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ORIGINAL ARTICLE

The Relationship Between Resilience and Internet Addiction in Young Adults: The Mediating Role of Self-Control

Gülçin Güler Öztekin[1], **Samet Ata**[2]

[1]Department of Psychology, Ağrı İbrahim Çeçen University Faculty of Science and Letters, Ağrı, Türkiye
[2]Department of Preschool Education, Ağrı İbrahim Çeçen University Faculty of Education, Ağrı, Türkiye

ORCID iDs of the authors: G.G.Ö. 0000-0001-6205-642X, S.A. 0000-0002-9212-1285.

Main Points

- The present study examines the relationships among resilience, self-control, and internet addiction.
- Females have higher resilience and self-control levels, while males are more prone to internet addiction.
- Young adults' internet addiction levels increase as age decreases.
- Self-control has a mediating effect on the association between resilience and internet addiction.
- The current study shows that the improvement of self-control through psychological resilience might be a reliable and practical way to address internet addiction problems effectively among young adults.

Abstract

Examining the protective factors that may reduce the possibility of individuals' internet addiction is important in almost every aspect of an individual's life. The present study aimed to explore the association between psychological resilience and internet addiction through self-control. Data were collected from 422 young adults with a mean age of 21.26 years (SD = 2.28) in Türkiye. Our analyses shed light on the gender and age differences in the variables of the study. The current paper also revealed that psychological resilience was negatively associated with internet addiction, and self-control mediated the decrease of internet addiction by psychological resilience among young adults. This suggests that the improvement of self-control through psychological resilience may be a highly reliable and practical way to address internet addiction problems effectively among young adults or other youth around the world. The findings of this study are of great importance in terms of preventing and intervening in internet addiction in young adults.
Keywords: Internet addiction, psychological resilience, self-control, young adults

Corresponding Author:
Gülçin Güler Öztekin
ggoztekin@agri.edu.tr

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Introduction

Exposure to frequent challenges throughout the life cycle is a strong indicator of impairments in psychological functioning, and individuals respond differently to these challenges. Some people experience long-term impairments, and some people experience short-term impairments. Progress better than expected in a difficult situation is related to psychological resilience (Troy et al., 2023).

Psychological resilience refers to the capacity or ability to overcome adverse situations and adapt to difficulties (Masten, 2001). According to positive psychology, psychological resilience is a dynamic concept. When individuals face negative situations, people with high resilience tend to constantly act in a positive way to improve frustration. On the other hand, those with low resilience cannot adapt to stress when faced with intense pressure (Rutter, 2012). In the relevant literature, psychological resilience was positively linked to mental and psychological health (Labrague, 2021). Conversely, there was an inverse association between psychological resilience and psychological distress, somatization symptoms, as well as addiction (Dailey et al., 2020; Ran et al., 2020).

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Internet addiction can be characterized as an individual's inability to control internet use, which has detrimental effects on any or all aspects of an individual's life (Dong et al., 2019). For example, maladaptive and continuous internet use leads to work and/or school difficulties as well as psychological and/or social problems (Nam et al., 2018). This type of addiction may cause loneliness and social isolation (Volpe et al., 2022), leading to mental health problems such as depression and anxiety (Taş, 2019), impulsivity, and family functioning problems (Marzilli et al., 2020; Zhao et al., 2022). In addition, Internet Gaming Disorder has been included in DSM-V for further studies (American Psychiatric Association, 2013). In recent years, the internet has become an area of interest for researchers in behavioral addiction due to its significant impact and high accessibility.

To date, many studies investigating the close link between psychological resilience and internet addiction have concluded that individuals with low psychological resilience are more affected by negative experiences and therefore show more interest in the internet (Cao et al., 2020; Li et al., 2010; Nam et al., 2018). Since problematic internet use might lead to addiction, those with low psychological resilience may be disadvantaged in these regards. Additionally, a study concluded that internet-addicted adolescents were more likely to experience suicidal behaviors, including suicide plans, suicide attempts, and suicidal ideation, and psychological resilience was negatively associated with such behaviors (Peng et al., 2021). This indicates that internet addiction may lead to hazardous or irreversible consequences, but high psychological resilience may prevent these outcomes.

The association has also been documented as a protective factor in behavioral addictions. Psychological resilience reduced the adverse psychological outcomes that are often accompanied by internet addiction such as psychological distress, impulsivity, and aggression (Choi et al., 2014), and protected individuals from engaging in online risky behaviors (Werner & Smith, 2019). Resilient individuals who had more internal resources for coping with negative situations and a positive attitude toward these situations were less likely to use the internet to control distressing emotions (Nam et al., 2018).

The latest data shows that internet usage rate is 89.1% for men and 80.9% for women in Türkiye in 2022. Additionally, it was determined that the majority of internet users are between the ages of 25 and 34, and the internet usage rate of individuals between the ages of 16 – 24 and 35–44 is also high, respectively (TUIK, 2022). Similarly, extensive research has provided evidence that internet addiction is more prevalent among young adults in different countries (Gong et al., 2021). Possible reasons for this may be that young adults are far from their homes, have more free time, and have easier access to the internet. These situations increase the possibility of developing internet addiction (Zhang et al., 2018). The increase in this rate in recent years facilitates addiction at a young age and is an important risk factor. Therefore, we think that studies with young adults will guide researchers studying internet addiction to reduce or eliminate this possibility.

Self-control can be defined as the capacity to change one's own responses to adopt standards such as ideals, expectations, and values, and promote the achievement of long-term goals. Self-control is the deliberate, effortful, and conscious subset of self-regulation (Baumeister et al., 2007). Researchers have focused their attention on effective practices of self-control in many contexts. It has been emphasized that psychologically resilient individuals have better self-control (Kaçar, 2022; Mohammed & Sebastian, 2022). On the other hand, inadequate self-control has detrimental effects, including mental health problems and developing addictions (Li et al., 2020).

Self-control theory proposes that variability in various problem behaviors can be partially explained by differences in self-control. Because individuals with low self-control cannot resist gratification, that is, they cannot postpone it, which causes them to follow short-term goals without considering long-term outcomes (Gottfredson & Hirschi, 2019). Individuals with low self-control and high sensation-seeking are prone to internet addiction (Slater, 2003). In particular, past studies have highlighted the self-control effect on internet addiction (Mehroof & Griffiths, 2010).

In the literature, studies revealed that self-control acted as a mediator in the relationship between resilience and subjective well-being (Hu et al., 2021). Higher levels of self-control buffered the effects of adverse environments on undesirable consequences such as substance use (Wills et al., 2008). In addition, this factor buffered the negative effects of internet addiction on various psychological and behavioral problems (Agbaria, 2021). We can conclude from the prior research that self-control is one of the most important and intervenable psychological factors affecting addiction.

Although there are studies that examine psychological resilience, self-control, and internet addiction separately, there are no studies regarding the impact of psychological resilience and self-control on internet addiction. Considering the increasing number of internet addictions in the world and in Türkiye, examining this relationship is important to understand how to prevent or deal with the consequences of addiction. Based on the theoretical framework and empirical evidence mentioned above, this study aimed to investigate the effect of self-control on the association between psychological resilience and internet addiction in young adults. To facilitate this purpose, we aimed to answer the following questions:

- Do psychological resilience, self-control, and internet addiction differ statistically according to gender?
- Is there a statistically significant age relationship with psychological resilience, self-control, and internet addiction?
- Is there a statistically significant relationship between psychological resilience, self-control, and internet addiction?
- Does self-control have a mediating role in the effect of psychological resilience on internet addiction?

Material and Methods

Research Design and Participants

Since the mediating role of self-control on the association of resilience on internet addiction was determined as the main problem statement in the study, Path Analysis based on Structural Equation Model was used. In addition, correlational and screening models were also used as quantitative methods. Because it is

aimed to describe both the attitudes, opinions, or tendencies of the individuals in the sample with quantitative data and an existing event in its current conditions without trying to change any object or person. Additionally, the relational model was used to determine the relationship between independent variables.

According to Erikson (1997), the young adulthood period includes the ages between 18 and 40. For this reason, young adults between the ages of 18-40 were preferred in this study. Data were collected between June 23, 2023, and July 01, 2023. It is important to determine the adequacy of the sample size in research. Fritz and MacKinnon (2007) stated that a sample size ranging from 115 to 285 participants for 0.80 power is generally required to detect an indirect effect between study variables. Considering that there may be extreme values, 430 young adults studying at Agri Ibrahim Cecen University were reached with the purposive sampling method, and 422 participants were included in the study by removing 8 extreme values. In purposive sampling, it is important to select people purposefully for in-depth analysis (Patton, 2014). In the purposive sampling method, the researchers evaluate who will be included in the study group, identify the participants who are most suitable for the research, and select them for the study (Balcı, 2007). The criteria for inclusion in the study were being an internet user, being between the ages of 18-40, and volunteering to participate in the study. In this study, young adults between the ages of 18 and 40 who actively use the internet were reached through social media. Before collecting the data, necessary permissions were obtained from the Ethics Committee of Agri Ibrahim Cecen University on June 22, (ethical number: E73537). Data were collected through online forms after obtaining consent forms from young adults who agreed to participate. 249 females (59%) and 173 males (41%) participated in this research. The participants were between the ages of 18 and 38, with a mean age of 21.26 years (SD = 2.28).

Measures

Brief Resilience Scale

To determine the psychological resilience levels of individuals, this measurement tool was developed by Smith et al. (2008) and Doğan (2015) performed the Turkish validity and reliability analyses. After coding the reverse items, the high score obtained from the one-dimensional and 5-point Likert-type 6-item scale indicates high psychological resilience. The Cronbach alpha coefficient was obtained as .83. For this study, it was obtained as .88. The validity and reliability studies of the scale were performed, and the obtained fit indices were $X^2 = 38.6$; $df = 9$; $p = .00$; CFI = .98; TLI = .96; RMSEA = .08; SRMR = .03. In line with the values obtained, it was found that the scale was valid and reliable in the relevant sample group.

Young's Internet Addiction Test

The scale, developed by Young (1998), aims to measure the internet addiction levels of young people. The Turkish validity and reliability studies were performed by Kutlu et al. (2016). The scale, which consists of 12 items and does not have reverse items, is in the 5-point Likert type. Although the scale does not have cut-off scores, a high score indicates a high level of internet addiction. In the Turkish adaptation study, the Cronbach Alpha coefficient of the scale was obtained as .85. For this study, it was calculated as .94. The validity and reliability studies of the scale were performed, and the obtained fit indices were $X^2 = 177$; $df = 54$; $p = .00$; CFI = .96; TLI = .95; RMSEA = .07; SRMR = .04. In line with the values obtained, it was found that the scale was valid and reliable in the relevant sample group.

The Brief Multidimensional Self-Control Scale

The scale, developed by Nilsen et al. (2020) and adapted into Turkish by Koç et al. (2023), aims to determine the self-control levels of the participants. The high score obtained from the 8-item and 5-point Likert-type scale indicates high self-control. In the Turkish adaptation study, the Cronbach Alpha coefficient was obtained as .69. For this study, it was calculated as .86. The validity and reliability studies of the scale were performed, and the obtained fit indices were $X^2 = 66.7$; $df = 16$; $p = .00$; CFI = .96; TLI = .93; RMSEA = .08; SRMR = .04. In line with the values obtained, it was found that the scale was valid and reliable in the relevant sample group.

Statistical Analysis

In our study, the mediating role of self-control in the effect of young adults' psychological resilience on internet addiction was examined by establishing a path analysis model, one of the structural equation models. Structural equation modeling allows researchers to analyze with four different methods: confirmatory factor analysis, path analysis, structural equation modeling, and latent variable modeling. Path analysis shows the partial effect of independent variables on dependent variables using standardized regression coefficients. In multiple causality relationships used in path analysis, the relationships can be direct or indirect. Path analysis was carried out using JAMOVI, version 2.3.28 (JAMOVI project, Sydney, Australia).

The relationships between the scores and the gender and age demographic characteristics of young adults, and the relationships between the scales themselves were calculated using the Statistical Package for the Social Sciences Statistics Software, Version 25 (IBM SPSS Corp.; Armonk, NY, USA). First, the associations between the scores of the participants according to the variables of gender and age were investigated. Then, the associations between the variables were examined with the Pearson's correlation coefficient to perform the path analysis. The skewness and kurtosis values of the scores obtained by the participants vary between +1.96 and −1.96 (Tabachnick & Fidell, 2013). Parametric methods were used in the analysis of the data because this showed a normal distribution.

Results

The associations between age and scale scores were examined with the Pearson Correlation coefficient. It was found that there was no relationship between age and psychological resilience ($r = .014$, $p > .05$) and self-control ($r = .021$, $p > .05$). A statistically significant, negative, and small relationship was determined between age and internet addiction ($r = -.117$, $p < .05$).

Table 1 shows whether the scores obtained from the scales differed statistically according to the gender variable.

In Table 1, it was examined whether the scores of the participants differed according to gender, and it was determined that there were statistically significant differences in all scales ($p < .05$). It

Table 1.
Scores of the Participants According to the Gender Variable

Dependents	Gender	F	*X*	SD	*df*	*t*	*p*
Psychological resilience	Female	249	18.69	5.68	420	2.293	.022*
	Male	173	17.38	6.00			
Internet addiction	Female	249	28.30	9.24	420	-6.755	<.001*
	Male	173	35.25	11.89			
Self-control	Female	249	27.22	6.48	420	3.666	<.001*
	Male	173	24.76	7.16			

Note: *$p < .05$

Table 2.
Descriptive Statistics, Skewness, Kurtosis, and Correlations

					Correlation		
Dependents	**M**	**SD**	**Skewness**	**Kurtosis**	**1**	**2**	**3**
Psychological Resilience	18.15	5.84	.06	−.73	-		
Internet Addiction	31.15	10.94	.32	−.62	−.51**	-	
Self-control	26.21	6.86	-.23	−.62	.53**	−.48**	-

Note: M = Mean; SD = Standard deviation.
**$p < .001$.

was found that females had statistically significant higher scores on the psychological resilience scale ($t_{420} = 2.293$, $X = 18.69$, $p < .05$) and self-control scale ($t_{420} = 3.666$, $X = 27.22$, $p < .05$), and males had statistically significant higher scores in internet addiction ($t_{420} = -6.755$, $X = 35.25$, $p < .05$).

In order to establish the mediator model in line with the main problem statement of the research, the relationships between the variables are examined in Table 2.

The results showed that there were statistically significant negative relationships between internet addiction and psychological resilience at a high level, and self-control at a moderate level. There was a statistically significant positive relationship between psychological resilience and self-control at a high level. The skewness and kurtosis values indicated that they were in the range of +1 and −1. These values show that the necessary conditions are met for the path analysis.

Figure 1 presents the figurative representation of the relevant model, and its estimates are given in Table 3.

In Table 3, the mediating role of self-control on the association between psychological resilience and internet addiction was examined. There was a statistically significant relationship between psychological resilience and internet addiction ($\beta = -0.51$; $Z = -12.30$; $p < .001$). Examining variables with the mediator variable, it was found that self-control had a partial mediating role in the relationship between psychological resilience and internet addiction ($\beta = -.15$; $Z = -4.78$; $p < .001$). Because the relationship between psychological resilience and internet addiction is still significant despite the decrease after establishing the mediator model.

Discussion

This study found that there were gender differences in the variables of the study. Females reported higher levels of resilience and self-control, while males reported higher levels of internet addiction. Psychological resilience has largely focused on individuals' ability to adapt to stress (Jordan, 1992). Lazarus and Folkman (1984) stated that women's coping styles are more emotion-focused, and men's coping styles are more problem-focused or instrumental. While women talk about their personal problems with their friends and share their sadness, men take action and look for new strategies to solve the problems. Emotion-focused coping enables adaptation to situations. Women in general may live in worlds where the possibility of changing things is unrealistic due to a lack of power; thus, emotion-based coping strategies

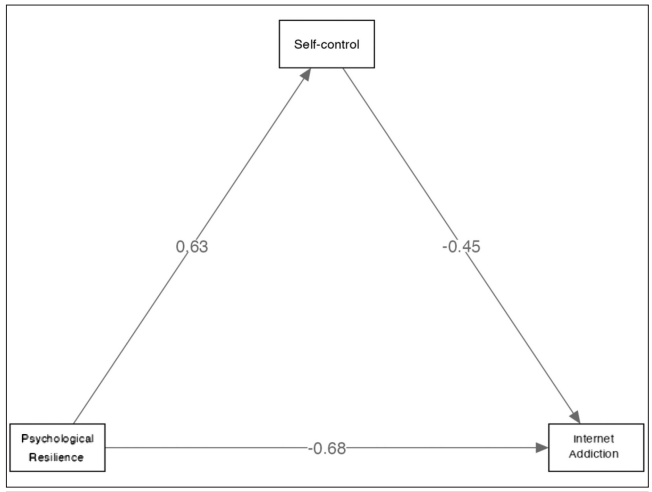

Figure 1. Figurative Representation of the Relevant Model.

Table 3.
Findings on Mediator Variable Analysis

				LB	UB		
Type	**Effect**	**Estimate**	**SE**	95% CI		β	z
Indirect	PR⇒SC⇒IA	−.28	.06	−.41	−.18	−.15	−4.78**
Component	PR⇒SC	.63	.05	.51	.73	.53	11.77**
	SC⇒IA	−.45	.08	−.60	−.29	−.28	−5.57**
Direct	PR⇒IA	−.68	.09	−.87	−.49	−.36	−7.17**
Total	PR⇒IA	−.96	.08	−1.12	−.81	−.51	−12.30**

Note: IA = Internet addiction; LB = Lower bound; PR = Psychological resilience; SC = Self-control; SE = Standard error; UB = Upper bound.
**$p < .001$.

may often make the most sense. Therefore, this may be the possible reason why women are more resilient than men. Gottfredson and Hirschi (1990) state that parents are more attentive to female behaviors than male behaviors, leading to gender differences in self-control. Accordingly, parental management may have led women to have higher self-control scores. There are studies in the literature with similar results to ours. For example, many studies found that males had lower resilience and self-control levels than females (Gibson et al., 2010). In a systematic review with 48 studies, many studies showed that men were further vulnerable to excessive internet use (Baloğlu et al., 2020). Contrary to our results, Davey et al. (2020) found that self-control was more in male students, while internet addiction was more in female students. In another study, male college students reported lower scores on internet addiction compared to females (Yang et al., 2021). Syahputra et al. (2019) concluded that there were no gender differences in internet addiction. Another study revealed that self-control and resilience did not differ with respect to gender (Yang et al., 2019). This study showed that males and females are equally competent in coping with stressful situations and in self-control by generating alternative solutions. However, the reasons behind these results need further investigation.

The results of the current study determined that there were no age differences in resilience and self-control, but a significant difference in internet addiction. Young adults' internet addiction levels increased as age decreased. Similarly, there are studies that could not find a link between resilience, self-control, and age (Linnemann et al., 2020). However, a study revealed that resilience levels were low among middle-aged or younger participants (Terrill et al., 2016). On the other hand, similar to our results, Sechi et al. (2021) determined that older individuals were less likely to acquire addictive internet behaviors than younger people. Based on these results, we can say that internet addiction levels tend to decrease as the age of young adults increases. This may be because younger people have more knowledge about the internet and have less responsibility with work and family. Communicating and sharing via social media may be more approved by their peers, which may lead them to be more immersed in their internet activities.

The results indicated that internet addiction was negatively associated with psychological resilience and self-control, while psychological resilience had a positive relationship with self-control. Psychological resilience had an inverse relationship with internet addiction, and this addiction was a failure in exercising self-control. Extensive research supported our results, showing that higher psychological resilience and self-control led to lower levels of internet addiction (Ismail & Zawahreh, 2017; Ozturk & Kundakci, 2021; Robertson et al., 2018) and higher psychological resilience was associated with higher self-control (Fu et al., 2021).

The current findings yielded that self-control acted as a mediator in the relationship between psychological resilience and internet addiction. That is, the present study provided evidence indicating that young adults with psychological resilience reported higher self-control and lower internet addiction. Consistent with our results, Yilmaz and Karaoglan Yilmaz (2022) found that increased dispositional hope levels and parents' happiness levels as well as developing resilience and self-control provided the decrease in problematic internet use. In other words, the negative consequences of internet addiction can be overcome by enhancing their resilience and self-control. Similarly, self-control mediated the decrease in mobile phone dependence through physical exercise for young adults (Yang et al., 2019) and the decrease in smartphone addiction through mindfulness (Cheng et al., 2020). From these results, we can conclude that resilient young adults who encounter adverse situations may adopt positive coping strategies and have high self-control, which in turn will prevent addiction. Thus, it is possible to say that resilient young adults will cope effectively with stressful situations and exhibit less internet addiction. However, some studies have documented that internet addicts use the internet more frequently both as a coping mechanism and to escape from reality in stressful situations (Tang et al., 2014; Whang et al., 2003). Along with the previous studies, the results of our study provided evidence regarding self-control buffering the adverse effects of psychological resilience on internet addiction and being useful in the fight against addiction types.

Moreover, in the experimental study examining the effectiveness of using brief willpower-strengthening exercises, the exercises increased the psychological resilience and self-control levels (Morrison & Pidgeon, 2017). In particular, a systematic review provided evidence that psychosocial interventions have the effect of reducing internet addiction and improving self-control (Yeun & Han, 2016). We can suggest that effective internet addiction treatment programs through self-control with young adults are required. Because one of the innovations brought by technology is the internet, and when used appropriately and carefully, it makes life easier for individuals and offers many opportunities. However, individuals meet many of their needs via the internet,

which increases the time they stay on the internet and leads to dysfunctional use. It is of great importance to raise awareness among young adults in this regard.

In conclusion, the risk of triggering mental illness by stress and negative life events, and the positive responses of some individuals to negative situations has attracted attention in this field. These positive responses of individuals in the presence of risk or distress experienced are generally known as resilience (Vella & Pai, 2019). The current paper follows the positive psychology framework, thus, attempts to identify protective factors, not risk factors, to reduce internet addiction. Positive psychology is based on improving individuals' quality of life and identifying factors that prevent or reduce problems, rather than the causes of a disorder (Seligman & Csikszentmihalyi, 2000). The findings of the study have shown that female participants have higher levels of resilience and self-control, while male participants are more prone to internet addiction. Additionally, young adults' internet addiction levels increase as age decreases. While psychological resilience has a positive relationship with self-control, internet addiction is negatively associated with psychological resilience and self-control. The current study also indicates the role of self-control in the relationship between resilience and internet addiction and suggests that counselors and mental health professionals can help young adults by increasing their capacity to control or regulate emotions, cognitions, and behaviors.

Limitations and Future Directions

Although the findings of the present study may contribute to the relevant literature, there are some limitations. The sample of the research consists of young adults studying at a state university. Thus, the findings cannot be generalized to all young adults. Future studies can be conducted with young adults studying at different universities in Türkiye. The present study is a cross-sectional design that does not allow for the causal relationships between study variables. Different methodological approaches should be applied, such as longitudinal or experimental design, which provide additional information in future research. Another limitation is that all measurements are self-reported. The results may be biased by the self-observation attitude of the respondents. The data obtained from the participants were collected through the internet. Face-to-face data collection methods may be used in future studies regarding internet addiction. The paucity of participant information is another limitation of this study. Future studies may include more detailed information such as the duration and type of internet use.

Ethics Committee Approval: Ethics committee approval was received for this study from Agri Ibrahim Cecen University Ethics Committee (date: June 22, 2023; number: E.73537).

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

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References

Agbaria, Q. (2021). Internet addiction and aggression: The mediating roles of self-control and positive affect. *International Journal of Mental Health and Addiction*, *19*(4), 1227 – 1242. [CrossRef]

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*, *5*. American Psychiatric Association.

Balcı, A. (2007). *Sosyal Bilimlerde araştırma yöntem, teknik ve İlkeler*. Pegema Yayıncılık.

Büyüköztürk, Ş. (2007). *Sosyal bilimler İçin veri analizi el kitabı*. Pegema Yayıncılık.

Baloğlu, M., Şahin, R., & Arpaci, I. (2020). A review of recent research in problematic internet use: Gender and cultural differences. *Current Opinion in Psychology*, *36*, 124 – 129. [CrossRef]

Bani Ismail, A. B., & Zawahreh, N. (2017). Self-control and its relationship with the internet addiction among a sample of Najran University students. *Journal of Education and Human Development*, *6*(1), 168 – 174. [CrossRef]

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, *16*(6), 351 – 355. [CrossRef]

Cao, Q., An, J., Yang, Y., Peng, P., Xu, S., Xu, X., & Xiang, H. (2020). Correlation among psychological resilience, loneliness, and internet addiction among left-behind children in China: A cross-sectional study. *Current Psychology*, 1 – 8. [CrossRef]

Cheng, S. S., Zhang, C. Q., & Wu, J. Q. (2020). Mindfulness and smartphone addiction before going to sleep among college students: The mediating roles of self-control and rumination. *Clocks and Sleep*, *2*(3), 354 – 363. [CrossRef]

Choi, E.-M., Shin, J.-R., Bae, J.-H., & Kim, M.-S. (2014). The relationships among depression, anxiety, impulsivity and aggression and internet addiction of college students-moderating effect of resilience. *Journal of the Korea Contents Association*, *14*(8), 329 – 341. [CrossRef]

Dailey, S. L., Howard, K., Roming, S. M. P., Ceballos, N., & Grimes, T. (2020). A biopsychosocial approach to understanding social media addiction. *Human Behavior and Emerging Technologies*, *2*(2), 158 – 167. [CrossRef]

Davey, A., Nasser, K., & Davey, S. (2020). Gender differential for smart phone addiction and its predictors among adolescents: Assessing relationship with self control via sem approach. *Journal of Indian Association for Child and Adolescent Mental Health*, *16*(3), 80 – 101. [CrossRef]

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

Dong, B., Zhao, F., Wu, X.-S., Wang, W.-J., Li, Y.-F., Zhang, Z.-H., & Sun, Y.-H. (2019). Social anxiety may modify the relationship between internet addiction and its determining factors in Chinese adolescents. *International Journal of Mental Health and Addiction*, *17*(6), 1508 – 1520. [CrossRef]

Erikson, J. M. (1997). The life cycle completed: Erik H. Erikson. New York: WW Norton & Company, Inc. stage model of spiritual formation. *Religious Education*, *96*(1), 49 – 63.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, *18*(3), 233 – 239. [CrossRef]

Fu, J., Zhao, Y., Feng, X., Wang, Y., Yu, Z., Hua, L., Wang, S., & Li, J. (2021). How is fatalistic determinism linked to depression? The

mediating role of self-control and resilience. *Personality and Individual Differences*, *180*, 110992. [CrossRef]

Gibson, C. L., Ward, J. T., Wright, J. P., Beaver, K. M., & DeLisi, M. (2010). Where does gender fit in the measurement of self-control? *Criminal Justice and Behavior*, *37*(8), 883 – 903. [CrossRef]

Gong, Z., Wang, L., & Wang, H. (2021). Perceived stress and internet addiction among Chinese college students: Mediating effect of procrastination and moderating effect of flow. *Frontiers in Psychology*, *12*, 632461. [CrossRef]

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford University Press.

Gottfredson, M., & Hirschi, T. (2019). *Modern control theory and the limits of criminal justice*. Oxford University Press.

Hu, D., Guo, Y., Chen, C., & Wang, Y. (2021). Mediating effect of self-control on the relationship between resilience and subjective well-being among rural primary and secondary school teachers. *International Journal of Intelligent Technologies and Applied Statistics*, *14*(3). [CrossRef]

Jordan, J. V. (1992). *Relational resilience*. Stone Center, Wellesley College.

Kaçar, T. (2022). *Öğretmenlerin psikolojik sağlamlıkları, yaşam Becerileri ve Öz-Kontrolleri arasındaki İlişkinin İncelenmesi*. Necmettin Erbakan üniversitesi, eğitim bilimleri Enstitüsü.

Koç, H., Şimşir Gökalp, Z., & Seki, T. (2023). The relationships between self-control and distress among emerging adults: A serial mediating roles of fear of missing out and social media addiction. *Emerging Adulthood*, *11*(3), 626 – 638. [CrossRef]

Kutlu, M., Savcı, M., Demir, Y., & Aysan, F. (2016). Young internet Bağımlılığı Testi Kısa Formunun Türkçe uyarlaması: Üniversite öğrencileri ve ergenlerde geçerlilik ve güvenilirlik çalışması. *Anadolu Psikiyatri Dergisi*, *17*(1), 69 – 76.

Labrague, L. J. (2021). Psychological resilience, coping behaviours and social support among health care workers during the COVID - 19 pandemic: A systematic review of quantitative studies. *Journal of Nursing Management*, *29*(7), 1893 – 1905. [CrossRef]

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company.

Li, J. B., Yang, A., Dou, K., & Cheung, R. Y. M. (2020). Self-control moderates the association between perceived severity of coronavirus disease 2019 (COVID-19) and mental health problems among the Chinese public. *International Journal of Environmental Research and Public Health*, *17*(13), 4820. [CrossRef]

Li, X., Shi, M., Wang, Z., Shi, K., Yang, R., & Yang, C. (2010). Resilience as a predictor of internet addiction: The mediation effects of perceived class climate and alienation. 2nd Symposium on Web Society, *2010*, IEEE Publications. [CrossRef]

Linnemann, P., Wellmann, J., Berger, K., & Teismann, H. (2020). Effects of age on trait resilience in a population-based cohort and two patient cohorts. *Journal of Psychosomatic Research*, *136*, 110170. [CrossRef]

Marzilli, E., Cerniglia, L., Ballarotto, G., & Cimino, S. (2020). Internet addiction among young adult university students: The complex interplay between family functioning, impulsivity, depression, and anxiety. *International Journal of Environmental Research and Public Health*, *17*(21), 8231. [CrossRef]

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227 – 238. [CrossRef]

Mehroof, M., & Griffiths, M. D. (2010). Online gaming addiction: The role of sensation seeking, self-control, neuroticism, aggression, state anxiety, and trait anxiety. *Cyberpsychology, Behavior and Social Networking*, *13*(3), 313 – 316. [CrossRef]

Mohammed, A. F., & Sebastian, K. (2022). The relationship between meaning in life, self-control and resilience among young adults. *International Journal of Indian Psychology*, *10*(3). [CrossRef]

Morrison, R., & Pidgeon, A. M. (2017). Cultivating resilience and self-control among university students: An experimental study. *Universal Journal of Psychology*, *5*(1), 1 – 7. [CrossRef]

Nam, C. R., Lee, D. H., Lee, J. Y., Choi, A. R., Chung, S. J., Kim, D. J., Bhang, S. Y., Kwon, J. G., Kweon, Y. S., & Choi, J. S. (2018). The role of resilience in internet addiction among adolescents between sexes: A moderated mediation model. *Journal of Clinical Medicine*, *7*(8), 222. [CrossRef]

Nilsen, F. A., Bang, H., Boe, O., Martinsen, Ø. L., Lang-Ree, O. C., & Røysamb, E. (2020). The Multidimensional Self-Control Scale (MSCS): Development and validation. *Psychological Assessment*, *32*(11), 1057 – 1074. [CrossRef]

Öztürk, A., & Kundakçı, N. (2021). Loneliness, Perceived social support, and psychological resilience as predictors of internet addiction: A cross-sectional study with a sample of Turkish undergraduates. *Psychiatry and Clinical Psychopharmacology*, *31*(4), 449 – 456. [CrossRef]

Patton, M. Q. (2014). *Nitel araştırma ve değerlendirme yöntemleri* (M. Bütün & S. B. Demir, Çev). Pegem Akademi Yayınları.

Peng, C., Wang, M., Cheng, J., Tan, Y., Huang, Y., Rong, F., Kang, C., Ding, H., & Yu, Y. (2021). Association between internet addiction and suicidal ideation, suicide plans, and suicide attempts among Chinese adolescents with and without parental migration. *Computers in Human Behavior*, *125*, 106949. [CrossRef]

Ran, L., Wang, W., Ai, M., Kong, Y., Chen, J., & Kuang, L. (2020). Psychological resilience, depression, anxiety, and somatization symptoms in response to COVID-19: A study of the general population in China at the peak of its epidemic. *Social Science and Medicine*, *262*, 113261. [CrossRef]

Robertson, T. W., Yan, Z., & Rapoza, K. A. (2018). Is resilience a protective factor of internet addiction? *Computers in Human Behavior*, *78*, 255 – 260. [CrossRef]

Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, *24*(2), 335 – 344. [CrossRef]

Sechi, C., Loi, G., & Cabras, C. (2021). Addictive internet behaviors: The role of trait emotional intelligence, self - esteem, age, and gender. *Scandinavian Journal of Psychology*, *62*(3), 409 – 417. [CrossRef]

Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction, American psychologist. *Edición Especial*, *55*, 5 – 14.

Slater, M. D. (2003). Alienation, aggression, and sensation seeking as predictors of adolescent use of violent film, computer, and website content. *Journal of Communication*, *53*(1), 105 – 121. [CrossRef]

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, *15*(3), 194 – 200. [CrossRef]

Syahputra, Y., Prayitno, P., Syahniar, S., & Hariyani, H. (2019). Rasch stacking analysis of student internet addiction based on gender. *Jurnal Konseling dan Pendidikan*, *7*(1), 35 – 41. [CrossRef]

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. Pearson Education.

Tang, J., Yu, Y., Du, Y., Ma, Y., Zhang, D., & Wang, J. (2014). Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. *Addictive Behaviors*, *39*(3), 744 – 747. [CrossRef]

Taş, İ. (2019). Association between depression, anxiety, stress, social support, resilience and internet addiction: A structural equation modelling. *Malaysian Online Journal of Educational Technology*, *7*(3), 1 – 10. [CrossRef]

Terrill, A. L., Molton, I. R., Ehde, D. M., Amtmann, D., Bombardier, C. H., Smith, A. E., & Jensen, M. P. (2016). Resilience, age, and perceived symptoms in persons with long-term physical disabilities. *Journal of Health Psychology*, *21*(5), 640 – 649. [CrossRef]

Troy, A. S., Willroth, E. C., Shallcross, A. J., Giuliani, N. R., Gross, J. J., & Mauss, I. B. (2023). Psychological resilience: An affect-regulation framework. *Annual Review of Psychology*, *74*, 547 – 576. [CrossRef]

Türkiye Istatistik Kurumu. (2022). Hanehalkı bilişim teknolojileri (BT) kullanım araştırması (Research about Informatics Technologies (IT) use of Household in Turkish). https://data.tuik.gov.tr/Bulten/

Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2022-45587

Vella, S.-L. C., & Pai, N. B. (2019). A theoretical review of psychological resilience: Defining resilience and resilience research over the decades. *Archives of Medicine and Health Sciences*, *7*(2), 233 – 239. [CrossRef]

Volpe, U., Orsolini, L., Salvi, V., Albert, U., Carmassi, C., Carrà, G., Cirulli, F., Dell'Osso, B., Luciano, M., Menculini, G., Nanni, M. G., Pompili, M., Sani, G., Sampogna, G., Group, W., & Fiorillo, A. (2022). COVID-19-related social isolation predispose to problematic internet and online video gaming use in Italy. *International Journal of Environmental Research and Public Health*, *19*(3), 1539. [CrossRef]

Werner, E. E., & Smith, R. S. (2019). *Overcoming the odds: High risk children from birth to adulthood*. Cornell University Press.

Whang, L. S.-M., Lee, S., & Chang, G. (2003). Internet over-users' psychological profiles: A behavior sampling analysis on internet addiction. *Cyberpsychology and Behavior*, *6*(2), 143 – 150. [CrossRef]

Wills, T. A., Ainette, M. G., Stoolmiller, M., Gibbons, F. X., & Shinar, O. (2008). Good self-control as a buffering agent for adolescent substance use: An investigation in early adolescence with time-varying covariates. *Psychology of Addictive Behaviors*, *22*(4), 459 – 471. [CrossRef]

Yang, C., Zhou, Y., Cao, Q., Xia, M., & An, J. (2019). The relationship between self-control and self-efficacy among patients with substance use disorders: Resilience and self-esteem as mediators. *Frontiers in Psychiatry*, *10*, 388. [CrossRef]

Yang, G., Tan, G. X., Li, Y. X., Liu, H. Y., & Wang, S. T. (2019). Physical exercise decreases the mobile phone dependence of university students in China: The mediating role of self-control. *International Journal of Environmental Research and Public Health*, *16*(21), 4098. [CrossRef]

Yang, W., Morita, N., Zuo, Z., Kawaida, K., Ogai, Y., Saito, T., & Hu, W. (2021). Maladaptive perfectionism and internet addiction among Chinese college students: A moderated mediation model of depression and gender. *International Journal of Environmental Research and Public Health*, *18*(5), 2748. [CrossRef]

Yeun, Y. R., & Han, S. J. (2016). Effects of psychosocial interventions for school-aged children's internet addiction, self-control and self-esteem: Meta-analysis. *Healthcare Informatics Research*, *22*(3), 217 – 230. [CrossRef]

Yilmaz, R., & Karaoglan Yilmaz, F. G. (2022). Problematic Internet use in adults: The role of happiness, psychological resilience, dispositional hope, and self-control and self-management. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, 1 – 19. [CrossRef]

Young, K. S. (1998). *Caught in the net: How to recognize the signs of internet addiction--And a winning strategy for recovery*. John Wiley & Sons.

Zhang, S., Tian, Y., Sui, Y., Zhang, D., Shi, J., Wang, P., Meng, W., & Si, Y. (2018). Relationships between social support, loneliness, and internet addiction in Chinese postsecondary students: A longitudinal cross-lagged analysis. *Frontiers in Psychology*, *9*, 1707. [CrossRef]

Zhao, Y., Zhang, K., & Griffiths, M. D. (2022). Serial mediation roles of alexithymia and loneliness in the association between family function and internet addiction among Chinese college students. *Frontiers in Psychology*, *13*, 874031. [CrossRef]