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The effect of online application usage on digital addiction

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Abstract
In recent years, there has been a rapid increase in the use of digital devices and applications along with technological developments in our country and around the world. Considering that a generation that was born into the developing technology stayed at home due to the COVID-19 epidemic, received online education, was exposed to meetings, and has a good command of the use of technology, there was a need to examine the relationship between online application use and addiction. This research aims to determine the effect of online applications on digital addiction. The paradigm group of this research is 328 volunteer prep students of a public university. 100% of the participants use smartphones to access online apps. There is a significant difference between the digital addiction levels of the participants and their sociodemographic variables; all of them use online applications by phone, and they think that society should be made aware of online applications.

Keywords: Digital addiction, online apps, behaviors, mental health

1. Introduction
Dependence is the desire and appetence that individuals feel towards any behavior, person, or object, which is very difficult to suppress and prevent (Uğurlu, Şengül, & Şengül, 2012) [15].

There are two types of addiction, the first is substance addiction such as alcohol, marijuana, and heroin, which are generally known to everyone, and the second is behavioral addiction, which causes psychological, physical, and social negativities in the individual as a result of continuing a behavior (Büyükarslan & Kırık, 2017) [4].

Digital addiction, one of the types of behavioral addiction, can be named as addiction to digital tools and applications based on human-machine interaction, including addiction to the internet, social media, mobile phones, and digital game playing (Arslan, Kırık, Karaman, & Çetinkaya, 2015) [1].

Along with the development of technology, newly produced devices have begun to take part in almost all parts of daily life, and as the difference between the virtual world and the real world has decreased over time, lives have turned towards virtual environment activities (Üzgü vd., 2023) [17]. Today, people interact with each other through social media platforms such as instegram and facebook as well as face-to-face communication (Cheng, Lau, Chan & Luk, 2021) [5]. With the use of smartphones, people have gained easy access to information. They have started to be able to perform transactions according to their needs in many areas, from health transactions to shopping, from business follow-up to mobile education (Yurdakul, Dönmez, Yaman, & Odabaşı, 2013) [18].

The developments in the world of technology increased access to the internet at home and the widespread use has brought addictions (Muslu & Gökçay, 2019) [12]. Digital devices used unconsciously and for a long time cause physical and mental disorders in people, and the concept of addiction comes first among these disorders. A study conducted in Turkey found that internet and digital device use can be seen from an early age, and the time spent on mobile devices has increased (Kececi, 2021) [10]. Media reports indicate that with the pandemic, online gaming addiction among young adults has intensified with increased access to online devices (Rosendo-Rios, Trott & Shukla, 2022) [13].

In recent years, there has been a rapid increase in the use of digital devices and applications along with technological developments in our country and around the world. Considering that a generation that was born into the developing technology stayed at home due to the

COVID-19 epidemic, received online education, was exposed to meetings, and has a good command of the use of technology, there was a need to examine the relationship between online application use and addiction. This research aims to determine the effect of online applications on digital addiction.

2. Materials and Methods

This research, determines the effect of online practices on digital addiction is aimed. The dependent variable of the research is digital addiction levels. The independent variables of the research are sociodemographic variables such as gender, age, number of siblings, income level, and place of residence.

2.1 Participants

A scanning model, one of the quantitative research methods that allows the creation of statistical results, numerical interpretation, and generalization, was used, and the research is cross-sectional. The research population consists of students studying at a public university in Turkey in the 2021-2022 academic year. While determining the sample, 1500 students studied constituted the research population. It was aimed to reach a sample of 306 people with a 95% reliability level, a 5% margin of error, and a random sampling method from the research population, and 328 participants were reached.

2.2 Procedure

After obtaining research ethics committee permission and application permission, data was collected by sending the scales via link and QR code to the volunteer participants who wanted to participate in the research, and the application took an average of 12 minutes.

2.3 Measures

"Self-Description Form" and "Digital Addiction Scale" via Google Forms were used as data collection tools in the research.

2.3.1 Self-description form

A self-description form was developed to obtain information about the participants' gender, age, socioeconomic status, place of residence, online application usage tools, duration of use, types of online applications they use, and their reasons.

2.3.2 Digital addiction scale

It is a 19-item scale developed by Kesici ve Tunç (2018) [11] for university students. The total reliability of the scale is .87 and consists of five subscales: overuse, relapse, obstruction of the flow of life, mood, and inability to quit. It can be stated that as the score obtained from the scale increases, the level of digital addiction increases. In this study, the total scale reliability coefficient was found to be .93.

2.4 Statistical Analysis

The data obtained in the research were transferred to the Statistical Package for Social Sciences for Windows 22.0 (SPSS-22.0) program and descriptive analyses including frequency, percentage, mean, and standard deviation were performed, as well as Kruskal Wallis H test, One Sample Kolmogorov-Simirnow Test. Non-parametric analyses including such analyses were applied and statistical consultancy services were received. 2.5 Ethics

Ethics committee approval was obtained from Ege University Scientific Research and Publication Ethics Boards (EGEBAYEK) dated 30/11/2021, meeting/decision number: 13/12, protocol number: 1216, and permission was obtained from the place where the research will be conducted. The participants were informed about the research and their consent was obtained from the volunteer participants using an online informed consent form.

3. Results and Discussion

The average age of the participants is $\bar{x}$= 20.06 ± 3.61. When the gender of the participants was examined, it was determined that 61% (200) were male. When the income status of the participants was examined, 62.8% (206) stated that they were in middle-income status. When the faculties where the participants would study were examined, it was determined that 75.3% were enrolled in Engineering, 13.8% in Economics and Administrative Sciences, 7.3% in Applied Sciences, and 3.6% in other faculties. It was determined that 53.7% of the participants stayed with their family, 27.1% at home, 14.3% with relatives, and 4.9% in a dormitory. When the place where they spent most of their lives was examined, it was determined that 45.7% of them lived in the village, 35% in the province, and 19.2% in the district. When the number of siblings of the participants was examined, 49.7% stated that they had two siblings.

When the devices that the participants used to log in to online applications were examined, it was determined that 100% of all participants accessed online applications via their phones. When the devices preferred by the participants to access online applications other than phones were examined, 76.5% stated that they used computers, 27.1% used smart televisions and 12.8% (42) stated that they used online applications via tablets (Table 1).

When comparing the Digital addiction scale and subscale score averages of the participants according to where they lived, it was determined that all the mean scores of the participants living in the district were higher than those living in villages and provinces, and a statistically significant difference was detected between the Mood subscale score averages (KW = 8.564; P = 0.036).

When the participants' Digital addiction scale and subscale score averages were compared with their place of residence, it was found that there was a statistically significant difference between the Mood subscale average score and the place of residence variable, and the average score of those who stay with family or relatives was higher (KW = 8.695, P = 0.034).

When the participants' Digital addiction scale and scale sub-score averages and online application usage durations were compared, there was a statistically significant difference between the Overuse, Relapse, Mood, Inability to Quit subscale and scale total score averages and online application usage durations, and those who used 0-2 hours had a higher score (KW = 8.695, P = 0.034) (Table2).

When the distribution of the first online applications that the participants preferred to use most was examined, it was determined that 54.2% of them used social media applications the most (Table 3).

When the reasons why the participants preferred to use online applications were examined, it was determined that 22% of them preferred it to spend time (Table4).

Computers, cell phones and the internet have developed rapidly since their invention and have become indispensable information and communication tools of today (Hahn, Reuter, Spinath & Montag, 2017) [8]. It is thought that digital applications, which are widely used in the world and our country due to disasters such as global epidemics, will pose a risk of digital addiction in the future. This research aims to determine the effect of online applications on digital addiction. When the devices used by the participants to access online applications were examined in the study, it was determined that 100% of all participants accessed online applications via their phones (Table 1). In the research conducted by Yusufoğlu (2017) [19] with university students, it was determined that 97.6% of the participants used smartphones, and in the study conducted by Uğur and Turan, 97.3% of them accessed online applications using smartphones (Uğur & Turan, 2015) [14]. In the findings of a research conducted by Ekberi *et al*. (2021) [7], adolescents, it was found that the most commonly used game playing device was the cell phone (% 52,3). It can be said that individuals use smartphones more in the information technology era because they are easy to carry.

When comparing the Digital addiction scale and subscale score averages of the participants according to where they lived, it was determined that all the mean scores of the participants living in the district were higher than those living in villages and provinces, and a statistically significant difference was detected between the Mood subscale score averages (KW = 8.564; P = 0.036). In the findings of a research conducted by Arslan and Bardakçı with university students, it was determined that there were significant differences in the total scores of the digital addiction subscales of obstruction of the flow of life, overuse, and inability to quit, depending on where the participants' family lived (Arslan & Bardakçı, 2020). It can be said that individuals living in the district are at greater risk of developing digital addiction. When the participants' Digital addiction scale and scale sub-score averages and online application usage durations were compared, there was a statistically significant difference between the Overuse, Relapse, Mood, Inability to Quit subscale and scale total score averages and online application usage durations, and the score of those who used 0-2 hours was It was found that the average was higher (KW = 8.695, P = 0.034) (Table 2). In the study conducted by Üzgü *et al*. (2023) [17], it was determined that 49.0% of the participants were online for 1-3 hours per day, and in Aksoy's study, 42.5% of the participants used the internet for 1-3 hours per day (Aksoy, 2018) [3]. It can be said that individuals who use online applications for two hours a day have a risk of addiction.

When the distribution of the applications that the participants preferred to use was examined, it was determined that 54.2% of the participants used social media applications first (Table 3). When the reasons why the participants preferred to use online applications were examined, it was determined that 22% of the participants preferred to use online applications primarily to spend time (Table 4). In the research conducted by Üçer (2016) [16] with university students, it was determined that young people use Facebook for social interaction, obtaining information, Instagram for entertainment and spending time, and Twitter for accessing news and expressing their thoughts. In the study of Jeri-Yabar *et al*. (2019), It was also shown that preferring the use of Twitter (PR = 1.84, CI 1.21–2.82) over Instagram (PR = 1.61, CI 1.13–2.28) is associated with depressive symptoms when compared to the use of Facebook. In the study of Çakmak and Yalçın (2013) [6], it was determined that 57.1% of the participants used mobile phones to follow the social networks they were members of. It can be stated that individuals prefer social media applications to spend their free time.

4. Tables and Figures

Table 1: Distribution of preferred devices for online application usage.

		n	%
Smartphone	Yes	328	100
	No	0	0
Tablet	Yes	42	12,8
	No	286	87,2
Computer	Yes	251	76,5
	No	77	23,5
Smart TV	Yes	89	27,1
	No	239	72,9

Table 2: Comparison of participants' digital addiction scale and subscale score averages according to different variables.

Variable	Overuse					Relapse				Obstructiveness of Living				Mood				Inability to Quit				Total Scale			
	N	x̄	SS	KW	P	x̄	SS	KW	P	x̄	SS	KW	P	x̄	SS	KW	P	x̄	SS	KW	P	x̄	SS	KW	P
Village	150	14,47	4,29			9,33	3,09			13,05	4,10			12,65	3,75			6,62	3,10			56,13	14,53		
District	63	15,49	4,48	6,397	0,094	10,19	3,34	3,63	0,304	14,19	4,64	6,142	0,105	14,05	4,40	8,564	0,036	7,25	3,05	2,75	0,43	61,17	16,67	7,32	0,062
City	115	15,04	4,61			9,85	3,76			13,82	4,68			12,97	4,44			6,70	2,97			58,37	16,64		
Dormitory	16	14,50	5,85			9,56	3,58			13,00	5,51			11,94	4,40			6,50	2,31			55,50	18,86		
House	89	14,42	4,54	4,997	0,172	9,08	3,40	4,399	0,221	13,17	4,57	0,916	0,822	12,08	4,08	8,695	0,034	6,52	2,82	3	0,39	55,26	16,19	5,36	0,147
Family	176	15,35	4,14			9,99	3,26			13,76	4,21			13,50	3,98			7,02	3,14			59,63	14,76		
Relative	47	14,06	4,76			9,68	3,73			13,60	4,66			13,43	4,55			6,38	3,31			57,15	17,21		
0-2 hours	11	18,18	6,81			11,82	4,51			14,64	5,46			14,73	5,62			8,82	2,99			68,18	23,93		
3-4 hours	53	16,34	4,82			10,85	3,55			13,92	4,94			13,92	4,65			7,74	3,26			62,77	18,85		
5-6 hours	100	15,02	4,04			9,49	2,88			13,49	3,73			13,27	3,63			7,14	2,89			58,41	13,53		
7-8 hours	102	14,18	3,89	20,59	0,002	9,52	3,34	21,21	0,002	13,53	4,65	4,478	0,612	12,79	4,19	18,69	0,005	6,12	2,85	24,5	0,00	56,14	14,83	23,7	0,001
9-10 hours	41	13,85	4,91			8,76	3,73			12,85	4,77			11,15	3,95			6,02	3,04			52,63	15,34		
11-12 hours	12	14,67	3,11			10,42	2,97			14,58	3,03			14,75	3,22			5,33	2,93			59,75	8,57		
13+ hours	9	13,22	5,21			7,33	3,28			12,33	5,12			11,89	3,55			7,11	3,06			51,89	17,34		

Table 3: Distribution of online applications most preferred by participants.

Online Application Type	n	%
Social media applications	174	54,2
Digital content viewing applications	65	20,2
Messaging and calling applications	62	19,3
Other applications	20	6,2

Table 4: Distribution of participants' reasons for preferring to use online applications.

Reason of Usage	n	%
Spending Time	82	25,4
Curiosity and Knowledge Acquisiton	71	22,0
Communication	67	20,7
Entertainment, relaxing	66	20,4
Socializing	29	9,0
Other reasons	8	2,5

5. Conclusions

When the results are evaluated in light of the literature, it has been observed that the participants mostly prefer to use online applications, especially with their smartphones, to spend time. Considering leisure time as a risk group, informative studies can be carried out about alternative activity areas that people can choose for spare time, and cooperation studies can be carried out to create suitable environments.

6. Conflict of Interest

Not available

7. Financial Support

Not available

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