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Investigation of Smartphone Addiction Levels Among University Students

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Abstract

The aim of this study was to investigate the smartphone addiction among university students. Totally 490 students with mean age of 20.1±2.1 year attending Çanakkale Onsekiz Mart University who volunteered to participate. "Smartphone Addiction Scale-Short Form" used to collect data. SPSS used to analysis. The results of the study found all participants used smartphones and the most common reason for smartphone use was determined as "browsing social networks" (51.9%). Daily smartphone use was most commonly determined as 4-6 hours (36.3%). There was a statistically significant difference found between smartphone use duration and addiction points ($p<0.05$). Daily smartphone use of 9 hours or more caused statistically significantly high addiction points compared to other daily use durations. Additionally, there was a statistically significant positive correlation between daily smartphone use duration and addiction points (r:0.339 p:0.01). In conclusion, daily smartphone use of 9 hours or more had highest smartphone addiction points. In light of this data, to prevent symptoms of smartphone addiction among university students, physical and social activities should be planned to reduce the daily smartphone use durations of students and it may be beneficial to encourage students to participate in these activities.

Keywords: Smart phone, addiction, university, student

1. Introduction

Smartphones appear to be an indispensable part of daily life and are becoming more common every day. Smartphones are more common than laptops due to ease of use and small size. They are used for many aims like accessing social media, surfing the internet, e-mail communication and messaging (Cho and Lee, 2015). Smartphones should have the following characteristics; telephone and short messaging, GPS, advanced connection choices like WiFi, 3G and bluetooth, mobile internet connection, an application market to upload mobile applications, a mobile operating system suitable for application development, touchscreen interface, ability to use more than one application at the same time, in situ or expandable memory, and video and sound recording. Due to the increase in popularity of information and communication technologies, mobile telephone use entered popular culture and mobile phones became necessary in people's lives. It is believed that globally over billion people use mobile phones. According to TSI (Turkish Statistical Institute, 2015) data, the mobile phone use in Turkey is 96.8%. According to research by the International Data Corporation (IDC), globally there were sales of 305 million smartphones in 2010. In 2011, this number increased 62% to reach 494 million units. According to the same research, the estimated total smartphone sales for 2012 was 660 million units, with a prediction that by 2015 sales of smartphones would reach one billion worldwide. Together with the increase in smartphone sales through the years, these numbers are an indicator that the importance of smartphones in daily and work life will increase (IDC, 2012).

The term of addiction can be described as a behaviour over which an individual has impaired control with harmful consequences (Cotter, 1993, Rounsaville et al., 1993). According to Graffiths (2000), there are six stages to behavioral addiction. These stages are attraction, mood changes, tolerance, withdrawal symptoms, conflict and relapse. As in other addiction areas, there is excessive occupation with a certain behavior, avoidance of the real world or repeating this behavior to feel better (Chakraborty, 2012), development of tolerance as the behavior repeats, difficulty controlling the behavior, withdrawal symptoms like tension, irritability and restlessness when the behavior is prevented and continuation of behavior with increasing severity leading to functional disorder (Grant, 2010).

The increasingly common smartphone use among university students, especially, and abundance of applications coming with smartphones have encourages common use of these devices in daily life. There is a need for studies researching the transformation of frequency of use into a degree of addiction. As a result, the main problem in this study is to determine the smartphone addiction, frequency of use and reasons for use among university students. Data from this study is important to know the level of addiction among university students, with common smartphone use, and to provide a new reference for the literature.

2. Materials and Methods

Participants

This study, completed with the descriptive screening method, included 490 students with mean age of 20.1±2.1 years attending Çanakkale Onsekiz Mart University chosen with the selective sampling method. Of participants, 340 (69.4%) attended Ezine Vocational School with 150 (30.6%) attending the Physical Education and Sport Vocational School. The participants included 236 females (48.2%) and 254 males (51.8%).

Data collection tools

Participants completed a survey comprising two sections. The first section included a total of 12 questions about demographic information like age, gender, mothers and fathers occupations, monthly income, educational level, department, year level, smartphone brand, daily smartphone use duration and reason for smartphone use.

The second section of the survey included the Smartphone Addiction Scale – Short Form (SOS-SF) developed by Kwon et al. (2013) and adapted to Turkish by Noyan et al. (2015). The scale comprises a total of 10 questions, with a six-point Likert type scaling. The scale points vary from 10 to 60. As the points obtained from the test increase, the risk of addiction is assessed to increase. The scale has one factor with no subscales. The Cronbach alpha coefficient of the test showing the reliability of the SAS-SF was measured as 0.867. The test/repeat test reliability coefficient was 0.926 (Noyan et al., 2015).

Ethical Permission

This study receives permission from Çanakkale Onsekiz Mart University Rectorate, Dean of the Faculty of Medicine, Clinical Research Ethics Committee dated 31.11.2016 and numbered 2016-21.

Statistical analysis

The SPSS program was used for data analysis. Two-way comparisons used the T test for independent groups, with comparisons between the groups tests with the one-way analysis of variance (ANOVA). Results with $p<0.05$ were accepted as significant.

3. Results

Table 1. Demographic Characteristics of Participants

		Frequency	Percentage
Gender	Male	254	51.8
	Female	236	48.2
	Total	490	100.0
Mother's occupation	Retired	19	3.9
	Trade	5	1.0
	Farmer	1	.2
	Civil Servant	16	3.3
	Private sector	63	12.9
	Housewife	386	78.8
	Total	490	100.0
Father's occupation	Retired	134	27.3
	Trade	50	10.2
	Farmer	37	7.6
	Civil Servant	37	7.6
	Private sector	223	45.5
	Unemployed	9	1.8
	Total	490	100.0
Educational level	Pre-undergraduate	340	69.4
	Undergraduate	150	30.6
	Total	490	100.0

Findings related to the demographic characteristics of participants are shown in Table 1. Accordingly, a total of 490 students participating in the study with 69.4% (n=340) with pre-undergraduate and 30.6% (n=150) with undergraduate level education. It was determined that 51.8% of students were male with 48.2% female. When the students are examined in terms of parental occupation, 78.8% stated their mothers were housewives, while 45.5% stated their fathers worked in the private sector.

Table 2. Distribution of participant's reasons for smart phone use

Reason for smart phone use	Frequency	Percentage
Surf the internet	138	18.1
Games	81	10.6
Browse social networks	395	51.9
Other	147	19.3
Total	761	100

Participants reasons for smartphone use are shown in Table 2. Accordingly, the most common reason for smartphone use among participants was determined as browsing social networks (51.9%), with the least common reason playing games (16.5%).

Table 3. Comparison of smart phone addiction according to department

Department	N	Mean	Standard deviation	F	P
Tourism and Travel Services	80	28.2	9.9	1.036	0.405
Marketing	31	28.6	9.6		
Public Relations and Publicity	85	28.4	11.2		
Foreign Trade	38	30.7	12.3		
Accounting and Taxation	10	28.6	10.8		
Business Administration	60	27.6	10.1		
Food Control and Analysis	36	24.3	10.5		
Sports Management	150	27.7	10.9		
Total	490	28.1	10.7		

The results of the one-way analysis of variance (ANOVA) used to compare addiction levels according to department attended are shown in Table 3. While there was no statistically significant difference in terms of smartphone addiction points according to department ($p>0.05$), the highest points were obtained by students in the Foreign Trade department (30.7±12.3) with lowest points obtained by students in the Food Control and Analysis department (24.3±10.5).

Table 4. Comparison of smart phone addiction according to gender

Gender	N	Mean	Standard deviation	t	P
Male	254	26.9	10.9	-2.185	0.29
Female	236	29.1	10.4		

The t-test for independent groups results are shown in Table 4 comparing smartphone addiction according to the gender of participants. The analysis results found no statistically significant difference in terms of addiction points between the genders (p>0.05). Additionally, the smartphone addiction points were 29.1±10.4 for females and 26.9±10.9 for males.

Table 5. Comparison of participant smart phone duration of use

	N	Mean	Standard deviation	F	P
1-3	115	22.7	10.4		
4-6	178	26.8	10.1		
7-9	101	31.3	9.3	21.921	0.001
9 or more	96	32.8	10.7		
Total	490	28	10.7		

The results for comparison of addiction points according to smartphone use duration of participants using the one-way analysis of variance (ANOVA) are shown in Table 5. The analysis results found a statistically significant difference in addiction points according to daily use durations of participants (p:0.001). Accordingly, the highest addiction points of 32.8±10.7 were found for 9 hours or more smartphone use, with lowest points of 22.7±10.4 determined for 1-3 hours smartphone use. The analysis results determined that the addiction points for 1-3 hour use duration were statistically significantly lower compared to all other use durations. Additionally, 4-6 hours use was significantly high compared to 1-3 hours use; however, it was significantly lower than 4-6 hours use and 9 hours or more use. Supporting this, there was a statistically significant positive correlation determined between use duration and addiction points (p:0.001 r: 0.339).

4. Discussion and Conclusion

The aim of the study was to investigate the smartphone addiction levels of university students. As a result, 490 students attending Çanakkale Onsekiz Mart University with mean age of 20.1±2.1 years participated in the study. The study results found total addiction points of students were 28±10.7. When the points of the scale are noted, it can be said that students have low addiction points.

The results of the analyses identified the highest rate for reasons for smartphone use was 51.9% for “browsing social networks”. Similarly, the study by Süt et al. (2016) of students attending the health sciences faculty observed the highest rate for reasons for smartphone use was 56.8% for “connecting to social networks”. A study of students attending an educational faculty by Kır and Sulak (2014) investigated the internet addiction levels and identified that the internet addiction points for students using social networks were statistically significantly high compared to those who did not use social networks. When the foreign literature is investigated, results similar to these studies are observed. Haug et al. (2015) reported there

were correlations between smartphone addiction and duration of browsing social networks and the duration between waking and first using the smartphone. A study by Alosaimi et al. (2016) observed that the highest rate among reasons for smartphone use was for "connecting to social networks". Similar findings were stated by Im et al. (2013). Accordingly of university students classified as addicted to the internet, 68.5% reported they chose smartphones with the aim of using social networks. According to this, social networks may be said to have an increasing effect on smartphone use or internet addiction.

The results identified that the majority of participants (36.3%) used smartphones for 4-6 hours daily. There was a statistically significant difference found between smartphone use duration and addiction points ($p<0.05$). The use of smartphones for 9 hours or longer cause statistically significantly higher addiction points compared to other daily use times (32.8±10.7 p:0.01). Additionally, there was a statistically significant positive correlation between daily smartphone use duration and addiction points (r:0.339 p:0.01). Similarly, Suliman et al. (2016) in a study based in Saudi Arabia observed that there was a significant correlation between daily smartphone use and smartphone addiction with addiction points increasing and the daily smartphone use increased. A study of 217 high school students by Yılmaz et al. (2015) investigated the correlation between mobile phone addiction and social anxiety and identified that the majority of participants (38.4%) used mobile telephones for 1-3 hours per day. This difference is considered to be due to the transformation of mobile phones into smartphones due to technological innovations and the ability to use them for more aims. As a result, it may be said that technological developments have increased the daily use duration for these devices.

There was no statistically significant difference comparing smartphone addiction according to gender. However, females (29.1±10.4) were identified to have higher addiction points than males (26.9±10.9). Similarly, the Turkish validity and reliability study of the smartphone addiction scale short form by Noyan et al. (2015) did not find a statistically significant difference between the genders in terms of smartphone addiction, though they observed that women (27.99±11.06) had higher addiction points compared to men (26.72±10.65). The study by Süt et al. (2016) identified females had higher points for smartphone addiction compared to males. When the foreign literature is investigated, the study by Choi et al. (2015) observed that smartphone addiction points for females were higher, while the internet addiction points for males were higher. A study of mobile phone addiction by Ebu-Jedy (2008) found the percentage of addicted females was twice than of males. Similar results are observed in studies by Wilska (2003), Bianchi and Phillips (2005), Billieux et al. (2008), Hakoama and Hakoyama (2011), and Pawłowska and Potembska (2011).

Comparison of smartphone addiction according to department found no statistically significant difference ($p>0.05$). When examined according to department, the highest addiction points were in the Foreign Trade department (30.7±12.3), with lowest addiction points in the Food Control and Analysis department (24.3±10.5). Similarly, the study of health sciences faculty students by Süt et al. (2016) observed that smartphone addiction was not statistically significantly different according to department.

In light of this data, to prevent symptoms of smartphone addiction among university students, physical and social activities should be planned to reduce the daily smartphone use duration of students and it may be beneficial to encourage students to participate in these activities.

Conflict of Interest

The authors have not declared any conflicts of interest.

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