

The Relationship of Smartphone Addiction with Motivation to Participate in
Physical Activity: A Study in Sports Sciences Faculty Studentsⁱ

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DOI: <https://doi.org/10.38021asbid.1476185>

ORIGINAL ARTICLE

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Abstract

In this study, it was aimed to examine the relationship between smartphone addiction and motivation to participate in physical activity within the scope of students studying at the Faculty of Sport Sciences. In addition to the relationship between students' smartphone addiction and motivation to participate in physical activity, it was also examined whether the related characteristics differed according to their age, gender, departments they studied, and whether they were doing licensed sports. In this study, which was conducted in the relational survey model, the Smartphone Addiction Scale and the Motivation to Participate in Physical Activity Scale were applied to 461 volunteer students. In the analyses, independent sample t-test for paired groups, one-way analysis of variance for multiple groups and Pearson correlation coefficient were calculated. According to the results obtained, it was determined that all participants had high motivation to participate in sports, when examined in terms of demographic variables; smartphone addiction was higher in 18-21 years old participants than 22-25 years old participants, motivation to participate in physical activity was higher in female participants than male participants according to gender variable, when examined according to the variable of doing licensed sports, it was determined that licensed sportsmen had higher smartphone addiction and participation in physical activity than non-licensed sportsmen, and there was a negative relationship between smartphone addiction and motivation to participate in physical activity.

Keywords: Smartphone, Addiction, Physical Activity, Sport

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**Akıllı Telefon Bağımlılığının Fiziksel Aktiviteye Katılım
Motivasyonu ile İlişkisi: Spor Bilimleri Fakültesi
Öğrencilerinde Bir Araştırma**

Öz

Bu çalışmada akıllı telefon bağımlılığının fiziksel aktiviteye katılım motivasyonu ile ilişkisinin Spor Bilimleri Fakültesinde öğrenim görmekte olan öğrenciler kapsamında incelenmesi amaçlanmıştır. Öğrencilerin akıllı telefon bağımlılığı ve fiziksel aktiviteye katılım motivasyonları arasındaki ilişkiye ek olarak ilgili özelliklerin yaşlarına, cinsiyetlerine, öğrenim gördükleri bölümlere, lisanslı spor yapma durumlarına göre farklılaşarak farklılaşmadığı da incelenmiştir. İlişkisel tarama modelinde yürütülmüş bu çalışmada Akıllı Telefon Bağımlılığı Ölçeği ve Fiziksel Aktiviteye Katılım Motivasyonu Ölçeği 461 gönüllü öğrenciye uygulanmıştır. Analizlerde ikili gruplar için bağımsız örneklem t-testi, çoklu gruplar için tek yönlü varyans analizi ve Pearson korelasyon katsayısı hesaplanmıştır. Elde edilen sonuçlara göre tüm katılımcıların spora katılım motivasyonlarının yüksek olduğu, demografik değişkenler açısından incelendiğinde; akıllı telefon bağımlılıklarının 18-21 yaş katılımcıların 22-25 yaş katılımcılara göre yüksek olduğu, fiziksel aktiviteye katılım motivasyonlarının cinsiyet değişkenine göre kadın katılımcıların erkek katılımcılara göre yüksek olduğu, lisanslı spor yapma değişkenine göre incelediğimizde ise lisanslı spor yapanların lisanslı olmayanlara göre akıllı telefon bağımlılıkları ve fiziksel aktiviteye katılımlarının yüksek olduğu, ayrıca katılımcıların akıllı telefon bağımlılığı ile fiziksel aktiviteye katılım motivasyonları arasında negatif yönlü ilişki olduğu belirlenmiştir.

Anahtar Kelimeler: Akıllı Telefon, Bağımlılık, Fiziksel Aktivite, Spor

Received:
30.04.2024

Accepted:
06.06.2024

Online Publishing:
28.06.2024

ⁱThis article was produced from the Master's Thesis prepared within Ankara Yıldırım Beyazıt University Health Sciences Institute.

Introduction

Addiction is a state of being unable to stop or control a behavior or substance use. It can be described as a continuous desire for an object, person, or entity, and being under the control of another will irresistibly (TDK, 2021). The state of constantly making substance consumption habitual, being unable to quit, increasing rather than decreasing the amount of use, and experiencing withdrawal when not using are aspects of addiction. In summary, spending excessive time on a behavior, tendency to withdraw from the real world for it, an unconditional desire to continue that behavior, and symptoms such as restlessness when the behavior is prevented should be considered in terms of addiction (Egger and Rauterberg, 2009). Although drugs or narcotics may come to mind first for these conditions, when addiction is considered, attention should also be paid to gambling, internet, gaming, and even smartphone addictions (Tarhan and Nurmedov, 2011).

With the advancement of technology, the concept of mobility has led to the development of wireless communication devices (Ay, 2021). Among these developments, mobile phones, which have been affected, have evolved into smartphones with many features today. The feature of always being in communication via mobile has led to smartphones being quickly embraced by people. As a result, they have surpassed all other portable digital devices (Di Maggio, Hargittai and Neuman, 2001). This rapid increase has become even more widespread among young people. As interest in smartphones has increased, their usage areas have expanded, and they have become an integral part of people's daily lives (Süler, 2016). Smartphones have now become a tool for social media, email, internet searches, reading materials such as books, newspapers, and magazines, shopping, and even finding directions while driving. However, smartphones can also cause some physical and psychological problems alongside their practicality in daily life. Although there is no clear definition yet, smartphone addiction is an important research topic as a type of addiction that develops depending on the frequency of use (Mustafaoğlu et al., 2021). While smartphones provide benefits and convenience in many areas when used correctly, their unconscious use can lead to serious harm. It can cause psychological disorders such as stress, anxiety, sleep disturbances, and the inability to stay away from the phone, as well as physical pains such as wrist, arm, shoulder aches, and eye strain. Moreover, conditions such as spending long periods of time on social media while connected to the internet can lead to a decrease in face-to-face communication and thus the possibility of living an antisocial life.

This research aims to examine the relationship between smartphone addiction and participation motivation in physical activity, which inherently contributes to overcoming all these negative effects, starting from the fact that excessive smartphone use can lead to physical problems due to individuals' sedentary lifestyle and to social and psychological problems due to decreased

participation in social life. It is known that physical activity refers to bodily activities performed within a specific plan and program to maintain and improve physical fitness elements. People engage in these activities for purposes such as weight control, disease prevention and reduction, socializing, and entertainment. Physical activity, which provides positive contributions to both physical and mental health, helps prevent negative emotions such as obesity, bone diseases, heart problems, depression, anxiety, and worry (Caspersen, Kriska and Dearwater, 1994).

In order to positively contribute to human health and increase quality of life, physical activities should be performed at planned intervals with a certain frequency and intensity (Koruc and Arslan, 2009). Therefore, it is important for physical activity to become a lifelong lifestyle. This research aims to investigate the relationship between smartphone use and participation motivation in physical activity among students of the Faculty of Sports Sciences. It is believed that the results obtained will not only contribute to the limited literature in the field but will also provide valuable data for evaluating the situations regarding these two important issues that are crucial for today's youth.

Material And Method

Research Design

In this study, it was aimed to examine the relationship between smartphone addiction and motivation to participate in physical activity within the scope of students studying at the Faculty of Sports Sciences. Within the scope of quantitative research method, it was carried out in the relational screening model, one of the general screening models.

Data Collection Tools

Motivation to Participate in Physical Activity Scale

The sixteen-item scale developed by Tekkurşun Demir and Cicioğlu (2018) in order to measure motivations to participate in physical activity is subject to a five-point Likert-type evaluation. The three sub-dimensions of the scale are named as individual reasons, environmental reasons and causality. The individual reasons and environmental reasons sub-dimensions consist of six questions each, while the causelessness sub-dimension contains four questions. A minimum score of sixteen and a maximum score of eighty can be obtained from the scale. It is stated that up to sixteen points from the scale means very low, up to thirty-two points means low, up to forty-eight points means medium, up to sixty-four points means high and up to eighty points means very high motivation to participate in physical activity.

Smartphone Addiction Scale

The ten-item scale, which was developed by Kwon et al. (2013) and adapted into Turkish by Noyan et al. (2015) in order to measure the risk of smartphone addiction, is subject to a six-point Likert-type evaluation. The scale does not include any sub-dimensions. The lowest score that can be obtained from the scale is ten and the highest score is sixty. A high score on the scale means a high risk of addiction.

Analysing the Data

The internal consistency of the responses obtained in the study was evaluated with Cronbach alpha (α) coefficient. The normality of the data was evaluated by examining the skewness and kurtosis scores. According to the results, it was determined that the data could be used in the analyses and parametric tests could be applied in the analyses. In this direction, independent sample t-test for paired groups, one-way analysis of variance for multiple groups and Pearson correlation coefficient were calculated. All statistical analyses were performed using Microsoft Excel 2016 and IBM SPSS 22 programmes, taking into account the significance level of $p < 0.05$.

Findings

Table 1
Some Descriptive Information About The Study Group

		n	%
Gender	Woman	213	46.2
	Male	248	53.8
Age	18-21	257	55.7
	22-25	204	44.3
Licenced Sport	Yes	73	15.8
	No	388	84.2
Regular Exercise	Yes	231	50.1
	No	230	49.9
Department	Physical Education and Sports Teaching	155	33.6
	Sport Management	114	24.7
	Coaching	107	23.2
	Recreation	85	18.4

In Table 1, some demographic information of the participants forming the research group is given. When Table 1 is analysed, it is seen that 213 of the 461 participants are female and 248 are male. 257 of the participants are between the ages of 18-21 and 204 of them are between the ages of 22-25. In addition, 73 of the participants are licensed athletes and 388 of them are not licensed athletes. In addition, 231 of the participants exercise regularly, while 230 of them do not exercise regularly.

Table 2

Descriptive Statistics of Smartphone Addiction and Motivation to Participate in Physical Activity Scales

Dimension	n	Mean	Sd.	Skewness	Kurtosis	Cr. Alpha
Individual Reasons	461	25.20	4.35	-1.04	.277	.87
Environmental Causes	461	15.11	4.09	1.36	1.38	.76
Causelessness	461	18.51	3.37	2.63	6.35	.95
Motivation to Participate in Physical Activity	461	58.85	8.96	-1.15	1.25	.87
Smartphone Addiction	461	32.29	9.69	-.349	-1.35	.96

In Table 2, the number of participants included in the study, descriptive information about the measurement tools used, descriptive statistics about the data obtained from the measurement tools, and skewness and kurtosis values regarding the normality evaluations of the responses used in the study are given. Since the results obtained are in the range of -2 to +7 recommended by Hong, Malik and Lee (2003), it was evaluated that the data showed normal distribution. In addition, it is observed that the motivation of the participants to participate in sports is at a high level.

Table 3

Comparison of Smartphone Addiction and Motivation to Participate in Physical Activity in Terms of Gender

Dimension	Gender	n	Mean	Sd.	t	p
Individual Causes (IC)	Male	248	23.61	4.22	9.19	.00
	Female	213	27.06	3.74		
Environmental Causes (EC)	Male	248	15.52	4.57	2.12	.00
	Female	213	14.70	3.41		
Non-causality (NC)	Male	248	18.06	3.87	3.19	.00
	Female	213	19.03	2.59		
Motivation to Participate in Physical Activity	Male	248	57.19	9.45	4.36	.00
	Female	213	60.78	7.93		
Smartphone Addiction	Male	248	34.41	9.26	5.21	.00
	Female	213	29.82	9.62		

When Table 3 is examined, it is seen that the sub-dimensions of motivation to participate in physical activity, total score of motivation to participate in physical activity and smartphone addiction levels differ significantly according to gender variable. In the IC sub-dimension, female participants ($\bar{x}=27.06\pm3.74$) had significantly higher scores compared to male participants ($\bar{x}=23.61\pm4.22$). In the sub-dimension of EC, male participants ($\bar{x}=15.52\pm4.57$) were significantly higher than female participants ($\bar{x}=14.70\pm3.41$). In the sub-dimension of NC, female participants ($\bar{x}=19.03\pm2.59$) were significantly higher than male participants ($\bar{x}=18.06\pm3.87$). In terms of the total score of motivation to participate in physical activity, it was determined that female participants ($\bar{x}=60.78\pm7.93$) were significantly higher than male participants ($\bar{x}=57.19\pm9.45$). On the other hand, it was determined that

male participants ($\bar{x}=34.41\pm9.27$) had significantly higher scores compared to female participants ($\bar{x}=19.82\pm9.61$) in smartphone addiction levels.

Table 4

Comparison of Smartphone Addiction and Motivation to Participate in Physical Activity in Terms of Age

Dimension	Age	n	Mean	Sd.	t	p
Individual Causes (IC)	18-21	257	25.38	4.54	.992	.32
	22-25	204	24.98	4.11		
Environmental Causes (EC)	18-21	257	14.72	3.46	2.44	.01
	22-25	204	15.68	4.72		
Non-causality (NC)	18-21	257	18.09	3.27	3.02	.00
	22-25	204	19.04	3.42		
Motivation to Participate in Physical Activity	18-21	257	58.18	8.19	1.82	.06
	22-25	204	59.70	8.59		
Smartphone Addiction	18-21	257	35.85	8.09	9.51	.00
	22-25	204	27.80	9.70		

According to Table 4, no significant difference was found in terms of IC sub-dimension and total score of motivation to participate in physical activity according to age variable. A significant difference was found in terms of EC and NC sub-dimensions and smartphone addiction levels. In the sub-dimension of EC, it was determined that participants aged 22-25 ($\bar{x}=15.68\pm4.72$) had significantly higher scores compared to participants aged 18-21 ($\bar{x}=14.72\pm3.46$). In the sub-dimension of NC, it was determined that participants aged 22-25 ($\bar{x}=19.04\pm3.42$) had significantly higher scores compared to participants aged 18-21 ($\bar{x}=18.09\pm3.27$). On the other hand, in terms of smartphone addiction, it was determined that participants aged 18-21 ($\bar{x}=35.85\pm8.09$) had significantly higher scores compared to participants aged 22-25 ($\bar{x}=27.80\pm9.70$).

Table 5

Comparison of Smartphone Addiction and Motivation to Participate in Physical Activity in Terms of Licensed Sportsmanship

Dimension	Licensed Sportsman	n	Mean	Sd.	t	p
Individual Causes (IC)	Yes	73	25.84	2.99	1.78	.07
	No	388	25.09	4.56		
Environmental Causes (EC)	Yes	73	19.41	4.82	8.59	.00
	No	388	14.34	3.39		
Non-causality (NC)	Yes	73	19.19	2.45	2.40	.01
	No	388	18.38	3.50		
Motivation to Participate in Physical Activity	Yes	73	64.43	7.00	6.02	.00
	No	388	57.80	8.90		
Smartphone Addiction	Yes	73	33.60	9.11	1.25	.20
	No	388	32.04	9.79		

When Table 5 is examined, it is determined that there is a significant difference in terms of IC sub-dimension and smartphone addiction level among the sub-dimensions of motivation to participate in physical activity according to licensed sportsmanship variable. On the other hand, it was determined that EC, NC, total score of physical activity participation and smartphone addiction levels differed significantly. In the EC sub-dimension, it was observed that licensed athlete participants ($\bar{x}=19.41\pm4.82$)

had significantly higher scores compared to non-licensed athlete participants ($\bar{x}=14.34\pm3.39$). In the sub-dimension of NC, it was determined that licensed athlete participants ($\bar{x}=19.19\pm2.45$) had significantly higher scores compared to non-licensed athlete participants ($\bar{x}=18.38\pm3.50$). In terms of the total score of participation in physical activity, it was determined that licensed athlete participants ($\bar{x}=64.43\pm7.00$) had significantly higher scores than non-licensed athlete participants ($\bar{x}=33.60\pm9.11$). On the other hand, it was determined that licensed athlete participants ($\bar{x}=33.60\pm9.11$) were significantly higher than non-licensed athlete participants ($\bar{x}=32.04\pm9.79$) in smartphone addiction levels.

Table 6

Correlation analysis results on the relationship between smartphone addiction and motivation to participate in physical activity.

	Pearson Correlation	Motivation to Participate in Physical Activity
Smartphone	r	-.132**
Addiction	p	.004

Table 6 shows the findings regarding the relationship between smartphone addiction and motivation to participate in physical activity. According to the results of the analyses, it was determined that there was a negative low-level relationship ($r=.132$; $p=.004$) between the level of smartphone addiction and motivation to participate in physical activity.

Discussion

In addition to supporting the positive aspects of technological developments, it is also important to investigate the negative aspects. In this respect, researches on smartphone addiction and solution suggestions are useful in this regard. In addition, research on determining motivations for physical activity, which is effective in overcoming many undesirable behaviours and habits, is also important. In this context, the first of the results obtained in this research is that motivation to participate in physical activity and smartphone addiction differ in terms of gender. According to the results obtained within the scope of the research, female students have higher motivation to participate in physical activity compared to male students, while male students have higher smartphone addiction scores than female students. Based on these results, it is thought that female students have higher physical activity participation as a result of having higher motivation to participate in physical activity and accordingly, they have lower smartphone addiction scores. This idea is also based on the evidence of the inverse relationship between smartphone addiction and motivation to participate in physical activity.

When the literature is examined, it is seen that there are different results regarding the differentiation of smartphone addiction in terms of gender. Küçük, Celbek, and Coşkun (2021), Liu et al. (2016), Şahin et al. (2013) obtained results that smartphone addiction does not differ according

to gender. Bianchi and Phillips (2005), Choi et al. (2015), Çakır and Ebru (2017), on the other hand, reached the results that women obtained higher scores for smartphone addiction. When these results are evaluated together, it can be said that different results can be obtained as a result of the sample group. It can be stated that there are not enough studies to make clearer definitions about the effect of gender on smartphone addiction.

When the results regarding the relationship between participation in physical activity and smartphone addiction are examined, it can be said that the results observed in the literature are quite diverse. Demirbilek and Minaz (2020), Gezgin et al. (2018) obtained results that there is no relationship between physical activity and smartphone addiction. Çakır and Ebru (2017), Kuyucu (2017) reported that women have higher smartphone addiction scores. Can and Karaca (2019), Erdoğanoğlu and Arslan (2019), Rosenberg et al. (2010), Lepp et al. (2013) obtained parallel results with the results of the study.

Another result obtained within the scope of the research is that smartphone addiction is related to age. According to the results obtained, smartphone addiction scores decrease as the age increases in line with the ranges determined in the research. According to the results of the research, students between the ages of 18-21 have obtained higher smartphone addiction scores than students between the ages of 22-25. When the literature is examined, it is observed that it is in parallel with the research results. The results obtained in the studies by Csibi et al. (2021), Lovibond and Lovibond (1995), Yılmaz, Boz and Arslan (2017) also indicate that there is an inverse relationship between age and smartphone addiction.

In addition, it was determined that students with past or present licensed sports experience had higher motivation to participate in physical activity compared to those who did not. Similarly, the results of the research conducted by Dede et al. (2016), Yaraşır (2018) determined that men who are members of a club / have a licence have higher physical activity levels. In this context, students can be encouraged to become licensed athletes or members of a club as an alternative way to increase the motivation of today's students to participate in physical activity.

Ethics Committee Permission Information

Ethics review board: Ankara Yıldırım Beyazıt University Ethics Committee

Date of ethics assessment document: 26.02.2021

Issue number of the ethics evaluation document: 27

Statement of Researchers' Contribution Rates

While the design, method and writing of the research were carried out by two authors together, the processes related to data collection and findings were carried out by the first author, and critical evaluation was carried out by the second author.

Conflicts of interest

The authors declare that they have no competing interests.

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