

Investigating the Relationship between Using Harmful Smartphones and Externalizing Problems: The Mediating Role of Self-control in Self-Harming Teenagers

DOI: 10.22098/JPC.2024.13523.1185

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Abstract

Aim: Adolescence is a critical period characterized by changes in different areas of development related to physiological and psychosocial functioning. The present study was conducted to investigate the relationship between the use of harmful smartphones and externalizing problems with the mediating role of self-control in a sample of self-harming teenagers. **Methods:** The current research method was a descriptive correlation type. The statistical population of the study included all teenage boys and girls of Yazd city between July and October 2022 and 23 in Yazd, Iran. Researchers selected clinics based on convenience methods and randomly selected self-harming teenagers. The data collection tools were the Cell Phone Addiction Scale (CAC), Self-control Questionnaire (CSQ), and Child Behavior Checklist (CBC). The structural equation model method with SPSS version 27 software and Smart PLS 3 software was used to check the research hypotheses. Sobel's test was used to check the significance of mediating variables. **Results:** The results showed that the use of harmful smartphones had a direct and significant effect on aggressive behavior among self-harming teenagers ($\beta=0.387$, $P=0.001$). Similarly, the use of harmful smartphones had a direct and significant effect on law-breaking behavior among self-harming teenagers ($\beta=0.297$; $P=0.022$). Also, self-control had a negative and significant effect on aggressive behavior ($\beta=-0.54$; $P<0.01$). In addition, self-control had a negative and significant effect on law-breaking behavior ($\beta=-0.497$; $P<0.01$). In the end, the results of the research showed that self-control had a negative and significant mediating role in the relationship between the use of harmful smartphones and externalizing problems in self-harming teenagers. **Conclusion:** Self-control played a big part in how harmful smartphone use negatively affected people's behavior. Findings from this research indicate that teenagers who demonstrate good self-control may experience fewer behavioral difficulties and have a reduced tendency to harm themselves, regardless of their harmful smartphone usage. Findings have emphasized that greater attention should be given to assisting teenagers in developing their self-control capabilities.

Keywords: Using Harmful SmartPhones, Externalizing Problems, Self-control, Self-Harming Teenagers.

Introduction

Adolescence is a time in human development (Racine et al, 2021). Adolescence is a really important time in life when a person goes through fast changes in their body and mind (Michaud et al, 2022). During early adolescence, teenagers go through changes in their bodies (puberty) as well as their minds (identity issues and thinking abilities) and interactions with others (becoming more independent from parents and joining new social groups). During this period, certain adolescents might encounter extra sources of stress (You, Shin & Kim, 2021).

Some people find it hard to understand and fit into social and school settings because of their emotional and behavioral problems. They might exhibit their emotions by engaging in externalization behaviors (Pourghorban Gourabi, Babakhani, Lotfi Kashani, 2021; Moradi & AzizMohammadi 2015). Externalizing problems usually show themselves in dominant impulsivity, aggressive behavior, attention deficit hyperactivity disorder, disobedience disorder, and conduct disorder (Kosari, Sabah, Makvand Hosseini, 2023; Mirzaeian et al., 2016; Azizmohammadi, 2013). Research has shown that externalizing behaviors not only cause various problems in the current functioning of adolescents but are also an important risk for challenging their adjustment (such as suicide attempts, juvenile delinquency, substance use disorders, etc.) in adulthood (Arslan, 2022). Here, Fakhri et al (2022) findings showed that the parenting training program was successful in helping parents reduce their children's bad behavior. In addition, Bakshipour et al.(2022) discovered that girls and boys have significant differences in their experiences with internalizing, externalizing, and family functioning disorders.

Sometimes, some teenagers may engage in self-injurious behavior or deliberate self-harm to relieve situational and psychological pressures (Zamani, Kiamarsi, 2023). In recent years, a significant increase in depressive symptoms has been reported among adolescents, a trend that may lead to an increase in self-harm behaviors (Damavandian et al, 2022). There is some evidence that self-harm is associated with a range of psychological problems such as depression, and anxiety [Mozafari et al, 2021 & Hughes et al, 2019]. Self-injurious behavior with non-suicidal intent includes self-harm behaviors that do not have any suicidal purpose or motivation and include behaviors such as scratching the skin, cutting, burning, banging the head, hitting oneself, etc (Panagiotopoulou, Peiris, Hayes, 2021). The lifetime prevalence of this behavior in adolescents ranges from 10 to 80% (Gillies et al, 2018). Self-harm often starts and peaks in adolescence (Hetrick et al, 2020). The purpose and function of these behaviors are reducing or getting rid of negative emotions, self-punishment, or reducing numbness or dissociative experiences (Hoffmann et al, 2021). The person does not perform these behaviors with the conscious intention of killing himself or violating socially accepted behaviors (Favril et al, 2020).

Although self-harm behaviors are common among Iranian teenage girls in recent years, there are no precise statistics in this area, and we can only refer to previous research, which showed that 9.17 students were surveyed at least once and 1.11 of them engaged

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in self-harm behaviors more than once (Ahmadi Marvili, Mirzahoseini, Monirpoor, 2019). Mozafari et al. (2021) showed that adolescent girls have more self-harm behaviors than boys. In addition, Zawant Bajirani et al. (2023) showed that childhood trauma plays a mediating role in the relationship between emotional-emotional nature and self-harming behavior.

The causes of self-harm are complex and multifaceted, yet there is growing speculation about the potential adverse effects of social media and smartphone use on youth mental health (Abi-Jaoude, Naylor, Pignatiello, 2020). Students who feel lonely, need to be popular and have more behavioral problems use virtual networks more (Pourmohseni-Kolouri, 2023). Joining online groups via smartphone can be a cause for concern because users may be exposed to self-harming content and online discussions that normalize such behaviors and discourage help-seeking, which may increase with Suicidal thoughts and self-harm associated among adolescent users (Bye et al, 2023). Research has shown that adolescents who exhibit self-injurious behavior use the Internet to interact with others, feel less isolated, and seek social support (Mancinelli, 2022). Of course, the problems mentioned in using smartphones are not inherent to the tool itself, but to the inefficient approach that people have towards it (Hussain, Griffiths, Sheffield, 2017). In this context, Sadri et al. (2021) in research concluded that addiction to social networks in the mobile platform mediates the effect of self-concept on high-risk behaviors. Research conducted in 2019 discovered that the amount someone relies on mobile phones and something closely linked to the Internet to how much they feel helpless, uncaring, disrespected, socially isolated, hateful towards other cultures, and hateful towards themselves (Atarodi Beimorghi, Rajabi, 2019). In addition, the study by Fallah et al. (2021) showed that smartphone-dependent adolescents had higher levels of fear of being left behind and depression than the normal group. In one study, it was found that the self-control of adolescents using their phones was less (Akhavi Samaraein, Ahmadi, Pourzargar, 2023; Barfi et al., 2015; Mirkamali et al., 2013).

Research shows that low self-control is significantly related to smartphone addiction (Mancinelli, 2021). Self-control is a person's ability to resist immediate temptation or endure immediate pain and discomfort for the sake of an ideal long-term goal (Huang et al, 2023). From a perspective of how the brain grows, teenagers are more likely to make bad choices and struggle with controlling their feelings and actions because certain parts of their brains develop at different rates. The areas that control emotions and impulses in the brain's front are not fully developed yet, while the parts that create excitement and pleasure are more developed. This can lead to problems with decision-making and emotional control, as well as a lack of self-control (Mancinelli et al, 2022). Thus, high self-control can be protective (Kim et al, 2018). Because it is associated with a greater capacity for emotional and behavioral self-regulation (Milyavskaya, Inzlicht, 2017), while if a person has low self-control, control is associated with risk-taking, addictive behaviors, and also with the development of emotional problems (Oliva, Antolín-Suárez, Rodríguez-Meirinhos, 2019). According to research findings, teenagers who have less self-control face feelings of disappointment, depression, and apathy because poor control

of unpleasant emotions in people who have low self-control will cause them to be less adaptable and adaptable (Robayo, 2020). In this context, Akhavi Samrin et al.'s research (2023) showed that self-control is indirectly related to cyber aggression through the mediation of mobile phone addiction. Also, Mafi et al. (2023) stated that dependence on social networks can be predicted based on family interaction patterns (dialogue, conformity), and the self-control of adolescents. Likewise, the results of Mohammadi et al.'s research (2022) showed that self-compassion training increases the self-control and self-expression of female students.

This research is one of the first to study the connection between using harmful smartphones and self-harming behaviors in teenagers. Not much attention has been given to this topic before. The research also explores how self-control plays a role in these behaviors. Different outcomes have been obtained through various studies conducted in different locations and on different groups of people up to this point. Despite numerous studies, there is a lack of research exploring the correlation between smartphone usage and externalizing problems among self-harming adolescents, as well as the role of self-control in this context. Given the importance of the issue, we should undertake a more thorough exploration of this domain.

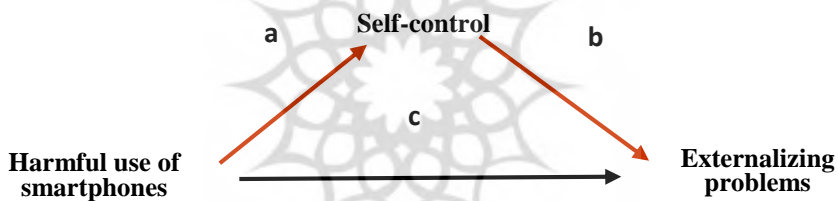


Fig. 1: Conceptual framework of the research

Methods

This research is part of descriptive-correlation research and cross-sectional research methods. The statistical population of the study included all teenage boys and girls of Yazd City between July and October 2022-23 in Yazd, Iran. The statistical population of the research includes 10 psychology clinics (psychology clinics A, B, C, D, E, F, G, H, I, J) in Yazd. Clinics are not named to protect their information. Researchers selected these clinics based on convenience methods and randomly selected self-harming teenagers. The size of the statistical population was equal to 980 people. To determine the sample size, the calculation method using Cochran's formula was used and the sample size of 276 people was selected for this research. Since the researcher intends to use the structural equation model method, according to Gadagnoli and Veliser (1998), the number of 300 people and more is suitable for determining the sample size of the structural equation model method. Therefore, the researcher chose a sample size of 300 people.

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The researchers first made a list of all the teenagers aged 13 to 18 who had visited the clinics for psychological help. In the next step, the research community was determined based on the criteria of entry and exit in the research. This work was done in such a way that all people between 13 and 18 years old were selected and other people were excluded from the research. Also, another criterion for entering the research was having a psychological record of self-harm in the researched psychological clinics. In the next step, the researcher randomly selected a sample from among the people. To comply with the ethical principles, before implementing the questionnaires, a willingness to cooperate form was taken from the participants in the research, and there was no obligation to participate in the research and continue it. They were told that participation in the study was completely voluntary and that they could withdraw from the study. It was also explained to them that these tests do not contain identity information. Each member of the sample measured three variables using the Cell Phone Addiction Scale, Self-control Questionnaire (CSQ), and Child behavior checklist. In the following, one was removed from the research due to not answering over 10 questions of the questionnaires, and 299 people took part in the research and analyzed the data of 299 people. To analyze the collected data, the Kolmogorov-Smirnov test was used to check the normality of study variables. Therefore, the study variables are not normally distributed because this test is significant for the study variables. Finally, the data were analyzed using the SPSS software version 27 and running Smart PLS 3 structural equation modeling software. Statistical results are considered significant at the 0.05 level.

Cell Phone Addiction Scale (CAC): It was developed by Koo in 2009. It consists of 20 questions about mobile phone addiction, which are classified and scored in three domains: deprivation tolerance (7 questions), life dysfunction (6 questions), and compulsion-insistence (7 questions). Each of the questions has 4 options: very high (5), high (4), medium (3), low (2), and very low (1), and the scores are specified as phone addicts, heavy and moderate users. A score greater than or equal to 70 was considered an addiction, 70-63 was considered severe use, less than 63 was considered moderate use to determine reliability, and Cronbach's alpha coefficient (0.92) was calculated. The validity of the questionnaire was determined by the method of factor analysis and confirmed after translation by the relevant experts (Koo, 2009). In the Basharpour et al study, its reliability coefficient was 0.80 for deprivation tolerance, 0.79 for liver dysfunction, 0.79 for compulsion-insistence, and 0.88 for the total score of mobile phone addiction [37]. The Cronbach's alpha for this questionnaire was 0.88.

Self-control Questionnaire (CSQ): This questionnaire was designed by Tanji, Bamsir, and Boone in 2004. Tanji's self-control questionnaire has two forms, one with 40 questions and the other with 13 questions, and both forms measure a person's self-control. The answer to each question is a five-point Likert scale from never to very much. Each question has five options: very high (5), high (4), medium (3), low (2), and very low (1). A higher score indicates higher self-control and vice versa. In this research, a scale of 40

questions was used and the range of people's scores is from 40 to 200. In the research of Tanji et al. (2004), the validity of this scale has been confirmed by evaluating its correlation with the scales of academic achievement, adaptability, positive relationships, and interpersonal skills. Also, its reliability has been obtained on two statistical samples using Cronbach's alpha test of 0.83 and 0.85 [38]. Cronbach's alpha was 0.88 for this questionnaire.

Child Behavior Checklist (CBC): The Achenbach Behavior Questionnaire is one of the Achenbach ASEBA parallel forms and evaluates the problems of children and adolescents. One of the topics discussed in this questionnaire is the evaluation of externalizing problems. This questionnaire addresses the two dimensions of Aggressive Behavior (AB) and law-breaking behavior (RB). The scale of externalizing behavior problems includes items from the subscales of law-breaking behavior (RB) and aggressive Behavior (AB). The answer to the questions of the Achenbach scale is a 3-point Likert scale from 0 to 2. In this way, the grade "0" is assigned to things that are never present in the child's behavior; A score of "1" is given to situations and behaviors that are sometimes observed in the child, and a score of "2" is given to those that are present most of the time or always in the child's behavior. Law-breaking behavior questions include items: 2, 26, 28, 39, 43, 63, 67, 72, 73, 81, 82, 90, 96, 99, 101, 105, and 106. The person's score in this dimension ranges from 0 to 34. Aggressive behavior questions include items: 3, 16, 19, 20, 21, 22, 23, 27, 37, 57, 68, 86, 87, 88, 89, 94, 95, 97, and 104. The person's score in this dimension ranges from 0 to 38. The overall reliability coefficients of the Achenbach scale forms were reported using Cronbach's alpha of 0.97 and using test-retest reliability of 0.94 [39]. Cronbach's alpha for this questionnaire in the present study was 0.85.

Results

First, the researcher examined the descriptive data of the search variables. The participants were divided into three groups: 13-14 years old, 15-16 years old, and 17-18 years old. The proportion of members in these agencies was 39.8%, 37.1%, and 23.1%, respectively. Gender is divided into two groups the participants: males (68.6%) and females (31.4%). According to the level of education, it divided the people into four groups: the ninth (23.7%), the tenth (19.4%), the eleventh (28.8%), and the twelfth (28.1%).

Table 1. Demographic variables

Variables	Groups	Frequency	Percent	Median
Age	13-14	119	39.8	2
	15-16	111	37.1	
	17-18	69	23.1	
Gender	Man	205	68.6	1
	Female	94	31.4	
Education	Ninth	71	23.7	3
	Tenth	58	19.4	
	Eleventh	86	28.8	
	twelfth	84	28.1	

Table 2. Descriptive statistics of the variables

Variables	Mean \pm SD	Min	Max
Cell phone addiction	61.50 \pm 27.912	22	96
Aggressive behavior	22.46 \pm 24.938	7	37
Law -breaking behavior	20.97 \pm 7.507	8	34
Self-control	95.70 \pm 50.894	40	172

Table 2 shows that the mean scores of Cell phone addiction, Aggressive behavior, Lawbreaking behavior, and Self-control are 61.50 \pm 27,912, 22.46 \pm 24,938, 20.97 \pm 7,507, and 95.70 \pm 50,894, respectively.

Table 3. Tests of Normality

Variables	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.
Cell phone addiction	P < 0 .001	P < 0 .001
Aggressive behavior	P < 0 .001	P < 0 .001
Law -breaking behavior	P < 0 .001	P < 0 .001
Self-control	P < 0 .001	P < 0 .001

Since the researcher's sampling method was random, this assumption has been met (Table 3). The sample size (or the size of the data set) is sufficient to implement the structural equation model using the partial least squares method, and its value is equal to 299 people.

Table 4. Correlation matrix between research variables

Row	Variables	1	2	3	4	Sig.
1	Cell phone addiction	-	0.866**	0.739**	-0.888**	P < 0 .001
2	Aggressive behavior	-	-	0.818**	-0.883**	P < 0 .001
3	Law-breaking behavior	-	-	-	-0.761**	P < 0 .001
4	Self-control	-	-	-	-	P < 0 .001

** P<0.01

According to Table 4, there is a statistically significant relationship between the research variables (P<0.01). Similarly, based on the Pearson correlation coefficient, it can be said that there is a close correlation between the research variables. Correspondingly, it is negative for the relationship between cell phone addiction and aggressive behavior and law-breaking behavior with self-control. This means that the relationship between these variables is inverse. The relationship between the variable Cell phone addiction, Aggressive Behavior, and Law-breaking behavior is in the same direction. This means that when one variable increases, the other also increases.

Table 5. Standard research coefficients in general

Relationship of variables	Path coefficient	Sig.	T-value	Results
Cell phone addiction-> Aggressive behavior	0.387	P=0.001	3.388	confirmation
Cell phone addiction -> Law -breaking behavior	0.297	P= 0.022	2.303	confirmation
Cell phone addiction->Self-control	-0.888	P < 0.001	47.95	confirmation
Self-control-> Aggressive behavior	-0.54	P < 0.001	4.76	confirmation
Self-control-> Law -breaking behavior	-0.497	P < 0.001	3.87	confirmation

In this research, the researcher set the bootstrap value to 500.

Based on the results shown in Table 5, all path coefficients related to the final model are significant. Based on the standard coefficients in Table 5, the direct effect of Cell phone addiction on Aggressive behavior is significant ($\beta=0.387, P= 0.001$). the direct effect of Cell phone addiction on Lawbreaking behavior is significant ($\beta=0.297, P= 0.022$). Self-control has a direct negative effect on the Aggressive behavior ($\beta=-0.54, P<0.01$). Moreover, Self-control has a direct negative effect on the Lawbreaking behavior ($\beta=-0.497, P<0.01$). As a result of this finding, the structural model of the study is confirmed.

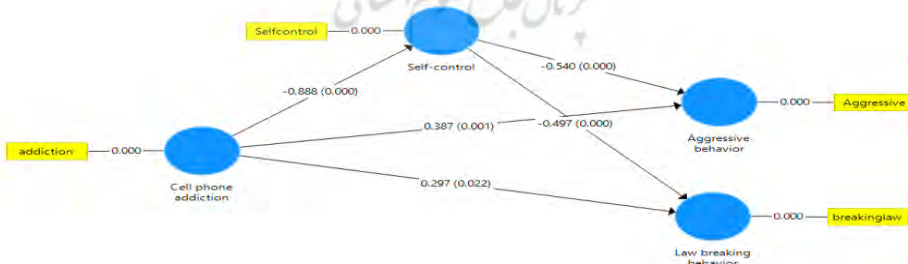


Figure 2: Path coefficients between variables and significance level

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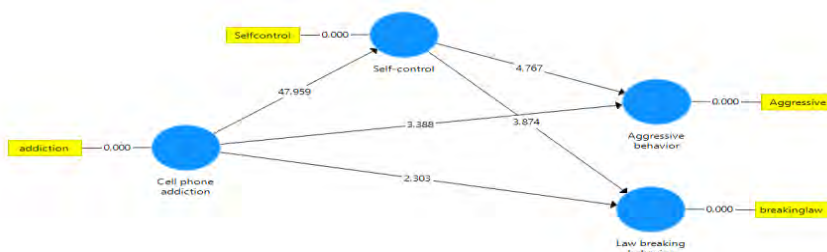


Figure 3: T-value between variables and significance level

The researcher used the Sobel test to check the significance of the mediating variable of the research. This test was calculated based on the following formula. In the Sobel test, if the Z value exceeds 1.96, it can be confirmed that the mediating effect of a variable is significant at the 95% confidence level.

$$Z - value = \frac{a * b}{\sqrt{(b^2 * s_a^2) + (a^2 * s_b^2) + (s_a^2 * s_b^2)}}$$

The Z-value for the Aggressive behavior variable was equal to 4.753. According to the values obtained in the Sobel test, it can be concluded that the mediating variable of the research is significant. The Z-value for the Lawbreaking behavior variable was equal to 3.869. According to the values obtained in the Sobel test, it can be concluded that the mediating variable of the research is significant.

Table 6. Reliability and validity of the model

Variables	Cronbach's Alpha	Composite Reliability	AVE
Cell phone addiction	0.917	0.928	0.97
Aggressive behavior	0.912	0.938	0.98
Law breaking behavior	0.981	0.987	0.97
Self-control	0.893	0.912	0.96

As it is clear from Table 6, the reliability and validity of the model have been confirmed. Cronbach's alpha reliability of the variables is higher than 0.7. The CR of these variables is also higher than 0.7. Similarly, convergent validity was also checked using the AVE index. The minimum value of ave should be 0.5, which means that the latent variable in question explains at least 50% of the variance of its observables. Since its value is higher than 0.5 for research variables, it can be concluded that the validity of the model is confirmed and it can be concluded that the validity of the model is confirmed

Table 7. Model fit

fit indices	SRMR	NFI	Chi-squared
Research model	0.038	0.950	64.632

In the same way, the researcher examined the fit of the model based on Table 7. As it is known, all the fit indices confirm the fit of the model. The SRMR or standardized root mean square residual index is the difference between the observed correlation and the correlation matrix of the structural model. If the value of this index is less than 0.8, it indicates a good fit for the model. **Table 8.** Predictive communication Q^2

Variables	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Aggressive behavior	299.000	58.603	0.804
Cell phone addiction	299.000	299.000	
Law breaking behavior	299.000	121.753	0.593
Self-control	299.000	64.824	0.783

Likewise, the researcher used blindfolding to check the model's ability to predict the research variable. Q^2 or Goodness of Fit values above zero indicate that the observed values are well reconstructed and the model has predictive ability (Table8).

In the same way, the researcher checked the goodness of fit of the model using an index called GOF based on the following formula.

$$GOF = \sqrt{\text{average (AVE)} \times \text{average (R}^2\text{)}}$$

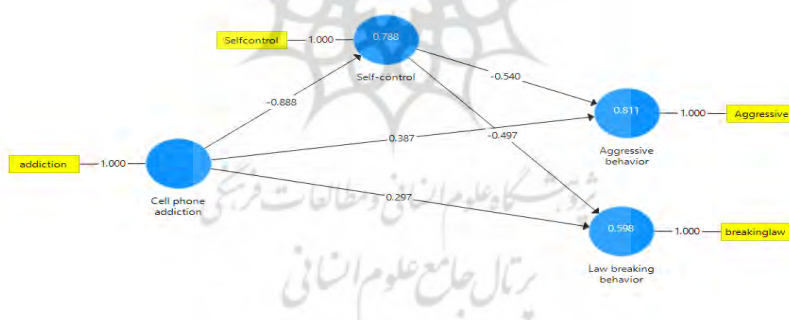


Figure 4: The amount of R^2 variables

Figure 4 shows the number obtained for the Aggressive behavior variable is equal to 0.88, because this value is higher than 0.36, it can be concluded that the model has a good fit. The number obtained for the Law breaking behavior variable was equal to 0.815, because this value is higher than 0.36, it can be concluded that the model has a good fit.

Discussion

In this study, the relationship between harmful smartphone use and externalization problems with the mediating role of self-control in a sample of adolescents with self-harm

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was investigated. Based on the findings of this research, the use of harmful smartphones and aggressive behavior among teenagers had a direct and significant relationship. Moreover, as indicated by this research, teenagers who utilize harmful smartphones have a greater propensity to involve themselves in law-breaking behavior. This finding was consistent with previous research in this field. Research shows that harmful and problematic smartphone use is linked to the internalizing and externalizing behaviors of self-harming adolescents (Ghanaat Bajgirani et al, 2023). Similarly, previous research has shown that social media and smartphone use can hurt the mental health of young people (Abi-Jaoude, Naylor, Pignatiello, 2020). Consistent with these findings, a study has shown that adolescents who engage in self-harm use the Internet to communicate with others, feel less isolated, and seek social support (Mancinelli et al, 2022).

In line with these results, previous research has shown that sometimes teenagers may engage in self-harm or intentional self-harm behaviors to escape from situational and psychological pressures, and in the meantime, the use of harmful smartphones can strengthen this behavior (Zamani, Kiamarsi, 2023). Previous research shows that self-harming behaviors are associated with a range of psychological problems such as depression and anxiety (Mozafari et al.2021), (Hughes et al, 2019). The results suggest that teenagers who engage in excessive and harmful internet use are more likely to experience additional behavioral problems. It triggers a perpetual cycle of adverse consequences (Pourmohseni-Kolouri et al, 2023). These findings suggest that when teenagers use the internet too much and in harmful ways, it can lead to more behavioral issues for them. This creates a harmful cycle. Also, studies have found a significant relationship between victimization of Internet harassment and self-harm in young people (Bye et al, 2023). Also, previous research has shown that adolescents with smartphone addiction experience a higher fear of being left behind and depression than normal groups (Fallahtafti et al, 2021).

Another finding was that self-control has a significant and negative effect on aggressive behavior. In addition, self-control has a significant negative impact on law-breaking behavior. Similarly, self-control acts as a mediator in the relationship between harmful smartphone use and externalizing problems. This finding is consistent with previous research in this field. A previous study found that the self-control of adolescents who used the phone less and less controlled it was higher and statistically significant (Akhavi Samaraein, Ahmadi, Pourzargar, 2023). Research shows low self-control is significantly linked to smartphone addiction (Mancinelli et al, 2021). Self-control is a person's ability to resist temporary temptations or endure temporary pain and discomfort to achieve an ideal long-term goal (Mancinelli et al, 2022). In this way, high self-control can be protective (Kim et al, 2018). One study has shown that a person's low self-control is linked to risky, addictive behavior and the development of emotional problems (Fallahtafti et al, 2021).

Based on this, it can be concluded that high self-control can be considered a protector to prevent self-harming behaviors in adolescents (Kim et al, 2018). Because it is associated with a greater capacity for emotional and behavioral self-regulation (Milyavskaya, Inzlicht, 2017), while if a person has low self-control, control is associated with risk-taking, addictive behaviors, and also with the development of emotional problems (Oliva,

Antolín-Suárez, Rodríguez-Meirinhos, 2019). Based on the findings of previous research, teenagers who have less self-control face feelings of disappointment, depression, and apathy, because the poor control of unpleasant emotions in people who have low self-control will cause them to be less adaptable and adaptable (Robayo et al, 2020). As a result, we can expect more self-harming behaviors in teenagers.

This study has certain limitations. For example, in the present study performed on a sample of adolescents with self-harm in Tehran, caution should be considered when generalizing to other clinical groups and samples. Therefore, larger sample sizes and more diverse age groups should be used in future research. Self-report and quantitative scales were used for data collection because of the potential for bias in these tools participants could have subjectively biased responses. The large number of questions on the questionnaire and the tendency of some subjects to exaggerate responses to specific items of the questionnaire to create a good self-image are other limitations of the study. Therefore, it is suggested to use diverse information collection methods such as observation and interviews (structured and semi-structured) in future research.

Conclusion

The results of the research showed that the use of harmful smartphones and the externalization of problems have a significant effect on the mediating role of self-control in a sample of self-harming teenagers. Harmful smartphone use has a direct and positive effect on problem-externalizing behaviors. This means that with the increase in the use of harmful smartphones among teenagers, the externalizing behaviors of problems in them also increase and strengthen. Self-control had a negative and significant mediating role in the relationship between harmful smartphone use and problem-externalizing behaviors. This finding showed that in teenagers who are exposed to using harmful smartphones a high amount, when they have a lot of self-control, the probability of externalizing problems becomes less, and as a result, the probability of self-harm decreases. Based on the present research, strengthening self-control in teenagers should be given more attention. Therefore, in psychological counseling for adolescents and counseling for their families, attention should be paid to the role of self-control of adolescents in facing various issues.

Disclosure Statements

In appreciation for the support received from executive management and students, the authors wish to express their deep appreciation. In the present study, the ethical considerations related to the subject were observed through the reference number of the ethics committee. IR.IAU.REC. 1400.078.

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