IJETS@R

(ISSN: 2587-0238)

Dikmen, S. (2024). Mediating Effect of Cyberbullying (Perpetration and/or Victimization) on the Relationship between Internet Addiction and Depression, *International Journal of Education Technology and Scientific Researches, 9(29), 727-742.*
DOI: http://dx.doi.org/10.35826/ijetsar.763

Article Type (Makale Türü): Research Article

MEDIATING EFFECT OF CYBERBULLYING (PERPETRATION AND/OR VICTIMIZATION) ON THE RELATIONSHIP BETWEEN INTERNET ADDICTION AND DEPRESSION

Semih DİKMEN
Dr., Fırat University, Elazığ, Turkey, sdikmen@firat.edu.tr
ORCID: 0000-0001-6077-2393

Received: 18.07.2024 *Accepted: 14.11.2024* *Published: 01.12.2024*

ABSTRACT

The relationship among Internet addiction (IA) and depression has been well-established. Few studies have attempted to explain the nature of these correlations, and none have considered at cyberbullying perpetration and/or victimization (CPV) as a possible mediating factor. The purpose of the present study was to test the hypothesis that CPV mediated the association between IA and depression symptoms. Thus, this study examined the mediating role of CPV using self-reported questionnaires in a sample of 697 university students in Turkey. The results revealed that the positive association between IA, depression and, CPV. Furthermore, findings from the mediation analysis revealed that CPV mediated the relationship between IA and depression symptoms and the hypothesized model explained approximately 24% of the variance in depression symptoms. his research enhances the understanding of how internet addiction and cyberbullying influence depressive symptoms in university students. The results draw attention to the effects of IA and CPV on the mental health of university students. The findings were discussed alongside relevant literature, and suggestions for future research were provided.

Keywords: Internet addiction, cyberbullying, depression symptoms.

Corresponded Author: Dr., Semih DİKMEN, Fırat University, sdikmen@firat.edu.tr
Ethics Committee Approval: Since the data for this study were collected prior to 2020, ethical approval was not required.
Plagiarism/Ethics: This article has been reviewed by at least two referees and has been confirmed to comply with research and publication ethics, containing no plagiarism.

INTRODUCTION

The internet has become an indispensable part of modern life, playing a crucial role in facilitating communication, access to information and purchases (Huang et al., 2022). In addition, the internet has significant effects on human behavior, including entertainment and social networking (Chou et al., 2017), making it an extensively utilized tool. According to recent studies, the number of internet users surpassed one billion in 2021 (China Internet Network Information Center, 2021). However, uncontrolled internet use has emerged as a significant social concern globally. Excessive internet use, or Internet addiction (IA), has been linked to negative impacts on mental health and has been shown to affect social, academic, and professional interactions (Beard & Wolf, 2001). IA is characterized as an inability to regulate online participation (Luo et al., 2022) and was first described by Ivan Goldberg in 1995. IA is considered a social issue that arises from an individual's incapacity to regulate their own internet usage. Moreover, IA is defined in the literature as excessive internet use (Yang et al., 2005), pathological internet use (Lei & Yang, 2007), compulsive internet use (Meerkerk et al., 2009), or problematic internet use. A systematic study found that depression among university students may be the strongest correlate of IA (Ko et al., 2012).

Internet Addiction and Depression

Depression is a widely studied variable associated with Internet Addiction (IA) in individuals. Depression is a common mental disorder characterized by states of sadness, emptiness, or irritability, which interfere with an individual's function and cause physical and cognitive changes (American Psychiatric Association, 2013). Studies (Bağatarhan & Siyez, 2020) demonstrate that IA is a significant predictor of depression symptoms. Moreover, models that delineate the causes of IA (Caplan, 2003; Davis, 2001) suggest that depression is a fundamental cause of the condition. According to the cognitive-behavioral model of pathological Internet usage (Davis, 2001), the likelihood of IA increases when psychopathologies such as depression are present, and depression can act as a triggering mechanism for IA. For example, a study of 954 undergraduate students in India revealed that IA can lead to depression (Jain et al., 2020). Another study consisting of 4,490 Japanese university students found that the odds ratio for depression increased with the severity of IA (Seki et al., 2019). Addiction scores in IA studies have shown a positive correlation with depression symptoms (Bahrainian et al., 2014). Furthermore, IA sufferers scored higher on the depression scale (Tonioni et al., 2012). It has also been observed that treating IA accompanied by resistant depressive symptoms can lead to a decrease in depression, social anxiety, and aggressive behaviors in Internet addicts (Ko et al., 2014). In fact, either IA or psychiatric symptoms may cause the emergence or continuation of the other (Yücens & Üzer, 2018). Studies have linked IA with an increase in cyberbullying problems (Sinkkonen et al., 2014), which can cause mental, physical, and social harm (Wang et al., 2012; Floros et al., 2013; Jung et al., 2014).

Internet Addiction and Cyberbullying Perpetration and/or Victimization (CPV)

Negative aspects of the Internet can include IA as well as online risks such as cyberbullying (Falender, 2017). Cyberbullying is when someone bullying or bullies or harasses others on the Internet and other digital spaces, especially on social media sites (USlegal, 2022). On the other hand, cybervictimization refers to repeated aggressive behavior or intentional harm-doing by peers where the power imbalance makes it difficult for victims to defend themselves (Arseneault, 2018). Although cyberbullying shares several negative consequences of traditional bullying, constructs such as anonymity, duration of bullying events, and difficulty in identifying who the bully is are some of the characteristics that distinguish it from face-to-face bullying (Park et al., 2014). These different nature of cyberbullying may make it a more harmful aggressive behavior than traditional bullying. Empirical evidence has revealed that IA is one of the strong predictors of university students' cyberbullying behaviors (Chu et al., 2021). In addition, a number of studies have revealed that cyberbullying victimization is associated with IA. A meta-analysis study revealed that there is a positive relationship between CPV and frequency of Internet use. (Kowalski et al., 2014). A longitudinal study (Gámez-Guadix et al., 2016) also shows that IA can predict the perpetration of cyberbullying after six months. On the other side, negative experiences and stressors would motivate some people to use the Internet excessively, in accordance with the compensatory Internet usage theory (CIUT; Kardefelt-Winther, 2014), which improves understanding of problematic Internet use, such as IA. Being subjected to cyberbullying, which is a negative experience, might increase problematic Internet use. IA could play a pivotal role in the process, from cybervictimization to depression, one of the most common negative emotions. A number of meta-analysis studies have discovered a connection between depression symptoms and having experienced cyberbullying (Kowalski et al., 2014; Kwan et al., 2020). Thus, IA could play an important role in the emergence of depression and CPV, as well as vice versa. In other words, while IA is effective in increasing cyberbullying and depression, a high level of depression may cause the individual to exhibit negative behaviors such as cyberbullying perpetration and/or victimization and IA.

The Mediating Role of Cyberbullying Perpetration and/or Victimization

Research has demonstrated that individuals involved in CPV often experience a range of psychological challenges, such as feelings of hopelessness, isolation, heightened anxiety, and diminished self-worth (Guo, 2016). Furthermore, among the various adverse consequences of CPV, one of the most notable is its strong association with depression (Kwan et al., 2020). Evidence from both cross-sectional and longitudinal studies has identified CPV as a substantial risk factor for depressive symptoms (Calvete et al., 2016; Chu et al., 2018). Consequently, it is plausible to hypothesize that CPV could play a mediating role in the relationship between IA and mental health conditions like depression. This notion is supported by numerous empirical findings, aligning with theoretical perspectives on this topic (Zhao et al., 2017; Sela et al., 2020). However, to our knowledge, the mediating effect of CPV on the association between IA and depression has not been thoroughly examined. Increasing evidence highlights a strong correlation between CPV and depression (Williams et al., 2017). Yet, limited research has

explored the specific pathways through which CPV influences depressive symptoms. Understanding these underlying mechanisms is critical for developing effective strategies to prevent depression.

Present Study

Although the mechanisms underlying IA and CPV are not known, it can be said that individuals are a risk factor for the development of depressive symptoms. Moreover, despite previous study findings suggesting that IA may be strongly associated with depression symptoms, the underlying mediating mechanism (mediating role of cyberbullying perpetration and/or victimization) remains unclear. In summary, this study aimed to examine the meditating roles of CPV in the relationship between university students' IA and depression symptoms. Interestingly, to date, this proposed mediation pathway has not been evaluated in any study.

First, students with IA are more likely to develop depressive symptoms. Specifically, after the increase in the duration of Internet use and the development of addiction; social, behavioral and various mental disorders lead to depression (Weinstein & Lejoyeux, 2010). Therefore, the following hypothesis was formulated:

H1: IA will a positive and direct effect on depression symptoms.

Second, individuals who spend more time online are exposed to a range of potential risks, including risks related to being cyberbullied, such as being the invasion of privacy online, target of harassment, identity theft, or manipulation and sexual exploitation (Keith & Martin, 2005). In addition, few studies have investigated the relationship between IA and CPV. It is possible that as individuals with IA are more online, they have a higher chance of becoming a CPV (Leung & Lee, 2012). Alternatively, CPV could also lead to IA, as a consequence of being victimized and perpetrated. Therefore, the following hypothesis was formulated:

H2: IA will a positive and direct effect on CPV.

Third, there is growing evidence that CPV are closely related to depression (Williams et al., 2017). Specifically, since CPV always involves verbal insults and attacks on one's personal values, it often triggers mental disorders, leading to depression (Gamez-Guadix et al., 2013). However, few studies have investigated the mechanism of CPV on depression. Exploring the mechanisms underlying this relationship may be important in inhibiting the development of depression. Therefore, the following hypothesis was formulated:

H3: CPV will a positive and direct effect on depression symptoms.

Finally, individuals with IA may be more likely to engage in CPV, while CPV experiences may exacerbate depression (Chang et al, 2015). Therefore, the following hypothesis was formulated:

H4: CPV will mediate the association between depression symptoms, and IA.

The proposed model is presented in Figure 1.

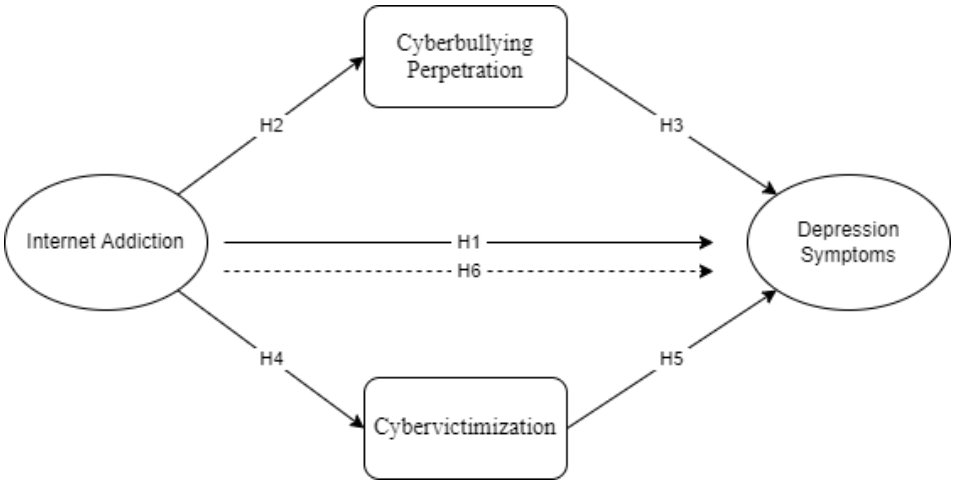

Figure 1. The proposed model.

METHOD

Participants, from September to November 2021, this survey was carried out at 3 universities in 3 different Turkish regions. The study's objective was described to the participants, who were also made aware that taking part in the study was completely optional. A total of 697 signed informed consents were collected from university students (female = 367; male = 330). University students were selected utilizing a convenience sampling method. The average age of the sample was 22.32 years (SD = 1.34, ranging from 17 to 29). The daily Internet use duration varied between 0.30 and 10 h (mean = 2.76 h; SD = 1.89).

Measures

Depression, symptoms was assessed by the Beck Depression Inventory (BDI). Beck Depression Inventory was developed by Beck et al. (1996) and adapted into Turkish in 2021 (Dikmen, 2021). The scale contains 21 items, covering seven dimensions, namely feeling restless and unhappy, feelings of guilt, feelings of failure, suicidality and complex emotions, loss of appetite, low life satisfaction, sleep disturbance and loss of sexual interest. Participants were asked during the past week how often they experienced feelings such as the following: “I am not hopeless and pessimistic about the future,” and “I get as much satisfaction out of things as I used to.” On a 4-point Likert-type scale, with 0 denoting "never" and 3 denoting "always," respondents stated how much they agreed with the items. After adding up all of the responses, the final scores ranged from 0 to 63. Higher depression levels are indicated by higher scores. Those receiving 29 and higher scores are defined as “extreme depression.” Those receiving scores between 20 and 28 are defined as “moderate depression symptoms,” those receiving scores 14 and 19 are defined as “mild mood disturbance,” whereas those receiving scores less than 13 are defined as “normal” In the present study, Cronbach’s α coefficient was 0.84.

Internet Addiction, Young (1998) developed the Internet Addiction Scale (IA) to measure IA, and Kutlu et al. (2016) translated it into Turkish. With a Likert-type response (1=Never, 5=Always), the 12-item (e.g. “I spend

more time on internet than previously planned") scale is unidimensional and scored. Higher scores show a higher risk of IA (Kutlu et al., 2018). Total scores ranged from 12 to 60 after the responses to each item were added together. In the present study, Cronbach's α coefficient was 0.87.

Cyberbullying (Perpetration and/or Victimization), the cyberbullying (perpetration/victimization) Inventory was developed by Erdur-Baker ve Kavşut (2007) and was revised by Topçu and Erdur-Baker (2010). The scale contains 21 items, covering two form, namely cyberbullying perpetration, and cybervictimization. By way of example "Sharing a humiliating message, photo or video image in a virtual environment without permission". In the inventory, participants were asked to answer the the items in the form of cyberbullying perpetration as "I did it". On the other hand, they were asked to answer the items in the form of cybervictimization as "it was done to me". On a 4-point Likert type scale participants were asked to score themselves. The responses to all the items were summed, with total scores between 12 and 48. Higher scores indicate higher levels of cyberbullying perpetration or cybervictimization. In the present study, Cronbach's α coefficient was 0.84 for Cyberbullying perpetration and cybervictimization

Procedure and Ethics

The data of the study were collected before 2020. Participants in the current study provided written, informed consent. Data were gathered via an internet form. Participants could withdraw from the study at any moment without facing any repercussions, and anonymity was guaranteed. It took approximately 15 minutes for the students to finish all the questionnaires.

Data Analysis

Data analysis and model evaluation in this study were performed using SPSS 22.0 and AMOS 22.0 software. Prior to conducting the analysis, several factors were examined, including outliers, univariate and multivariate normality, multicollinearity issues, and the adequacy of the sample size. The results of these checks indicated that the data met all the necessary assumptions for structural equation modeling (SEM). The hypothetical model was subsequently tested through SEM. The Tucker-Lewis Index (TLI), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI) were used to assess the model's fit. Hu and Bentler (1999) defined an adequate model fit as having RMSEA values less than 0.08 and CFI, AFI, and IFI values greater than 0.90. Additionally, Pearson's correlation coefficients were calculated to examine the relationships between the primary variables in this research.

FINDINGS

Findings of the research; It should support the purpose and problem of the study. In the Results section, only the findings should be presented and explained. Never comment. The comment should be made in the discussion and conclusion part. In the Findings section, explanations can be made using tables, figures, graphics or pictures when necessary.

Table 1 shows descriptive data and bivariate correlations for each study variable. As a result of the analyses were in the expected direction. IA were positively associated with depression symptoms, and CPV.

Table 1. Descriptive Statistics and Correlations.

	M	SD	1	2	3
Internet addiction	2.38	.793	-		
Depression symptoms	12.38	7.71	.445**	-	
Cyberbullying perpetration	1.21	.324	.444**	.345**	-
Cybervictimization	1.34	.421	.364**	.346**	.589**

N=697, **p< .001

As shown in Table 1, IA was positively associated with depression symptoms (r= .445, p< .001), cyberbullying perpetration (r = .444, p< .001), and cybervictimization (r = .364, p < 0.001) respectively. In addition, depression was positively associated with cyberbullying perpetration (r = .345, p < 0.001), and cybervictimization (r = .346, p < 0.001) respectively.

Testing for the Mediating Effect

The findings of the tested model of the mediation of CPV in the relationship between depression symptoms and IA are presented in Figure 2.

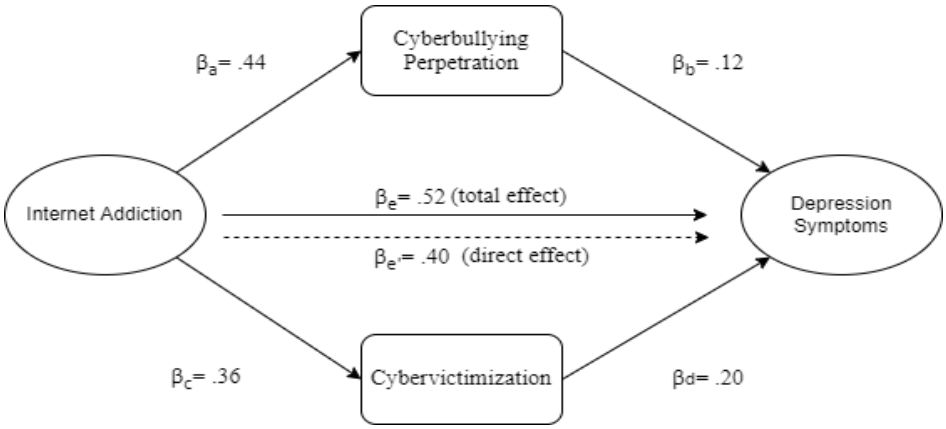

Figure 2. Mediation Model for IA and Life Depression Symptoms through CPV

As presented in Figure 2, the total effect of IA on depression symptoms is statistically significant (βe= .52, SE= .037, t=6.605, p< .001) (H1). The results showed a good fit: χ^2 /sd = 1.058, GFI= .98, AGFI= .96, CFI= .99, TLI= .99, RMSEA= .017, SRMR = .035. The direct effect of IA on Cyberbullying perpetration is statistically significant (βa= .44, SE= .025, t= 7.237, p< .001) (H2) as well as the direct effect of Cyberbullying perpetration on depression symptoms (βb= .12, SE= .087, t= 2.924, p< .001) (H3). The direct effect of IA on Cybervictimization is statistically significant (βc= .36, SE= .034, t= 5.707, p< .001) (H2) as well as the direct effect of Cybervictimization on depression symptoms (βd= .20, SE= .065, t= 3.520, p< .001) (H). When IA and Cyberbullying perpetration and victimization (mediating variable) were entered simultaneously into the model (H6), the significant relationship between IA and depression symptoms decreased but the significance level did not change (βe'= .40, SE= .039, t

= 4.682, p < .001). The mediational hypothesis is significant (F= 22.406, p< .001) and explained approximately 24 % of the variance in depression symptoms.

Indirect Effect of Internet Addiction on Depression Symptoms through Cyberbullying Perpetration and/or Victimization

To ascertain whether the effects were significant, the bias corrected percentile bootstrap method (with 5000 bootstrapping sample) was used (Table 2). The comparison of direct and indirect effect of IA on depression symptoms through Cyberbullying perpetration and/or victimization is presented in Table 2.

Table 2. Mediation Analysis.

	Without mediator		
	Direct effect		
	Estimate	Lower	Upper
IA → DS	.516**	.364	.643
	With mediator		
	Direct effect		
	Estimate	Lower	Upper
IA → DS	.395**	.099	.536
	Indirect effect		
	Estimate	Lower	Upper
IA → CP → DS	.100**	.022	.193
IA → CV → DS	.094**	.028	.196
	Total Indirect effect		
	Estimate		
IA → CPV → DS	.127**	.035	.241

** p< .001, IA= Internet Addiction, CP= Cyberbullying Perpetration CV= Cybervictimization, CPV= Cyberbullying perpetration and victimization, DS= Depression Symptoms

Table 2 shows the effect of IA on depression symptoms decreased from 0.52 to 0.40 when Cyberbullying perpetration and victimization was added in as a mediating variable, and the indirect effect was significant (p < 0.001). The results point out that the indirect effect (the difference between the total and direct effects/e-e') of IA through Cyberbullying perpetration and victimization on depression symptoms is statistically significant (95% BCa CI = .035, .241). In addition, it was determined that the partial mediating roles of Cyberbullying perpetration (95% BCa CI = .022, .193) and victimization (95% BCa CI = .028, .196) separately in the relationship between internet addiction and depression symptoms were significant (p < 0.001). The indirect effects are considered significant if zero does not fall within the confidence interval (Kenny, 2018). The results indicated that the Cyberbullying perpetration and victimization was a partial mediator between IA and depression symptoms.

CONCLUSION and DISCUSSION

The present study aimed to examine the association between IA and depression symptoms through the mediation variables of CPV in Turkish university students. The results show that H1, H2, H3, and H4 were proved.

The results of the study showed that there is a significant and positive relationship between IA, depression symptoms and CPV.

The results showed that IA had a direct and positive relation to depression symptoms, which supports H1. In other studies, it has been reported that IA is an important factor in the increase of depression symptoms (Choo et al., 2010; Elhai et al., 2017). Longitudinal studies on IA indicate that students with higher IA tend to have more mental health problems such as depression (Strittmatter et al., 2016; Lau et al., 2017). IA is also significantly associated with forms of separation and anti-sociality (Canan et al., 2012). Another study reported that the risk of depressive symptoms was 2.6 times higher in students who had IA or limited symptoms than those who did not have (Günay et al., 2018). Similarly, depending on the increase in Internet usage time; It was determined that emotional and behavioral disorders such as loneliness, social isolation, aggression and depression symptoms increased (Khoshakhlagh & Faramarzi, 2012). Thus, university students' excessive use of the Internet to pass time or relieve their daily stress may increase their IA levels, causing them to be less social and deteriorate their interpersonal relationships in the real world. Therefore, they may become more depressed.

Secondly, IA had a direct and positive relation to CPV, which proved H2. In other words, it can be said that IA causes individuals to become more CPV. The results of a number of studies in the literature confirm the positive correlation between IA and CPV (Gámez-Guadix et al., 2013; Jung et al., 2014). IA is thought to be a coping mechanism for cyberbullying victims to get rid of the unpleasant or overpowering feelings brought on by cyberbullying (Wachs et al., 2020). As a result, victims of cyberbullying risk losing the ability to judge how much time should be spent online. Additionally, victims of cyberbullying spend more time on the Internet searching for new material spread by cyberbullies (Stodt et al., 2016). Therefore, a strong correlation may arise between CPV and IA. Furthermore, there is some empirical evidence from cross-sectional and longitudinal research suggesting that those who experience cyberbullying have a higher odds of developing IA (Liu et al., 2021; Gámez-Guadix et al., 2013). Thus, it can be said that cyberbullies use the Internet more to see how they can bully more or the effects of bullying, while cyberbullying victims use the Internet more to investigate how they can fight the situation they face. This may cause both cyberbullies and victims of cyberbullying to become more Internet addicted.

The results showed that CPV had a direct and positive relation to depression symptoms, which was the same as H3. In other words, CPV had increased odds of depression. Studies in the literature has show that cyberbullying was significantly associated to depression symptoms (Bottino, Bottino, Caroline et al., 2015; Kowalski et al., 2014). Additionally, it was discovered that students with CPV were more likely to have subsequent depression (Tian, Yan & Huebner, 2018). Thus, the results of the present study were consistent with previous studies. Furthermore, some studies showed that depression was a significant predictor of CPV (Chen et al., 2017; Chu et al., 2019). The relationship between depression and CPV has three possible pathways: The first is the symptom-driven model, in which individuals first become depressed and then become targets of CPV (Saint-Georges & Vaillancourt, 2019). The second is the interpersonal risk model, which states that CPV causes depression (Ttofi

et al., 2011). And in the last, transactional model (reciprocal associations), there is a reciprocal spiral structure between depression and CPV. In this model, the level of depression may trigger cyberbullying, and the opposite may also be the case (Reijntjes et al., 2010). Therefore, controlling CPV can be effective in reducing depression.

Consistent in present study expectation (H4), IA positively predicted depression symptoms; and CPV played a mediating role in this relation, which extends previous empirical research. Longitudinal studies have determined that there is a significant relationship between CPV and depressive symptoms, and this situation increases the level of depression. (Gámez-Guadix et al., 2013). In another study, it was determined that individuals with IA may be more likely to experience CPV, while cyberbullying experiences increase depression. (Chang, et al., 2015). Similarly, it has been stated that cyberbully victims show more depressive symptoms, while cyberbullies display some aggressive and against the rules behaviors (Jung, et al., 2014). University students with IA may have higher rates of CPV, while CPV experiences may increase depression symptoms. Indeed, several meta-analysis studies (Fisher et al., 2016; Kwan et al., 2020) have found that the experience of being cyberbullied was associated with depressive symptoms. These results reinforce the findings of the present study.

Limitations and Future Research

Despite these useful implications, our study is not without limitations. First, the present study's cross-sectional nature prevented causal inferences. It may reflect that university students' IA can affect the relationship between the longitudinal effects of depression and their CPV experiences, which is something that needs to be discussed in future studies. Second, the sample of the study was too modest to generalize. Therefore, the model can be retested on a larger sample group. Third, structural equation models depend on researchers' assumptions. Therefore, it may be important for future research to test different hypotheses in order to obtain more detailed information about the relationship between IA, CPV and depression. Finally, the current study may not be representative of university students living in other region of Turkey. Thus, future studies should test that the results be further validated with different and more representative samples.

SUGGESTIONS

Based on the findings of this study, several recommendations are proposed to address internet addiction, cyberbullying, and depression symptoms among university students. Firstly, expanding psychosocial support programs and individual counseling services can assist students in coping with these issues effectively. Educational programs aimed at raising awareness of cyberbullying and campaigns promoting "digital hygiene" can encourage students to adopt more conscious internet usage habits. It is essential for university guidance and psychological counseling centers to play a more active role in these processes.

Furthermore, organizing awareness programs to educate families and the community about these problems and encouraging parents to take on supportive roles is highly recommended. At the academic level, interdisciplinary studies focusing on the relationship between cyberbullying, internet addiction, and depression should be

supported. Conducting longitudinal studies to explore cause-and-effect relationships and replicating research with broader sample groups from different socio-cultural contexts are also necessary. Lastly, universities and educational policymakers should engage in strategic planning and develop preventive policies to combat these issues. These recommendations aim to provide practical and academic solutions to support the psychological and social well-being of young individuals.

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Author Publish.

Arseneault, L. (2018). Annual research review: The persistent and pervasive impact of being bullied in childhood and adolescence: Implications for policy and practice. *Journal of Child Psychology and Psychiatry*, *59*(4), 405–421. https://doi.org/10.1111/jcpp.12841

Bağatarhan, T., & Siyez, D. M. (2020). Rumination and internet addiction among adolescents: The mediating role of depression. *Child and Adolescent Social Work Journal*, 1-10.

Bahrainian, S. A., Alizadeh, K. H., Raeisoon, M. R., Gorji, O. H., & Khazaee, A. (2014). Relationship of Internet addiction with self-esteem and depression in university students. *Journal of Preventive Medicine and Hygiene*, *55*(3), 86.

Liu, C., Liu, Z., & Yuan, G. (2021). Cyberbullying victimization and problematic Internet use among Chinese adolescents: Longitudinal mediation through mindfulness and depression. *Journal of Health Psychology, 26*(14), 2822-2831.

Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for Internet addiction. *Cyberpsychology & Behavior*, *4*(3), 377-383.

Beck, A. T., Steer R. A., Ball, R., & Ranieri ,W. F. (1996). Comparison of beck depression inventories-IA and-II in psychiatric outpatients. *Journal of Personality Assessment, 67*, 588– 597. https://doi.org/10.1207/s15327752jpa6703_13

Bottino, S. M. B., Bottino, C., Regina, C. G., Correia, A. V. L., & Ribeiro, W. S. (2015). Cyberbullying and adolescent mental health: Systematic review. *Cadernos de Saude Publica*, *31*, 463-475.

Calvete, E., Orue, I., & Gámez-Guadix, M. (2016). Cyberbullying victimization and depression in adolescents: The mediating role of body image and cognitive schemas in a one-year prospective study. *European Journal on Criminal Policy and Research, 22*, 271-284. doi: 10.1007/s10610-015-9292-8

Caplan, S. E. (2003). Preference for online social interaction: A theory of problematic internet use and psychosocial well-being. *Communication Research, 30*(6), 625–648. https://doi.org/10.1177/0093650203257842.

Chang, F. C., Chiu, C. H., Miao, N. F., Chen, P. H., Lee, C. M., Chiang, J. T., & Pan, Y. C. (2015). The relationship between parental mediation and Internet addiction among adolescents, and the association with cyberbullying and depression. *Comprehensive Psychiatry*, *57*, 21-28.

Chen, L., Ho, S. S., & Lwin, M. O. (2017). A meta-analysis of factors predicting cyberbullying perpetration and victimization: From the social cognitive and media effects approach. *New Media & Society*, *19*(8), 1194-1213.

China Internet Network Information Center (2021). *The 48 nd China Statistical Report on Internet Development.* http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/202109/P020210915523670981527.pdf

Choo, H., Gentile, D., Sim, T., Li, D. D., Khoo, A., & Liau, A. (2010). Pathological video-gaming among Singaporean youth. *Annals Academy of Medicine, 39*(11), 822-829.

Chou, W. P., Lee, K. H., Ko, C. H., Liu, T. L., Hsiao, R. C., Lin, H. F., & Yen, C. F. (2017). Relationship between psychological inflexibility and experiential avoidance and internet addiction: Mediating effects of mental health problems. *Psychiatry Research*, *257*, 40-44.

Chu, X. W., Fan, C. Y., Lian, S. L., & Zhou, Z. K. (2019). Does bullying victimization really influence adolescents' psychosocial problems? A three-wave longitudinal study in China. *Journal of Affective Disorders*, *246*, 603-610.

Chu, X. W., Fan, C. Y., Liu, Q. Q., & Zhou, Z. K. (2018). Cyberbullying victimization and symptoms of depression and anxiety among Chinese adolescents: Examining hopelessness as a mediator and self-compassion as a moderator. *Computers in Human Behavior*, *86*, 377-386. doi: 10.1016/j.chb.2018.04.039

Chu, X., Li, Y., Wang, P., Zeng, P., & Lei, L. (2021). Social support and cyberbullying for university students: The mediating role of internet addiction and the moderating role of stress. *Current Psychology*, 1-9.

Davis, R. A. (2001). A cognitive-behavioral model of pathological internet use. *Computers in Human Behavior, 17*, 187–195. https://doi.org/10.1016/S0747-5632(00)00041-8.

Dikmen, M. (2020). Examination of the reliability and validity of the Beck Depression Inventory II on pre-service teachers. *Turkish Studies - Education, 15*(6), 4137-4150. https://dx.doi.org/10.47423/TurkishStudies.46722

Elhai, J. D., Dvorak, R. D., Levine, J. C., & Hall, B. J. (2017). Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *Journal of Affective Disorders*, *207*, 251-259.

Erdur-Baker, Ö. & Kavúut, F. (2007). A new face of peer bullying: cyberbullying. *Journal of Euroasian Educational Research, 27*, 31-42

Falender, J. (2017). Bernadette H. Schell: Online health and safety: From cyberbullying to Internet addiction. *Journal of Youth & Adolescence, 46*(2), 478-481. https://doi.org/10.1007/s10964-016-0588-x

Fisher, B. W., Gardella, J. H., & Teurbe-Tolon, A. R. (2016). Peer cybervictimization among adolescents and the associated internalizing and externalizing problems: A meta-analysis. *Journal of Youth and Adolescence*, *45*(9), 1727-1743.

Floros, G. D., Siomos, K. E., Fisoun, V., Dafouli, E., & Geroukalis, D. (2013). Adolescent online cyberbullying in Greece: The impact of parental online security practices, bonding, and online impulsiveness. *Journal of School Health*, *83*(6), 445-453.

Gámez-Guadix, M., Orue, I., Smith, P. K., & Calvete, E. (2013). Longitudinal and reciprocal relations of cyberbullying with depression, substance use, and problematic internet use among adolescents. *Journal of Adolescent Health*, *53*(4), 446-452.

Goldberg, I. (1995). *Internet Addiction Disorder*. *http://users.rider.edu/~suler/psycyber/index.html*.

Guo, S. (2016). A meta-analysis of the predictors of cyberbullying perpetration and victimization. *Psychology in the Schools*, *53*(4), 432-453.

Günay, O., Öztürk, A., & Arslantaş, E. E. (2018). Internet addiction and depression levels in Erciyes University students. *Neurological Sciences*, *31*, 79-88.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Huang, Y. J., Kao, T. J., Chen, W., Yao, S. J., & Shih, C. L. (2022). Effectiveness of a psychological growth camp without Internet in the treatment of adolescents at risk of Internet addiction: a pilot study. *Current Medical Research and Opinion*, 1-13.

Jain, A., Sharma, R., Gaur, K. L., Yadav, N., Sharma, P., Sharma, N., ... & Yadav, K. S. (2020). Study of internet addiction and its association with depression and insomnia in university students. *Journal of Family Medicine and Primary Care*, *9*(3), 1700.

Jung, Y. E., Leventhal, B., Kim, Y. S., Park, T. W., Lee, S. H., Lee, M., ... & Park, J. I. (2014). Cyberbullying, problematic internet use, and psychopathologic symptoms among Korean youth. *Yonsei Medical Journal*, *55*(3), 826-830.

Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior, 31*, 351–354. https://doi.org/10.1016/j.chb.2013.10.059.

Keith, S., & Martin, M. E. (2005). Cyber-Bullying: Creating a culture: Reclaiming children and youth. *Journal of Strength-based Interventions*, *134*(3), 224-228.

Kenny, D. A. (2018). *Mediation*. http://davidakenny.net: http://davidakenny.net/cm/mediate.htm

Khoshakhlagh, H., & Faramarzi, S. (2012). The relationship of emotional intelligence and mental disorders with internet addiction in internet users university students. *Addiction & Health*, *4*(3-4), 133.

Ko, C. H., Liu, T. L., Wang, P. W., Chen, C. S., Yen, C. F., & Yen, J. Y. (2014). The exacerbation of depression, hostility, and social anxiety in the course of Internet addiction among adolescents: A prospective study. *Comprehensive Psychiatry*, *55*(6), 1377-1384.

Ko, C. H., Yen, J. Y., Yen, C. F., Chen, C. S., & Chen, C. C. (2012). The association between Internet addiction and psychiatric disorder: a review of the literature. *European Psychiatry*, *27*(1), 1-8.

Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, *140*(4), 1073.

Kutlu, M., Savcı, M., Demir, Y., & Aysan, F. (2016). Turkish adaptation of Young's Internet Addiction Test-Short Form: a reliability and validity study on university students and adolescents. *Anadolu Psikiyatri Dergisi*, *17*(1), 69-76.

Kwan, I., Dickson, K., Richardson, M., MacDowall, W., Burchett, H., Stansfield, C., ... & Thomas, J. (2020). Cyberbullying and children and young people's mental health: a systematic map of systematic reviews. *Cyberpsychology, Behavior, and Social Networking*, *23*(2), 72-82.

Lau, J. T., Wu, A. M., Gross, D. L., Cheng, K. M., & Lau, M. M. (2017). Is Internet addiction transitory or persistent? Incidence and prospective predictors of remission of Internet addiction among Chinese secondary school students. *Addictive Behaviors*, *74*, 55-62.

Lei, L., & Yang, Y. (2007). The development and validation of adolescent pathological Internet use scale. *Acta Psychologica Sinica, 39*(04), 688–696. https://doi.org/10.1037/t53624-000

Leung, L., & Lee, P. S. (2012). Impact of internet literacy, internet addiction symptoms, and internet activities on academic performance. *Social Science Computer Review*, *30*(4), 403-418.

Luo, R., Li, Q., Meng, G., Zheng, Y., Hu, K., Zhang, X., ... & Liu, X. (2022). The association between intolerance of uncertainty and Internet addiction during the second wave of the coronavirus disease 2019 pandemic: A multiple mediation model considering depression and risk perception. *PsyCh Journal, 11*(3), 383-391.

Meerkerk, G.-J., Van Den Eijnden, R. J., Vermulst, A. A., & Garretsen, H. F. (2009). The compulsive internet use scale (CIUS): Some psychometric properties. *Cyberpsychology & Behavior, 12*(1), 1–6. https://doi.org/10.1089/cpb.2008.0181

Park, S., Na, E. Y., & Kim, E. M. (2014). The relationship between online activities, netiquette and cyberbullying. *Children and Youth Services Review*, *42*, 74-81.

Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect*, *34*(4), 244-252.

Saint-Georges, Z., & Vaillancourt, T. (2019). The temporal sequence of depressive symptoms, peer victimization, and self-esteem across adolescence: Evidence for an integrated self-perception driven model. *Development and Psychopathology*, *32*(3), 975-984.

Seki, T., Hamazaki, K., Natori, T., & Inadera, H. (2019). Relationship between internet addiction and depression among Japanese university students. *Journal of Affective Disorders*, *256*, 668-672.

Sela, Y., Zach, M., Amichay-Hamburger, Y., Mishali, M., & Omer, H. (2020). Family environment and problematic internet use among adolescents: The mediating roles of depression and fear of missing out. *Computers in Human Behavior*, *106*, 106226. doi: 10.1016/j.chb.2019.106226

Sinkkonen, H. M., Puhakka, H., & Meriläinen, M. (2014). Internet use and addiction among Finnish adolescents (15–19 years). *Journal of Adolescence*, *37*(2), 123-131.

Stodt, B., Wegmann, E., & Brand, M. (2016). Predicting dysfunctional Internet use: The role of age, conscientiousness, and Internet literacy in Internet addiction and cyberbullying. *International Journal of Cyber Behavior, Psychology and Learning (IJCBPL)*, *6*(4), 28-43.

Strittmatter, E., Parzer, P., Brunner, R., Fischer, G., Durkee, T., Carli, V., ... & Kaess, M. (2016). A 2-year longitudinal study of prospective predictors of pathological Internet use in adolescents. *European Child & Adolescent Psychiatry*, *25*(7), 725-734.

Thomée, S., Eklöf, M., Gustafsson, E., Nilsson, R., & Hagberg, M. (2007). Prevalence of perceived stress, symptoms of depression and sleep disturbances in relation to information and communication technology (ICT) use among young adults–an explorative prospective study. *Computers in Human Behavior*, *23*(3), 1300-1321.

Tian, L., Yan, Y., & Huebner, E. S. (2018). Effects of cyberbullying and cybervictimization on early adolescents' mental health: Differential mediating roles of perceived peer relationship stress. *Cyberpsychology, Behavior, and Social Networking*, *21*(7), 429-436.

Tonioni, F., D'Alessandris, L., Lai, C., Martinelli, D., Corvino, S., Vasale, M., ... & Bria, P. (2012). Internet addiction: hours spent online, behaviors and psychological symptoms. *General Hospital Psychiatry*, *34*(1), 80-87.

Topcu, Ç., & Erdur-Baker, Ö. (2010). The revised cyber bullying inventory (RCBI): Validity and reliability studies. *Procedia-Social and Behavioral Sciences*, *5*, 660-664.

Ttofi, M. M., Farrington, D. P., Lösel, F., & Loeber, R. (2011). Do the victims of school bullies tend to become depressed later in life? A systematic review and meta-analysis of longitudinal studies. *Journal of Aggression, Conflict and Peace Research*, 3(2), 63-73.

USlegal (2022). *Cyber Bullying Law and Legal Definition.* https://definitions.uslegal.com/c/cyber-bullying/

Wachs, S., Vazsonyi, A. T., Wright, M. F., & Ksinan Jiskrova, G. (2020). Cross-national associations among cyberbullying victimization, self-esteem, and Internet addiction: Direct and indirect effects of alexithymia. *Frontiers in Psychology*, *11*, 1368.

Wang, L., Luo, J., Gao, W., & Kong, J. (2012). The effect of Internet use on adolescents' lifestyles: A national survey. *Computers in Human Behavior*, *28*(6), 2007-2013.

Weinstein, A., & Lejoyeux, M. (2010). Internet addiction or excessive internet use. *The American Journal of Drug and Alcohol Abuse*, *36*(5), 277-283.

Williams, L. J., Cote, J. A., & Buckley, M. R. (1989). Lack of method variance in self-reported affect and perceptions at work: reality or artifact?. *Journal of Applied Psychology*, *74*(3), 462.

Williams, S. G., Langhinrichsen-Rohling, J., Wornell, C., & Finnegan, H. (2017). Adolescents transitioning to high school: Sex differences in bullying victimization associated with depressive symptoms, suicide ideation, and suicide attempts. *The Journal of School Nursing*, *33*(6), 467-479.

Yang, C. K., Choe, B. M., Baity, M., Lee, J. H., & Cho, J. S. (2005). SCL-90-R and 16PF profiles of senior high school students with excessive internet use. *The Canadian Journal of Psychiatry*, *50*(7), 407-414. https://doi.org/10.1177/070674370505000704

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.

Yücens, B., & Üzer, A. (2018). The relationship between internet addiction, social anxiety, impulsivity, self-esteem, and depression in a sample of Turkish undergraduate medical students. *Psychiatry Research*, *267*, 313-318.

Zhao, F., Zhang, Z. H., Bi, L., Wu, X. S., Wang, W. J., Li, Y. F., & Sun, Y. H. (2017). The association between life events and internet addiction among Chinese vocational school students: The mediating role of depression. *Computers in Human Behavior*, *70*, 30-38. doi: 10.1016/j.chb.2016.12.05

Ethics Statement: This study has been conducted in full compliance with the journal's writing guidelines, publication principles, research ethics, and ethical standards. The author(s) bear full responsibility for any ethical violations that may arise in relation to this article.

Declaration of Author(s)' Contribution Rate:

CONTRIBUTION RATE	CONTRIBUTORS
Idea or Notion	***Semih DİKMEN***
Literature Review	***Semih DİKMEN***
Yöntem	***Semih DİKMEN***
Data Collecting	***Semih DİKMEN***
Data Analysis	***Semih DİKMEN***
Findings	***Semih DİKMEN***
Discussion and Commentary	***Semih DİKMEN***

Funding: No contribution or support was received during the writing process of this study.

Informed Consent Statement: Informed consent forms were obtained from all participants involved in the study.

Conflict of Interest: There is no conflict of interest between the authors and any other individuals, institutions, or organizations related to the research.