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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

Problematic Smartphone Use, Depression, Loneliness, and Perceived Social Support: A Study of Moderated Mediation Model

Problemli Akıllı Telefon Kullanımı, Depresyon, Yalnızlık ve Algılanan Sosyal Destek: Düzenlenmiş Aracılık Modeli Üzerine Bir Çalışma

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Abstract

Problematic smartphone use is a contemporary issue that reduces individuals physical, emotional, and social functioning. Therefore, identifying factors related to problematic smartphone use is of significant importance. The aim of this study is to examine the mediating role of loneliness in the relationship between problematic smartphone use and depression. Additionally, the moderating role of perceived social support in the relationship between problematic smartphone use and loneliness is also investigated. The sample of the study consisted of 404 participants aged between 18 and 60 years (M = 31.11, SD = 9.06), including 258 females (63.86%) and 146 males (36.14%) living in Türkiye.

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During the data collection process, the Demographic Information Form, Smartphone Addiction Short Form, UCLA Loneliness Scale, Multidimensional Scale of Perceived Social Support and Beck Depression Scale Short Form were utilized. For data analysis, Model 4 and Model 7 of the PROCESS Macro were employed using the bootstrap method. The analysis results show that loneliness plays a partial mediating role in the relationship between problematic smartphone use and depression. That is, individuals with a high level of problematic smartphone use reported more loneliness and a higher level of depression. In addition, the findings revealed that perceived social support significantly moderated the relationship between problematic smartphone use and loneliness. The present study contributes to a better understanding of the mechanism underlying the relationship between problematic smartphone use and depression.

Keywords: problematic smartphone use, loneliness, depression, perceived social support

Öz

Problemli akıllı telefon kullanımı, bireylerin fiziksel, duygusal ve sosyal işlevselliğini azaltan güncel bir problemdir. Bu nedenle problemli akıllı telefon kullanımının ilişkili olduğu faktörlerin belirlenmesi önem taşımaktadır. Mevcut araştırmanın amacı problemli akıllı telefon kullanımı ile depresyon arasındaki ilişkide yalnızlığın aracı rolünü incelemektir. Ayrıca problemli akıllı telefon kullanımı ile yalnızlık arasındaki ilişkide algılanan sosyal desteğin düzenleyici rolü de incelenecektir. Araştırmanın örneklemi Türkiye'de yaşayan 18-60 yaş aralığında (M = 31.11 yıl, SD = 9.06), 258'i (%63.86) kadın, 146'sı (%36.14) erkek olmak üzere toplam 404 kişiden oluşmaktadır. Veri toplama sürecinde Demografik Bilgi Formu, Akıllı Telefon Bağımlılığı Kısa Formu, UCLA Yalnızlık Ölçeği, Çok Boyutlu Algılanan Sosyal Destek Ölçeği ve Kısa Beck Depresyon Envanterinden faydalanılmıştır. Verilerin analizinde bootstrap yöntemiyle PROCESS Makrosunda Model 4 ve Model 7 kullanılmıştır. Analiz sonuçları, yalnızlığın problemli akıllı telefon kullanımı ile depresyon arasındaki ilişkide kısmi aracı rol oynadığını göstermektedir. Yani, problemli akıllı telefon kullanımı düzeyi yüksek olan bireyler daha fazla yalnızlık ve daha yüksek depresyon düzeyi bildirmiştir. Ayrıca, bulgular algılanan sosyal desteğin problemli akıllı telefon kullanımı ile yalnızlık arasındaki ilişkiyi anlamlı biçimde düzenlediğini ortaya koymuştur. Mevcut araştırma, problemli akıllı telefon kullanımı ile depresyon arasındaki ilişkinin altında yatan mekanizmanın daha iyi anlaşılmasına katkı sağlamaktadır.

Anahtar Kelimeler: problemli akıllı telefon kullanımı, yalnızlık, depresyon, algılanan sosyal destek

INTRODUCTION

Problematic smartphone use (PSU) refers to a repetitive pattern of smartphone use that disrupts daily functioning by negatively affecting productivity, social relationships, and physical and psychological well-being (Liu et al., 2017). Individuals with PSU tend to exhibit behaviors such as constantly carrying their phone with them, thinking about their phone even when not using it, and frequently checking their devices (Mei et al., 2018). According to the Digital 2025 Global Overview Report (We Are Social, 2025), 5.78 billion people, representing 70.5% of the global population, use mobile phones, and this number is expected to reach 6.1 billion by 2030 (Statista, 2025). A meta-analysis on the prevalence of problematic technology use revealed that among different types of addictions, PSU was the most common, with a prevalence rate of 27% (Meng et al., 2022). While smartphones provide benefits to individuals lives, excessive use of smartphones leads to various problems (Demirbağ, 2025). High levels of PSU have been associated with loneliness and anxiety

(Açıkgöz et al., 2022; Gao et al., 2016), sleep problems (Gao et al., 2016), higher stress levels (Sevilgen & Tolan, 2025), and lower mental well-being and relationship satisfaction (Kayis, 2022; Satici, 2022). Researchers in the field of psychology have shown interest in identifying negative psychological factors related to PSU. One of these adverse factors is depression (Geng et al., 2021).

Depression is a prevalent mental health condition characterized by persistent sadness, irritability, or feelings of emptiness, along with a loss of interest or pleasure in activities (American Psychiatric Association, 2013). Globally, the prevalence of depression has been reported as 4% among adult males and 6% among adult females (Institute of Health Metrics and Evaluation, 2021). Previous studies have reported that PSU is related to higher depression levels (Kim et al., 2018). According to the Social Displacement Theory, excessive smartphone use reduces face-to-face interaction time, which is associated with social disconnection and weakened coping skills, which has been associated with a higher likelihood of depression (Bessière et al., 2008). Studies have shown that higher levels of PSU are associated with increased depression severity, both directly (Demirci et al., 2015; Geng et al., 2021) and indirectly through stress (Stankovic et al., 2021). Based on these findings, PSU is considered to be significantly associated with depression. The current study further examines the role of loneliness as a mediator between PSU and depression.

Loneliness as Mediator

Loneliness is defined as a state in which an individuals feels alienated and lacks security and closeness in social relationships (Cramer & Barry, 1999). In other words, loneliness can be described as a situation where an individuals social relationships are inadequate or existing relationships fail to provide the desired level of satisfaction (Peplau & Perlman, 1982). Rapid technological advancements and increased smartphone use have led individuals to become dependent on smartphones, which in turn is associated with increased feelings of loneliness (Mosalanejad et al., 2019). The Digital Goldilocks Hypothesis suggests that excessive use of devices such as smartphones weakens individuals adaptive abilities and leads them to engage in less fulfilling social activities (Przybylski & Weinstein, 2017). At the core of loneliness may lie a deficiency in an individuals adaptive skills. Consequently, high levels of PSU are associated with higher levels of loneliness (Hu & Xiang, 2024). Research indicates that as individuals levels of PSU increase, their feelings of loneliness also rise (Gökçearslan et al., 2021; Sönmez et al., 2021; Su & He, 2024). Loneliness has been shown to be associated with depression, anxiety, and panic disorder (Cacioppo et al., 2015; Creese et al., 2020; Park et al., 2020). Individuals experiencing loneliness are more likely to feel worthless and hopeless, which has been linked to greater vulnerability to depression (Tharayil, 2012). Erzen & Çikrikci (2018), in their meta-analysis, identified loneliness as a significant factor in the onset of depression. Similarly, research indicates that increases in loneliness levels are associated with increases in depression levels (Cacioppo et al., 2006; Özdoğan et al., 2023). Based on this evidence, loneliness is considered to potentially play a mediating role in the relationship between PSU and depression.

Perceived Social Support as Moderator

Perceived Social Support (PSS) refers to an individuals subjective evaluation of their ability to access support from their social network when needed and the adequacy of that support (Procidano & Heller, 1983). Low levels of PSS have been associated with increased feelings of loneliness (Doğan et al., 2011). Studies in the literature have shown that higher levels of PSS are associated with reduced loneliness (Çelik & Konan, 2019; Peng et al., 2022). Goodfellow et al. (2022) demonstrated that communication with close social circles and the availability of supportive individuals serve a moderating function in the relationship between loneliness and well-being. Similarly, Zhang et al. (2023) reported that family support plays a protective role against the negative effects of PSU on loneliness. Consistent with these findings, other studies have also reported a negative association between PSS and PSU (Konan et al., 2018; Zhong et al., 2025). These findings are also consistent with the I-PACE model (Brand et al., 2016; 2019), which posits that problematic technology use develops through the reciprocal interaction among personal predispositions, affective and cognitive responses, and executive functions. In this context, low PSS has been associated with higher negative affect, greater smartphone use, and consequently make them more vulnerable to loneliness. In this context, the present study hypothesizes that the relationship between PSU and loneliness will weaken among individuals with high levels of PSS, whereas this relationship will strengthen among those with low levels of PSS.

Present Study

Due to the conveniences provided by smartphones, individuals tend to become excessively attached to and preoccupied with these devices (Ting & Chan, 2020). Considering the prevalence and consequences of PSU (Gao et al., 2016; Meng et al., 2022), it is important to elucidate the underlying mechanisms linking PSU and depression. Although previous studies have addressed these variables separately, they have rarely been examined together in detail. Moreover, these relationships have been predominantly examined in Western contexts, and studies focusing on adult samples in collectivist cultures such as Türkiye remain limited. To address this gap, the present study aims to contribute to the literature by investigating the social and behavioral mechanisms through which PSU relates to depression. Specifically, the study examines the mediating role of loneliness in the relationship between PSU and depression, and the moderating role of PSS in the relationship between PSU and loneliness. Accordingly, the hypotheses of the study are presented below (*H*):

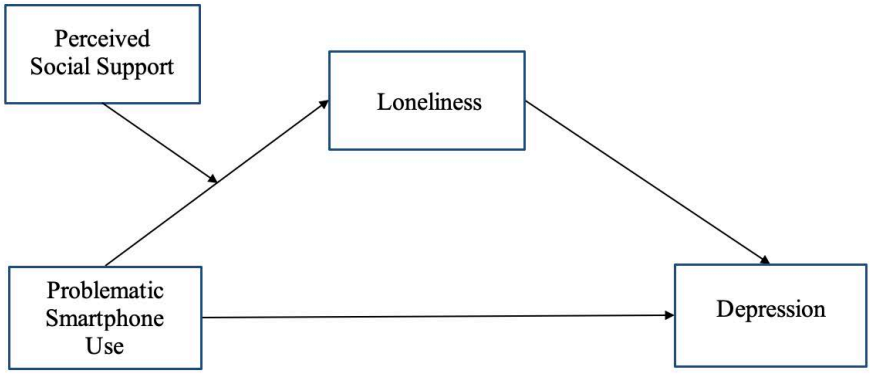
H1: There is a significant positive relationship between PSU and depression.

H2: Loneliness plays a mediating role in the relationship between PSU and depression.

H3: PSS plays a moderating role in the relationship between PSU and loneliness.

Figure 1.

Conceptual model of the hypothesized moderated mediation.



METHOD

Research Model

In this study, a quantitative method was employed to collect data, and a cross-sectional design was adopted to examine the relationships among the variables. While this design allows for the prediction of one variable based on another, it does not permit causal inferences (Gürbüz & Şahin, 2014).

Participants and Procedure

The study included 404 participants, among whom 63.86% (N = 258) were female and 36.14% (N = 146) were male. Participants' ages ranged from 18 to 60 years, with a mean age of 31.11 (SD = 9.06). Convenience sampling was utilized, and data were gathered through Google Forms. Of the sample, 50.99% (N = 216) reported being married, and 59.11% (N = 239) held a bachelor's degree. Detailed demographic characteristics of the sample are summarized in Table 1.

Table 1.

Participants' Characteristics

Variable		Frequency	%
Gender	Female	258	63.86
	Male	146	36.14
Educational status	Primary School	27	6.68
	High School	96	23.76
	Bachelor's Degree	239	59.11
	Master / Ph.D.	42	10.39

Employment Status	Student	98	24.26
	Unemployed	104	25.74
	Public sector employee	119	29.46
	Private sector employee	83	20.54
Perceived socio-economic status	Very poor	9	2.23
	Poor	26	6.44
	Moderate	337	83.32
	Good	29	7.18
	Very good	3	0.74
Marital Status	Single	198	49.01
	Married	206	50.99

Measures

Demographic information form, were assessed using a form developed by the researchers, which encompassed variables including age, gender, marital status, education, employment, and perceived socioeconomic status.

Smartphone Addiction Short Form, the scale was originally created by Kwon et al. (2013), with its Turkish adaptation conducted by Noyan et al. (2015). The brief version includes 10 items, each measured on a 6-point Likert scale. An example item is, "*Even if I don't use it, my smartphone is on my mind.*" The scale is scored by aggregating responses from all items. Higher scores on the scale indicate greater levels of PSU. Noyan et al. (2011) reported a Cronbach's alpha of .87 for the scale in their adaptation study. The present study found the scale to have acceptable reliability, with α = .91 and ω = .91.

UCLA Loneliness Scale, the scale was originally created by Russell et al. (1980), with its Turkish adaptation conducted by Doğan et al. (2011). Consisting of 8 items, the scale includes reverse scoring for items 3 and 6. Total scores are obtained by adding individual item responses, with elevated scores representing increased loneliness. It is designed as a one-factor scale. An example item is, "*I don't have any friends*." Doğan et al. (2011) reported a Cronbach's alpha of .72 for the scale in their adaptation study. The present study found the scale to have acceptable reliability, with α = .82 and ω = .82.

Multidimensional Scale of Perceived Social Support, the scale was originally created by Zimet et al. (1988), with its Turkish adaptation conducted by Eker et al. (2001). The brief version includes 12 items, each measured on a 7-point Likert scale. It consists of three subscales: family, friends, and a significant other. An example item is, "*I can count on my friends when things go wrong.*" The scale is scored by summing all items with elevated scores indicating a higher degree of perceived social support. Eker et al. (2011) reported a Cronbach's alpha of .87 for the scale in their adaptation study. The present study found the scale to have acceptable reliability, with α = .92 and ω = .91.

Short Form of the Beck Depression Inventory, the scale was originally created by Beck et al. (1997), with its Turkish adaptation conducted by Özdemir & Dağdeviren (2014). The brief version includes 7 items, each measured on a 4-point Likert scale. An example item is, "*Suicidal thoughts*

and desire." It is designed as a one-factor scale. A higher score on the inventory denotes a higher degree of depression. Özdemir & Dağdeviren (2014) reported a Cronbach's alpha of .78 for the scale in their adaptation study. The present study found the scale to have acceptable reliability, with α = .84 and ω = .84.

Data Collection Procedure

The data were collected using self-report scales whose validity and reliability had been previously established in earlier studies. A convenience sampling method was employed, and participants were reached online through social media platforms such as Instagram, Facebook, and X (Twitter). Only individuals aged 18 years and older participated in the study on a voluntary basis. Before completing the questionnaires, participants were presented with an informed consent form that included information about the purpose of the study, ethical principles, and confidentiality. Those who provided consent were directed to the data collection form. The data were collected between June and July 2025. No identifying information was requested from participants, and all data were collected anonymously.

Data Analysis

Analyses were conducted using SPSS version 25 and JASP version 0.19.3. The analyses were conducted in four stages. In the first stage, descriptive statistics for the variables were computed, and normality was evaluated through skewness and kurtosis values. Since these values fell between – 2 and +2, the data were considered normally distributed (George & Mallery, 2010). To evaluate the assumption of multicollinearity, tolerance and VIF values were examined. Tolerance values above .20 and VIF values below 10 are considered acceptable (Büyüköztürk, 2018). In the present study, these conditions were met, indicating that the model satisfied the assumption of multicollinearity (VIF = 1.57-4.17, Tolerance = .24-.64). In the second stage, Pearson correlation analysis was performed to examine the relationships between variables. In the third stage, mediation analysis was conducted using Hayes' (2017) PROCESS Macro Model 4, using a sample size of 5000 and a 95% confidence interval employing bias-corrected bootstrap procedures. In the final stage, a moderated mediation analysis was conducted using Hayes' (2017) PROCESS Macro Model 7, with a sample size of 5000 and a 95% confidence interval, employing bias-corrected bootstrap procedures.

RESULTS

Preliminary Analysis

Initially, correlation analyses and descriptive statistics are provided in this section. Subsequently, the findings obtained through the bootstrapping method are presented. The mean scores on the scales were 2.61 (±1.06) for PSU, 1.61 (±.53) for loneliness, 5.05 (±1.34) for PSS, and .65 (±.65) for depression. Additionally, the data showed skewness and kurtosis values within – 2 to +2, confirming the assumption of normality (George & Mallery, 2010). The correlations and reliability coefficients of these variables are shown in Table 2.

Table 2.
Descriptive Statistics and Correlations

	Descriptive Statistics and Reliabilities							Correlations		
Variables	Mean	SD	Skew.	Kurt.	α	ω		1	2	3
1. PSU	2.61	1.06	.30	-.70	.90	.90		-		
2. Loneliness	1.61	.53	1.15	1.23	.82	.82		.41**	-	
3. PSS	5.05	1.34	-.45	-.41	.91	.91		-.23**	-.51**	-
4. Depression	.65	.53	1.26	1.66	.78	.77		.43**	.55**	-.51**

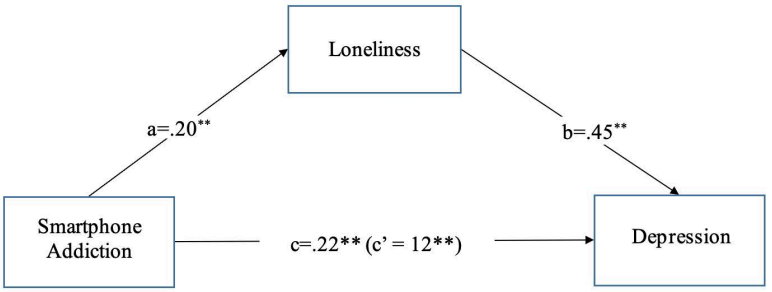
Note. ** $p < .01$. *PSU: problematic smartphone use, PSS: perceived social support, Skew: skewness, Kurt: kurtosis*

As shown in Table 2, PSU was positively correlated with loneliness (r= .41, $p < .01$), and depression ($r = .43$, $p < .01$). PSU was negatively correlated with PSS ($r = – .23$, $p < .01$). Loneliness was negatively correlated with PSS ($r = – .51$, $p < .01$), and was positively correlated with depression ($r = .55$, $p < .01$). Finally, PSS was negatively correlated with depression ($r = – .51$, $p < .01$).

Testing for Mediation Model

An important aim of the study was to examine the mediating role of loneliness in the relationship between PSU and depression. The results of the mediation analyses are presented in Figure 2.

Figure 2.
Bootstrapping Model for Mediation Model.



Note. ** $p < .01$.

When the model was examined, the direct effect path between PSU and loneliness (a) was found to be significant ($\beta = .20$, $SE = .02$, $t = 8.97$, $p < .01$, CI = .16/.25). The direct effect path between loneliness and depression (b) was also found to be significant ($\beta = .45$, $SE = .04$, $t = 10.30$, $p < .01$, CI = .37/.54). The total effect path between PSU and depression (c) was also found to be significant ($\beta = .22$, $SE = .02$, $t = 9.62$, $p < .01$, CI = .17/.26). The direct effect path between PSU and depression (c') was determined to be significant ($\beta = .12$, $SE = .02$, $t = 5.65$, $p < .01$, CI = .08/.17). As a result, loneliness was found to partially mediate the relationship between PSU and depression. The mediation model explained 35.7% of the variance in depression, and the model examined in the study was found to be significant ($F_{(2,401)} = 111.49$, $p < .01$). The findings related to the mediation analysis are presented in Table 3 below.

Table 3.

Bootstrapping Results for Mediation Effects

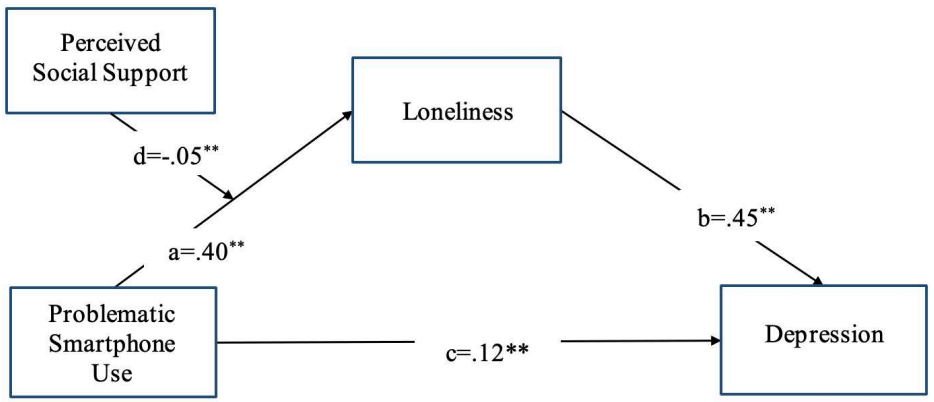
		95% Cl	
	Estimated	Lower	Upper
Direct Effect			
Problematic smartphone use → Loneliness	.20	.16	.25
Problematic smartphone use → Depression	.12	.08	.17
Loneliness → Depression	.45	.37	.65
Indirect Effect			
Problematic smartphone use → Loneliness → Depression	.09	.06	.13
Total Effect			
Problematic smartphone use → Depression	.22	.17	.26

Testing for Moderated Mediation Model

Hayes' (2017) PROCESS Macro Model 7 was used to test the moderating role of PSS in the relationship between PSU and loneliness. According to the analysis results, the direct effect path between PSU and loneliness (a) was found to be significant (β = .40, t = 7.09, p < .01, CI = .26/.55), and the direct effect path between loneliness and depression (b) was found to be significant (β = .45, t = 10.30, p < .01, CI = .37/.54). In addition, the interaction term between PSU and PSS was significantly associated with loneliness (β = – .05, t = – 3.56, p < .01, CI = – .08/-.02). These findings indicate that PSS moderates the relationship between PSU and loneliness. The moderated mediation model explained 35.7% of the variance in depression, and the overall model was significant, F(2, 401) = 111.49, p < .01. The results of the mediation analyses are presented in Figure 3.

Figure 3.

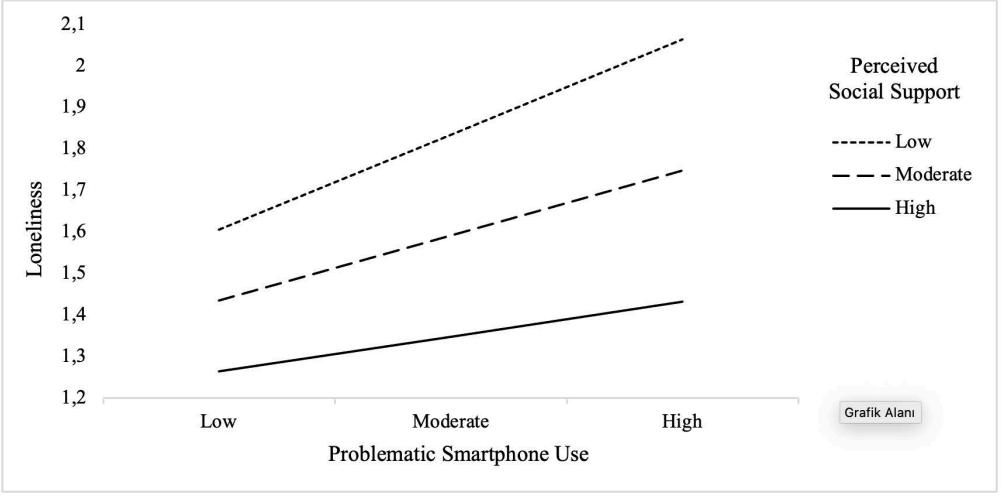
Bootstrapping model for moderation model.



Note. **p < .01.

At low levels of PSS (M – 1SD = 3.65), PSU was significantly positively associated with loneliness (β = .21, SE = .03, t = 7.96, p < .01). At the average level of PSS (M = 5.08), PSU was still positively associated with loneliness (β = .14, SE = .03, t = 7.04, p < .01). At high levels of PSS (M + 1SD = 6.50), the positive association between PSU and loneliness was weaker but still significant (β = .07, SE = .03, t = 2.39, p < .05). Figure 3 presents the statistical findings on the relationship between PSU and loneliness across different levels of PSS.

Figure 4.
The Moderating Role of Perceived Social Support in the Relationship Between Problematic Smartphone Use and Loneliness



DISCUSSION

This study examined the mediating role of loneliness in the relationship between PSU and depression, as well as the moderating role of PSS in the relationship between PSU and loneliness. The first finding of this study indicates a significant positive relationship between PSU and depression (*H1*). In other words, an increase in PSU levels was found to be associated with higher depression levels. According to the Compensatory Internet Use Theory, individuals may use smartphones as a coping mechanism to escape or compensate for interpersonal problems and the negative emotions associated with those problems (Kardefelt-Winther, 2014). However, this behavior is related to addictive behaviors, which have been linked to higher depression levels (Kim et al., 2018). In this context, the results of the current study are in line with prior studies showing that PSU is a significant positive predictor of depression (Gao et al., 2017). This positive relationship between PSU and depression suggests that individuals with PSU may have an increased likelihood of experiencing depression (Geng et al., 2021). Ithnain et al. (2018) found that individuals with high levels of PSU also exhibited high levels of depression. Furthermore, a recent study reported that PSU is a positive predictor of depression (Lai et al., 2025).

The second finding of the present study indicates that loneliness partially mediates the relationship between PSU and depression (*H2*). In other words, an increase in PSU is associated with higher levels of loneliness, which in turn is related to higher levels of depression. Rotondi et al. (2017) stated that smartphones reduce the importance of face-to-face social communication, thereby restricting social interaction. According to the Displacement Hypothesis, time spent in front of screens with devices such as TVs, computers, and smartphones can replace other activities in a person's life (Neuman, 1988). PSU is associated with lower levels of social interaction and the perception of relationships as more superficial, which is also linked to higher levels of loneliness (Su & He, 2024). Shi et al. (2023), in their longitudinal study with university students, found that individuals with high levels of smartphone use reported more depressive symptoms. Another study in the literature has demonstrated a positive relationship between PSU and loneliness, showing that increases in PSU levels lead to heightened feelings of loneliness (Gökçearslan et al., 2021; Su & He, 2024).

Loneliness is one of the significant social determinants of depression (Cacioppo et al., 2009). According to the Unsatisfied Social Needs Model, individuals experiencing loneliness face deficiencies in necessary social relationships or have difficulty maintaining continuous and meaningful connections (Weiss, 1975). This situation hinders individuals ability to fulfill their needs for love and belonging, leading to the emergence of depressive symptoms (Shi et al., 2023). In the present study, an increase in loneliness levels was found to be associated with higher depression levels. In a recent longitudinal study with university students, Wang et al. (2024) demonstrated a positive relationship between high levels of loneliness and increased depression. Wakefield et al. (2020), in their longitudinal research, identified that loneliness was positively associated with depression both concurrently and over time. Another longitudinal study reported that loneliness acts as a strong stressor in the onset of depressive symptoms (Van As et al., 2022). Other studies in the literature have also shown that increases in loneliness levels lead to higher depression levels (Moeller & Seehuus, 2019; Tu & Zhang, 2015). In summary, an increase in loneliness plays a notable role in the elevation of depression levels.

The third finding of the present study indicates that PSS plays a moderating role in the relationship between PSU and loneliness (*H3*). More specifically, as individuals levels of PSS increase, the positive relationship between PSU and loneliness weakens, whereas this positive relationship strengthens when PSS levels decrease. This suggests that PSS moderates the aforementioned relationship. The current framework is consistent with the I-PACE model (Brand et al., 2016; 2019). According to this model, problematic technology use interacts reciprocally with individual predispositions, affective and cognitive responses, and executive functions. In this context, loneliness can be conceptualized as an affective process that interacts with PSU and contributes to psychological outcomes such as depression, whereas PSS can be regarded as a contextual protective factor that moderates this relationship. According to the Buffering Hypothesis, social support functions as a protective factor that alleviates the potential psychological effects of adverse life events (Cohen & Wills, 1985). Consistent with the present findings, previous research has shown that family support, a subdimension of social support, weakens the relationship between loneliness and mobile phone addiction (Zhang et al., 2023) as well as between stress and internet addiction (Hua et al., 2018), indicating its protective role.

Similarly, Tang et al. (2025) reported that among individuals with high levels of PSS, the relationship between loneliness and psychological well-being became insignificant. In line with these findings, Son et al. (2022) also noted that social support moderates the relationship between loneliness and depression. In this context, the moderating role of PSS identified in the present study is consistent with findings reported in the literature.

Limitations

In addition to its contributions to the literature, the present study has several limitations. A primary limitation concerns the use of a convenience sampling method and the focus solely on an adult population. This restricts the generalizability of the findings. To enhance the generalizability, it is recommended that future research replicate the study with different age groups and specific samples. Furthermore, self-report scales were used during the data collection process, which necessitates consideration of potential biases. Lastly, the cross-sectional design limits causal inference.

Implications

The findings obtained from this research offer important implications for both mental health professionals and researchers. The present study revealed that loneliness plays a mediating role in the relationship between PSU and depression. Accordingly, it is crucial that intervention programs conducted by mental health practitioners to prevent depression incorporate strategies to cope with loneliness as well as preventive measures targeting PSU. Furthermore, individual or group psychological counseling interventions aimed at increasing individuals levels of PSS can be developed. Within these interventions, raising awareness about support from family, friends, and significant others can be considered a protective factor in reducing feelings of loneliness. Additionally, organizing seminars to raise awareness about smartphone use is recommended. Including digital and technological literacy topics in these programs may help individuals use technological devices more consciously. For future research, it is suggested to employ longitudinal and experimental research designs to more clearly elucidate the network of relationships among variables.

Conclusion

This study contributes to the literature by examining the relationships among PSU, PSS, loneliness, and depression. The findings of the present study revealed that an increase in PSU levels is positively associated with depression, and that loneliness mediates this relationship. Additionally, high levels of PSS were found to weaken the positive relationship between PSU and loneliness, serving a moderating role in this association. The results provide a comprehensive framework for understanding the relationship between PSU and depression. Moreover, this study contributes to the understanding of the negative outcomes of digital addictions and sheds light on psychosocial factors related to individuals mental health in the digital age.

Data availability: Data are available upon reasonable request.

AI Use for Language and Writing Editing: Artificial intelligence was used for language and writing editing at a rate of 15%.

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Problemli Akıllı Telefon Kullanımı, Depresyon, Yalnızlık ve Algılanan Sosyal Destek: Düzenlenmiş Aracılık Modeli Üzerine Bir Çalışma

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Giriş

Problemli akıllı telefon kullanımı, üretkenlik, sosyal ilişkiler, fiziksel ve psikolojik iyi oluş açısından günlük işlevsel yapının bozulmasına yol açabilen kullanım biçimi olarak tanımlanmaktadır (Liu vd., 2017). Teknoloji bağımlılığının yaygınlığına ilişkin yapılan bir meta-analiz çalışmasında, bağımlılık türleri arasında akıllı telefon bağımlılığının %27 oranla en yaygın bağımlılık türü olduğu ortaya konmuştur (Meng vd., 2022). Bu problemli akıllı telefon kullanımının depresyon ile pozitif ilişkili olduğu belirtilmektedir (Kim vd., 2018). Nitekim Sosyal Yer Değiştirme Kuramı'na göre, akıllı telefonun aşırı kullanımı ile yüz yüze etkileşim süresinin azalması, bireyin sosyal ilişkilerden kopması ve sorunlarla başa çıkma becerisinin zayıflaması birbiriyle ilişkili olup, bu durum daha yüksek depresyon düzeyleriyle bağlantılı bulunmuştur (Bessière vd., 2008).

Yüksek düzeyde problemli akıllı telefon kullanımı, yalnızlık hissinin daha yoğun yaşanmasıyla ilişkili bulunmuştur (Hu & Xiang, 2024). Ayrıca, Erzen ve Çikrikci (2018) tarafından gerçekleştirilen meta-analiz çalışmasında, yalnızlık ile depresyon arasında anlamlı ve pozitif bir ilişki bulunduğu bildirilmiştir. Bu nedenle yalnızlığın problemli akıllı telefon kullanımı ile depresyon arasındaki ilişkide aracı rolü olabileceği düşünülmektedir. Ayrıca yapılan çalışmalar, algılanan sosyal destek düzeyindeki artışın yalnızlık düzeyindeki azalma ile ilişkili olduğunu göstermektedir (Peng vd., 2022). Zhang ve

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meslektaşları (2023), algılanan sosyal desteğin önemli bir kaynağı olan aile desteğinin, problemli akıllı telefon kullanımı ile yalnızlık arasındaki ilişkide düzenleyici bir rol oynadığını göstermiştir. Bu bağlamda, mevcut çalışmada algılanan sosyal desteğin problemli akıllı telefon kullanımı ve yalnızlık arasındaki ilişkide düzenleyici rolü olabileceği düşünülmektedir.

Yöntem

Çalışma 258'i (%63.86) kadın ve 146'sı (%36.14) erkek olmak üzere 404 katılımcı ile gerçekleştirilmiştir. Çalışmada veri toplamak amacıyla Akıllı Telefon Bağımlılığı Ölçeği Kısa Formu (Kwon vd., 2013; Noyan vd., 2015), UCLA Yalnızlık Ölçeği (Doğan vd., 2011; Russell vd., 1980), Çok Boyutlu Algılanan Sosyal Destek Ölçeği (Eker vd., 2001; Zimet vd., 1988) ve Beck Depresyon Envanteri Kısa Formu (Beck vd., 1997; Özdemir & Dağdeviren, 2014) kullanılmıştır. Çalışma başlamadan önce Yıldız Teknik Üniversitesi Etik Kurulundan onay alınmıştır.

Veri analizi aşamasında, değişkenlere ait betimsel istatistikler, çarpıklık ve basıklık değerleri ile güvenirlik katsayıları elde edilmiştir. Ayrıca çoklu doğrusal bağlantı varsayımı da değerlendirilmiştir. Değişkenler arasındaki ilişkilerin incelenmesi için Pearson Korelasyon Analizi uygulanmıştır. Son olarak, aracılık ve moderatör etkilerin değerlendirilmesinde Hayes'in PROCESS Makrosu kullanılmıştır (Model 4 ve Model 7) (Hayes, 2017).

Bulgular

Çalışmadaki değişkenlerin basıklık (-.70 ile 1.66 arasında) ve çarpıklık (-.45 ile 1.26 arasında) değerlerinin – 2 +2 arasında olduğu görülmüş ve normal dağılım gösterdikleri belirlenmiştir (George & Mallery, 2010). Ayrıca, çoklu doğrusal bağlantı varsayımı VIF ve tolerans değerleriyle değerlendirilmiş, kabul edilebilir sınırlar içinde olduğu görülmüştür (VIF = 1.57-4.17, Tolerance = .24-.64). Aracılık analizi sonucunda yalnızlığın akıllı telefon kullanımı ve depresyon arasındaki ilişkide aracı rolü olduğu görülmüştür. Yapılan düzenleyicilik analizi sonucunda ise algılanan sosyal desteğin problemli akıllı telefon kullanımı ve yalnızlık arasındaki ilişkide düzenleyici rolü olduğu belirlenmiştir.

Tartışma

Bu çalışmada, problemli akıllı telefon kullanımı ile depresyon arasındaki ilişkide yalnızlığın aracı rolü ve problemli akıllı telefon kullanımı ile yalnızlık arasındaki ilişkide algılanan sosyal desteğin düzenleyici rolü incelenmiştir. Çalışmanın ilk bulgusu problemli akıllı telefon kullanımı ile depresyonun pozitif yönde ilişkili olduğunu göstermektedir. Mevcut çalışmanın bulguları, problemli akıllı telefon kullanımı ile depresyon arasında pozitif yönde ilişki olduğunu gösteren önceki çalışmalar ile tutarlıdır (Gao vd., 2017; Geng vd., 2021). İkinci bulgusu ise yalnızlığın problemli akıllı telefon kullanımı ve depresyon arasındaki ilişkide aracı rolü olduğunu göstermektedir. Diğer bir ifadeyle, problemli akıllı telefon kullanımı düzeyindeki artış, yalnızlık düzeyinin artışıyla ilişkili bulunmuş, yalnızlıktaki bu artış ise bireylerin daha yüksek depresyon düzeyleri bildirmesiyle bağlantılı olmuştur. Yer Değiştirme Hipotezine (Displacement Hypothesis) göre TV, bilgisayar, akıllı telefon gibi cihazlarla ekran başında geçirilen zaman kişinin yaşamındaki diğer faaliyetlerin yerini

alabilir (Neuman, 1988). Bu doğrultuda, problemli akıllı telefon kullanımı bireylerin mevcut sosyal ağlarından uzaklaşması ve yalnızlık duygularının artmasıyla ilişkili bulunmuştur (Su & He, 2024). Yalnızlığın ise bireylerde daha yüksek depresyon düzeyleriyle ilişkili olduğu bilinmektedir (Wang vd., 2024). Dolayısıyla depresyonun azaltılmasına ya da önlenmesine yönelik yapılacak çalışmalarda yalnızlık ve problemli akıllı telefon kullanımı ele alınabilir.

Çalışmanın son bulgusu problemli akıllı telefon kullanımı ve yalnızlık arasındaki ilişkide algılanan sosyal desteğin düzenleyici rolü olduğunu göstermektedir. Daha açık bir ifadeyle bireylerin algılanan sosyal destek düzeyi arttıkça problemli akıllı telefon kullanımı ile yalnızlık arasındaki pozitif ilişki zayıflamakta, algılanan sosyal destek düzeyi azaldıkça ise problemli akıllı telefon kullanımı ile yalnızlık arasındaki pozitif ilişki güçlenmektedir. Bu bulgu literatürdeki çalışmalarla tutarlıdır (Son vd., 2022; Tang vd., 2025). Tamponlama hipotezi (Buffering Hypothesis) algılanan sosyal desteğin olumsuz durumların oluşturabileceği potansiyel psikolojik zararı azaltan koruyucu bir faktör olduğunu ifade etmektedir (Cohen & Wills, 1985). Bu nedenle, algılanan sosyal destek düzeyini artırmaya ve aile, arkadaş ile özel kişi desteğine dair farkındalığı güçlendirmeye yönelik çalışmalar, yalnızlık duygusunu azaltmada koruyucu bir faktör olarak değerlendirilebilir.