÇİFTÇİ, H., DAĞILGAN, S., & Eda, Ü. Bursa Uludağ Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Öğrencilerinin Akıllı Telefon Kullanım Durumu ve Bağımlılık Düzeylerinin Belirlenmesi. *Uludağ Üniversitesi Tıp Fakültesi Dergisi*, 45(3), 281-290.
- Roberts, J., Yaya, L., & Manolis, C. (2014). The invisible addiction: Cell-phone activities and addiction among male and female college students. *Journal of behavioral addictions*, 3(4), 254-265.
- Taylan, H. (2016). *YÜKSEKÖĞRETİM ÖĞRENCİLERİNDE AKILLI TELEFON BAĞIMLILIĞI*.
- Yen, C.-F., Tang, T.-C., Yen, J.-Y., Lin, H.-C., Huang, C.-F., Liu, S.-C., & Ko, C.-H. (2009). Symptoms of problematic cellular phone use, functional impairment and its association with depression among adolescents in Southern Taiwan. *Journal of adolescence*, 32(4), 863-873.

---

YUSUFOĞLU, Ö. Ş. (2017). Boş zaman faaliyeti olarak akıllı telefonlar ve sosyal yaşam üzerine etkileri: üniversite öğrencileri üzerine bir araştırma. *İnsan ve Toplum Bilimleri Araştırmaları Dergisi*, 6(5), 2414-2434.