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ORIGINAL ARTICLE

The Relationship of Smartphone Addiction with Sleep Quality, Eating Attitudes, and Obesity

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Main Points

- About 45.9% of the participants were found to have smartphone addiction.
- Smartphone addiction causes worse sleep quality.
- Factors associated with smartphone addiction include the absence of chronic physical illness, the presence of psychiatric illness, poor sleep quality, poor eating attitude, average daily smartphone, internet, and social media usage time.
- There is no relationship between obesity and smartphone addiction.

Abstract

We aimed to examine the relationship between smartphone addiction and sleep quality, eating attitudes, and obesity. This research included 407 university students aged 18 – 30 years who had been using smartphones for at least the last 6 months. The Smartphone Addiction Scale-Short Form, Pittsburgh Sleep Quality Index, and Eating Attitudes Test were administered to all participants along with the Sociodemographic Data Form. Participants' height and weight were recorded based on self-reports. Smartphone addiction was found in 45.9% of the students. The median value of the Pittsburgh Sleep Quality Index scale was higher in participants with smartphone addiction than in those without smartphone addiction ($p < .001$). The absence of chronic physical illness, presence of psychiatric illness, duration of internet use, duration of smartphone use, duration of social media use, poor sleep quality, and poor eating attitudes were found to be associated with smartphone addiction. It can be said that nearly half of the participants may have smartphone addiction and sleep quality is impaired in those with smartphone addiction. Additionally, smartphone addiction is associated with the presence of psychiatric illness, poor sleep quality, and poor eating attitudes, but not with obesity.

Keywords: Eating disorder, obesity, sleep disorder, smartphone addiction, social media

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Introduction

In recent years, smartphone users have expanded dramatically, and they are now an essential part of everyday life. By 2023, more than half of the global population is reported to own a smartphone (GSMA, 2024). Although the widespread use of smartphones has brought many conveniences to lives, the problems arising from the overuse of these devices cannot be ignored. Overuse can reach the level of addiction. In this case, which can be called smartphone addiction (SA), people use their smartphones uncontrollably. This use disrupts people's functionality. Despite this harm, people continue to use impulsively and show withdrawal symptoms (Panova & Carbonell, 2018). Smartphone addiction rates are found to be extremely high in studies. For example, SA among adolescents in India is reported to range between 39% and 44% (Davey & Davey 2014). In the research performed in the United Kingdom with 1043 participants aged 18 – 30 years, the rate of SA was 38.9% (Sohn et al., 2021). In the research performed among 771 university students in Türkiye, 42.4% of people were found to be addicted to their smartphones (Uzunçakmak et al., 2022). In a review of 39 studies, it was reported that SA rates among nursing students in 15 countries ranged from 19% to 72% (Zhou et al., 2024). One

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study reported the prevalence of SA to be 41.93% among medical students in seven Asian countries (Zhong et al., 2022).

SA is associated with many problems. One of the most important of these is sleep disorders. An association has been observed between sleep disorders and SA. Studies have reported that as SA scores increase, sleep disorder scores increase (Sanusi et al., 2022; Nikolic et al., 2023). Another problem is eating disorders. The excessive use of smartphones excessively is closely linked to eating disorders, eating behaviors, and lifestyle (Wang et al., 2023). It has been reported that poor eating attitudes increase as SA increases (Çakir Kardeş et al., 2023). It is also highlighted that children's and teenagers' obesity may be linked to inappropriate smartphone use (Ma et al., 2021). A connection has been found between obesity, eating habits, and SA. It has been observed that eating habits are impacted by SA, which elevates body weight (Örnek & Gündoğmuş, 2022). In light of all this literature, it can be said that SA is an important health problem that needs to be investigated.

This study contributes to the existing literature by examining the combined impact of smartphone addiction, sleep quality, and eating attitudes among university students, a topic that has been explored separately but not comprehensively. Specifically, the study investigates the relationships between smartphone addiction, daily social media and internet use, and eating behaviors. This study will contribute to the literature on the effects of smartphone addiction on eating attitudes and obesity.

The following sub-objectives were determined:

Sub-objective 1: To investigate the relationship between smartphone addiction and sleep quality.

Sub-objective 2: To investigate the association between smartphone addiction, daily internet use, and eating attitudes.

Based on these objectives, the following hypotheses were formulated:

H1: Higher smartphone addiction is associated with poorer sleep quality.

H2: Higher smartphone addiction is associated with problematic eating attitudes.

H3: Increased daily social media use is associated with problematic eating attitudes.

Material and Methods

Participants, Study Design, and Methodology

We recruited 407 volunteer participants between the ages of 18 and 30 years, who were studying at Akdeniz University Faculty of Medicine, agreed to participate in the study after being informed about the research, and met the inclusion and exclusion criteria. Physical and psychiatric illnesses of participants were assessed through self-report. Participants were asked to disclose their medical history, including any diagnosed conditions, during the data collection process. Sociodemographic Data Form, Smartphone Addiction-Short Form (SAS-SV) (Kwon et al., 2013), Pittsburgh Sleep Quality Index (PSQI) (Agargun, 1996), Eating Attitude Test (EAS) (Garner & Garfinkel, 1979; Savaşır & Erol, 1989) were applied to the participants. In addition, the height and weight of all participants were taken as declarations, and body mass indexes (BMI) were calculated. Ethics committee approval was obtained from the Akdeniz University Faculty of Medicine Clinical Research Ethics Committee (Decision No: KAEK-695, Date: September 13, 2023). The participants were informed about the research and then signed consent was obtained from all participants. The principles of the Declaration of Helsinki were followed throughout all phases of the study.

Inclusion Criteria

- To be between the ages of 18 and 30.
- Using a smartphone for at least the last 6 months.

Exclusion Criteria

- Presence of comorbidity of psychiatric disorders other than depression and anxiety disorders according to DSM-5 (e.g., psychotic disorder, schizoaffective disorder, eating disorder, etc.).
- Presence of severe physical illness (e.g., liver failure, kidney failure, cancer, etc.).
- Infection and infectious disease.
- History of neurological disease.

At the time of the study, nearly 2000 students were enrolled in the medical faculty. However, not all could be reached. A total of 357 students declined participation, and 14 students were excluded due to the predefined exclusion criteria.

The data for this study were collected between September 24, 2023, and December 24, 2023. This study uses a cross-sectional survey model to examine the relationships between smartphone addiction, sleep quality, and eating attitudes among university students (Creswell & Creswell, 2017). Participants were selected using a convenience sampling method, and only those who met the inclusion criteria and did not meet any exclusion criteria were invited to participate. Convenience sampling was used to select participants who were readily accessible and available to participate (Sekaran, 2003). This method was chosen to facilitate the data collection process while focusing on a specific group of participants, i.e., medical faculty students, to ensure a more homogenous sample and reduce potential biases.

Data Collection Tools

Sociodemographic and Clinical Data Form

It is a semi-structured information collection tool developed by the researchers for the study to collect sociodemographic and clinical data. The form contains questions about the participant's age, gender, marital status, grade in medical school, presence of chronic disease, regular medication use, and presence of psychiatric illness.

Smartphone Addiction Scale-Short Form

This scale was developed to detect SA (Kwon et al. 2013). This scale consists of six factors (daily life disturbance, positive expectancy, withdrawal, cyberspace-oriented relationship, overuse, and tolerance from the original version of the SA scale), each with ten items and ratings based on a six-item Likert scale. The cut-off values are 33 for women and 31 for men. A higher score

corresponds to a greater likelihood of SA, whereas a lower score indicates a decreased likelihood. In this study, the reliability of the scale was reassessed, and Cronbach's alpha was found to be 0.870, supporting its previously established validity and reliability (Noyan et al., 2015).

Pittsburgh Sleep Quality Index

Buysse et al. developed this index in 1989. It consists of seven parts (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction) with scores from 19 items. Those with a total score of five or below were considered good sleepers; higher scores indicated poorer quality sleep. Although previous studies reported a Cronbach's alpha of 0.870, in the present study, the reliability analysis yielded a Cronbach's alpha of 0.653 for 25 items, indicating a moderate level of internal consistency. (Buysse et al., 1989; Agargun, 1996).

Eating Attitudes Test

It was developed in 1979. The Turkish validity and reliability study was conducted by Savaşır and Erol. The scale consists of six items in a 4-point Likert type. A maximum of three points can be obtained from each question on the scale (120 points in total). Thirty was shown to be the cut-off threshold for eating attitude disorder. In the present study, Cronbach's alpha was found to be 0.872 for 40 items, indicating a high level of internal consistency (Garner & Garfinkel, 1979; Savaşır & Erol, 1989).

Body Mass Index

Body mass divided by the square of the height.

Statistical Analysis

Data were analyzed using IBM SPSS 25 (IBM SPSS Corp.; Armonk, NY, USA). The compatibility of continuous variables with normal distribution was examined by the Kolmogorov-Smirnov test. (– . Categorical variables in the study were presented as frequency (n) and percentage (%), and continuous variables were presented as mean ± standard deviation, median (interquartile range [IQR], 25th – 75th percentile), and minimum – maximum values. In the correlation analysis between continuous variables, Spearman Rho correlation analysis was used because the data were not normally distributed. In independent two-group analyses, Independent Samples *t*-test was used for normally distributed data and Mann – Whitney *U* Test was used for non-normally distributed data. Pearson Chi-Square Test, Fisher Freeman Halton Exact Test, Post Hoc Bonferroni correction, and Yates correction were used in the analysis of independent categorical variables. Logistic regression analysis was performed to determine the independent risk factors associated with SA. The results are presented with odds ratio (OR) and 95% CIs. The statistical significance level was accepted as 0.05.

Results

The participants' mean age was 21.15 ± 2.17 years (min: 18 to max: 29). Because of SAS-SV scale-specific scoring, 45.9% (*n* = 187) of the patients were found to have SA. According to the PSQI score, 32.9% (*n* = 134) of the participants had sleep problems. According to the EAS scale, 8.8% (*n* = 36) of the participants were characterized as having a disordered eating attitude. Other sociodemographic data are summarized in Table 1.

Table 1.
Sociodemographic and Clinical Characteristics of All Participants

		***n* (407)**	**%**
Gender	Woman	203	49.9
	Male	204	50.1
Marital status	Single	404	99.3
	Married	2	0.5
	Divorced	1	0.2
Classroom	1	89	21.9
	2	70	17.2
	3	70	17.2
	4	44	10.8
	5	73	17.9
	6	61	15.0
Chronic physical illness	Yes	47	11.5
	No	360	88.5
Psychiatric illness (depression and anxiety)	Yes	50	12.3
	No	357	87.7
Regular use of medication	Yes	82	20.1
	No	325	79.9
Body mass index (BMI) category	Underweight	31	7.6
	Normal	262	64.4
	Overweight	84	20.6
	Obese	30	7.4
Most frequently used social media application	Instagram	250	61.4
	X (Twitter)	88	21.6
	TikTok	19	4.7
	Other	50	12.3
Age (years) (Median) (IQR) (min-max)	21 (19 – 23) (18 – 29)		
Height (cm) (Median) (IQR) (min-max)	171 (165 – 179) (147 – 198)		
Weight (kg) (Median) (IQR) (min-max)	65 (57 – 80) (41 – 130)		
BMI (kg/m²) (Median) (IQR) (min-max)	22.69 (20.31 – 25.56) (15.24 – 39.68)		
Smartphone Addiction Scale (Median) (IQR) (min-max)	30 (23 – 38) (11 – 60)		
Eating Attitude Scale (Median) (IQR) (min-max)	11 (7 – 19) (0 – 83)		
Pittsburgh Sleep Quality Index (Median) (IQR) (min-max)	4 (3 – 6) (0 – 16)		
Daily internet use (hours) (Median) (IQR) (min-max)	4 (3 – 6) (1 – 12)		
Daily smartphone use (hours) (Median) (IQR) (min-max)	4 (3 – 6) (1 – 14)		
Daily social media use (hours) (Median) (IQR) (min-max)	3 (2 – 4) (0 – 13)		

Table 2.
Comparison of Participants with and without Smartphone Addiction

		Participants without Smartphone Addiction (*n* = 220)		Participants with Smartphone Addiction (*n* = 187)		
		n	**%**	***N***	**%**	***p***
Gender	Woman	110	50.0	93	49.7	0.957*
	Male	110	50.0	94	50.3	
Chronic physical illness	Yes	32	14.5	15	8.0	0.058*
	No	188	85.5	172	92.0	
Psychiatric illness	Yes	20	9.1	30	16.0	**0.033***
	No	200	90.9	157	84.0	
Sleep disturbance	Yes	58	26.4	76	40.6	**0.002***
	No	162	73.6	111	59.4	
Eating Behavior	Normal	205	93.2	166	88.8	0.165*
	Unhealthy	15	6.8	21	11.2	
Most frequently used social media application	Instagram	153	69.5	97	51.9	**<0.001α**
	X (Twitter)	39	17.7	49	26.2	
	TikTok	4	1.8	15	8.0	
	Other	24	19.9	26	13.9	
Age (years)		21 (19 – 23)		21 (19 – 23)		0.424 µ
BMI (kg/m²)		22.23 (20.28 – 25.59)		23.03 (20.44 – 25.39)		0.290 µ
Smartphone Addiction Scale*		23 (19 – 28)		39 (35 – 43)		**<0.001 µ**
Eating Attitude Scale*		10 (7 – 16)		12 (7 – 21)		0.061 µ
Pittsburgh Sleep Quality Index*		4 (2 – 6)		5 (3 – 7)		**<0.001 µ**
Daily internet use (hours)*		4 (3 – 5)		5 (4 – 6)		**<0.001 µ**
Daily smartphone use (hours)*		4 (3 – 5)		5 (4 – 6)		**<0.001 µ**
Daily social media use (hours)*		2 (1 – 3)		3 (2 – 5)		**<0.001 µ**

µ Mann – Whitney *U* test, *Med* (IQR)-. Bold values indicate statistically significant results (p < 0.05).
*Pearson Ki-Kare test, Yates Correction, *n* (%).
α Pearson Ki-Kare test, Yates Correction, Post-Hoc Bonferroni Düzeltmesi *n* (%).

The comparison of sociodemographic characteristics of those with and without SA according to the SAS-SV scale is summarized in Table 2.

When participants with and without sleep problems were compared, the average daily internet and smartphone usage times were higher in participants with sleep problems (p < .001 and p = .002, respectively). The proportion of participants with disordered eating behavior in those with sleep problems (14.9%) was significantly higher than the proportion of participants without disordered eating behavior (5.9%) (p = .005).

To examine the relationship between smartphone addiction and sleep quality (H1), a Spearman's rho correlation analysis was conducted. Similarly, to test the hypotheses that daily social media use is correlated with eating attitudes (H2) and that increased daily social media use is associated with problematic eating attitudes (H3), another Spearman's rho correlation analysis was performed. The results are presented in Table 3.

The comparison of participants in terms of preclinical and clinical periods is summarized in Table 4.

Variables that may affect SA were analyzed by logistic regression analysis. According to the results of the analysis, not having a chronic disease increases the likelihood of SA by 1.952 times (OR: 1.952; 95% CI: (1.022 – 3.728); p = .043). Having a psychiatric illness increases the likelihood of SA by 1.911 times (OR: 1.911; 95% CI: (1.045 – 3.493); p = .035). The likelihood of SA increases 1.251 times (OR: 1.251; 95% CI: (1.140 – 1.372); p < .001) when average daily internet use increases by one unit, 1.475 times (OR: 1.475; 95% CI: (1.305 – 1.668); p < .001), 1.860 times (OR: 1.860; 95% CI: (1.581 – 2.188); p <.001) when daily social media use increases by one unit, 1.113 times (OR: 1.113; 95% CI: (1.041 – 1.191); p = .002) and 1.022 times (OR: 1.022; 95% CI: (1.005 – 1.040); p < .001) when the EAS scale increases by one unit.

Discussion

In recent years, SA has emerged as an extremely common problem among young people. Different rates are reported in studies conducted in different countries regarding SA. For example, rates such as 44% in India and 38.9% in the United Kingdom have been reported (Davey & Davey 2014; Sohn et al., 2021). Smartphone addiction is also extremely high in Türkiye. Overall, 42.4% of 771

Table 3.
Correlation between Age, Duration of Daily Use and Scale Scores

Spearman's rho		Age	Daily Internet	Everday Smartphone	Daily Social Media	Smartphone Addiction Scale	Sleep Quality Scale	Eating Attitude Scale
Age	r	1						
Daily internet	r	0.005	1					
Everday smartphone	r	−0.108*	0.486**	1				
Daily social media	r	−0.123*	0.367**	0.629**	1			
Smartphone Addiction Scale	r	0.042	0.310**	0.402**	0.481**	1		
Sleep Quality Scale	r	−0.037	0.181**	0.145**	0.072	0.198**	1	
Eating Attitude Scale	r	−0.071	0.01	0.107*	0.046	0.145**	0.238**	1

*Correlation is significant at 0.05 level. Bold values indicate statistically significant results (p < 0.05).
**Correlation is significant at 0.01 level.

Turkish college students were found to be affected by SA in a research (Uzunçakmak et al., 2022). In this study, 45.9% of the participants were found to have SA because of SAS-SV-specific scoring. It is possible to argue that the high rate of young individuals in the sample—whose median age was 21—was a result of their dependency ratio.

Indeed, SA is reported to be an important problem, especially in the young population (Zhong et al., 2022). There may be many reasons for SA in young people. Depression, anxiety, insomnia, and lack of social support seem to be associated with SA (Aker et al., 2017). Therefore, SA is an important problem that needs to be addressed in a multidimensional way. The fact that almost half of the participants in the study had SA can be interpreted as a significant proportion of young people in the country are faced with SA. It is believed that urgent preventive public health interventions are necessary for this behavioral addiction.

Table 4.
Comparison of Preclinical (First, Second and Third Year Students) and Clinical Years (Fourth, Fifth and Final Year Students)

	Education Periods		
Variables (n = 407)	**Preclinical (n = 229)**	**Clinical (n = 178)**	***p***
Smartphone Addiction Scale *	30.6±9.96	30.66±10.17	0.957 α
Sleep Quality Scale **	4 (3 – 7)	4 (2 – 6)	**0.009µ**
Eating Attitude Scale **	12 (7 – 19)	10 (6 – 18)	**0,036µ**
Smartphone Addiction Status			0.875*
No dependency	123 (53.7)	97 (54.5)	
Dependency	106 (46.3)	81 (45.5)	
Sleep Problem Status			0.160*
No Sleep Problems	147 (64.2)	126 (70.8)	
Sleep Problems	82 (35.8)	52 (29.2)	
Eating Behavior			0.931*
Normal	208 (90.8)	163 (91.6)	
Unhealty eating attitude	21 (9.2)	15 (8.4)	

µ Mann – Whitney U test, *Med* (IQR)-. Bold values indicate statistically significant results (p < 0.05).
*Pearson Ki-Kare test, Yates Correction, n (%).
α Independent Samples t-test, Ort ± Standard deviation.

One of the study's key findings is that 32.9% of the participants had sleep problems, and the presence of sleep problems was significantly higher in people with SA than in people without SA. This research revealed a link between SA and sleep disturbance. It is well known that sleep disorders and SA are related. A study of 761 medical students reported significant associations between SA and poor sleep quality (Nikolic et al., 2023). Strong associations between the PDQI score and the SA scale were discovered in a different study involving 420 dental students, suggesting that poorer sleep quality corresponds with higher levels of SA (Sanusi et al., 2022). In a study conducted in the United Kingdom with 1043 participants aged 18 – 30 years, sleep quality was found to be worse in those with SA compared to those without, and SA was associated with poor sleep (Sohn et al., 2021). In particular, it has been reported that smartphone use near the onset of sleep may delay the circadian rhythm and therefore affect total sleep time and sleep quality (Lin et al., 2019). In patients presenting to outpatient clinics with sleep disorders, SA should be questioned in addition to diseases such as depression and anxiety. It is also reported in the literature that SA is associated with spending too much time on the smartphone and with diseases such as depression (Nikolic et al., 2023). There are relationships between SA and mental health. In one study, 574 medical students were evaluated and it was found that for every unit increase in SA, there was an increase in levels of neuroticism, stress, anxiety, and depression (Lei et al., 2020). This study revealed a correlation between SA and psychiatric illnesses such as anxiety and depression. Therefore, it should be kept in mind that the patient may have SA in addition to diseases such as depression and anxiety. In this study, the amount of time spent using a smartphone was found to be associated with SA. Therefore, it is thought that keeping young people away from smartphones as much as possible and directing them to sports and cultural activities instead of spending time on smartphones may be protective.

Additionally, there may be a connection between eating habits and the usage of smartphones, according to reports. It has been found that SA causes changes in eating behavior and SA may be a precursor of eating disorders. In a study conducted in Korea, 63.4% of the 372 students who participated in the evaluation ate snacks while watching television, using a computer, or using a smartphone, and 48.1% of the participants ate snacks while using a smartphone. In both cases, smartphone overexposure (≥2 hours per day) was the most common. Additionally, it was found that a greater proportion of participants in the group overexposed to smartphones spent more money on snacks, preferred fast food, ice cream, and fizzy drinks. The group that was overexposed also had higher intakes of cookies, ice cream, and fizzy beverages. As a result, it was shown that longer smartphone use was associated with less desirable snack preferences/consumption and other dietary behaviors in students (Kim & Pae, 2017). In a different study, the three categories of danger, potential, and general SA were applied to eighty teenage smartphone addicts. The subjects' food habits and way of life were then examined and the mineral content of their hair assessed. Fast food consumption and twice-daily snacking were comparatively higher in the danger group, and a higher SA was linked to a lower average weekly sleep duration. All subjects had higher concentrations of lead and lower-than-average concentrations of selenium in their hair mineral analyses. Furthermore, of the three groups, the aluminum levels in the hazard group were the highest and exceeded the normal range. An association between excessive smartphone use and eating habits was discovered (Lim & Kim, 2018). In another study conducted with university students in Korea, negative eating behaviors such as frequent skipping of breakfast, irregular eating, preference for processed foods, overeating, and skipping meals were reported by frequent smartphone users (Lim et al., 2016). It has also been reported that both smartphone and internet addiction and disordered eating behavior have a positive and significant relationship with overweight (Tayhan Kartal & Yabancı Ayhan, 2021). In a study conducted in the country, 325 students were evaluated. Based on the regression analysis performed to determine the predictors of being overweight, it was found that being addicted to smartphones increased the risk of having a weight problem by two times (Coban, 2021). Akıncı et al. examined 90 obese men aged 18 – 45 years who were monitored for obesity to investigate SA's impact on sleep quality and BMI values. It was shown that BMI values were higher in patients with higher SA scores, and poor sleep quality and SA affected BMI in obese individuals (Akıncı et al., 2023). According to the Eating Attitude Test, which is another scale included in the study, the rate of participants who were characterized as having a disordered eating attitude was 8.8%. In the regression analysis, SA is linked to a poor eating attitude. The findings align with previous research in the field. It is thought that being addicted to smartphones may cause behaviors such as skipping meals, eating quickly, and snacking. This is because people may not want to waste time on regular meals in order to return to activities on their phones as soon as possible. Therefore, individuals with SA should be evaluated for eating behaviors. In this study, no relationship was found between BMI and SA. This finding might be explained by the fact that the study's sample was young and obesity is uncommon in this age range.

Limitations and Directions for Future Research

The fact that it is one of the limited number of studies evaluating the relationship between SA and sleep, eating behavior, and obesity together can be considered a strength of this study. However, the results should be evaluated by considering some limitations. The fact that the study was single-center and cross-sectional creates a limitation to generalize the findings obtained for the entire population with SA. The fact that the scales used are self-report scales can be considered a limitation, as a limitation to reveal the possibility that the participants' answers to the questions may be influenced by social norms or affected by memory problems. The lack of a control group and the lack of an unstructured psychiatric interview are among the limitations of the study. Power analysis was not conducted for the sample size, as the study initially aimed to reach all medical faculty students. However, not all students could be included, which may have impacted the representativeness of the sample. It can be said that almost half of young people are at risk of SA, and those with SA have worse sleep quality. Factors associated with SA are the absence of chronic physical illness, the presence of psychiatric illness, poor sleep quality, poor eating attitude, average daily smartphone, internet and social media usage time. However, it can be concluded that there is no relationship between obesity and SA. Smartphone addiction has become a public health problem, and urgent measures should be taken. Future studies should include larger and more diverse samples to increase the generalizability of findings. Additionally, structured psychiatric interviews and objective sleep assessments (e.g., polysomnography or actigraphy) should be used to obtain more reliable data. Studies with control groups should be conducted to better differentiate the effects of smartphone addiction. Furthermore, longitudinal studies are needed to determine causal relationships between smartphone addiction, sleep quality, and eating behaviors. Although no direct relationship between smartphone addiction and obesity was found in this study, future research could explore the potential long-term metabolic effects of excessive smartphone use, including sedentary behavior and changes in dietary habits.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethics Committee Approval: The study was approved by the Akdeniz University Faculty of Medicine Clinical Research Ethics Committee (September 13, 2023 - Decision No: KAEK-695). This study was conducted in accordance with the Declaration of Helsinki.

Informed Consent: Written informed consent was obtained from the patients/patient who agreed to take part in the study.

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Genişletilmiş Özet

Akıllı Telefon Bağımlılığının Uyku Kalitesi, Yeme Tutumları ve Obezite ile İlişkisi

Giriş

Son yıllarda akıllı telefon kullanıcılarının sayısı katlanarak artmış ve akıllı telefonlar yaşamımızın önemli bir parçası haline gelmiştir. Akıllı telefonların yaygın kullanımı hayatımıza birçok kolaylık getirmiş olsa da bu cihazların aşırı kullanımından kaynaklanan sorunlar da göz ardı edilemez. Aşırı kullanım bağımlılık seviyesine ulaşabilir. Literatürde akıllı telefon bağımlılığı, birçok sorunla ilişkilendirilmektedir. Bunların en önemlilerinden biri uyku bozukluklarıdır. Akıllı telefon bağımlılığı ile uyku bozuklukları arasında bir ilişki vardır. Bir diğer sorun ise yeme bozukluklarıdır. Akıllı telefon bağımlılığı yeme bozuklukları, yeme alışkanlıkları ve yaşam tarzı ile önemli ölçüde ilişkilidir. Problemli akıllı telefon kullanımının çocuk ve ergenlerde obezite ile ilişkili olabileceği de vurgulanmaktadır.

Tüm bu literatür ışığında akıllı telefon bağımlılığının araştırılması gereken önemli bir halk sağlığı sorunu olduğunu söyleyebiliriz. Bu çalışmada, üniversite öğrencilerinde akıllı telefon bağımlılığı oranının belirlenmesi ve akıllı telefon bağımlılığı ile uyku, yeme tutumu ve obezite arasındaki ilişkilerin ortaya konulması amaçlanmıştır.

Yöntem

Katılımcılar ve Örneklem Seçimi

Tıp Fakültesi'nde öğrenim gören, araştırma hakkında bilgilendirildikten sonra araştırmaya gönüllü olan, çalışmaya dahil edilme kriterlerini karşılayan 18-30 yaş arası 407 katılımcı çalışmaya alınmıştır. Katılımcılara Sosyodemografik Veri Formu, Akıllı Telefon Bağımlılığı-Kısa Formu (AKB-KF), Pittsburgh Uyku Kalitesi İndeksi (PUKİ), Yeme Tutum Testi (YTT) uygulanmıştır. Ayrıca tüm katılımcıların boy ve kiloları beyan olarak alınmış ve beden kitle indeksleri hesaplanmıştır.

İstatistiksel Analiz

Veriler SPSS 25 ile değerlendirilmiştir. Sürekli değişkenlerin normallik analizleri için Kolmogorov-Smirnov testi kullanılmıştır. Veriler normal dağılmadığı için Spearman Rho korelasyon analizi kullanılmıştır. Bağımsız iki gruplu analizlerde normal dağılan veriler için Independent Samples t-test, normal dağılmayan veriler için Mann Whitney U Test kullanılmıştır. Bağımsız kategorik değişkenlerin analizinde Pearson Ki-Kare Testi, Fisher Freeman Halton Exact Test, Post Hoc Bonferroni düzeltmesi ve Yates düzeltmesi kullanılmıştır. Akıllı telefon bağımlılığı ile ilişkili bağımsız risk faktörlerini belirlemek için lojistik regresyon analizi yapılmıştır.

Bulgular

Çalışmaya dahil edilen katılımcıların yaşı 18 ila 29 arasında ve ortalama yaş 21.15 ± 2.17 yıldı. AKB-KF ölçeğine özgü puanlama nedeniyle, hastaların %45,9'unun ($n = 187$) akıllı telefon bağımlılığı olduğu tespit edilmiştir. PUKİ skoruna göre katılımcıların %32,9'unun ($n = 134$) uyku problemi yaşadığı görülmüştür. YTT ölçeğine göre, katılımcıların %8,8'i ($n = 36$) düzensiz yeme tutumuna sahip olarak nitelendirilmiştir

Uyku sorunu olan ve olmayan katılımcılar karşılaştırıldığında, uyku sorunu olan katılımcıların günlük ortalama internet ve akıllı telefon kullanım süreleri daha yüksektir (sırasıyla $p < 0{,}001$ ve $p = 0{,}002$). Uyku sorunu olan katılımcılarda düzensiz yeme davranışı olanların oranı (%14,9), düzensiz yeme davranışı olmayan katılımcıların oranından (%5,9) anlamlı derecede yüksektir ($p = 0{,}005$).

Tartışma

Son yıllarda akıllı telefon bağımlılığı gençler arasında son derece yaygın bir sorun olarak ortaya çıkmıştır. Bizim çalışmamızda da AKB-KF 'ye özgü puanlama sonucunda katılımcıların %45,9'unda akıllı telefon bağımlılığı tespit edilmiştir. Çalışmamızdaki katılımcıların yaş ortalaması 21'dir ve örneklemimizin gençlerden oluşmasının bu yüksek orana neden olduğu düşünülebilir. Çalışmamızdaki katılımcıların neredeyse yarısının akıllı telefon bağımlılığına sahip olması, ülkemizdeki gençlerin önemli bir kısmının akıllı telefon bağımlılığı ile karşı karşıya olduğu şeklinde yorumlanabilir. Akıllı telefon bağımlılığı gibi davranışsal bağımlılıklar için acil önleyici halk sağlığı müdahalelerinin gerekli olduğuna inanıyoruz.

Çalışmamızın bir diğer önemli bulgusu ise katılımcıların %32,9'unun uyku problemi yaşaması ve akıllı telefon bağımlılığı olan kişilerde uyku problemi varlığının akıllı telefon bağımlılığı olmayan kişilere göre anlamlı derecede yüksek olmasıdır. Çalışmamızda akıllı telefon bağımlılığının uyku bozukluğu ile ilişkili olduğu bulunmuştur. Uyku bozukluğu ile polikliniklere başvuran hastalarda depresyon ve anksiyete gibi hastalıkların yanı sıra akıllı telefon bağımlılığı da sorgulanmalıdır.

Akıllı telefon bağımlılığı ile ruh sağlığı arasında ilişkiler vardır. Çalışmamızda akıllı telefon bağımlılığının depresyon ve anksiyete gibi psikiyatrik bir hastalığa sahip olmakla ilişkili olduğu bulunmuştur. Dolayısıyla hastanın depresyon ve anksiyete gibi hastalıklarına akıllı telefon bağımlılığının da eşlik edebileceği akılda tutulmalıdır. Çalışmamızda akıllı telefon kullanım süresi akıllı telefon bağımlılığı ile ilişkili bulunmuştur. Bu nedenle gençleri akıllı telefonlardan mümkün olduğunca uzak tutmanın ve akıllı telefonlarda vakit geçirmek yerine sportif ve kültürel faaliyetlere yönlendirmenin koruyucu olabileceğini düşünüyoruz.

Çalışmamızda yer alan bir diğer ölçek olan YTT-40 ölçeğine göre düzensiz yeme tutumuna sahip olarak nitelendirilen katılımcıların oranı %8,8'dir. Regresyon analizinde, kötü yeme tutumunun akıllı telefon bağımlılığı ile ilişkili olduğu bulunmuştur. Bu sonuç literatürle tutarlıdır. Akıllı telefon bağımlısı olmanın öğün atlama, hızlı yeme ve atıştırma gibi davranışlara neden olabileceğini düşünüyoruz. Çünkü insanlar bir an önce telefondaki aktivitelere dönmek için düzenli öğünlerle vakit kaybetmek istemeyebilir. Bu nedenle akıllı telefon bağımlılığı olan bireylerin yeme davranışları değerlendirilmelidir. Çalışmamızda VKİ ile akıllı telefon bağımlılığı arasında bir ilişki bulunmamıştır. Bu sonuç, çalışmamızdaki örneklemin genç bir nüfustan oluşması ve bu yaş grubunda obezitenin yaygın olmamasıyla ilişkili olabilir.

Gençlerin neredeyse yarısının akıllı telefon bağımlılığı riski altında olduğunu ve akıllı telefon bağımlılığı olanların uyku kalitesinin daha kötü olduğunu söyleyebiliriz. Akıllı telefon bağımlılığı ile ilişkili faktörler; kronik fiziksel hastalığın olmaması, psikiyatrik hastalığın varlığı, kötü uyku kalitesi, kötü yeme tutumu, günlük ortalama akıllı telefon, internet ve sosyal medya kullanım süresidir. Ancak obezite ile akıllı telefon bağımlılığı arasında bir ilişki olmadığı sonucuna varabiliriz. Akıllı telefon bağımlılığı bir halk sağlığı sorunu haline gelmiştir ve acil önlemler alınmalıdır.

Anahtar Kelimeler: Akıllı telefon bağımlılığı, sosyal medya, uyku bozukluğu, yeme bozukluğu, obezite