Yeni Medya New Media
Hakemli, uluslararası, e-Dergi Peer Reviewed, international, e-Journal

Peer Reviewed, International, e-Journal
Ankara Hacı Bayram Veli University
Faculty of Communication
Issue: 12 / Volume: 2022 Spring
E-ISSN: 2587-1285

Hakemli, Uluslararası, E-Dergi
Ankara Hacı Bayram Veli Üniversitesi
İletişim Fakültesi
Sayı: 12 / 2022 Bahar
E-ISSN: 2587-1285

Araştırma *Research Article*

https://doi.org/10.55609/yenimedya.1109968

Smartphone Addiction and Awareness of University Students During the Pandemic Period: The Case of Bitlis Eren University

Pandemi Döneminde Üniversite Öğrencilerinin Akıllı Telefon Bağımlılığı ve Farkındalığı: Bitlis Eren Üniversitesi Örneği

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Öz

Cep telefonu olmadan kalma korkusu olarak bilinen akıllı telefon bağımlılığı ve genellikle aşırı internet kullanım sorunu veya bağımlılığı ile ilişkili olarak tartışılmaktadır. Ancak genel olarak baktığımızda, bağımlılığı yaratan şey nadiren telefonun kendisidir, daha çok bireylerin bağlandığı oyunlar, uygulamalar ve çevrimiçi dünyalardır. Bu çalışma, Türkiye'de yaşayan üniversite öğrencilerinde akıllı telefon bağımlılığı düzeyini ölçmeyi ve üniversite öğrencilerinin COVID-19 pandemisi sırasında akıllı telefon bağımlılığı ve farkındalığını belirlemeyi amaçlamaktadır. Araştırmanın örneklemi 2020-2021 bahar döneminde Bitlis Eren Üniversitesi'nde farklı bölümlerde öğrenim gören 443 öğrencidir. Katılımcılara iki bölümden oluşan anket formu uygulanmıştır. Anket formunun ilk bölümünde sosyo-demografik bilgiler içeren sorular yer alırken ikinci bölümünde Demirci ve arkadaşları tarafından Türkçeye uyarlanan Akıllı Telefon Bağımlılığı Ölçeği yer almaktadır. Orijinal ölçekte 6, Türkçe uyarlamasında 7 alt ölçek bulunmaktadır. Araştırma bulgularına göre erkek öğrenciler kadın öğrencilere kıyasla daha fazla akıllı telefon bağımlısıdır. Diğer yandan COVID-19 etkilerinin akıllı telefon kullanımını etkilemediğini düşünen öğrenciler, düşünmeyen öğrencilere göre daha fazla akıllı telefon bağımlısıdır. 1. sınıf öğrencilerinin 2. sınıf öğrencilerine göre daha fazla telefon bağımlısı olduğu gözlemlenmiştir ve son olarak akıllı telefonu 1 yıl ve daha az kullananlar 5 yıl ve daha uzun süre kullananlara göre daha fazla akıllı telefon bağımlısıdır. Araştırma sonuçlarına göre üniversite öğrencileri (kız veya erkek farkı olmaksızın) arasında akıllı telefon bağımlılığı farkındalığı düşüktür. Özellikle Bitlis gibi sosyal faaliyet alanlarının sınırlı olduğu şehirlerde öğrencilerin akıllı telefon bağımlılığı artmaktadır. Ayrıca öğrenciler arasında akıllı telefon kullanım süresi arttıkça genel anlamda bağımlılık riski azalmaktadır. Üniversite öğrencileri arasında genel anlamda akıllı telefon kullanımı görece yeni olduğundan zamanla akıllı telefon kullanımını öğrenmektedir.

Abstract

Smartphone addiction, known as the fear of being without a mobile phone, and is often discussed in relation to excessive internet use problem or addiction. But in general, it is rarely the smartphone itself that creates addiction, but rather the games, apps, and online worlds that people connect to. This study aims to measure the level of smartphone addiction among university students living in Turkey and to determine the smartphone addiction and awareness of university students during the COVID-19 outbreak. The sample of the research is 443 students studying in different departments at Bitlis Eren University in the spring term of 2020-2021. A questionnaire consisting of two parts was used that the first part of the questionnaire includes questions about socio-demographic information, the second part includes the Turkish version of Smartphone Addiction Scale. There are 6 subscales in the original scale and 7 in its Turkish adaptation. According to the research findings, male students are more addicted to smartphones than female students. On the other hand, students who think that the effects of COVID-19 do not affect smartphone use are more smartphone addicted than students who do not think. It has been seen that first-year students are more smartphone addicted than second-year students, and finally, those who use a smartphone for 1 year or less are more addicted to smartphone than those who use it for 5 years or more. The research reveals that the awareness of smartphone addiction among university students (no difference between male and female) is low. Especially in cities such as Bitlis where social activities are limited, students' smartphone addiction is increasing. In addition, as the duration of smartphone use among students increases, the risk of addiction decreases in general. While the use of smartphones in general among university students is relatively new, they learn how to use smartphones over time.

Anahtar Kelimeler Keywords

Akıllı Telefon Kullanımı, Akıllı Telefon Bağımlılığı, Üniversite Öğrencileri, Akıllı Telefon Bağımlılığı Farkındalığı, Covid-19
The Usage of Smartphone, Smartphone Addiction, University Students, Smartphone Addiction Awareness, COVID-19

Geliş Tarihi / Recieved: 27. 04. 2022, Kabul Tarihi / Accepted: 08. 06. 2022
Çağırkan, B., & Tekindal, M. A. (2022). Smartphone addiction and awareness of university students during the pandemic period: The case of Bitlis Eren university. *Yeni Medya*, 2022(12), 79-96. https://doi.org/10.55609/yenimedya.1109968

Introduction and Literature Review

In recent years, developments in communication have radically changed individuals' mobile phone use and social interaction patterns in a variety of ways. Network society theorists have stated that contemporary societies consist of network connections that have become an integral part of global communication thanks to the opportunities provided by worldwide internet connectivity. The emergence of smartphones, together with the transformation of social networking sites (such as Facebook, Instagram, etc.) into mobile phone applications in 2009, have caused smartphones to become a significant part of people's daily lives. Smartphones have continued to evolve and change from the first moment they emerged, and, for the purposes of comparison with other mobile phones, can be defined as "mobile interaction tools that have an operating system which enables internet access and facilitates the daily lives of individuals with different applications" (Yurdagül, 2011). Smartphones are devices with features which enable people to instantly connect and communicate with other individuals from all over the world, allow them to participate in leisure activities (such as listening to music, watching movies, playing games, etc.), and generally make life much easier for people; for these reasons, they are becoming increasingly more addictive (Coogan & Kangas, 2001; Gao, Yang & Krogstie, 2015; Matar & Jaalouk, 2017).

Today's young adults—referred to as Generation Z (Gen Z)—are the first generation to have grown up with access to the internet and portable digital technology from an early age. They are referred to as 'digital natives', although they are not required to be digitally literate. With the digital age comes a variety of problems, especially for today's young adults. Almost everywhere in the world, young people are spending more and more time on electronic devices; consequently, besides all the features that make life easier, smartphones have harmful effects for adolescents and young adults in particular. One of the most significant harmful effects is smartphone addiction, which is a growing problem among young adults (Van Velthoven, Powell & Powell, 2018). Lee et al. (2014) have stated that the first thing smartphone owners do before going to sleep and on waking up in the morning is to spend some time on their devices. As of 2020, there are 3.81 billion social media users globally; in other words, 49.03% of the world population of 7.77 billion uses social media (Social Business, 2021). Furthermore, according to the Turkish Statistical Institute (TSI) (2021), 55% of the population of Turkey actively uses social media today. If we consider the age distribution of social media users in Turkey, the highest rates of social media use occur among those aged 35 and under. Moreover, if we look at patterns of usage across all age ranges, it can be observed that men use social media more than women, and social media usage decreases as age increases (We Are Social, 2022). The number of mobile phone users in Turkey has reached 58 million; additionally, 94% of Turkey's population accesses the internet via smartphone. The average time spent by internet users in Turkey on the internet per day is 8 hours. The time spent on smartphone is 4 hours 16 minutes. Moreover, the average time smartphone users spend on social media is 2 hours and 27 minutes and smartphone users have an average of 8.1 social platforms' membership (We Are Social, 2022). The percentage of social media users compare to the population is 80% in Turkey.

University students are among the first and the fastest to experience smartphone technology, even if smartphone technology is relatively new. Many studies have suggested that "there is a significant relationship between smartphone use and health, academic achievement, social interactions and learning perceptions" (Boumosleh & Jaalouk, 2018: 50). University students' usage and duration of use of smartphones in daily life varies according to a number of factors, such as the students' age and gender, economic factors, and whether students have

a computer at home. One of the most critical issues around smartphone addiction is young adults' awareness of this addiction. Young adults, who have grown up with the internet and with smartphone technology, consider these devices to be an integral part of their daily lives. This situation makes it difficult for them to appreciate the reality of their own addiction. The level of awareness of smartphone addiction (which changes the daily life of university students and affects their academic life) may differ from country to country, and from region to region within countries, and the reasons and duration of use of smartphones by young people vary between cities located in different economic regions within the country. Differing levels of economic development among countries means that smartphone infrastructure is more widespread in some countries than in others.

The social changes increase the duration of individuals' usage of smartphones in society. One of the most significant changes that people have experienced recently is the COVID-19 epidemic, which started in China in 2019 and affected the whole world (Crawford et al., 2020), has caused many changes. The epidemic, which almost radically changed the daily life practices, has especially differentiated the understanding of socialisation and mobilisation of young adults. The COVID-19 outbreak has had a significant effect on education. Undoubtedly, the spread of COVID-19 has created vast challenges for higher education systems worldwide; therefore, university administrators have had no alternative but to encourage academic staff to use different online teaching applications to continue their classes. For many academics and students, "online education has its own particular problems and obstacles, including inexperience with emerging new technologies and ways of coping with unknown difficulties" (Teymori & Fardin, 2020: 3). It is clear that the shift from conventional or mixed learning to entirely online remote education will not happen overnight; there are various unresolved problems to address, such as the lack of student capacity (how can students connect online?). Nowadays, academic staff and students are qualified to use digital learning platforms (such as Zoom, Google Meet, etc.) for seamless development and implementation as part of a successful teaching method (Future Learn, 2020). Moreover, many university students have been engulfed by technological innovation because most of them have grown up in a digital age using social networking sites, smartphones, tablets, and the internet, integrating these elements in their daily life activities (Livari et al., 2020). In many countries, the enforced lockdown due to the COVID-19 outbreak has increased individuals' use of smartphones and other technological devices; in particular, the transition to online and distance education has seen many university students attending online classes using their smartphones. Additionally, COVID-19 has increased the usage of social media, instant messaging and communication applications, digital music platforms, video streaming services, and mobile game applications; all of this has caused young people to become increasingly addicted to smartphones.

Smartphone Addiction Studies in Turkey

In Turkey and across the world, the age group showing the highest smartphone use is young adults. According to the Global Mobile Consumer Survey (2019), which was conducted with a total of 44,150 users in 28 countries over 6 continents. Turkey is one of the countries with the highest levels of smartphone addiction due to its relatively dynamic and young population compared to the other 28 countries. As stated in the research, 90% of Turkish participants in the 2019 Global Mobile Consumer Survey state that they have access to a smartphone, 76% report access to a laptop computer, and 59% access to a tablet. In examining the daily activities of smartphone (the most frequently used device) users, it was seen that they most frequently watch

videos and short videos/live broadcasts/stories on instant messaging networks. This behaviour of users indicates that social media has become a significant means of consuming content. It was also observed that users in the 18-24 age group check applications such as WhatsApp, Snapchat, Instagram, and Twitter more frequently, and the frequency of use decreases as the users' age increases; in addition, 46% of users in Turkey stated that they feel the need to check their phone constantly. The most preferred membership services among users in Turkey are video/TV streaming platforms (these being accessed by 76% of users) and music streaming platforms (58%) (Global Mobile Consumer Survey, 2019).

Due to the increasing rates of smartphone addiction, different aspects of this phenomenon have been examined by scholars; for example, in a study carried out to compare the frequency of use of mobile phones and brand preferences, it was found that "the students of education faculties use their mobile phones intensively, and the number of students who use them for more than 1 hour a day is very high" (Tutgun Unal & Arslan, 2013: 1). On the other hand, in a study conducted in 2015, it was stated that "playing online games can lead to a decrease in academic success, but there is no correlation between the usage of smartphones and success at school" (Elmas et al., 2015: 49). Furthermore, in a study conducted in the United States, it was found that "the multifunctional aspect of smartphones hinders the educational learning process of students, negatively affecting both their academic and non-academic life" (Boumosleh & Jaalouk, 2018: 50). From a study of the literature, it can be observed that patterns of smartphone use and addiction vary according to age (Van Deursen et al., 2015), gender differences (Jenaro et al., 2007; Billieux et al., 2008; Turner et al., 2008; Walsh et al., 2011), academic success (Junco & Cotten, 2012; Karpinski et al., 2013; Judd, 2014; Boumosleh & Jaalouk, 2018), loneliness (Ye et al., 2018; Mosalanejad et al., 2019) and personality traits (Bian & Leung, 2015; Pearson & Hussain, 2016).

As mentioned above, many studies have found that intensive use of smartphones can lead to various problems, and users may face the risk of being addicted to smartphones. To the best of our knowledge, this is the first study to focus on a sample of university students in the province of Bitlis in the Eastern Anatolia Region of Turkey. According to the Turkish Statistical Institute, in 2018 Bitlis was among the 5 most "dissatisfied" cities (in terms of the social lives of students as well as other social and economic factors), and it ranks as one of the worst cities in Turkey in which to be a student (Karadag & Cemil, 2017). Bitlis has some additional economic, social, and cultural limitations that cause people to spend more time on smartphones. In summary, the study aims, from a theoretical and empirical perspective, to reveal the extent of smartphone addiction awareness, the levels of addiction, the relationship between addiction and personality traits, and the usage patterns of university students who live in low-income families and who have limited internet access generally.

Significance and Purpose of the Study

Developments in mass communication and information technologies have brought many benefits to human life. It has become a device that used by young people, especially since smartphones have small computer features and can easily connect to the internet. The increase in the use of smartphones thanks to the features they have has also caused young adults to become more and more addicted to smartphones. Studies on smartphone addiction in the literature have generally been carried out on factors such as the use of smartphones, duration of use, and effect on academic achievement. At the same time, the studies are carried out on

sample groups with relatively big cities in general. In this context, there is a lack of research in the literature related to university students' awareness of smartphone addiction and in cities where relatively less socialisation opportunities for students.

In our study, smartphone addiction and awareness of university students during the COVID-19 outbreak were examined. The main questions of our research are as follows:

1. Is there a relationship between being addicted to a smartphone and smartphone addiction awareness for university students?

2. Is the duration of the participants' use of smartphones impact on students' addiction?

3. Is there a relationship between the participants' purpose of smartphone and smartphone addiction?

4. Are the restrictions applied during the COVID-19 outbreak effect on the smartphone addiction of the students?

Materials and Methods

Procedure, participants, and ethics

To In order to determine the levels of smartphone addiction among university students in this study, the Smartphone Addiction Scale (SAS) has been used; this is a 33-item, self-report questionnaire ranging from 1 (definitely no) to 6 (definitely yes), developed by Kwon et al. (2013) Higher scores indicate a higher risk of smartphone addiction. The participants of the study are students of Bitlis Eren University, Turkey, ranging in grades from the first year to the fourth year. The study comprises a total of 443 students who were studying in the spring semester of 2020-2021 at Bitlis Eren University. The institutional review board approved the study protocol of the Bitlis Eren University Ethics Committee in 2021. Having obtained permission from the Bitlis Eren University Ethics Committee, the researcher prepared the online questionnaire and shared it with the students via instant messaging applications.

A total of 443 students who were studying in different departments in the 2020-2021 spring term responded to the questionnaire, and participation in the study was voluntary. An electronic version of the questionnaire was used in data collection (Google Forms was used), and the link was shared with the students electronically. All the students were informed via a direct message before they began filling in the online questionnaire form. They were made aware of the ethical procedures for the study and were provided with the researcher's contact information in case of any situations arising related to the study. The questionnaire form is divided into two parts: The Turkish version of the SAS, which is adapted by Demirci et al. (2014), and the sociodemographic data form. There are 6 subscales in the original instrument and 7 in its Turkish adaptation.

Methods

SPPS 25 (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) statistical package program is used to analyse the data. Descriptive statistics (mean, standard deviation, median, 1st and 3rd quartiles, number, and percentile) are given for categorical and continuous variables in the study. In addition, the homogeneity of the variances, which is one of the prerequisites of the parametric tests, is checked with the "Levene" test.

Normality assumption is controlled with the "Shapiro-Wilk" test. When it is needed to evaluate the differences between the two groups, "Student's t-Test" if the parametric test prerequisites are met; if not, the "Mann Whitney-U test" is preferred to use. One-way Analysis of Variance and Tukey HSD test from multiple comparison tests are used to compare three or more groups, and Kruskal Wallis test and Bonferroni-Dunn test from multiple comparison tests are applied. A $p<0.05$ level is considered statistically significant.

Results and Discussion

In Turkey and across the world, the age group showing the highest smartphone use is young adults. According to the We Are Social Report (2021), Turkey is one of the countries with the highest levels of smartphone addiction due to its relatively dynamic and young population. As stated in the research, 90% of Turkish participants have access to a smartphone, 67% of them have personal/desktop computers, 45 0f them have tablets and 17% of them have smart watches/wristbands (We Are Social, 2021. In examining the daily activities of smartphone (the most frequently used device) users, it was seen that they most frequently watch videos and short videos/live broadcasts/stories on instant messaging networks.

This behaviour of users indicates that social media has become a significant means of consuming content. It was also observed that users in the 18-24 age group check applications such as WhatsApp, Snapchat, Instagram, and Twitter more frequently, and the frequency of use decreases as the users' age increases; in addition, 46% of users in Turkey stated that they feel the need to check their phone constantly. The most preferred membership services among users in Turkey are video/TV streaming platforms (these being accessed by 76% of users) and music streaming platforms (58%) (Global Mobile Consumer Survey, 2019).

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Table 1 *Sociodemographic data (n=443)*

Demographic Questions	**Answer Categories**	*n (%)*
Gender	Male	107 (%24)
	Female	336 (%76)
Place of residence	Village	118 (%27)
	Small town	11 (%2)
	District centre	151 (%34)
	City centre	163 (%37)
Number of siblings	None	6 (%1)
	1	17 (%4)
	2	43 (%10)
	3	55 (%12)
	4	65 (%15)
	5 or more	257 (%58)
Grade	1st	227 (%51)
	2nd	126 (%28)
	3rd	41 (%9)
	4th	49 (%11)
Type of family	Nuclear family	369 (%83)
	Extended family	64 (%14)
	Living far from family	10 (%2)
How long have you had a smartphone?	1 year or les	66 (%15)
	2	78 (%18)
	3	55 (%12)
	4	78 (%18)
	5 year or more	166 (%37)
Do you have a personal internet connection? (Mobile internet or wired internet)	Yes	344 (%78)
	No	99 (%22)
How do you see your academic success?	Low	89 (%20)
	Middle	312 (%70)
	High	42 (%9)
Smartphone usage on average per day	0-2 hours	91 (%21)
	2-4 hours	135 (%30)
	4-6 hours	120 (%27)
	6 hours or more	97 (%22)
Do you feel lonely in general?	Yes	221 (%50)
	No	222 (%50)
Do you think your smartphone usage has increased during the COVID-19 outbreak?	Yes	338 (%76)
	Not changed	65 (%15)
	No	40 (%9)
Do you spend time with your smartphone during the online class?	Yes	156 (%35)
	No	287 (%65)

Do you think your social media usage has increased during the COVID-19 outbreak?	Yes	276 (%62)
	Not changed	60 (%14)
	No	107 (%24)
Do you consider yourself as a smartphone addict?	Yes	152 (%34)
	No	291 (%66)
Which device do you use to attend online classes?	Smartphone	320 (%72)
	Computer	112 (%24)
	Tablet	9 (%2)
	Other	2 (%1)
Do you think that the restrictions applied during the COVID-19 outbreak affect your smartphone usage?	Yes	312 (%70)
	No	92 (%21)
	No idea	39 (%9)

n: Figure %: Percentage

Participant sociodemographic characteristics are summarised in Table 1. The study included a total of 443 (336 females (%76), 107 males (%24)) participants. Their residence addresses are 27% in the village, 2% in the small town, 34% in the district centre and 37% in the city centre. Most participants had 5 or more siblings that %1 none, %4 one sibling, %10 two siblings, %12 three siblings, %15 four siblings, and %58 five or more siblings. It may be related to the number of siblings that 50 of the participants did not feel themselves lonely in general and %50 felt lonely in general.

Most of the participants, 51%, were studying in the 1st grade while %28 of them were 2nd grade, %9 of them were 3rd grade, %11 of them were 4th grade. The majority of the students lived in a nuclear family that %83 nuclear families, %14 extended families, and only %2 living far from their family. 83% of the participants have been using a smartphone for 5 years or more, 18% for 4 years, 12% for 3 years, 18% for 2 years, and 15% for less than 1 year, and 78% of the participants had a mobile or wired internet connection (%22 of them did not have). Most of the participants, %72, used a smartphone to attend online classes while %24 of them used a computer, %2 used a tablet, and %1 used other devices. Participants primarily (70% of them) consider their academic success at a moderate level while %20 of them considered low and %9 them considered high.

Most of the participants, %76, thought that their smartphone usage had increased during the COVID-19 outbreak while %15 of them believed it had not changed, and %9 of them thought it had decreased. Furthermore, %62 of the participants thought that their social media usage had increased during the COVID-19 outbreak, while %14 of them believed that it had not changed, and %24 of them thought that it had decreased. The restrictions imposed during the COVID-19 outbreak affected smartphone usage of the participants: %70 of them said that their smartphone usage increased, %21 of them said that their smartphone usage did not increase, and %9 of them said that they did not sure whether their smartphone usage increased or not.

It is stated that 21% of the students use their smartphone for less than 0-2 hours, 30% of them use for 2-4 hours, 27% of them use for 4-6 hours, and 22% of them use for more than 6 hours. During this time of use, when we look at Table 2, it is presented that 71% study, 16% watching movies, 51% use social media, 13% use games for entertainment, 30% listen to music, 57% use them for messaging and 15% use watching videos.

Smartphone Addiction Scale

Table 2 *Descriptive statistics on scale and subscales (n=443)*

Scale Information	*± SD [M (Q_1-Q_3)]*
Smartphone Addiction Scale Total Score	86,86±27,5 [83 (68-104)]
Disturbing daily life and tolerance	24,08±8,77 [24 (17-30)]
Withdrawal symptoms	16,39±7,36 [15 (11-21)]
Positive anticipation	13,71±4,83 [13 (10-16)]
Cyberspace-oriented relationships	7,7±3,82 [7 (4-9)]
Overuse	10,62±4,29 [10 (8-13)]
Social network dependence	4,77±2,54 [4 (2-6)]
Physical symptoms	9,6±3,3 [10 (7-12)]

Table 3 *Analysing demographic data with a significant effect on the Smartphone Addiction Scale (n=443)*

	Predictive		**SE**	**Confidence Interval**	**t**	**p**
Intercept	65,281	8,63	(48,32 / 82,25)	**7,564**	**0,001 ****	
Gender	Female – Male	7,427	3,38	(0,79 / 14,06)	**2,200**	**0,028 ***
Do you think your social media usage has increased during the COVID-19 out-break period?	Not Changed – Yes	-3,121	4,75	(-12,46 / 6,22)	-0,657	0,511
	No – Yes	-9,645	3,96	(-17,42 / -1,87)	**-2,438**	**0,015 ***
What grade are you going to?	2nd Grade – 1st Grade	6,51	3,15	(0,31 / 12,71)	**2,065**	**0,040 ***
	3rd Grade – 1st Grade	-3,998	4,95	(-13,73 / 5,73)	-0,808	0,420
	4th Grade – 1st Grade	-3,188	4,52	(-12,07 / 5,70)	-0,706	0,481

How do you see your academic success?	Medium – Low	-8,051	3,49	(-14,91 / -1,19)	**-2,307**	**0,022 ***
	High – low	-4,933	5,47	(-15,68 / 5,82)	-0,902	0,368
Do you think your smartphone usage time has increased during the COVID-19 outbreak period?	Not Changed – Yes	8.557	4,68	(-0,64 / 177,55)	1.829	0.068
	No – Yes	7.866	5,51	(-2.97 / 187,01)	1.427	0.154
How long have you had your smartphone?	2 year – 1 year or less	5,281	4,67	(-3,89 / 14,45)	1,132	0,258
	3 year – 1 year or less	10,808	5,29	(0,41 / 21,21)	**2,043**	**0,042 ***
	4 year – 1 year or less	5,531	5,01	(-4,31 / 15,37)	1,105	0,270
	5 year or more – 1 year or less	9,866	4,55	(0,93 / 18,81)	**2,170**	**0,031 ***
What purpose do you use your smartphone the most?						
Studying or attending online classes	Yes – No	7,197	3,37	(0,57 / 13,82)	**2,135**	**0,033 ***
Watch or download movies	Yes – No	-7,195	3,67	(-14,40 / 0,012)	**-1,963**	**0,049 ***
Social networks (such as Facebook, Instagram, twitter, etc.)	Yes – No	-2,9	2,97	(-8,73 / 2,93)	-0,977	0,329
Fun or playing online game	Yes – No	-2,962	4,09	(-10,99 / 5,07)	-0,725	0,469
Shopping	Yes – No	-7,181	4,55	(-16,12 / 1,76)	-1,579	0,115
Listening/downloading music	Yes – No	3,75	2,92	(-1,989 / 9,49)	1,284	0,200

***p<0,05,** ***p<0,01,**

β: Model Coefficient ***SE: Standard Error***

In Table 3, the effects of demographic characteristics that were found to be significant for the Model are analysed. It can be concluded that there is an effect on the SAS of 7,427 from Men to Women. In other words, it has been observed that men are more smartphone-addicted than women. Those who do not think that the duration of smartphone use has increased during the COVID-19 outbreak period has 9,645 times more impact on the SAS than those who do. In other words, it has been observed that those who do not think are more addicted to the smartphone than those who do. It has been observed that students in the 1st grade are 6,510 times more phone addicted than those in the 2nd grade. Those who used the smartphone for 1 year or less were 10,808 times more likely than those who used it for 3 years, and those who used it for 1 year or less were 9,866 more smartphone addicts than those who used it for 5 years or more. Those who say they use their smartphone to study or attend online classes are 7,197 times less smartphone-addicted than those who do not. Those who said they used their smartphone to watch or download movies were 7,181 times less smartphone-addicted than those who did not. In terms of smartphone addiction, the model explained 11% of the variance.

Conclusion

Due to the ease of use and range of functions offered by smartphones today, people tend to use their devices for daily activities such as e-mail tracking, attending online meetings, ordering food, watching movies, playing online games, following online classes, and communicating with their friends and relatives. However, young adults (especially Gen Z) have higher usage rates and spend more time with smartphones; this has led to some harmful effects among this age group, one such effect being addiction. This research aimed to (i) ascertain the level of smartphone addiction among Bitlis Eren University students during the COVID-19 outbreak, (ii) reveal the extent of these students' awareness around smartphone addiction, and (iii) determine the sociodemographic factors which have a significant impact on this phenomenon. Also, the smartphone addiction scores were calculated for the whole sample, and differences and similarities in terms of sociodemographic variables were identified.

The research results highlight several significant factors affecting the smartphone addiction of university students during the COVID-19 outbreak. Moreover, according to the study carried out by Li et al. (2021) that users' smartphone usage indeed changes across the outbreak of COVID-19. However, the outbreak has different effects on different usage behaviour in terms of changing trends, diurnal patterns, and correlations. Our study revealed that students who do not think that their smartphone usage time has increased during the COVID-19 outbreak have a higher smartphone addiction rate (9.645 times higher) than students who do. In other words, students who do not think of themselves as smartphone addicts are more likely to be addicted to their smartphones than students who do. This finding differs from the studies that are carried out before the COVID-19 outbreak. For example, in study which is carried out by Göldağ (2019), students who consider themselves as smartphone addicts have higher smartphone addiction levels than those who do not. In this sense, awareness of smartphone addiction has emerged between the students who consider themselves as smartphone addicts. Similarly, in the study of İkiışık et al. (2020), it was figured out that students who consider themselves as addicted are at higher risk for smartphone addiction than those who do not see themselves as addicted. In this context, compared to other studies, it is revealed that students' awareness of smartphone addiction is particularly low in our study. One of the most important factors affecting this result is the socio-cultural and economic differences of the samples of the studies.

The first smartphone was released in September 2008; since then, smartphone use has increased progressively, to the extent that today's young adults are born and grew up surrounded by this technology, without having seen previous models from the pre-smartphone era. In this context, smartphone usage time and addiction are more common among young adults. The duration of ownership of a smartphone is another critical factor that affects students' smartphone addiction. According to the results of the study, there is a significant relationship between the duration of ownership of a smartphone and levels of addiction. In our study, students who have had their smartphone for 1 year or less are 10.808 times more likely to be addicted to the device than students who have had theirs for 3 years, and 9.866 times more likely to be addicted than students who have been using theirs for 5 years or more. Generally, most of the studies have focused on the daily smartphone use, age of participants, and the relationship of these factors with addiction (Kumcagiz et al. 2020), rather than the duration of smartphone ownership. For example, in the studies, it was indicated that as the daily usage time of the smartphone increases, the level of smartphone addiction increases (Özata, 2019; Akgül, 2020; Kara et al., 2021; Tejedor et al., 2020). Arguing that the daily usage rate of the smartphone may vary for a number of reasons, but the duration of ownership of a device is not something that may

change in a day. Taking this into account, our study focuses on university students' smartphone ownership time rather than daily usage. Also, proper smartphone usage is a significant factor inhibiting addiction, especially for those individuals who have had a smartphone for 1 year or less and began to use their device for the first time during the COVID-19 outbreak. The restrictions on face-to-face interactions during the outbreak, as well as the lack of socialisation due to the lockdown, caused an increase in the use of smartphones for university students. Moreover, 76% of participants answered "yes" to the question "Do you think your smartphone usage time has increased during the COVID-19 outbreak?". Also, the use of smartphones among students during the COVID-19 period has increased due to the restrictions.

It can be concluded from the data that as the duration of possession of a smartphone increase, the rate of smartphone addiction decreases. The low rate of smartphone addiction among students who already owned their device before the COVID-19 outbreak can be explained by the fact that they learned how to use a smartphone before the onset of the outbreak. Similarly, it was found that among the students who participated in the research, those in their first year of study were 6.510 times more likely to be addicted to their smartphones than those in their second year. As a result of the outbreak, these first-year students fell directly into distance learning as they embarked on their university journeys without experiencing face-to-face learning. In addition, it was revealed that, due to the restrictions imposed during the COVID-19 pandemic, the majority (72%) of the students participating in the study made use of smartphones to attend online classes, and 71% made use of them to study or attend online courses. As a consequence of the COVID-19 outbreak restrictions, most universities made the decision to shift their formal education systems to online; it should be mentioned that students needed to attend online classes for at least 6-8 hours a day on average, which means that students needed to spend 6-8 hours a day with their smartphones (which students used for attending online classes). In the research conducted by Çiçek et al. (2021), following the online education via smartphone during the COVID-19 can be considered as one of the reasons for the increase in the use of smartphones by students. As students spent more and more time with their smartphones, students tended to use smartphones not just for attending online classes or studying (van Velthoven et al., 2018) but also in their free time to be socialised during the COVID-19 restrictions; inevitably, this led to increasingly high levels of addiction among students. Furthermore, in other studies, it is determined that the level of addiction increases as the duration of use of smartphones increases (Günal & Pekçetin, 2019). Besides, most of the young people prefer to follow the information and news about COVID-19 outbreak with their smartphones. Tejedor et al. (2020) stated that "regarding the consumption of information, the sources of information referring to the outbreak, informative content about COVID-19, news data about the virus, as well as the consumption of statistics on the progress of infections, occupy the first place". Young generations give priority to new media rather than traditional media in terms of following news and information. This leads young people to use smartphone more and more, and thus an increase in smartphone addiction.

In the pre-pandemic period, factors such as texting, taking photos, making phone calls, and instant messaging are more common in determining smartphone usage characteristics (Aktaş & Yılmaz, 2016). However, the purpose of using smartphones had also changed during the pandemic period, media services providers are more widely used due to the restrictions during the pandemic period. In this context, one of the important findings of our research is that students who use their smartphones to watch movies are 7.181 times less likely to be addicted than students who do not. During the COVID-19 outbreak, students tended to spend their free time mostly on video streaming platforms (such as Netflix, Blutv, Amazon Prime, etc.) after

formal education was suspended. Similar to this finding, the students stated that their use of smartphones increased during the COVID-19 outbreak period, and 70% of participants answered "yes" to the question "Do you think that the restrictions imposed during the COVID-19 outbreak affect your smartphone use?". In this context, it can be said that restrictions imposed during the COVID-19 outbreak have caused students to use their smartphones more and spend more time with them. In the study of Güleryüz et al. (2020), it is stated that smartphone addictions have increased among young adults due to the social isolation processes applied during the outbreak period. According to the research conducted by Statista (2020) internationally, it was stated that the increase in social media use at home during the COVID-19 outbreak was mostly experienced by students. Furthermore, according to the study of Dong et al. (2020), it has been revealed that students access the internet mostly through smartphones, so the duration of smartphone use has increased during the outbreak period. When we compared to the pre-epidemic period, it is expected that the use of smartphones for the purpose of following the news, sending e-mails, playing games, watching TV series/movies, listening to audiobooks, video chatting/communicating, and shopping increase. In addition, it is thought that when students stay at home, they play games and watch TV series/movies in order to spend their free time. There has been a resultant increase in the "cyber behaviours" of individuals—such as watching movies, listening to music, and playing mobile games; for this reason, electronic devices such as smart televisions, personal computers and laptops, consoles, and tablets have become more functional for people who have to spend their free time at home. However, individuals and families with lower income levels cannot necessarily afford to buy separate products offering different functions, especially in regions such as Bitlis, where mostly low-income families live. For such people, smartphones offer the best solution because they allow the user to play online games, watch digital video content platforms and use social media applications (Abo-Jedi, 2008). As a result, it is expected that the study will reveal a significant link between the increase in video-watching habits of students living in and around Bitlis and their levels of smartphone addiction, because the socioeconomic social structure of Bitlis and the surrounding region had an impact on this finding, especially when compared with other studies conducted in Turkey. This finding shows some differences when compared to the findings of studies carried out before the outbreak. In the results of the research carried out before the COVID-19 period, it was stated that the variables of daily use of the smartphone, the purpose of use and the individual's self-identification as addicted were effective on smartphone addiction (Noyan et al., 2015). Also, if we look at the studies carried out in the pre-epidemic period, students mostly use their smartphones to enter social networks (Kumcagiz et al., 2020).

Bitlis Eren University students generally live in families with limited social and cultural opportunities and low-income levels. The smartphones have many applications, such as communicating with others, taking photos, watching videos and movies, and listening to music (Abo-Jedi, 2008), and because of this, young people with limited socio-economic opportunities spend a large portion of their free time on their smartphones; inevitably, this leads to an increase in the usage rate of smartphones among this demographic. To our knowledge, this factor has not been highlighted by previous studies on smartphone addiction; we believe our study to be the first to draw attention to it. Bitlis is a prime example of a province with relatively limited social and cultural activities and low-income levels. This is the most significant difference between this study and previous studies, which have been conducted in regions and cities where there is relatively more opportunity for social and cultural activities, and where income levels and other economic factors are considerably more favourable. These studies have not considered the effects on smartphone addiction of the sociodemographic factors which are unique to Bitlis. The study is intended to offer pioneering research to raise awareness of smartphone addiction

in a city like Bitlis within the context of such factors. In addition, compared to other studies, students' usage rates and awareness of smartphone addiction are highly significant because of the restrictions imposed during the COVID-19 outbreak and the effect of distance learning on university students' smartphone addiction levels.

Limitations

In general, there are some limitations in the scope of the study which it would be useful to consider when evaluating the results of the study. Firstly, due to the study's cross-sectional nature, the significances were interpreted within the framework of theoretical references without establishing causal relationships; for this reason, future research can help broaden the field of knowledge by identifying causal relationships through longitudinal studies and finding relationships between different aspects of smartphone addiction. Secondly, the participants of this study were Bitlis Eren University students. In terms of geography and population, Turkey is a vast country, and therefore Turkey's demographic and socioeconomic structure can vary by city, town, region and according to socioeconomic factors, among other variables; for this reason, it is difficult to determine whether the findings of the study are a fair reflection of the characteristics of university students in other parts of Turkey. Thirdly, the participants' awareness of smartphone addiction is low, reflecting a general lack of awareness of the nature of smartphone addiction among Turkish people. The final limitation is that the study was carried out during an unprecedented epidemic. Due to the restrictions imposed during the COVID-19 outbreak period, it was observed that people's perceptions and attitudes can change instantly; thus, the attitudes and perceptions of participants while filling out the questionnaire could have triggered some degree of bias in the study.

Conflict-of-Interest and Financial Disclosure: The authors state that they have no conflict of interest to disclose. Also, the authors assert that they did not receive any financial support for the study.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

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Destekleyen Kurum/Kuruluşlar *Supporting-Sponsor Institutions or Organizations*:
Herhangi bir kurum/kuruluştan destek alınmamıştır. None

Çıkar Çatışması *Conflict of Interest:* Herhangi bir çıkar çatışması bulunmamaktadır. None

Katkı Oranı (Birden fazla yazarı olan makale başvuruları için)
Author Contribution Percentage (For article submissions with more than one author):
Birinci yazar: % / *First Author Percentage* ___50_____
İkinci yazar: % / *Second Author Percentage* ___50_____