Investigation of smartphone addiction levels of Turkish pre-service teachers with regards to various variables

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Abstract

This research aims to determine the smartphone addiction levels of Turkish pre-service teachers. In this study, a relational screening model, which is one of the quantitative research methods, was used. The study group consists of 178 pre-service teachers studying at a State University in the West of Turkey. Smartphone Addiction Scale adapted to Turkish by Demirci, Orhan, Demirdas, Akpınar and Sert (2014) were used in the research. Data analysis in the research was done through the SPSS 25 package program. Descriptive statistical analysis, t-test and ANOVA statistical analysis and correlation analysis were performed on the data obtained in the study. When the findings obtained from the research are examined, it is seen that the pre-service Turkish Teacher candidates use their smart phones more than they planned; female pre-service teachers' have higher smartphone addiction levels than male pre-service teachers'. There is a significant difference between pre-service teachers' smartphone addiction levels and their gender, age, economic status, place where they spend most of their lives, education level of parents, parental professions, grade averages, class levels, the number of books they read, and the time they spend on social media and the Internet.

Keywords: smart phone; dependence; internet; social media; Turkish pre-service teachers.

1. Introduction

Technology is advancing rapidly in the 21st century, and human beings cannot keep up with the speed of the rapidly advancing technology. This progress in communication technologies has been the determinant of the globalization process and it has also been influenced by it (Kadi & Öztuç, 2015). The fact that internet access is available everywhere thanks to the evolving technology also increases the amount of use of the internet and any equipment connected to the internet. (Turan, 2008 reported by Sabırlı, 2018). In the age of technology, computers, the internet and smartphones, which have been in human life for nearly 15 years, have become indispensable parts of our daily lives. The demand for smartphone use has been increasing every day due to the facilities that it offers and its ease of use.

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Unlike the phones that were used for communication purposes only when they first entered our lives, smartphones have many features; social media, video chat, games, cameras, video recording, navigation, etc. as well as playing important roles in facilitating everyday life such as paying bills, shopping, writing emails (Ozata, 2019). Smartphones alone can do what computers do (Laudon & Laudon, 2012). In addition to these features, smartphones, with their small size as well as their ease of handling and use, have become widespread. However, in addition to the many easiness and conveniences that smartphones provide, smartphone addiction, which can develop due to their overuse, has been becoming increasingly common and a major problem in the world (Aggül, 2019). In the Waste Report for Turkey dated March 2017 published by the Ministry of Customs and Trade, 83.8% of individuals in our country own smartphones (Ölmeztoprak, 2019).

In addition to bringing convenience to human life, smartphones can cause many negative consequences by affecting individuals' relationships with their social environment, their dialogue, and people's physical and mental health. While smartphones supposedly socialize individuals, they cause individuals to become individualized and lonely in real life (Park & Lee; 2012, Reported by Sabırlı, 2018).

Addiction is defined as the inability to quit the use of a substance or to control behaviour (Soydan, 2015 reported by Sabırlı, 2018). Smartphone addiction is defined as the stress, anxiety that individuals experience when they are unable to access or communicate with their mobile device for any reason (Çelik, 2019). According to Meral (2017), smartphone addiction is a type of behavioural addiction that damages users' mental health and social relationships, along with the overuse of the smartphone and loss of control. People with smartphone addiction have a constant, frequent need to take care of their smartphones and check them non-stop. Phone usage times are increasing every day. Today, the first thing that smartphone users do as soon as they wake up in the morning, and again the last thing they do before they go to sleep is to check their smartphones (Lee et al., 2014, reported by Ozata, 2019). Today, it is known that many users spend time with their smartphones at any moment, who do most of their jobs with their smartphones, who feel bad and unhappy when their smartphones are not with them (Polat, 2017; reported by Özata, 2019). Many studies have been conducted on smartphone addiction (Kuss, 2011; Takao, Takahaski & Kitamura, 2011; Tuncer, 2013; Alfawareh & Jusoh, 2014; Montenegro, Tosuntaş, Erzen, Duru, Bostan, ŞahinTotten, 2015; Lipscomb, Cook & Lesch, 2015; Çalışkan, Yalçın, Aydin & Ayık, 2017; Güney, 2017; Büyükgebiz Koca, 2019). When all these studies were examined, it was observed that there was no research on smartphone addiction levels of Turkish pre-service teachers. In this respect, this research aims to determine the smartphone addiction levels of Turkish pre-service teachers.

2. Method

2.1. Research model

In this study, a relational screening model, which is one of the quantitative research methods, was used. The relational screening method is a research model that aims to determine the presence and/or degree of co-change between two or more variables (Karasar, 2013). In this study, relational scanning model was used to determine the level of addiction of Turkish pre-service teachers and the relationship between variables.

2.2. Sample / Participants

The study group consists of 178 pre-service teachers studying at a State University in the West of Turkey. Descriptive statistical analyses of the sample group were given.

Table 1. Gender of research participants

Gender	F	%
Female	159	66.3
Male	81	33.8

When Table 1 is examined, it is seen that 66% of the participant pre-service teachers were female and 33% of them were male.

Table 2. Age groups of the research participants

Age	f	%
18-19	77	32.1
20-21	120	50.0
22-23	31	12.9
24+	12	5.0

When Table 2 is examined, 32.1% of the participants in the study were in the 18-19 age range, 50.0% of them were in the 20-21 age range, 12.9% of them were in the 22-23 age range, 5.0% of them were in the 24 and above age range.

Table 3. Descriptive statistical analysis of the places where the participants have spent their lives

Place where they have spent their lives	f	%
Village	32	13.3
Town	38	15.8
City	90	37.5
Metropolis	80	33.3

When Table 3 was examined, 13.3% of the respondents were found to have spent most of their lives in the village, 15.8% in the town, 37.5% in the city, and 33.3% in the metropolitan cities.

Table 4. Economic status of participants

Economic Status	f	%
Low	30	12.5
Average	178	74.2
High	32	13.3

When Table 4 was examined, 12.5% of the pre-service teachers who participated in the study had low, 74.2% had average and 13.3% had high-level economic status.

Table 5. Educational status of the mothers of research participants

	Mother's Educational Status		Father's Educational Status	
	f	%	f	%
Illiterate	13	5.4	2	0.8
Literate	13	5.4	5	2.1
Graduate of Primary School	127	52.9	84	35.0
Graduate of Elementary School	32	13.3	55	22.9
Graduate of High School	38	15.8	57	23.8
Graduate of University	17	7.1	37	15.4

When Table 5 was examined, it was observed that 5.4% of the mothers of the pre-service teachers participating in the study were illiterate, 5.4% were literate, 52.9% were primary school graduates, 13.3% were secondary school, 15.8% were high school, and 7.1% were university graduates. Of the fathers of the respondents, 0.8% were illiterate, 2.1% were literate, 35.0% were primary school, 22.9% were secondary school, 23.8% were high school, and 15.4% were university graduates.

Table 6. Professional status of the mothers of the research participants

	Occupation of Mothers		Occupation of Fathers	
	f	%	f	%
Retired	14	5.8	66	27.5
Artisan	3	1.3	35	14.6
Worker	27	11.3	83	34.6
Farmer	5	2.1	19	7.9
Civil Servant	18	7.5	37	15.4
Housewife	173	72.1		

When Table 6 was examined, it was observed that 5.8% of the mothers of the participants were retired, 1.3% were artisans, 11.3% were workers, 2.1% were farmers, 7.5% were civil servants, and

72.2% were housewives. Of the fathers of the respondents, 27.5% were retired, 14.6% were artisans, 34.6% were workers, 7.9% were farmers, and 15.4% were a civil servant.

Table 7. Grade point averages of the participants

Grade Point Averages (GPA)	f	%
0-1.99	16	6.7
2.00-2.49	68	28.3
2.50-2.99	102	42.5
3.00-4.00	54	22.5

When Table 7 was examined, it was seen that 6.7% of the respondents had a GPA of 0-1.99, 28.3% had a GPA of 2.00 to 2.99, 42.5% had a GPA of 2.50 to 2.99, and 22.5% had a GPA of 3.00 to 4.00.

Table 8. Grade levels of the participants

Grade Level	f	%
1. Grade	71	29.6
2. Grade	51	21.3
3. Grade	98	40.8
4. Grade	20	8.3

29.6% of respondents were 1. Grade. 21.3% of them were 2. Grade, 40.8% were 3. Grade, 8.3% were 4. Grade.

Table 9. The number of books that research participants read annually

Number of Books Read Annually	f	%
1-5	39	16.3
5-10	82	34.2
11-15	66	27.5
16+	53	22.1

Of the respondents, 16,3% read books between 1-5, 34.2% read books between 5-10, 27.5% read books between 10-15 and 22.1% read books between 16 and above.

Table 10. Duration that research participants spend on the internet

Duration Spent on the Internet	f	%
0-1 hour	6	2.5
1-2 hour	29	12.1
2-3 hour	65	27.1
3-4 hour	60	25.0
More than 4 hours	80	33.3

When Table 10 was examined, it was observed that 2.5% of the participants spent 0-1 hours, 12.1% spent 1-2 hours, 27.1% spent 2-3 hours, 25% spent 3-4 hours and 33.3% spent more than 4 hours on the internet.

2.3. *Instrument(s)*

Smartphone Addiction Scale adapted to Turkish by Demirci, Orhan, Demirdas, Akpınar and Sert (2014) were used in the research. The scale consists of 33 items and 7 dimensions. Permission was received from the researchers to use the scale. As a result of the analysis performed by the researcher (Kaiser-Meyer-Olkin (KMO=.89) and Bartlett test (x^2=3847,107; sd=528, p=.000), it was found that structural validity of the scale was appropriate and a 7-factor structure emerged.

2.4. Data analysis

Data analysis in the research was done through the SPSS 25 package program. The Cronbach alpha value on the scale was found to be 0.92. This value indicates that the scale is reliable. To determine whether the data obtained from the study showed normal distribution, skewness and kurtosis values were calculated. It is stated in the literature that skewness and kurtosis values must be between -2 and +2 to show normal distribution (Şencan, 2005).

Table 11. Skewness and kurtosis values of the scale

Dimensions	Skewness	Kurtosis
Obscuring Daily Life and Tolerance	.501	-.012
Deprivation Symptoms	.834	.455
Positive Expectations	.186	-.292
Cyber-focused relationships	1.180	.885
Overuse	.565	.362
Addiction to Social Network	.432	-.479
Physical Symptoms	.641	.253

As can be seen from the table, the research data had a normal distribution. As the research data had a normal distribution, parametric tests were used for the relevant analysis. Descriptive statistical analysis, t-test and ANOVA statistical analysis and correlation analysis were performed on the data

obtained in the study. The correlation coefficient can be between (-1) and (+1) in the analysis, which is shown as "r" in the correlation analysis. The fact that the "r" between variables is between 0.00 and 0.29 means low, between 0.30 and 0.69 means medium, and between 0.70 and above means high correlation (Ural and Kılıç, 2006).

3. Results

In this part of the research, the data obtained with this research will be analyzed and interpreted.

Table 12. Descriptive statistical analysis regarding obscuring daily life and tolerance

Name of the Dimension	Items	$\overline{X}$	ss	General Average
Obscuring Daily life and Tolerance	I use my smartphone more than I planned.	3.47	1.47	
	I always think I should shorten my time spent on smartphone	3.44	1.52	
	Right after I stop using my smartphone. I feel the need to use it again.	2.97	1.50	
	Because of my smartphone use. I have difficulty concentrating in class. doing homework or working.	2.87	1.39	
	I can't keep up my scheduled work because of my smartphone use.	2.75	1.33	2.88
	I can't get enough sleep due to excessive smartphone use and I feel tired.	2.67	1.50	
	People around me say I use my smartphone too often.	2.51	1.45	
	I have tried repeatedly to shorten my time spent on my smartphone. but each time I failed.	2.37	1.34	

When Table 12 was examined, it was seen that pre-service teachers used their smartphones more than they planned and that they felt the need to shorten the duration of use. Pre-service teachers felt the need to use their smartphones again after they stopped using them, they had difficulty in concentrating in doing homework, or working, they felt tired and did not get enough sleep because of excessive smartphone use, they were uncertain about that they used their smartphones too much. Some pre-service teachers had repeatedly tried to shorten the time spent on smartphone and had succeeded, as well as those who had failed.

Table 13. Descriptive statistical analysis of the dimension of deprivation symptoms

Name of Dimension	Item	$\overline{X}$	ss	General Average
Deprivation Symptoms	I can't stand not having a smartphone.	2.90	1.59	
	Without my smartphone. my life is meaningless.	2.26	1.31	
	I feel impatient and frustrated when I don't have my smartphone in my hand	2.25	1.31	2.18
	I think of my smartphone even when I'm not using it.	2.22	1.29	

I feel free the most when I am using my smartphone	2.00	1.08
There's nothing more fun than using a smartphone.	1.82	1.08
Using a smartphone is the most fun thing in my life.	1.81	1.04

When Tabel 13 was examined in terms of the overall average, it was seen that pre-service teachers did not show deprivation symptoms. It was observed that pre-service teachers felt uncertain about their ability to withstand lacking smartphone, that their lives were meaningful even if they did not have a smartphone, that they felt impatient and frustrated when they did not have their smartphones in their hands, that they thought about their phones even when they were not using them. Pre-service teachers said that they did not feel free the most when they are using their smartphones, that there were some other things more fun than using a smartphone, that using a smartphone was not the most fun thing in their lives.

Table 14. Descriptive statistics analysis of the positive expectation dimension

Name of Dimension	Items	$\overline{X}$	ss	General Average
Positive Expectation	I feel joyful and effusive when using a smartphone.	3.37	1.28	
	I calm down and relax when using a smartphone.	3.08	1.36	
	It's a great feeling to meet more people via smartphone.	2.84	1.42	2.96
	It is possible to get rid of stress with a smartphone.	2.82	1.43	
	I feel safe when using a smartphone.	2.69	1.33	

Pre-service teachers appear to be uncertain about the positive expectations for smartphones. Pre-service teachers express that they feel joyful and enthusiastic, calm down and relax while using their smartphones. Pre-service teachers are uncertain about that meeting more people via a smartphone is a great feeling, that it was possible to get rid of stress with a smartphone, and that they felt safe when using a smartphone.

Table 15. Descriptive statistics analysis of dimension of cyber-oriented relationships

Name of Dimension	Item	$\overline{X}$	ss	General Average
Cyber-oriented relationships	I think my relationships with my friends on the smartphone are more intimate than my relationships with my friends in real life	1.85	1.09	
	I prefer spending time with friends on the smartphone than spending time with friends in real life or other family members.	1.79	1.12	1.76
	I think my friends on my smartphone understand me better than my real-life friends.	1.74	1.05	
	Not being able to use my smartphone can be as painful as losing a friend.	1.68	1.08	

Pre-service teachers said that they did not prefer their relationship with their friends on the smartphone to their relationship with their friends in real life. Pre-service teachers claimed that their

relationship with their friends on their smartphone wasn't more intimate than their relationship with their real-life friends; that they did not prefer spending time with friends on the smartphone to their real-life friends or other family members, that their friends on their smartphones did not understand them better than those in real life, and that not being able to use their smartphones could not be as painful as losing a friend.

Table 16. Descriptive statistics analysis of overuse dimension

Name of Dimension	Items	$\overline{X}$	ss	General Average
Overuse	My smartphone battery is not enough for a day even when it is fully charged.	3.33	1.70	2.76
	I never stop using my smartphone. even if it greatly affects my daily life.	2.75	1.47	
	Even when I have to go to the toilet immediately. I take my smartphone with me.	2.49	1.56	
	It is annoying to be disturbed while I'm busy with my smartphone.	2.39	1.35	

Pre-service teachers say that even when the battery of their smartphones is full, they are not enough for a day, and they will never stop using their smartphone even if it greatly affects their daily lives. Pre-service teachers are uncertain about taking their phones with them when they go to the toilet and being disturbed when they are busy with their smartphone.

Table 17. Descriptive statistics analysis of social network addiction

Name of Dimension	Items	$\overline{X}$	ss	General Average
Social Network Addiction	I check social networks like Twitter or Facebook as soon as I wake up.	3.09	1.60	2.74
	I constantly check my smartphone not to miss people's status on Twitter or Facebook.	2.40	1.38	

Pre-service teachers said that as soon as they woke up, they checked their social media accounts and were uncertain about constantly checking their phones to keep up with their social media posts once they woke up.

Table 18. Descriptive statistical analysis of physical symptoms dimension

Name of Dimension	Items	$\overline{X}$	ss	General Average
Physical Symptoms	I'm experiencing dizziness or blurred vision due to excessive smartphone use.	2.06	1.27	2.73
	I feel pain in my wrists or the back of my neck when using a smartphone.	2.62	1.46	
	I'd rather research it on my smartphone than ask other people.	3.52	1.51	

Pre-service teachers said that they prefered to research for people on their smartphones, felt pain in the back of their wrists or necks while using a smartphone, had no problems such as dizziness or blurred vision.

Table 19. T-test Results of the items on smartphone addiction scale by gender

Dimension	Gender	n	Mean	ss	t	df	p
I feel joyful and effusive when using a smartphone.	Female	159	3.49	1.29	1.96	238	.051
	Male	81	3.14	1.25			
I feel safe when using a smartphone.	Female	159	2.81	1.36	1.99	238	.048
	Male	81	2.45	1.24			
Without my smartphone. life is meaningless.	Female	159	2.46	1.36	3.43	238	.001
	Male	81	1.86	1.10			
I feel free most when using a smartphone	Female	159	2.11	1.13	2.41	238	.017
	Male	81	1.76	.939			
I can't stand not having a smartphone.	Female	159	3.18	1.57	3.92	238	.000
	Male	81	2.35	1.49			
I feel impatient and frustrated when I don't have my smartphone in my hand.	Female	159	2.38	1.35	2.08	238	.039
	Male	81	2.01	1.20			
I always think about my smartphone even when I'm not using it.	Female	159	2.42	1.31	3.29	238	.001
	Male	81	1.85	1.15			
I never stop using my smartphone. even if it greatly affects my daily life.	Female	159	2.98	1.51	3.41	238	.001
	Male	81	2.30	1.27			
I'd rather research on my smartphone than ask other people.	Female	159	3.67	1.45	2.13	238	.034
	Male	81	3.23	1.60			
Right after I stop using my smartphone. I feel the need to use it again.	Female	159	3.19	1.51	3.23	238	.001
	Male	81	2.54	1.39			

When the table was examined, it was seen that female pre-service teachers were more pleasant and enthusiastic while using the phone compared to male pre-service teachers, they felt safe, they believed their life would be meaningless without a smartphone, they felt free when using a smartphone, they could not stand not having a smartphone, they were impatient when their smartphones were not in their hands, they thought about their smartphones even when they were not using it, even if it greatly affected their daily lives, they would never stop using their smartphones, they would rather research on their smartphones rather than asking other people, and they felt the need to use their smartphones again immediately after they stopped using them.

Table 20. ANOVA results between pre-service teachers' ages and dimensions of smartphone addiction scale

Item	Source of Variance	Sum of Square	sd	Sum of Squares	F	p	Significant Difference
Obscuring Daily life and Tolerance	Between Gorup	1.404	2	.702	.670	.513	
	Within Groups	248.239	237	1.047			
	Total	249.643	239				
Deprivation Symptoms	Between Group	1.271	2	.636	.695	.500	
	Within Groups	216.639	237	.914			
	Total	217.910	239				
Positive Expectation	Between Group	.614	2	.307	.324	.723	
	Within Groups	224.398	237	.947			
	Total	225.012	239				
Cyber-oriented relationships	Between Group	1.190	2	.595	.851	.428	
	Within Groups	165.726	237	.699			
	Total	166.916	239				
Overuse	Between Group	.665	2	.333	.294	.746	
	Within Groups	268.409	237	1.133			
	Total	269.074	239				
Social Network Addiction	Between Group	13.105	2	6.552	4.009	.019	
	Within Groups	387.391	237	1.635			B-C
	Total	400.496	239				
Physical Symptoms	Between Group	1.718	2	.859	.849	.429	
	Within Groups	239.697	237	1.011			
	Total	241.415	239				

A= 18-19; B=20-21; C=22 and above

When Table 20 was examined, it was seen that there was not a significant relationship between the dimensions of the scale of smartphone addiction; obscuring daily life and tolerance (F=.513; p>.05), deprivation symptoms (F=.695; p>.05), positive expectation (F=.723;p>.05), cyber-oriented relations (F=.428; p>.05), overuse (F=.746; p>.05), physical symptoms (F=.429;p>.05) and the ages of the pre-service teachers. The dimension of social network addiction (F=4,009; p<.05) was found to have a significant relationship with the age of the pre-service teachers. Tukey multi-comparison test results revealed that pre-service teachers in the 20-21 age range were constantly checking their smartphones to ensure that people did not miss their posts on Twitter or Facebook more often than those in the 22 and above age range.

Table 21. ANOVA results performed on the data obtained from the responses given by pre-service teachers to the items of smartphone addiction scale and participants' ages

Item	Source of Variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
I check social networks like twitter or facebook as soon as I wake up.	Between Group	19.288	2	9.644	3.843	.023	
	Within Groups	594.696	237	2.509			B-A
	Total	613.983	239				
I'd rather research on my smartphone than ask other people.	Between Group	15.847	2	7.924	3.517	.031	
	Within Groups	534.003	237	2.253			B-A
	Total	549.850	239				

A= 18-19; B=20-21; C=22 and above

When Table 21 was examined, it was seen that there was a statistically significant difference between the pre-service teachers' responses to "I check social networks like Twitter or Facebook as soon as I wake up; I would rather research on my smartphone than ask other people" and their ages. Turkey multiple comparison tests revealed that those in the age range 20-21 prefer to search on their smartphone for in the information that they needed rather than asking other people and checked their status on social networks more often than those in the age range of 18-19.

Table 22. ANOVA results obtained from the responses given by pre-service teachers to the items on smartphone addiction scale and the place where they have spent most of their lives

Item	Source of variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
I feel impatient and frustrated when I don't have my smartphone in my hand.	Between Group	13.425	3	4.475	2.637	.050	
	Within Groups	400.558	236	1.697			A-B
	Total	413.983	239				
I never stop using my smartphone. even if it greatly affects my daily life.	Between Group	17.636	3	5.879	2.770	.042	
	Within Groups	500.859	236	2.122			A-B
	Total	518.496	239				

A=Metropolis, B: City, C: Town, D: Village

When Table 22 was examined, it was seen that there was a statistically significant difference between the pre-service teachers' responses to "I feel impatient and frustrated when I don't have my smartphone in my hand; I never stop using my smartphone, even if it greatly affects my daily life" and where they have spent most of their lives. Tukey multi-comparison test revealed that pre-service teachers who had spent most of their lives in the metropolitan cities felt impatient and frustrated when they did not have their smartphones in their hands and that they never stopped using their smartphones even if they greatly affected their lives more than those who had spent most of their lives in the cities.

Table 23. ANOVA test results regarding the economic status that participants felt and dimensions of smartphone addiction scale

Item	Source of variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
Obscuring daily life and tolerance	Between Group	6.870	2	3.435	3.353	.037	
	Within Groups	242.774	237	1.024			A-B
	Total	249.643	239				
Deprivation Symptoms	Between Group	13.523	2	6.762	7.841	.001	A-B
	Within Groups	204.387	237	.862			A-C
	Total	217.910	239				
Positive Expectation	Between Group	11.707	2	5.853	6.504	.002	
	Within Groups	213.305	237	.900			A-C
	Total	225.012	239				
Cyber-oriented relationships	Between Group	5.642	2	2.821	4.145	.017	
	Within Groups	161.274	237	.680			A-C
	Total	166.916	239				
Overuse	Between Group	15.423	2	7.711	7.205	.001	A-B
	Within Groups	253.651	237	1.070			A-C
	Total	269.074	239				
Social Network Addiction	Between Group	16.017	2	8.008	4.937	.008	
	Within Groups	384.479	237	1.622			A-C
	Total	400.496	239				
Physical Symptoms	Between Group	9.925	2	4.963	5.081	.007	
	Within Groups	231.489	237	.977			A-B
	Total	241.415	239				

A: High, B: Average, C: Low

When Table 23 was examined, it was seen that there was a significant relationship between the economic status felt by pre-service teachers and the dimensions of obscuring daily life and tolerance (F=3.353; p<.05), deprivation symptoms (F=7.841; p<.05), positive expectation (F=6.504; p<.05), cyber-oriented relations (F=4.145; p<.05), overuse (F=7,205; p<.05), physical symptoms (F=4.937; p<.05), social network addiction (F=5.081; p<.05). Tukey multiple comparison test results revealed that pre-service teachers who considered their economic situation high seemed to fail to manage their own business their tasks due to their use of smartphones, suffered from concentration problems, lacked enough sleep, used their smartphones too much, considered their smartphones as a source of entertainment, cannot tolerate being without their smartphones, though about their smartphones even when they were not using their smartphones and suffered physical health problems. Pre-service teachers who found their economic situation high place their smartphones in the centre of their lives claimed that their life would be meaningless without their smartphones, stated that they calmed down when using their smartphones, felt secure, happy, prefered spending time with their friends on their smartphones to spending time with their real-life friends and other people, overused their smartphones, and constantly check their social media accounts compared to the pre-service teachers who found their economic situation low. Pre-service teachers who found their economic situation high calmed down when they

had their smartphones in their hands and felt confident compared to the pre-service teachers who found their economic situation low.

Table 24. ANOVA test results performed on the responses of the pre-service teachers to smartphone addiction scale and their mothers' educational level

Items	Source of Variance	Sum of Squares	sd	Means of Square	F	p	Significant Difference
Because of my smartphone use. I have difficulty concentrating in class. doing homework or working.	Between Group	26.731	5	5.346	2.838	.016	B-A
	Within Groups	440.765	234	1.884			C-A
	Total	467.496	239				D-A
Even if I have to go to the toilet immediately. I'll take my smartphone with me.	Between Group	47.005	5	9.401	4.097	.001	
	Within Groups	536.991	234	2.295			E-B
	Total	583.996	239				

A: Literate, B: Primary School, C: Secondary School, D: High School, E: University

When table 24 is examined, it can be said that there is a statistically significant difference between the pre-service teachers' responses to "I have difficulty concentrating in class, doing homework or working because of my use of a smartphone; even if I have to go to the toilet immediately, I will take my smartphone with me" and their maternal education levels. As a result of the Tukey multiple comparison tests, pre-service teachers whose mother graduated from primary school, secondary school, high school, and pre-service teachers whose mother is literate suffer from a lack of concentration due to using smartphones. Pre-service teachers whose mother is a graduate of university take their smartphones with themselves even when they have to go to the toilet urgently more than those whose mothers are graduates of primary school.

Table 25. ANOVA results between the paternal educational status of pre-service teachers and the dimensions of smartphone addiction scale

Item	Source of Variance	Sum of Squares	sd	Means of Squares	F	p	Significant Difference
Obscuring Daily Life and Tolerance	Between Group	1.555	3	.518	.493	.687	
	Within Groups	248.088	236	1.051			
	Total	249.643	239				
Deprivation Symptoms	Between Group	2.852	3	.951	1.043	.374	
	Within Groups	215.058	236	.911			
	Total	217.910	239				
Positive Expectation	Between Group	9.780	3	3.260	3.575	.015	
	Within Groups	215.232	236	.912			D-B
	Total	225.012	239				
	Between Group	4.774	3	1.591	2.316	.076	

Cyber-oriented Relationships	Within Groups	162.141	236	.687			
	Total	166.916	239				
	Between Group	8.990	3	2.997	2.719	.045	
Overuse	Within Groups	260.084	236	1.102			E-B
	Total	269.074	239				
	Between Group	7.356	3	2.452	1.472	.223	
Social Network Addiction	Within Groups	393.140	236	1.666			
	Total	400.496	239				
	Between Group	2.218	3	.739	.729	.535	
Physical Symptoms	Within Groups	239.197	236	1.014			
	Total	241.415	239				

A: Literate, B: Primary school, C: Secondary School, D: High School, E: University

When table 25 was examined, the dimensions of the smartphone addiction scale; obscuring daily life and tolerance (F=.687; p>.05), deprivation symptoms (F=.374; p>.05), cyber-oriented relations (F=2.316; p>.05), physical symptoms (F=.729; p>.05), social network addiction (F=1.472; p<.05) were found to have no significant relationship with the participants' fathers' education level. The dimensions of smartphone addiction scale; positive expectation (F=3.575; p<.05), overuse (F = 2.719; p<.05) were found to have a significant relationship with the participants' fathers' educational level. Tukey multiple comparison tests revealed that pre-service teachers whose fathers were high school graduates exhibited more positive attitudes when using a smartphone than pre-service teachers whose fathers were primary school graduates. Pre-service teachers whose fathers were university graduates were found to use their smartphones more often than those whose fathers were primary school graduates.

Table 26. ANOVA test results performed on the responses of the pre-service teachers to the items in the smartphone addiction scale and their mothers' occupations

Item	Source of Variance	Sum of Square	Sd	Means of Square	F	p	Significant Difference
It is possible to get rid of stress with a smartphone.	Between Group	23.036	5	4.607	2.302	.046	
	Within Groups	468.259	234	2.001			B-A
	Total	491.296	239				
I feel most free when I am using a smartphone	Between Group	13.824	5	2.765	2.412	.037	
	Within Groups	268.176	234	1.146			E-D
	Total	282.000	239				
People around me say I use my smartphone too often	Between Group	27.025	5	5.405	2.641	.024	
	Within Groups	478.937	234	2.047			F-C
	Total	505.963	239				

A: Housewife. B: Farmer. C: worker. D: Civil Servant. E: Artisan. F: Retired

When Table 26 was examined, it was seen that there was a significant difference between the responses given to "It is possible to get rid of stress with a smartphone; I feel free most when I am using a smartphone, people around me say that I use my smartphone too much" and their maternal occupations.

Tukey multiple comparison test results revealed that pre-service teachers whose mothers were ae farmer claimed that they got rid of stress through smartphone more than those whose mothers were graduates of primary school. Pre-service teachers whose mothers were an artisan felt free when they used smartphone more than those whose mothers were a civil servant. Pre-service teachers whose mothers were retired used their smartphones a lot more than those whose mother was a worker.

Table 27. ANOVA test results regarding the relationship between pre-service teachers' fathers' occupation and dimensions of smartphone addiction scale

Item	Source of Variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
Obscuring daily life and tolerance	Between Group	7.283	4	1.821	1.765	.137	
	Within Groups	242.360	235	1.031			
	Total	249.643	239				
Deprivation symptoms	Between Group	5.164	4	1.291	1.426	.226	
	Within Groups	212.746	235	.905			
	Total	217.910	239				
Positive expectation	Between Group	4.933	4	1.233	1.317	.264	
	Within Groups	220.079	235	.937			
	Total	225.012	239				
Cyber-oriented relationship	Between Group	8.032	4	2.008	2.970	.020	
	Within Groups	158.884	235	.676			A-C
	Total	166.916	239				
Overuse	Between Group	8.179	4	2.045	1.842	.122	
	Within Groups	260.895	235	1.110			
	Total	269.074	239				
Social network addiction	Between Group	15.586	4	3.897	2.379	.053	
	Within Groups	384.909	235	1.638			
	Total	400.496	239				
Physical symptoms	Between Group	6.591	4	1.648	1.649	.163	
	Within Groups	234.823	235	.999			
	Total	241.415	239				

A: Retired, B: Farmer, C: Worker, D: Civil Servant, E: Artisan

When table 27 was examined, dimensions of smartphone addiction scale; obscuring daily life and tolerance (F=1.765; p>.05), deprivation symptoms (F=1.426; p>.05), positive expectation (F=1.317; p>.05), overuse (F=1.842; p>.05), social network addiction (F=2.379; p>.05) physical symptoms (F=1.649; p>.05) were found to have no significant relationship with the occupations of the participants' fathers. It was also found that there was a significant relationship between the occupations of the participants' fathers and the dimension of cyber-oriented relations (F = 2.970; p<.05). Tukey multiple comparison test results revealed that pre-service teachers whose fathers were retired were found to differ in their friendships on their smartphones, their friends in their immediate cycle, friendships, family relationships from pre-service teachers whose fathers were workers.

Table 28. ANOVA test results regarding the responses of the participants given to dimensions of smartphone addiction scale and their fathers occupations.

Item	Source of Variance	Sum of Square	Sd	Means of Square	F	p	Significant Difference
There's nothing more fun than using a smartphone.	Between Group	17.265	4	4.316	3.871	.005	B-E
	Within Groups	262.031	235	1.115			B-C
	Total	279.296	239				
I constantly check my smartphone not to miss people's posts on Twitter or Facebook	Between Group	21.816	4	5.454	2.914	.022	D-E
	Within Groups	439.784	235	1.871			D-C
	Total	461.600	239				
I prefer spending time with friends on the smartphone than spending time with real-life or other family members.	Between Group	21.262	4	5.315	4.465	.002	
	Within Groups	279.734	235	1.190			A-E
	Total	300.996	239				A-C

A: Retired, B: Farmer, C: Worker, D: Civil Servant, E: Artisan

When Table 28 was examined, it was seen that there is a significant difference between the responses given to the items "there is one thing more fun than using a smartphone, I constantly check Twitter or Facebook not to miss out any posts, I prefer spending time with friends on a smartphone to spending time with real-life friends or other family members." and their fathers' occupations. Tukey multiple comparison tests revealed that pre-service teachers whose fathers were a farmer claimed that there was nothing funnier than using a smartphone more than those whose fathers were workers and artisans. Pre-service teachers whose fathers were public employees more often check their smartphones to follow social networks than those whose fathers were artisan and workers; pre-service teachers whose fathers were retired like spending time with their friends on their smartphones more often than those whose fathers were artisan and workers.

Table 29. ANOVA test results regarding the means scores and the responses given by pre-service teachers to smartphone addiction scale

Item	Source of Variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
I feel pain in my wrists or the back of my neck when using a smartphone.	Between Group	11.798	2	5.899	2.795	.043	
	Within Groups	500.197	237	2.111			B-A
	Total	511.996	239				
It's a great feeling to meet more people via smartphone.	Between Group	19.858	2	9.929	5.056	.007	
	Within Groups	465.438	237	1.964			A-B
	Total	485.296	239				

A: 2.00-2.49, B: 2.50-2.99, C: 3.00-4.00

When we examined Table 28, it was seen that there was a significant difference between the views of pre-service teachers regarding the items "I feel pain in my wrists or the back of my neck when using a smartphone, it's a great feeling to meet more people via smartphone." and their mean scores. Tukey

multi-comparison test reveals that pre-services with a GPA of 2.50-2.99 feel more pain in the back of their wrists or necks when using a smartphone compared to pre-service teachers with a GPA of 2.00-2.49; pre-service teachers with a GPA of 2.00-2.49 express more that it is a great feeling to meet more people via smartphone than pre-service teachers with a GPA of 2.50-2.99.

Table 30. ANOVA test results regarding pre-service teachers' class level and dimensions of smartphone addiction scale

Item	Source of Variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
Obscuring Daily Life and Tolerance	Between Group	3.926	3	1.309	1.257	.290	
	Within Groups	245.718	236	1.041			
	Total	249.643	239				
Deprivation Symptoms	Between Group	9.220	3	3.073	3.475	.017	
	Within Groups	208.690	236	.884			D-A
	Total	217.910	239				
Positive expectation	Between Group	6.968	3	2.323	2.514	.049	
	Within Groups	218.044	236	.924			D-B
	Total	225.012	239				
Cyber-oriented relations	Between Group	2.801	3	.934	1.343	.261	
	Within Groups	164.115	236	.695			
	Total	166.916	239				
Overuse	Between Group	14.009	3	4.670	4.321	.005	D-A
	Within Groups	255.065	236	1.081			D-B
	Total	269.074	239				D-C
Social Network Addiction	Between Group	8.374	3	2.791	1.680	.172	
	Within Groups	392.122	236	1.662			
	Total	400.496	239				
Physical Symptoms	Between Group	9.815	3	3.272	3.334	.020	
	Within Groups	231.600	236	.981			
	Total	241.415	239				

A: 1. Grade, B: 2. Grade, C: 3. Grade, D: 4. Grade

When Table 30 was examined, it was seen that there was not a significant relationship between the dimensions of smartphone addiction scale; obscuring daily life and tolerance (F=1.257; p>.05), cyber-oriented relations (F=1.343; p>.05), social network addiction (F=1.680; p>.05) and the grades of the pre-service teachers. It was seen that there was a significant relationship between the grades of pre-service teachers and dimensions of deprivation symptoms (F = 3.475; p<.05), positive expectation (F=2.514; p<.05), overuse (F=4.321; p<.05), physical symptoms (F=3.334; p<.05). Tukey multiple comparison test results revealed that 4. grade pre-service teachers perceived smartphones as a fun tool, they claimed that without a smartphone life would be meaningless, using a smartphone calmed them down, and they felt safe more than 1. Grade pre-service teachers. 4. grade pre-service teachers were found to have used their smartphones more than 1., 2. and 3. grade pre-service teachers. 4. grade pre-

service teachers showed more signs of physical health when using a smartphone compared to 1., and 2. Grade pre-service teachers (such as back pain, headache).

Table 31. ANOVA test results between pre-service teachers' annual reading level and dimensions of smartphone addiction scale.

Item	Source of Variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
Obscuring Daily Life and Tolerance	Between Group	9.730	3	3.243	3.190	.024	
	Within Groups	239.913	236	1.017			B-D
	Total	249.643	239				
Deprivation symptoms	Between Group	14.743	3	4.914	5.709	.001	A-D
	Within Groups	203.167	236	.861			A-C
	Total	217.910	239				A-B
Positive expectations	Between Group	6.046	3	2.015	2.172	.092	
	Within Groups	218.966	236	.928			
	Total	225.012	239				
Cyber-oriented relations	Between Group	3.119	3	1.040	1.498	.216	
	Within Groups	163.797	236	.694			
	Total	166.916	239				
Overuse	Between Group	9.299	3	3.100	2.816	.060	
	Within Groups	259.775	236	1.101			
	Total	269.074	239				
Social network addiction	Between Group	13.673	3	4.558	2.781	.042	
	Within Groups	386.822	236	1.639			
	Total	400.496	239				
Physical symptoms	Between Group	13.851	3	4.617	4.788	.003	
	Within Groups	227.564	236	.964			
	Total	241.415	239				

A: 1-5, B: 6-10, C: 11-15, D: 16+

When table 31 was examined, it was seen that there was not any significant relationship between the dimensions of positive expectations (F=2.172; p>.05), cyber-oriented relations (F=1.498; p>.05), overuse (F=2.816; p>.05) and pre-service teachers' annual book readings. It was seen that there was a significant relationship between pre-service teachers' annual book reading rates and dimensions of obscuring daily life and tolerance (F = 3.190; p<.05), deprivation symptoms (F=5.709; p<.05), social network addiction (F=2.781; p<.05), physical symptoms (F=4.788; p<.05). Tukey multi-comparison test revealed that pre-service teachers who read books between 6-10 in a year delayed their responsibilities, failed to concentrate on their tasks and ruined their sleeping habits more than those who read 16 and above books a year. Pre-service teachers who read books between 1 and 15 a year were found not to consider anything else more fun than a smartphone, felt free when they were using their smartphones and could not do without their smartphones more than those who read 16 and above books a year. Pre-service teachers who read books between 1-5 a year checked their social networks more often than those who read books between 16 and above a year. Pre-service teachers who read books between 5-10 years

had more physical health problems due to excessive phone use than those who read books between 16 and above a year.

Table 32. ANOVA test results regarding the time spent by pre-service teachers on smartphones and dimensions of smartphone addiction scale

Item	Source of Variance	Sum of Square	sd	Means of Square	F	p	Significant Difference
Obscuring Daily Life and Tolerance	Between Group	50.105	4	12.526	14.753	.000	D-A, D-B, D-C, E-A, E-B, E-C
	Within Groups	199.538	235	.849			
	Total	249.643	239				
Deprivation symptoms	Between Group	30.166	4	7.541	9.440	.000	E-A
	Within Groups	187.744	235	.799			
	Total	217.910	239				
Positive expectation	Between Group	26.317	4	6.579	7.782	.000	C-A, D-A, E-A, E-B, E-C
	Within Groups	198.694	235	.846			
	Total	225.012	239				
Cyber-oriented relations	Between Group	11.821	4	2.955	4.478	.002	E-C, D-C
	Within Groups	155.094	235	.660			
	Total	166.916	239				
Overuse	Between Group	35.532	4	8.883	8.938	.000	D-B, E-A, E-B, E-C
	Within Groups	233.542	235	.994			
	Total	269.074	239				
Social Network addiction	Between Group	49.767	4	12.442	8.336	.000	D-A, D-B, E-A, E-B, E-C
	Within Groups	350.729	235	1.492			
	Total	400.496	239				
Physical symptoms	Between Group	20.994	4	5.249	5.596	.000	E-B
	Within Groups	220.421	235	.938			
	Total	241.415	239				

A: 0-1 hour, B: 1-2 hour, C: 2-3 hours, D: 3-4 hours, E: more than 4 hours

When Table 32 was examined, it was seen that there was a significant relationship between the number of books that pre-service teachers read in a year and dimensions of obscuring daily life and tolerance (F=14.753; p<.05), deprivation symptoms (F=9.440; p<.05), positive expectation (F=7.782; p<.05), cyber-oriented relations (F=4.478; p<.05), overuse (F=8.938; p<.05), social network addiction (F=8.336; p<.05), physical symptoms (F=5.596; p<.05). Tukey multi-comparison test revealed that pre-service teachers who spent 3-4 hours and more than 4 hours failed to make their tasks on time, had difficulty in concentrating, did not have enough sleep and used their smartphone more than those who spent 0-3 hours on their smartphones. Pre-service teachers who used their smartphone for 4 hours and above were found to consider their smartphones as an entertainment tool and expressed that they could not do without their smartphones more than those who used their smartphones between 0-1 and 3-4 hours. Pre-service teachers who used their smartphones for 4 hours and above calmed down, felt more secure and got rid of stress when they were using their smartphones more than those who used their smartphones for 0-3 hours, 2-3 hours, 3-4 hours and 0-1 hour. Pre-service teachers who used their

smartphones for 3-4 hours had a better time with their friends on the smartphone than pre-service teachers who used their smartphone for 2-3 hours. Pre-service teachers who used their smartphones for 3-4 hours could not do without their smartphones, did not like being disturbed when they were busy with their smartphones and could not make a day with the batteries of their phones more than those who used their smartphones for 1-2 hours. Pre-service teachers who used their smartphones for 4 hours and above cannot do without their smartphones, did not like being disturbed when they were busy with their smartphones and cannot make a day with the batteries of their phones more than those who used their smartphones for 0-3 hours. Pre-service teachers who used their smartphones for 3-4 hours checked their social media accounts more often than those who used their smartphones for 0-1 and 1-2 hours. Pre-service teachers who used their smartphones for 4 hours and above checked their social media accounts more often than those who used their smartphones for 0-3hours. Pre-service teachers who used their smartphones for 4 hours and above suffered from physical health problems more often than those who used their smartphones for 1-2 hours.

Table 35. Correlations between dimensions of smartphone addiction scale

	Obscuring Daily Life and Tolerance	Deptiviation symptoms	Positive expectation	Cyber-oriented relations	Overuse	Social network addiction	Physical symptoms
Obscuring Daily Life and Tolerance	1						
Deprivation symptoms	.566**	1					
Positive Expectation	.376**	.526**	1				
Cyber-oriented relations	.322**	.543**	.331**	1			
Overuse	.572**	.615**	.397**	.417**	1		
Social network addiction	.500**	.512**	.439**	.382**	.473**	1	
Physical symptoms	.500**	.463**	.267**	.245**	.429**	.315**	1

**significant at $p<0.01$ level

When Table 35 was examined, it was found that there was a positive and medium level relationship between the dimensions of smartphone addiction scale, which are obscuring daily life and tolerance, deprivation symptoms, positive expectation and cyber-focused relationships, overuse, social network addiction and physical symptoms.

4. Discussion

Dealing with a particular job or behaviour can stress a person, as well as produce a gratifying behaviour (Chakraboty, Basu & Vi junaya, 2012). The use of social media, in particular, paves the way for individuals to become addicted to smartphones (Noyan, Darçın, Nurmedov, Yilmaz, & Dilbaz, (2015). One of the research on smartphone addiction levels was conducted by Çalışkan et al. In his (2017) research, computer and instructional technologies indicated that smartphone addiction levels of pre-service teachers were moderate. Hayırcı (2019) conducted a study and found that high school

students' levels of social anxiety and loneliness increased as their smartphone addiction levels increased. Similar results were obtained in the research of Doğan and Tosun (2016). In research conducted by Doğrusever (2015) on secondary school students, there was no relationship between internet addiction and their loneliness levels. When the research was examined, it was observed that as the grade levels of the students increased, the levels of addiction and loneliness and anxiety also increased.

The research conducted by Hayırcı (2019) and Meral (2017) on some high school students, the research conducted by Kuyucu (2017) and Süler (2016) on some college students showed that there was no statistically significant difference between the smartphone addiction levels and gender of the participants. In the research conducted by Kumcağız, Terzi, Koç and Terzi (2020), it was found that there was a significant difference between the smartphone addiction levels of college students in favour of female ones. Female pre-service teachers were found to feel safe, free and enthusiastic when using the smartphone, and they were also found to feel impatient and frustrated when they did not have their smartphones in their hands more than male pre-service teachers. It was also found that female pre-service teachers felt the need to reuse their smartphones just after they stopped using them; they also believed that their life would be meaningless without their smartphones, they could not make without their smartphones, they always thought about their smartphones even when they were not using them, they would never stop using their smartphones even if it greatly disturbed their daily life, they would prefer to search on their smartphones rather than asking other people

Kuyucu (2017) conducted on some university students and found no significant relationship between the ages of the students and their smartphone addiction levels. It was found in the study that pre-service teachers in the 20-21 age range constantly checked their smartphones not to miss the posts on Twitter and Facebook more than those in the range of 22 and above. Pre-service teachers in the 20-21 age range prefered to search through their smartphones instead of asking people for the information they wanted to obtain more than those in the 18-19 age range and checked their status on their social networks as soon as they woke up.

Pre-service teachers who have spent most of their lives in metropolis felt impatient and frustrated when they did not have their smartphones in their hands, they would never stop using their smartphones even if it affected their daily lives to a large extent more than those who have spent most of their lives in cities. Pre-service teachers who considered their economic status high cannot fulfil their daily tasks, and suffered from physical problems due to their excessive phone use more than those who considered their economic status average. Pre-service who considered their economic status high put smartphones in the centre of their lives, calmed down, felt secure and happy when they were using their smartphones, prefered spending time with their friends on their smartphone to other friends or family members, overused their smartphone and checked their status on their social media accounts more than those who considered their economic status low. Pre-service teachers who considered their economic status high calmed down when they had their smartphones in their hands and felt confident more than those who considered their economic status average.

Pre-service teachers whose mothers were graduates of elementary school, secondary school and suffered from lack of concentration due to using smartphones more than those whose mothers were literate. Pre-service teachers whose mothers were university graduates took their smartphone with them even if they had to visit the toilet more than those whose mothers were graduates of primary school. Pre-service teachers whose fathers were high school graduates had more positive attitudes when using a smartphone than pre-service teachers whose fathers were primary school graduates. Pre-service teachers whose fathers were university graduates were using smartphones in an extreme way compared to pre-service teachers whose fathers were primary school graduates.

Pre-service teachers whose mothers were a farmer claimed that they got rid of stress through a smartphone more than those whose mothers were housewives. Pre-service teachers whose mothers were an artisan felt free the most when they were using a smartphone more than those whose mothers were civil servants. . The pre-service teachers whose mothers were retired used their smartphones more than those whose mothers were a worker. Pre-service teachers whose fathers were retired claimed that there was a difference between the friends on their smartphones and their immediate circles, family members more than those whose fathers were a worker. Pre-service teachers whose fathers were a farmer stated that there was nothing more fun than using a smartphone more than those whose fathers were an artisan and worker. Pre-service teachers whose fathers were a civil servant constantly checked their social media accounts more often than those whose fathers were an artisan and worker; pre-service teachers whose fathers were retired had more fun spending time with their friends on their smartphones more than those whose fathers were an artisan and worker.

Hayırcı (2019) and Meral (2017) conducted a study on some high school students and found that students with low-grade point averages had higher smartphone addiction scores. In the research, it was also found that pre-service teachers with GPA 2.50-2.99 grade point average felt pain in their wrists and the back of their neck more than those whose GPA was between 2:00-2.49 when they were using their smartphones. Pre-service teachers whose GPAs were between 2.00-2.49 were found to state that it was a great pleasure to meet more people through smartphones more than those whose GPA was 2.50-2.99.

Hayırcı (2019) and Eker (2017) conducted a study and found that there was a statistically significant difference between smartphone addiction levels and students' grades. Kuyucu (2017) conducted s research on some university students and found that there was no significant relationship between grade levels and smartphone addiction levels. Hakkari (2018) conducted a study on some 1st-year university students and found that first-year students had high levels of smartphone addiction. Karakuyu and Ata (2019) conducted a study on some university students and found no significant difference between grade levels of university students and their smartphone addiction. It was found in the study that 4th-grade students find smartphones as entertaining tools, that they found life meaningless without their smartphones, that they calmed down and felt secure when they were using smartphones more than 1st-grade students. 4th-grade pre-service teachers overused their smartphones more than 1st, 2nd and 3rd-year students. 4th-grade pre-service teachers exhibited physical health symptoms when they were using their smartphones more than the 1st and 2nd-grade students (such as back pain and headache).

Kumcak, Terzi, Koç and Terzi (2020) conducted research and found that university students spent the majority of their free time using smartphones. It was found in the research that pre-service teachers who read books between 6-10 a year tended to delay their responsibilities due to their smartphones, failed to concentrate on their tasks and had sleep disorder more than those who read books 16 and above a year. Pre-service teachers who read books between 1-15 a year claimed that they could not imagine anything else more fun than their smartphones, felt free when they were using smartphones and could not do without their smartphones more than those who read 16 books and above a year. Pre-service teachers who read books between 1-5 in a year were constantly checking their social network accounts more than those who read books between 16 and above in a year. Pre-service teachers who read books between 5-10 in a year had physical health problems due to excessive phone use more than those who read books 16 and above.

Vanden Abeele and Postma-Nilsenova (2018) concluded in their study that dealing with a phone during any interaction distracted more than any other element. Individuals prefered smartphones and the internet for a variety of reasons wanted to create environments where they could meet their social needs in real life instead of the virtual world and increased their social skills (Özteke Kozan, Kavaklı, Ak & Kesic, 2019). Bak (2019) conducted a study on some X generation individuals and found that 40.0% of them spent time on their smartphones for 4-6 hours per day, and 30.0% of Y generation spent time on

their smartphones for 4-6 hours a day. In the research, pre-service teachers who spent 3-4 hours and more than 4 hours a day could not fulfil their tasks on time due to their smartphone using habits, failed to concentrate on their tasks and had a sleep disorder and used their smartphone more than they planned compared to those who spent time on their smartphones for 0-3 hours a day.

Pre-service teachers who used their smartphone very much saw their smartphones as a means of entertainment and felt that they could not do without their smartphone compared to those who used their smartphones between 0-1 hours and 3-4 hours. Pre-service teachers who used their smartphone for over 4 hours calm down, felt confident and got rid of stress when they were using their smartphones compared to those who used their smartphones for 0-3 hours a day. Pre-service teachers who used their smartphone for over 2-3 and 3-4 hours calmed down, felt confident and got rid of stress when they were using their smartphones compared to those who used their smartphones for 0-1 hour a day. Pre-service teachers who used their smartphones for 3-4 hours had a better time with their friends on their smartphone than pre-service teachers who used their smartphone for 2-3 hours. Pre-service teachers who used their smartphone for 3-4 hours cannot give up their smartphones, did not like being disturbed by someone else when they were using their smartphones, claimed that their phone batteries were not enough for a whole day compared to those who used their smartphones for 1-2 hours. Pre-service teachers who used their smartphones for 4 hours and above cannot give up their smartphones, did not like being disturbed by someone else when they were using their smartphones, claimed that their phone batteries were not enough for a whole day compared to those who used their smartphones for 0-3 hours. Pre-service teachers who used their smartphones for 3-4 hours a day constantly checked their social status compared to than those who used their smartphones for 0-1 and 1-2 hours a day. Pre-service teachers who used their smartphones for 4 hours and above a day constantly checked their social status compared to those who used their smartphones for 0-3 hours a day. Pre-service teachers who used their smartphones for 4 hours and above a day suffered from physical health problems more often than those who used their smartphones for 1-2 hours a day.

5. Conclusion

When the results of the research were examined, it was seen that pre-service Turkish teachers used their smartphones more than they planned, that there was something more fun than using a smartphone, that they felt joyful and enthusiastic when using a smartphone, that they relaxed and felt free when using a smartphone, that using a smartphone was not the most fun thing in their lives, their relationship with their friends on their smartphones were not more sincere than their real-life friends; that they would not rather spend time with their friends on their smartphones than spend time with their real-life friends or other family members, that their friends on their smartphones did not understand them better than their friends in real life, that not being able to use their smartphone can not be as painful as losing a friend, that their phone battery was not adequate even when it was full, that they would never stop using their smartphones even if it greatly affected their daily life, that they checked their social media accounts as soon as they woke up, that they did not experience dizziness or blurred vision when using a smartphone. It was seen that pre-service teachers were neutral about if they were feeling tired or not as a consequence of their excessive use of a smartphone, continuing their life without a smartphone, feeling irritable and impatient when it was not possible to use their smartphones, that it was a wonderful feeling to meet more people through their smartphones, that it was possible to get rid of stress and they felt safe when they were using their smartphone, that they took their phones with them when they went to the toilet, getting annoyed when their smartphone was busy, that they constantşy checked their smartphones to check their social media accounts. Some pre-service teachers had repeatedly tried to shorten the time they spent on their smartphones and had succeeded, as well as those who had failed. In the study, it is

seen that there is a significant difference between the pre-service teachers' smartphone addiction levels and their gender, age, grade point averages, grade levels, reading levels, time spent on daily smartphones and the Internet, where they spend their lives, their economic status, their mothers' graduation status, and their mothers' professions.

6. Ethics Committee Approval

The author confirms that ethical approval was obtained from Çanakkale Onsekiz Mart University (Approval Date: 06/04/2020).

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Türkçe öğretmeni adaylarının akıllı telefon bağımlılık düzeylerinin çeşitli değişkenler açısından incelenmesi

Öz

Bu araştırmanın amacı Türkçe Öğretmeni adaylarının akıllı telefon bağımlılık düzeylerinin çeşitli değişkenler açısından incelemektir. Araştırmada nicel araştırma modellerinden ilişkisel tarama modeli kullanılmıştır. Araştırmanın örneklem grubunu bir devlet üniversitesinin Türkçe Eğitimi Anabilim Dalı'nda öğrenim görmekte olan 178 öğretmen adayı oluşturmaktadır. Araştırmada Demirci, Orhan, Demirdas, Akpınar ve Sert (2014) tarafından Türkçeye uyarlanan Akıllı Telefon Bağımlılığı Ölçeği kullanılmıştır. Arıştırmanın veri analizi SPSS 25 paket programı yoluyla yapılmıştır. Araştırmada elde edilen verilere tanımlayıcı istatistiksel analizler, t-testi ve ANOVA istatistiksel analizler ve korelasyon analizi yapılmıştır. Araştırmadan elde edilen bulgular incelendiğinde

Türkçe Öğretmeni adaylarının, akıllı telefonlarını planladıklarından daha fazla kullandıkları; kadın öğretmen adaylarının, erkek öğretmen adaylarına göre akıllı telefon bağımlılık düzeylerinin yüksek olduğu görülmektedir. Öğretmen adaylarının akıllı telefon bağımlılık düzeyleri ile cinsiyetleri, yaşları, ekonomik durumları, yaşamlarını çoğunu geçirdikleri yer, anne-baba eğitim durumu, anne-baba meslekleri, not ortalamaları, sınıf düzeyleri, okdukları kitap sayıları, sosyal medyada ve internette geçirdikleri süreler arasında anlamlı bir farklılığın olduğu görülmektedir.

Anahtar sözcükler: akıllı telefon; bağımlılık; Türkçe öğretmeni adayı

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