



## A Study on the Relationship between the Levels of Loneliness and Smartphone Addiction of Students who are Studying at the Faculty of Sports Science

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### Abstract

The main purpose of this study is to investigate the relationship between loneliness and smartphone addiction of students studying at the faculty of sports sciences. The study was conducted with the correlational survey method. The study group consisted of a total of 281 students, 61 females (21.7%) and 220 males (78.3%). In the study, Mobile telephone addiction scale developed by Sar, Ayas, and Horzum (2015) was used to investigate the mobile phone addiction levels of the participants. Loneliness scale developed by Demir (1989) was used to measure loneliness levels. According to the results of the study, there was no statistically significant difference between loneliness and smartphone addiction of students according to gender and academic achievement variables. On the other hand, there was a significant difference between loneliness and smartphone addiction according to the departments of the students. Looking at the relationship between loneliness and smartphone addiction levels, it was concluded that there was a statistically significant positive correlation between all sub-dimensions of smartphone addiction and smartphone addiction total score.

**Keywords:** Loneliness, Smart phone addiction, Addiction, sports sciences, students, department.

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**Contribution of this paper to the literature**

The study contributes to the existing literature by investigating the relationship between loneliness and smartphone addiction of students studying at the faculty of sports sciences.

**1. Introduction**

Since human being is a social entity, social relations, social environment and interpersonal communication have an important place in human life in terms of maintaining the life of the individual in a healthy way. In this sense, it is seen that the distressing situations occurring in social life adversely affect individuals. Loneliness, which is one of these troublesome situations, means the cognitive awareness of the lack of close relationships of the individual, social relations and the emotional emptiness that accompanies despair, longing and awareness (Asher & Paquette, 2003; Yildiz & Duy, 2014). There are many different definitions regarding the concept of loneliness in the literature. Weiss (1973) has addressed loneliness in two ways: social and emotional loneliness. Social loneliness arises from the inability of the individual to feel as a part of his/her society and to be a member of a group where common interests and activities are shared (Duy, 2003). Emotional loneliness is caused by the lack of close attachment to another person, and the feeling of anxiety and emptiness (Emineoğlu, 2018).

In other words, Fromm (Reichmann, 1959) described loneliness as a state of intense abstraction experienced by only the artists and patients with some mental problems. Perlman and Peplau (1981) one of the important names in loneliness studies, stated that loneliness was a serious deterioration in the interpersonal relations, either qualitatively or quantitatively, and also an unpleasant and disturbing life. Looking at the definitions, there is no publicly accepted explanation of loneliness. However, it can be stated that the common points show loneliness as an undesirable situation rather than a solitude, that it causes discomfort and negative feelings to the individual.

Nowadays, the rapid progress of technology has caused people to feel lonely by removing them from society and, later on, to create various addictions. In addition, family structure, the attitude of the family members, environmental factors, personality structure and the negative conditions can cause individuals to be addicted. From this point of view, addiction can be defined as the situation of being under the control of an irrevocable desire for a person, object or an entity, or of another willpower (Korkmaz, 2017).

In another definition, Kwon, Kim, Cho, and Yang (2013) stated that addiction is an obsessive activity that causes a disorder in the daily activities of the individual and shows a picture similar to drug addiction.

From the addiction types, smartphone addiction, which we will discuss about, is an excessive telephone use situation which reduces the enjoyment of daily activities, which can be uncomfortable in cases of inaccessibility (Sata, Celik, Ertürk, & TaS, 2016). Overuse of smartphones, which are used as an effective method to deal with loneliness and provide emotional support, leads to addiction (Sar., 2013). There are some symptoms that result from excessive telephone use. Casey (2012) listed these symptoms as ignoring the harmful consequences, mind being overwhelmed continuously with the phone, the extreme desire for the addicted object, the loss of the individual's productivity and the feeling of being anxious. Experiencing these situations means that the individual is addicted.

In literature, there are many findings on whether loneliness causes smartphone addiction or smartphone addiction causes loneliness. But individuals who are self-isolated from the society, have psychological problems, lose their self-confidence, feel alone, and are in many negative situations may be more likely to be addicted. Therefore, the aim of this study is to investigate the relationship between loneliness levels and smartphone addiction of students studying at the faculty of sports sciences.

**2. Research Method****2.1. Research Model**

The research made was performed by taking the relational screening model with respect to the target and scope it tends to. The relational screening models are the researches where the relationship between two or more variables is evaluated without intervening to the variables (Büyüköztürk, Kılıç Cakmak, Akgün, Karadeniz, & Demirel, 2016).

**2.2. Participants**

As it was easily accessible by the researcher, the study group was assigned from the students of Sakarya University of Applied Sciences, Faculty of Sports Science. A total of 281 students 220 males (78.3%) and 61 females (21.7%) participated in the study voluntarily.

**Table-1. Descriptive statistics.**

Variable		n	%
Gender	Woman	61	21,7
	Man	220	78,3
Perceived Academic Achievement	Low	28	10,0
	Moderate	191	68,0
	High	62	22,1
Smart Phone Addiction Levels	Normal-Level Smartphone Addiction	128	45,6
	Conventional Smartphone Addiction	75	26,7
	Obsessive Smartphone Addiction	69	24,6
	Inveterate Smartphone Addiction	9	3,2
Total		281	100

When the analysis results are examined for the Table 1, it is seen that 78.3% of the participants are man and 21.7% of the participants are woman. It was identified that 68% of the participants had moderate level, 22.1% had high level and 10% had a low level of academic achievement. In addition, it is concluded that 45.6% of participants

were normal-level smartphone addicts, 26.7% were conventional smartphone addicts, 24.6% were obsessive smartphone addicts and 3.2% were inveterate smartphone addicts.

### 2.3. Data Collection Tool

To determine the loneliness level of the individual, UCLA loneliness scale developed by Demir (1989) was used. The scale consists of 20 items, 10 of which are forward, and 10 of which are back, and it is a four-way Likert type scale. The items that contain positive expressions, never experience: 4, rarely experience: 3, sometimes experience: 2, often experience: 1. Items containing negative entries are scored as total opposite. The highest possible score is 80 and the lowest is 20. As the score increases, the loneliness level increases and the loneliness level decreases with the lower scores. In other words, the higher the score, the higher the loneliness level and vice-versa. The internal consistency coefficient of the scale was .94 and the test-retest reliability coefficient was calculated as .96 (Demir, 1989).

In order to determine the level of telephone addiction of students, the scale of smartphone addiction developed by Sar et al. (2015) was used. The scale is a five-point Likert type which is "never", "rarely", "sometimes", "often" and "always". In the scale of 30 items with four sub-dimensions in total items 1-5 are; Physical impairment and negligence of daily activities, items 6-22 are; relieving oneself, items 23-26 are; Unrestrainable use, items 27-30 items are; obstruction face-to-face communication. For the scoring in the scale; 30-55 "normal level", 56-78 "conventional smartphone addiction", 79-113 "obsessive smartphone addiction", 114 and above "inveterate smartphone addiction". The Cronbach's alpha value of the scale is .962, Internal consistency and composite reliability values for the factors of the scale respectively are .960 and .960; .819 and .818; .837 and .837; and .738 and .744. All internal consistency and composite reliability values are above 0.70.

### 2.4. Collection of Data

The sample populace, which was determined with convenience sampling method from the related literature, was applied the questionnaire form, which was formed by the researchers, between 6 March 2018 and 5 April 2018. In this study, based on quantitative research method, general surveying model was used. In the data collection, 55 scale statements are given in the questionnaire formed in accordance with the expert opinion and related literature review.

The scales prepared to determine the loneliness and smartphone addiction levels of the participants were applied by face-to-face interview method. In order for the data to be collected in a healthy way, students were given permission and help was from the instructor before the lesson. After informing the students about the research, the questionnaires were applied to the students in the classroom with the method of group application (Büyüköztürk et al., 2016).

### 2.5. Data Analysis

The data were subjected to descriptive statistics, factor, correlation and regression analysis with SPSS 20.0 program. The suitability of the data to the statistical analyzes was evaluated by examining the skewness and kurtosis values as well as the multiple connection and linearity conditions (Altunışık, Coşkun, & Yıldırım, 2012; Büyüköztürk et al., 2016; Tabachnick & Fidell, 2001). In this context, it is found that there is no extreme/outlier value in the data and the skewness and kurtosis values for all statements are in the range of  $-1 < \dots < +1$  (Tabachnick & Fidell, 2001). In order to determine whether there are multiple connections in the data pattern, it is found that the paired correlations for both regression models are less than 0.80, tolerance values (1-R<sup>2</sup>) are greater than 0.20, variance inflation factor (VIF =  $[1 / (1-R^2)]$ ) is less than 10 and the highest status index (CI) value is less than 30 (Altunışık et al., 2012; Büyüköztürk, 2016). Durbin-Watson coefficient values were in the range of  $1.5 < 1.865 < 2.5$  and it was found that there was no auto correlation problem between the variables (Kalaycı, 2014).

## 3. Findings

**Table-2.** Analysis of smart phone addiction and loneliness variables according to the gender of the students of the faculty of sport sciences.

Variable	Gender	N	$\bar{X}$	S.D.	t	p
Loneliness (1)	Woman	61	36,23	8,03	-,359	,720
	Man	220	36,73	9,95		
Physical Impairment and Negligence of Daily Activities (2)	Woman	61	10,28	4,48	,185	,853
	Man	220	10,15	4,67		
Relieving Oneself (3)	Woman	61	37,34	16,97	,034	,973
	Man	220	37,27	15,02		
Unrestrainable use (4)	Woman	61	6,26	3,20	-,958	,339
	Man	220	6,74	3,52		
Obstruction face-to-face communication (5)	Woman	61	8,77	4,86	-,468	,640
	Man	220	9,05	3,91		
Smartphone Addiction (6)	Woman	61	62,66	27,20	-,154	,878
	Man	220	63,21	24,39		

When the results of the analysis of Table 2 were examined according to gender variable, it was found that there was no statistically significant difference between the total score of smartphone addiction, all sub-dimensions of smartphone addiction and loneliness variables ( $p > 0.05$ ).

**Table-3.** Analysis of smart phone addiction and loneliness variables according to the departments of sports sciences students.

Variable	Department	N	$\bar{X}$	S.D.	F	p	Post Hoc.
Physical Impairment and Negligence of Daily Activities (1)	Sport Management <sup>a</sup>	126	11,25	4,92	5,956	,001	a-c; a-d
	Physical Education and Sport Teaching <sup>b</sup>	57	10,33	4,38			
	Recreation <sup>c</sup>	56	8,45	3,94			
	Coaching <sup>d</sup>	42	9,10	4,02			
Relieving Oneself (2)	Sport Management <sup>a</sup>	126	40,32	15,32	3,885	,010	a-c
	Physical Education and Sport Teaching <sup>b</sup>	57	37,33	16,82			
	Recreation <sup>c</sup>	56	32,95	14,50			
	Coaching <sup>d</sup>	42	33,90	13,29			
Unrestrainable use (3)	Sport Management <sup>a</sup>	126	6,48	3,21	1,721	,163	-
	Physical Education and Sport Teaching <sup>b</sup>	57	7,47	3,93			
	Recreation <sup>c</sup>	56	6,07	3,30			
	Coaching <sup>d</sup>	42	6,71	3,57			
Obstraction face-to-face communication (4)	Sport Management <sup>a</sup>	126	9,73	4,16	4,075	,007	a-c; a-d
	Physical Education and Sport Teaching <sup>b</sup>	57	9,30	4,23			
	Recreation <sup>c</sup>	56	7,95	3,91			
	Coaching <sup>d</sup>	42	7,74	3,68			
Smart Phone Addiction Total (5)	Sport Management <sup>a</sup>	126	67,78	24,55	3,807	,011	a-c
	Physical Education and Sport Teaching <sup>b</sup>	57	64,44	27,46			
	Recreation <sup>c</sup>	56	55,41	23,09			
	Coaching <sup>d</sup>	42	57,45	22,26			
Loneliness (6)	Sport Management <sup>a</sup>	126	36,43	10,11	,993	,396	-
	Physical Education and Sport Teaching <sup>b</sup>	57	38,47	8,72			
	Recreation <sup>c</sup>	56	35,63	8,36			
	Coaching <sup>d</sup>	42	36,00	10,39			

When the results of the analysis were examined for the **Table 3**, it was found that there was no statistically significant difference in ' Unrestrainable use ' sub-dimension of the smartphone addiction scale and the loneliness variable for the students from the faculty of sports science ( $p > 0.05$ ). On the other hand, it has been concluded that there is a statistically significant difference between the total score of smartphone addiction and the physical impairment and negligence of daily activities, relieving oneself, unrestrainable use, obstraction face-to-face communication ( $p < 0.05$ ). Accordingly, there is a significant difference between the impairment and negligence of daily activities mean points of sports management students and the impairment and negligence of daily activities mean points of the students in the recreation and coaching department, between the relieving oneself mean points of the students in the sports management department and the relieving oneself mean points of the students in the recreation department, between the mean scores of obstraction face-to-face communication of the students of the sports management department and the mean scores of obstraction face-to-face communication of the students of the recreation and coaching department, and between the total score averages of the smartphone addiction of students of the sports management department and the average score of the smartphone addiction of the recreation department students.

**Table-4.** Analysis of smart phone addiction and loneliness variables according to the perceived academic achievement of the faculty of sport sciences students.

Variable	Level	N	$\bar{X}$	S.D.	F	p	Post Hoc.
Physical Impairment and Negligence of Daily Activities (1)	Low	28	11,39	5,43	1,087	,339	-
	Moderate	191	10,08	4,55			
	High	62	9,95	4,45			
Relieving Oneself (2)	Low	28	37,68	14,81	,187	,829	-
	Moderate	191	36,91	15,07			
	High	62	38,26	16,95			
Unrestrainable use (3)	Low	28	6,68	3,61	,852	,428	-
	Moderate	191	6,47	3,25			
	High	62	7,13	3,95			
Obstraction face-to-face communication (4)	Low	28	10,29	5,01	1,813	,165	-
	Moderate	191	8,74	3,89			
	High	62	9,18	4,34			
Smart Phone Addiction Total (5)	Low	28	66,04	26,91	,535	,586	-
	Moderate	191	62,20	24,08			
	High	62	64,52	26,99			
Loneliness (6)	Low	28	36,86	12,74	,065	,937	-
	Moderate	191	36,71	9,17			
	High	62	36,24	9,22			

When the analysis results of [Table 4](#) were examined according to perceived academic achievement, it was found that there was no statistically significant difference in the loneliness variable, all sub-dimensions of smartphone addiction and total score of smartphone addiction ( $p > 0.05$ ).

**Table-5.** Analysis of the relationship between the loneliness levels and smartphone addiction of the students of the faculty of sport sciences.

Variable		(1)	(2)	(3)	(4)	(5)	(6)
Loneliness (1)	r	1					
	p						
Physical Impairment and Negligence of Daily Activities (2)	r	,219**	1				
	p	,000					
Relieving Oneself (3)	r	,166**	,759**	1			
	p	,005	,000				
Unrestrainable use (4)	r	,357**	,627**	,644**	1		
	p	,000	,000	,000			
Obstraction face-to-face communication (5)	r	,189**	,694**	,750**	,584**	1	
	p	,001	,000	,000	,000		
Smart Phone Addiction Total (6)	r	,222**	,808**	,919**	,716**	,773**	1
	p	,000	,000	,000	,000	,000	

Note: \*\* $p < 0,001$ ;  $n = 281$ .

Analyzing the results of [Table 5](#), it was found that there was a statistically significant positive correlation between all sub-dimensions of smartphone addiction, loneliness and smartphone addiction total score ( $p < 0.01$ ).

**Table-6.** Analysis of the effects of loneliness levels of students of sports sciences faculty on smartphone addiction.

Değişken	$\beta$	t	p.	R <sup>2</sup>	AdjR <sup>2</sup>	F
(Constant)		5,224	,000	,049	,046	14,495
Loneliness	,222	3,807	,000			

Dependent Variable: Smartphone Addiction Method: Enter

In order to reveal the predictive power of loneliness variable on the smartphone addiction, simultaneous (enter) multiple regression analysis was performed in the [Table 6](#). When the results were examined, it was determined that the applied simultaneous regression model was statistically significant ( $p < 0.01$ ). In this respect, it was determined that the loneliness variable predicted approximately 5% of smartphone addiction.

#### 4. Discussion and Conclusion

The research was applied to university students studying at the sports science faculty of Sakarya University of Applied Sciences. The independent variables which are the subject of the study, taking into consideration the information, the gender, the department and the academic success level, obtained by the researcher in the personal information form, are discussed in the light of the literature.

According to the results of analysis on the level of smart phone addiction and loneliness according to gender variable, it was determined that there is no statistically significant difference in all sub-dimensions of smartphone addiction and loneliness variable. The reason for this is that almost everyone, regardless of whether they are women or men, have smart phones and people use smart phones for different purposes within the possibilities provided by technology, and this may not show a significant difference in terms of users' addiction and usage habits. In parallel with the conclusion we reached, [Stüler \(2016\)](#) concluded that there was no statistically significant difference in the level of smartphone addiction according to the gender variable. According to the gender variable, there is no significant difference in the level of loneliness. It can be explained that the situations that lead individuals to loneliness are related to family, personality and social environment rather than gender. In parallel with the results we obtained, [Eskin \(2001\)](#)'s study of the relationship between the loneliness of high school students and the smartphone addiction has reached the conclusion that there is no statistically significant difference in loneliness levels according to the gender variable. [Sar. \(2013\)](#) in her study, concluded that girls had higher levels of loneliness than boys did.

According to the analysis of smart phone addiction and loneliness level according to the department variable, while there were significant differences in the level of physical impairment and negligence of daily activities, relieving oneself, and obstruction face-to-face communication of smartphone addiction, there was no statistically significant difference in the level of not being able prevent usage sub-dimension and loneliness level. In the light of our results, the students studying in the sport management department are mainly trained on how to be a manager, how to manage an organization, how to contact with the relevant federations about coordinating sports organizations, sports marketing and sports management. The communication skills and the communication network are of great importance in realizing these situations and this can be achieved mostly by smartphones. Because of the rapid progress of organizations, it is sometimes not possible to communicate face-to-face on some issues that need contacting with the relevant federations. In this context, communication can be provided mostly by smart phones. For this reason, depending on the use of the smart phone, there can be physical pain of fingers and eyes, disruption of daily work, feeling unrest when not being with the phone because of the continuous use, and communication is often done through smart phones and this situation may be able to prevent face to face communication. The reason for the lack of a significant difference between 'Relieving oneself' and loneliness level is that individuals should be more likely to use smartphones due to work, not to use too much in times other than work, and not to feel lonely because they are always in contact with people. There is not much research on smartphone addiction according to the department variable in the literature about the result we reached. According to similar studies, [Meral \(2017\)](#) concluded that there is no significant difference in the level of smartphone addiction according to high school type. Again, in another finding, [Kiziltoprak \(2018\)](#) concluded that the levels of smartphone addiction did not differ significantly according to the type of school in their study with high school

students. In a different finding, Cakır and Oğuz (2017) concluded that there was a significant difference in loneliness and smartphone addiction levels according to school type.

According to the results obtained from the analysis of loneliness and the smart phone addiction according to the academic achievement variable, it was concluded that there is no statistically significant difference in all sub-dimensions of smartphone addiction and loneliness level. According to this result, it can be explained that almost everyone in today's world, regardless of any criteria, has a smart phone and this is not related to loneliness level. Looking at the related literature, Süler (2016) found that, in parallel with our findings, there was no significant difference between university students' smart phone addiction and academic achievement levels. Meral (2017) however, concluded that there is a significant relationship between academic achievement and smart phone addiction. In another study, Körlor (2011) reported a significant difference between academic achievement and loneliness level. According to the results of the analysis of the effect of loneliness levels of students on smartphone addiction, it was concluded that loneliness predicted smartphone addiction. It is thought that this situation may be caused by the fact that individuals are away from the social environment due to various reasons, they are introverted and therefore they do not have the opportunity to show themselves and therefore they turn to smart phones in order to fill this emptiness. In other words, smart phones that are used for various purposes may increase the use of smart phones as it allows individuals not to think about the difficult conditions by sparing the majority of their time for smartphone usage. In parallel with the results, Cakır and Oğuz (2017) found a positive and significant relationship between students' smartphone addiction and loneliness levels. Again, Meral (2017) reached the conclusion that loneliness perceptions increased in secondary school students with the more use of smartphones. Unlike our results, Uzun (2013) in his study, concluded that the loneliness of individuals did not have an effect on the use of social networks.

The result we arrived at was that loneliness caused smartphone addiction. So, loneliness has an effect on addiction. Ultimately, as the loneliness levels of the students studying at the sports science faculty increased, the levels of smart phone addiction increased. In this direction, it is recommended to organize recreational activities by the relevant bodies of universities in order to reduce loneliness levels of students.

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