Examining the Relationships between Smartphone Addiction and Psychological Resilience in Adolescents

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Article Info	Abstract
	The aim of this study is to examine the relational relationship between adolescent psychological resilience and smartphone addiction in terms of certain variables. The research was designed within the framework of a quantitative research approach and conducted using a correlational survey model. Research data were collected from 267 students studying in two different provinces in Turkey. The Short Psychological Resilience Scale and the Smartphone Addiction Scale were used as data collection tools in the research. Descriptive analyses, Independent Samples t-Test, and One-Way ANOVA were used in the analysis of the data. The findings showed that adolescents' psychological resilience levels were above average, while their smartphone addiction was relatively high; that boys had higher psychological resilience than girls, but that addiction levels did not differ significantly according to gender. In addition, it was determined that smartphone addiction decreased as the grade level increased, and that psychological resilience negatively and significantly predicted smartphone addiction, explaining 7.8% of the variance in addiction. It is recommended that psychoeducational content aimed at strengthening psychological resilience be systematically integrated into guidance services. It is also recommended to collect data from multiple sources and include contextual variables in the model.

Introduction

During adolescence, the use of digital technology has become central to daily life. The constant accessibility of smartphones and the proliferation of online gaming are accelerating this process; research on problematic smartphone use and its psychological effects is increasing (Karakose et al., 2022). Research on problematic smartphone use and addiction focuses not only on risk factors and psychological outcomes but also on prevention strategies (Yu & Sussman, 2020). Examining smartphone addiction and psychological resilience together is important for understanding risk and protective processes. Psychological resilience is defined as a dynamic resource reflecting adolescents' capacity to adapt to stressors. This construct, associated with processes such as emotion regulation, self-regulation, and goal orientation, is seen as a protective variable that can weaken the effects of problematic behaviors (Chen et al., 2018). Research shows that psychological resilience can be strengthened through physical exercise and social processes; and that it can mediate changes in social anxiety and emotion regulation (Wu et al., 2025). However, differences are observed in the structural relationships between factors such as peer support, gender, and educational level and psychological resilience (Li, et al., 2024). In this context, psychological resilience is important in understanding digital risk behaviors in adolescence.

The likelihood of co-occurrence and common determinants of digital addictions are increasingly discussed in the literature (Baldwin & Nasırcı, 2024). Smartphone addiction is seen to be associated with psychological outcomes, academic burnout, and social problems; it is also considered in relation to variables such as parenting style, psychological control, and self-regulation (Li, et al., 2022; Subramaniam et al., 2024; Yao et al., 2025; Li, & Liu, 2025). However, studies examining the relationship between smartphone addiction and psychological resilience appear to be limited.

Digital Addictions in Adolescents: Smartphone Addiction

Digital addictions are addressed within a framework characterized by loss of control in technology-mediated behaviors, tolerance-like symptoms, and impaired functionality. In this context, problematic smartphone use and internet gaming disorder constitute two prominent sub-areas for adolescents. While the conceptual development of the digital addiction literature is revealed through bibliometric studies (Coşkun, 2025; El-Shihy, 2026; Karakose et al., 2022), it is stated that smartphone addiction can show different levels of severity within the continuum of addictive behaviors (Yu & Sussman, 2020). Risk factors are evaluated together with personality tendencies, family processes, and environmental pressures (Fischer-Grote et al., 2019), and mental health outcomes are systematically examined through classification and taxonomy studies (Lazarotto Schroeder et al., 2023). However, the risk-resilience approach defines digital addictions not only as a risk but also as a multidimensional phenomenon that should be evaluated together with protective processes (Warburton et al., 2022).

Smartphone addiction is considered a specific form of addiction because adolescents conduct communication, entertainment, and academic functions through a single device. Large-scale studies reveal the prevalence of problematic use and its place within the framework of behavioral addiction (Long et al., 2016). Prevalence can

differ according to educational levels (Tai et al., 2025), and risks of bias such as social desirability are raised in self-report-based measurements. Therefore, it is emphasized that problematic use should be evaluated not only in terms of frequency but also in conjunction with the purpose of use, loss of functionality, and psychological adjustment processes. Long et al. (2016) state that smartphone addiction negatively affects individuals' daily life activities, academic performance, and social relationships. Gu and Mao (2023) emphasize that this addiction is particularly common among young adults and may be associated with psychological disorders such as anxiety and depression. Research indicates that the risk of addiction increases with the duration of smartphone use, suggesting that this has become a global public health problem (Li et al., 2022; Subramaniam et al., 2024). Looking at studies on the neurobiological and behavioral mechanisms of smartphone addiction, Tai et al. (2025) state that smartphone addiction is related to the dopaminergic reward system and shares similar neural mechanisms with behavioral addictions. Yao et al. (2025) emphasize that social media applications and instant notification systems play a critical role in addiction development. One of the key factors in this regard is psychological resilience.

The Relationship between Psychological Resilience and Smartphone Addiction

Psychological resilience functions in conjunction with processes such as emotional regulation, cognitive flexibility, and purposefulness. Indeed, it has been noted that variables such as psychological resilience and life purpose can mitigate the negative effects of behavioral disorders (Chen et al., 2018). It has been reported that physical exercise behavior in adolescents is associated with psychological resilience, and this relationship can be explained by chain mediation mechanisms (Li et al., 2024). Furthermore, structural links between peer support and psychological resilience in adolescents may differ according to gender and educational level (Li et al., 2025). It is suggested that adolescents with high levels of psychological resilience may show advantages in emotion regulation and action control (Yu et al., 2025). Psychological resilience is considered a protective resource in various problem behaviors, including technology-based addictions (Dong et al., 2025). Therefore, psychological resilience is considered not only an outcome variable but also a process variable in explaining risky behaviors in adolescence.

In adolescence, psychological resilience is considered in close relation to contextual variables such as family relationships, traumatic experiences, and parenting experiences. The relationship between childhood trauma and internet gaming disorder is being examined, and it is reported that depression can act as a mediator and psychological resilience as a moderator (Liu, et al., 2024). Furthermore, it has been shown that perceived family support can mediate the relationship between anxiety and problematic smartphone use, and this structure has been tested through cross-cultural validation (Long, et al., 2024). Additionally, the relationship between parental psychological control and adolescent smartphone addiction can be explained through reactance and psychological resilience (Li & Liu, 2025). It is also important to note that psychological resilience can play a mitigating role in the context of the relationship between COVID-19 fear and smartphone addiction (Yıldırım and Çiçek, 2022). Indeed, during the pandemic transition period, psychological resilience, along with stress and loneliness, was found to be associated with gaming addiction (Attasara et al., 2025). Therefore, psychological resilience is defined both as a protective buffer in risk conditions and as a target that can be strengthened in intervention programs.

However, the sub-processes that are more decisive in the relationship between psychological resilience and digital addictions do not emerge in the same way in every study. For this reason, it seems necessary to examine psychological resilience in adolescence in a multidimensional way, together with digital behavior patterns.

The relationship between smartphone addiction and psychological resilience is mostly explained by protective-effect and mediation/regulation models. Indeed, the relationship between psychological resilience and mobile phone addiction in adolescents is being examined, and it is reported that coping styles can play a chain mediating role (Ma et al., 2022). However, it is stated that psychological resilience and emotion regulation processes can mediate the relationship between smartphone addiction and psychological well-being (Alkal, 2025). It is stated that self-regulation and psychological resilience play a mediating role in the relationship between smartphone addiction and academic procrastination (Liu, et al., 2026). Mindfulness-based cognitive programs are considered to have the potential to both reduce smartphone addiction and support psychological resilience (Tang et al., 2025). Therefore, when smartphone addiction is considered together with psychological resilience, a more explanatory process model can be established.

Research Objective and Research Questions

The aim of this study is to examine the relational relationship between adolescents' psychological resilience and smartphone addiction in terms of certain variables. In this context, the following questions were addressed in the study:

1) What are the levels of psychological resilience and smartphone addiction among adolescents?
2) Do adolescents' psychological resilience and smartphone addiction differ in relation to gender?
3) Do adolescents' psychological resilience and smartphone addiction differ in relation to grade level?
4) Does adolescents' psychological resilience significantly affect their smartphone addiction?

Method

This research was designed within the framework of a quantitative research approach and conducted using a correlational survey model. A correlational survey model is a descriptive research design that aims to determine the direction and level of the relationship between two or more variables. In this context, the relationships between adolescents' psychological resilience levels and smartphone addiction were examined. In the study, participants' psychological resilience and smartphone addiction levels were obtained through self-report using measurement tools that underwent validity and reliability studies. The obtained data were analyzed using descriptive and inferential statistical analysis techniques; differences and relationships between variables were tested.

Sample

Since the study's population consisted of adolescent participants, high school students, who are clustered within this population, were the focus of the research. In this context, a total of 1305 students were enrolled in the two high schools in Ankara and Mersin where the research was conducted. This study was carried out in 2025 using

an online survey technique. Necessary permissions were obtained for the surveys, and the administrators of the high schools in Ankara and Mersin where the surveys were conducted were informed about the process. In this context, while an attempt was made to reach the entire research population, 267 adolescents participated in the study: 141 from high schools in Ankara and 126 from high schools in Mersin. Of the participating adolescents, 135 were girls and 132 were boys. The participants were between 14 and 18 years old, with an average age of 15.9.

Data Collection Tools

The Brief Psychological Resilience Scale and the Smartphone Addiction Scale were used as data collection tools in the study.

Brief Psychological Resilience Scale (BPRS)

The Short Psychological Resilience Scale (SPSS) was developed to help individuals understand themselves and measure their potential and psychological resilience. The Short Psychological Resilience Scale was used to measure the psychological resilience of teachers. Developed by Smith et al. (2008) and adapted into Turkish by Doğan (2015), with reliability and validity studies conducted, the "Short Psychological Resilience Scale" is included. The scale is a five-point Likert type (5: Completely appropriate, 4: Appropriate, 3: Somewhat appropriate, 2: Not appropriate, 1: Not appropriate at all) and consists of 6 statements and a single dimension. Three negative statements (i2, i4, i6) are reverse-coded. The lowest possible score is 6; the highest is 30. A higher score indicates high psychological resilience. The Cronbach alpha coefficient is 0.79. The corrected item correlation coefficients of the scale items ranged from 0.45 to 0.63 (Doğan, 2015).

Smartphone Addiction Scale

In this study, a 10-item Likert-type scale developed by Kwon et al. (2013) and adapted into Turkish by Noyan et al. (2015) was used to determine the levels of smartphone addiction in adolescents. Exploratory and Confirmatory Factor Analyses performed on the adolescent sample in this study showed that the scale has a unidimensional structure and a high level of validity. Furthermore, the calculated Cronbach's Alpha Coefficient was found to be .91. This finding indicates that the measurement instrument has high reliability in measuring smartphone addiction in adolescents.

Data Analysis

The data obtained in this study were analyzed using the quantitative analysis program "SPSS 26.0". To examine the significance of the scale according to demographic variables and the differences between two independent groups based on arithmetic means, the Independent Samples T-Test was used. Skewness and Kurtosis values were examined to test whether the data conformed to a normal distribution, and the One Sample Kolmogorov-Smirnov Test was performed. The Levene Test was used to determine the homogeneity of variances, and One-Way

ANOVA (Analysis of Variance) was used to determine whether there were differences between three or more groups based on a specific variable. Finally, the Tukey Post Hoc Test was used to examine the significance between groups.

Findings

This section presents the findings obtained in line with the research questions. First, descriptive statistics regarding adolescents' levels of psychological resilience and smartphone addiction are presented. Then, whether these variables differ according to gender and grade level is examined, and finally, the predictive role of psychological resilience on smartphone addiction is tested. The minimum, maximum, mean, and standard deviation values for the descriptive statistics are presented in Table 1.

Table 1. Examination of Adolescents' Psychological Resilience and Smartphone Addiction

	N	Minimum	Maximum	Mean	Std. Deviation
Psychological Resilience	267	1.67	5.00	3.48	0.77
Smartphone Addiction	267	1.11	5.33	3.73	0.56

Table 1 shows descriptive statistics on adolescents' scores on the psychological resilience and smartphone addiction scales. According to the findings, the smartphone addiction scale scores ranged from 1.67 to 5.00, with an average score of 3.48±0.77. On the other hand, the average score on the smartphone addiction scale was calculated as 3.73±0.56. Based on these average values, adolescents' psychological resilience is above average, while their smartphone addiction is at a high level.

As can be seen in Table 2, the mean score on the psychological resilience scale for female adolescents is (M=3.38), while the mean score for male students is (M=3.58). A multivariate t-test was used to analyze whether the differences in mean scores between genders were statistically significant, and it was found that the mean scores differed significantly ($p<0.05$). According to the group means, male adolescents were found to have significantly higher psychological resilience compared to their female peers.

Table 2. Comparison of Psychological Resilience by Gender

	Gender	N	Mean	Std. Deviation	t	p
Psychological	Female	135	3.38	0.72	-2.160	0.032*
Resilience	Male	132	3.58	0.80		

*$p<0.05$

As can be seen in Table 3, the mean score on the smartphone addiction scale for female adolescents is (X=3.79), while the mean score for male students is (X=3.57). The differences in mean scores between genders were analyzed using a multivariate t-test to determine if they were statistically significant, and it was found that the mean scores did not differ significantly ($p<0.05$). Smartphone addiction among female and male adolescents shows a similar distribution.

Table 3. Comparison of smartphone Addiction by Gender

	Gender	N	Mean	Std. Deviation	t	p
Smartphone	Female	135	3.79	0.55	1.757	0.080
Addiction	Male	132	3.67	0.57		

Table 4 shows the results of a comparison of the mean scores on the psychological resilience scale for adolescents based on their grade level. The differences between the mean scores based on grade level were analyzed using an F-test to determine if they were statistically significant. The results showed that the mean scores did not differ significantly (p>0.05). It was observed that adolescents in different grade levels exhibited a similar and equivalent distribution of psychological resilience.

Table 4. Comparison of Psychological Resilience according to Grade Level

	Class Level	N	Mean	Std. Deviation	F	p
Psychological	9	39	3.25	0.71	2.408	0.068
Resilience	10	117	3.46	0.71		
	11	74	3.52	0.82		
	12	37	3.71	0.85		
	Total	267	3.48	0.77		

Table 5 shows the results of a comparison of the average scores on the smartphone addiction scale among adolescents based on their grade level. The differences between the averages based on grade level were analyzed using the F-test to determine if they were statistically significant, and it was found that the averages differed significantly (p<0.05). Further analysis using the Tukey test revealed that adolescents in the ninth and tenth grades had higher levels of smartphone addiction compared to those in the twelfth grade.

Table 5. Comparison of Smartphone Addiction by Grade Level

	Class Level	N	Mean	Std. Deviation	F	p
Smartphone	9	39	3.93	0.54	4.061	0.008**
Addiction	10	117	3.77	0.55		
	11	74	3.68	0.58		
	12	37	3.51	0.48		
	Total	267	3.73	0.56		

**p<0.01

According to Table 6, smartphone addiction is the dependent variable, while psychological resilience is the independent variable. Participants' psychological resilience significantly explains the variation in smartphone addiction (F = 22.524, p < 0.05). There is a significant but negative relationship between psychological resilience and smartphone addiction (β = -0.28; p < 0.05). Furthermore, psychological resilience explains 7.8% of smartphone addiction. Overall, adolescents with high levels of psychological resilience were found to have lower levels of smartphone addiction.

Table 6. Results of a Simple Regression Analysis between Adolescents' Psychological Resilience and Smartphone Addiction

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.444	0.153		28.991	0.000**
Psychological Resilience	-0.204	0.043	-0.280	-4.746	0.000**

Dependent Variable: Smartphone Addiction, R=0.28; R^2=0.078; F=22.524; p<0.05

**p<0.001

Discussion

This study aims to examine the relationships between psychological resilience and smartphone addiction in adolescents, along with demographic variables. The findings show that adolescents generally exhibit above-average psychological resilience, while smartphone addiction appears to be high. The findings suggest that psychological resilience may have a function in reducing smartphone addiction. Significant differences were observed in some demographic characteristics.

Interpretation of the Findings

The study first determined that adolescents generally had above-average levels of psychological resilience. However, it was found that adolescents generally exhibited a high level of smartphone addiction. These two findings indicate that while adolescents interact intensely with digital technology in their daily lives, they also possess certain protective resources. The relatively high level of psychological resilience suggests that adolescents' capacity to cope with stressors has not been completely weakened. However, the high level of smartphone addiction indicates that usage can transform into a risk pattern that impairs functionality. In this context, digital addictions need to be addressed in terms of control difficulties and functional impairment (Yu & Sussman, 2020).

The literature indicates that problematic smartphone use in adolescents is shaped by various risk factors (Fischer-Grote et al., 2019), which is supported by the current findings. Furthermore, it is stated that problematic smartphone use can be classified in relation to mental health areas (Lazarotto Schroeder et al., 2023). The high-level perspective shows that these classifications are also important in adolescent samples. Furthermore, it is reported that problematic use can be widespread in different samples. It is stated that problematic smartphone use in adolescents shows different patterns according to educational levels (Tai et al., 2025). The high-level perspective revealed in the study increases the importance of school-based regulatory mechanisms. The risk and resilience approach emphasizes the importance of digital addictions not only as a pathology but also in conjunction with protective processes (Warburton et al., 2022).

The study revealed that male adolescents had higher levels of psychological resilience than female adolescents.

This finding indicates that gender-related socialization processes can differentiate sources of resilience. The literature indicates that peer support and psychological resilience relationships differ across gender groups (Li et al., 2025), and the current difference appears consistent with this differentiation. However, it is stated that psychological resilience can produce advantages related to emotion regulation and action control (Yu et al., 2025). Gender differences suggest that contextual factors may play a role in the distribution of these advantages.

No significant gender-based differences were found in smartphone addiction levels. This indicates that smartphones are reflected in daily life with similar functions in both girls and boys during adolescence. The literature notes that problematic smartphone use is considered a widespread phenomenon in adolescent groups, and the gender similarity aligns with this trend (Tai et al., 2025). However, it is also suggested that parenting styles may play a differentiating role in digital addiction patterns (Li et al., 2022). The absence of a gender difference in this study suggests that common moderating effects within the family and school contexts may be dominant. Furthermore, it is reported that problematic use can cluster with mental health issues (Poetar et al., 2024), and the lack of a gender difference suggests that risk clustering may have operated independently of gender. In this context, gender differences in psychological resilience are considered a resource difference that does not directly reflect smartphone addiction but can affect adaptation processes. Therefore, content that strengthens resilience resources should be made more visible in intervention programs for adolescent girls. In addition, it seems necessary to plan gender-independent universal prevention components for smartphone addiction.

The study found that psychological resilience did not differ significantly across grade levels. This finding indicates that psychological resilience functions as a relatively balanced resource throughout high school. Psychological resilience is described as a dynamic construct shaped by contextual conditions (Wu, et al., 2025). Similarity across grade levels suggests that the school context can offer a common regulatory framework. The study found that smartphone addiction levels differed across grade levels. The findings indicate that adolescents in the early years of high school had higher levels of smartphone addiction than those in their final year. This suggests that adjustment difficulties and the need to integrate into the social environment in the early years of school can increase digital orientation. The literature states that problematic smartphone use among adolescents can vary across school levels (Tai et al., 2025). However, it is emphasized that mental health literacy is associated with problematic smartphone use (Jeon et al., 2022). It seems likely that awareness and self-regulation skills increase as grade levels progress. In this context, the similarity of psychological resilience across grade levels suggests that addiction differentiation may not be explained solely by the level of resilience. Therefore, it is considered that processes such as school climate, peer relationships, and academic expectations, which vary with grade level, may be more decisive in smartphone addiction. Furthermore, the more intense digital use in earlier grade levels necessitates intensifying school-based prevention efforts, especially at the beginning of high school. In addition, the decrease in addiction levels as grade levels progress suggests that adolescents can develop more functional usage strategies over time.

The research showed that psychological resilience is significantly related to reducing smartphone addiction. This finding indicates that psychological resilience can function as a protective resource against digital risk behaviors. The literature reports the existence of process models explaining the relationships between mobile phone addiction

and psychological resilience (Ma et al., 2022), and that psychological flexibility and emotion regulation can play a mediating role in the relationship between smartphone addiction and psychological well-being (Alkal, 2025). In this context, the mitigating effect of resilience can be explained by self-management and emotion regulation mechanisms. Furthermore, it is stated that psychological resilience plays a moderating role in the relationship between parental psychological control and smartphone addiction (Li & Liu, 2025), and findings in the COVID context also show that resilience can mitigate the risk of addiction (Yıldırım & Çiçek, 2022).

In this context, psychological resilience is considered not only an outcome variable but also a behavioral regulatory process in adolescents' engagement with digital environments. Increased resilience leads to decreased addiction tendencies, indicating more functional self-regulation and emotion management processes. Therefore, integrating content that strengthens resilience into addiction prevention programs within school-based psychological counseling services, and structuring family-school support systems to increase these resources, appears crucial.

Implications of the Findings

The study's findings indicate that smartphone addiction in adolescents is a significant risk area to monitor, and that psychological resilience can play a protective role in mitigating this risk. This suggests that digital addictions should be explained not only in terms of technology use but also in conjunction with psychological adjustment processes. Indeed, it is emphasized that digital addiction research has evolved into a multidimensional framework (Karakose et al., 2022) and that the risk-resilience approach addresses internet-based addictions using a balance model (Warburton et al., 2022). The findings demonstrate that this model is also valid in the context of adolescent smartphone addiction. In the school context, the increased visibility of digital risk behaviors, especially in the early years of high school, necessitates strategically planned timing for preventive guidance applications. The presence of differences in psychological resilience based on gender indicates that protective resources are not equally distributed among groups; therefore, the development of targeted psychoeducational content, particularly for adolescent girls, is important. Conversely, the observation of gender similarities in addiction levels reveals that universal prevention components should be offered to all students. Theoretically, the findings support addressing resilience-based explanations in conjunction with emotion regulation and psychological resilience processes (Alkal, 2025); practically, they demonstrate that mindfulness and meditation-based programs can be designed to integrate with addiction management (Choi et al., 2020; Tang et al., 2025). Furthermore, findings regarding the role of parental control and family processes (Li & Liu, 2025) highlight the importance of family-participatory interventions, while evidence that problematic use can be co-organized at the network level with mental health variables (Li, et al., 2023) points to the necessity of resilience-focused multidimensional interventions. In this respect, the study contributes to approaches that integrate technology-based risks with protective psychological resources in adolescent mental health services.

Limitations

The findings of this study are limited to making definitive causal inferences due to the fact that the data were

collected at a single point in time. Therefore, the change in the relationship between psychological resilience and smartphone addiction over time cannot be directly tracked. The fact that the data were collected using self-report scales may lead to the introduction of biases such as social desirability and response tendencies. In addition, the online data collection process may have differentiating effects on participants' attention and response consistency. The limitation of the sample to specific geographic contexts may limit the generalization of the findings to different regional and cultural contexts. Furthermore, since the types of content used, motivations for use, and application-based patterns of smartphone use are not directly separated, risk profiles cannot be explained in detail. In addition, since grade level differences are not considered together with variables such as school climate and academic pressure, the depth of explanation remains limited. These limitations necessitate a cautious interpretation of the findings, considering contextual and temporal factors, even though they present a strong relationship pattern.

Recommendations

School-based prevention programs aim to raise awareness and develop self-regulation skills related to smartphone addiction. It appears necessary to intensify these programs, particularly during the early years of high school. It is recommended that psychoeducational content aimed at strengthening psychological resilience be systematically integrated into guidance services. Making social support and emotion regulation-focused practices, which increase resilience resources in adolescent girls, more visible seems beneficial. In practices involving family participation, it appears necessary to work on parental attitudes and psychological control processes. It is suggested that mindfulness and meditation-based programs be evaluated through pilot applications in school contexts. Future research should use longitudinal designs to track the direction of the relationship between resilience and addiction over time. Furthermore, measuring usage motivations, application types, and psychosocial stressors together strengthens the explanations of the mechanisms. Moreover, collecting data from multiple sources and including contextual variables in the model increases generalizability.

Conclusion

This study contributes to understanding the relationships between psychological resilience and smartphone addiction in adolescents, along with demographic variables. The findings demonstrate that smartphone addiction remains a significant high-risk area in adolescents. It reveals that psychological resilience can function as a protective resource against this risk area. The findings also show that psychological resilience can differ according to gender and that smartphone addiction can exhibit different patterns depending on grade level. In this context, the study supports the idea that digital risk behaviors should be considered not only in terms of usage intensity but also in conjunction with psychological coping resources. The study provides a theoretical framework for integrating resilience-focused components into school-based prevention programs. Furthermore, the study contributes to the development of targeted intervention designs that take demographic differences into account. Thus, the study fills a gap in the field of adolescent mental health regarding an integrated explanation of the relationship between digital addiction and psychological resilience.

References

Alkal, A. (2025). The role of psychological flexibility and emotion regulation in the relationship between smartphone addiction and psychological wellbeing in adolescents: Three-wave longitudinal serial mediation study. *Health and Quality of Life Outcomes, 23*(1), 89-15. https://doi.org/10.1186/s12955-025-02405-8

Attasara, P., Thaweekoon, T., & Napa, W. (2025). Perceived stress, loneliness, and resilience in relation to game addiction among adolescents in bangkok during the COVID-19 pandemic transition period. *Journal of Child and Adolescent Psychiatric Nursing, 38*(4), e70044. https://doi.org/10.1111/jcap.70044

Baldwin, C. A., & Nasırcı, H. (2024). Technological Advancements and International Organizations in Education: A Comparative Study of China and Myanmar in the Context of Deglobalization. *Anatolian Turkish Journal of Education*, *6*(3), 313-333.

Chen, J. H., Tong, K. K., Wu, A. M. S., Lau, J. T. F., & Zhang, M. X. (2018). The comorbidity of gambling disorder among macao adult residents and the moderating role of resilience and life purpose. *International Journal of Environmental Research and Public Health, 15*(12), 2774. https://doi.org/10.3390/ijerph15122774

Choi, E., Chun, M. Y., Lee, I., Yoo, Y., & Kim, M. (2020). The effect of mind subtraction meditation intervention on smartphone addiction and the psychological wellbeing among adolescents. *International Journal of Environmental Research and Public Health, 17*(9), 3263. https://doi.org/10.3390/ijerph17093263

Coskun, E. (2025). An investigation of the relationship between academic self-efficacy, achievement motivation, and smartphone addiction. *International Journal on Studies in Education, 7*(4), 959-977.

Doğan, T. (2015). Kısa psikolojik sağlamlık ölçeği'nin türkçe uyarlaması: Geçerlik ve güvenirlik çalışması. *The Journal of Happiness ve Well-Being, 1*(3), 93-102.

Dong, F., Bu, Z., Jiang, S., Liu, Y., Lin, J., Li, J., Li, J., & Liu, Y. (2025). Cross-lagged panel relationship between physical activity atmosphere, psychological resilience and mobile phone addiction on college students. *Scientific Reports, 15*(1), 16599-10. https://doi.org/10.1038/s41598-025-97848-w

El-Shihy, D. (2026). A Mixed-Methods Study of Social Media Addiction in Egyptian Gen Z: Psychological, Educational, and Academic Consequences and Intervention Pathways. *Journal of Research in Social Sciences and Language*, 6(1), 223-247. https://doi.org/10.71514/jssal/2025.226

Fischer-Grote, L., Kothgassner, O. D., & Felnhofer, A. (2019). Risk factors for problematic smartphone use in children and adolescents: A review of existing literature. *Neuropsychiatrie : Klinik, Diagnostik, Therapie Und Rehabilitation : Organ Der Gesellschaft Osterreichischer Nervenarzte Und Psychiater, 33*(4), 179. https://doi.org/10.1007/s40211-019-00319-8

Gu, X., & Mao, E. Z. (2023). The impacts of academic stress on college students' problematic smartphone use and internet gaming disorder under the background of neijuan: Hierarchical regressions with mediational analysis on escape and coping motives. *Frontiers in Psychiatry, 13*, 1032700. https://doi.org/10.3389/fpsyt.2022.1032700

Jeon, M., Lee, M., Yoon, J., & Bhang, S. (2022). Mental health literacy of internet gaming disorder and problematic smartphone use among korean teenagers. *PloS One, 17*(7), e0270988. https://doi.org/10.1371/journal.pone.0270988

Karakose, T., Tülübaş, T., & Papadakis, S. (2022). Revealing the intellectual structure and evolution of digital addiction research: An integrated bibliometric and science mapping approach. *International Journal of Environmental Research and Public Health, 19*(22), 14883. https://doi.org/10.3390/ijerph192214883

Kwon, M., Kim, D., Cho, H., ve Yang, S. (2013). The Smartphone AddictionScale: Development and Validation of a Short Version for Adolescents. *PLoS ONE, 8*(12), 1-2.

Lazarotto Schroeder, G., Heckler, W., Francisco, R., & Barbosa, J. L. V. (2023). Problematic smartphone use on mental health: A systematic mapping study and taxonomy. *Behaviour & Information Technology, 42*(16), 2808-2831. https://doi.org/10.1080/0144929X.2022.2149422

Li, M., Huang, Y., & Sun, M. (2025). Exploring the structural links between peer support, psychological resilience, and exercise adherence in adolescents: A multigroup model across gender and educational stages. *BMC Public Health, 25*(1), 2300-22. https://doi.org/10.1186/s12889-025-23308-9

Li, N., Wang, D., Zhao, X., Li, Z., & Zhang, L. (2024). The association between physical exercise behavior and psychological resilience of teenagers: An examination of the chain mediating effect. *Scientific Reports, 14*(1), 9372-11. https://doi.org/10.1038/s41598-024-60038-1

Li, Q., & Liu, Z. (2025). Parental psychological control and adolescent smartphone addiction: Roles of reactance and resilience. *BMC Psychology, 13*(1), 139-11. https://doi.org/10.1186/s40359-025-02477-7

Li, Y., Mu, W., Xie, X., & Kwok, S. Y. C. L. (2023). Network analysis of internet gaming disorder, problematic social media use, problematic smartphone use, psychological distress, and meaning in life among adolescents. *Digital Health, 9*https://doi.org/10.1177/20552076231158036

Li, Z., Shi, L., & Cai, X. (2022). Smartphone addiction is more harmful to adolescents than internet gaming disorder: Divergence in the impact of parenting styles. *Frontiers in Psychology, 13*, 1044190. https://doi.org/10.3389/fpsyg.2022.1044190

Liu, Q., Ouyang, L., Fan, L., Liao, A., Li, Z., Chen, X., Yuan, L., & He, Y. (2024). Association between childhood trauma and internet gaming disorder: A moderated mediation analysis with depression as a mediator and psychological resilience as a moderator. *BMC Psychiatry, 24*(1), 412-10. https://doi.org/10.1186/s12888-024-05863-4

Liu, Y., Lin, Y., Zhao, S., Wang, F., Yuan, Q., & Tong, Y. (2026). Mobile phone addiction and academic procrastination in adolescents: The serial mediating roles of Self-Regulation and psychological resilience and the moderating role of the Parent-Child relationship. *Brain and Behavior, 16*(1), e71169-n/a. https://doi.org/10.1002/brb3.71169

Long, J., Liu, T., Liao, Y., Qi, C., He, H., Chen, S., & Billieux, J. (2016). Prevalence and correlates of problematic smartphone use in a large random sample of chinese undergraduates. *BMC Psychiatry, 16*(1), 408-408. https://doi.org/10.1186/s12888-016-1083-3

Long, J., Liu, Y., Wang, Y., Pottié, A., Cornil, A., Deleuze, J., Wu, Q., Chen, S., Ma, Y., Wang, Q., Hao, Y., Lu, J., Radu, I., Liu, T., & Billieux, J. (2024). The mediating effects of perceived family support in the relationship between anxiety and problematic smartphone use: A cross-cultural validation. *The Journal of Nervous and Mental Disease, 212*(2), 76. https://doi.org/10.1097/NMD.0000000000001738

Ma, A., Yang, Y., Guo, S., Li, X., Zhang, S., & Chang, H. (2022). Adolescent resilience and mobile phone addiction in henan province of china: Impacts of chain mediating, coping style. *PloS One, 17*(12), e0278182. https://doi.org/10.1371/journal.pone.0278182

Noyan, C. O., Darçın, A. E., Nurmedov, S., Yılmaz, O., ve Dilbaz, N. (2015). Akıllı Telefon Bağımlılığı Ölçeğinin Kısa Formunun üniversite öğrencilerinde Türkçe geçerlilik ve güvenilirlik çalışması. *Anadolu Psikiyatri Dergisi*(16), 73-81.

Poetar, C., Dobrean, A., & Florean, I. S. (2024). Problematic smartphone use and mental health problems: A network analysis of romanian adolescents. *Youth & Society, 56*(6), 1048-1070. https://doi.org/10.1177/0044118X231218295

Smith, B. W., Tooley, E. M., Christopher, P., ve Kay, V. S. (2008). Resilience as the ability to bounce back:Aneglected personal resource?. *Journal of Positive Psychology, 5*, 166-176.

Subramaniam, M., Koh, Y. S., Sambasivam, R., Samari, E., Abdin, E., Jeyagurunathan, A., Tan, B. C. W., Zhang, Y., Ma, S., Chow, W. L., & Chong, S. A. (2024). Problematic smartphone use and mental health outcomes among singapore residents: The health and lifestyle survey. *Asian Journal of Psychiatry, 98*, 104124. https://doi.org/10.1016/j.ajp.2024.104124

Tai, Z., Chen, H., & Li, Y. (2025). Problematic smartphone use among middle school and high school students in china: A cross-sectional survey study. *International Journal of Mental Health and Addiction, 23*(5), 3879-3894. https://doi.org/10.1007/s11469-024-01326-9

Tang, A. C. Y., Lee, R. L., Chan, A. C., Kwan, R. Y. C., & Lee, P. H. (2025). Mindfulness-based cognitive program as a potential intervention for managing smartphone addiction and resilience in adolescents: A pilot evaluation. *Health Psychology & Behavioral Medicine, 13*(1), 2508833. https://doi.org/10.1080/21642850.2025.2508833

Warburton, W. A., Parkes, S., & Sweller, N. (2022). Internet gaming disorder: Evidence for a risk and resilience approach. *International Journal of Environmental Research and Public Health, 19*(9), 5587. https://doi.org/10.3390/ijerph19095587

Wu, J., Shao, Y., Zang, W., & Hu, J. (2025). Is physical exercise associated with reduced adolescent social anxiety mediated by psychological resilience?: Evidence from a longitudinal multi-wave study in china. *Child and Adolescent Psychiatry and Mental Health, 19*(1), 17-15. https://doi.org/10.1186/s13034-025-00867-8

Yao, W., Hou, H., Yang, P., & Ni, S. (2025). The co-occurrence of adolescent smartphone addiction and academic burnout: The role of smartphone stress and digital flourishing. *Education and Information Technologies, 30*(4), 4987-5007. https://doi.org/10.1007/s10639-024-13017-y

Yıldırım, M., & Çiçek, İ. (2022). Fear of COVID-19 and smartphone addiction among turkish adolescents: Mitigating role of resilience. *The Family Journal (Alexandria, Va.),* https://doi.org/10.1177/10664807221139510

Yu, S., & Sussman, S. (2020). Does smartphone addiction fall on a continuum of addictive behaviors? *International Journal of Environmental Research and Public Health, 17*(2), 422. https://doi.org/10.3390/ijerph17020422

Yu, Z., Lai, X., Wang, Y., Wang, Y., & Zhao, H. (2025). Implicit benefits of adolescents with high psychological resilience in action control of emotion regulation. *PloS One, 20*(9), e0332384. https://doi.org/10.1371/journal.pone.0332384