THE MEDIATION ROLE OF SELF-CONTROL BETWEEN SELF-REGULATION AND INTERNET ADDICTION

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(Received 11th July 2024; revised 30th September 2024; accepted 08th October 2024)

Abstract. There has been an increase in the prevalence of internet addiction among adolescents in recent years. It is known that self-control and self-regulation are adaptive factors and protective factors for various forms of behavior. However, there is little research in Indonesia that assesses and considers protective factors for adolescents from various negative behaviors. 122 high school students were involved in this research; the research location was in East Jakarta. The current research wants to examine the role of self-control in the relationship between self-regulation and internet addiction in middle school and high school adolescents. Mediation analysis is used in the current research, and the results of the mediation test show that self-control can be a factor that partially mediates the relationship between self-regulation and internet addiction, that good self-regulation and supported by high self-control can prevent adolescents from internet addiction. These findings provide important input for parents and schools to be able to provide interventions in the form of interventions to adolescents related to the importance of self-regulation and good self-control.
Keywords: *internet addiction, self-regulation, self-control, adolescents*

Introduction

Now that the internet has become a part of life, this new technology is raising concerns about its potential impact on the well-being of adolescents. In recent years, both researchers and the public have raised concerns about the rise of digital technology, with a focus on smartphones and social media in relation to vulnerable youth (Dienlin and Johannes, 2020). The prevalence of internet addiction among adolescents is still widely discussed. There is an increasing trend of internet addiction among adolescents. Research on internet addiction in Indonesia was previously carried out by Siste et al. (2021), 15.2% of the total 643 adolescents involved in the study had a high prevalence of internet addiction among adolescents. Rakhmawati et al. (2021) found four main themes from adolescents' experiences related to internet addiction: reasons for internet addiction, social needs that are not met without the internet, effects of internet addiction, and self-control over internet use. Easy access to the internet and its social appeal among adolescents puts adolescents at higher risk of internet addiction and the associated adverse physical and psychosocial effects. Internet addiction is currently a more serious public health problem, representing adverse effects on adolescents' emotional and adaptive behavioral patterns, and the increasing prevalence of internet addiction and its adverse impact on adolescents' optimal functioning (Lan and Wang, 2020).

This problem is certainly a common problem that must be faced. Research on internet addiction is still being carried out. There are important factors that have been identified as protective factors for adolescents, namely self-control factors and self-regulation factors, however, these two factors are not a serious consideration when

looking at the problem of internet addiction among adolescents. Previous studies, for example Wang et al. (2023), Li et al. (2021a) as well as Özdemir et al. (2014), found a correlation between self-control and internet addiction, and even self-control can act as a mediating factor. Self-control is an important strategy for adolescents to avoid internet addiction. Self-control refers to "the exercise of self-control by oneself (Muraven and Baumeister, 2000). Johnson et al. (2018) explains that self-control occurs when a person (or another organism) attempts to change the way they think, feel, or behave. Self-control and self-regulation can be seen as core aspects of human adaptive behavior (Groß, 2021). Self-control is a protective factor; adequate self-control early in life is associated with a variety of long-term positive outcomes, including physical and mental health (Kim et al., 2022). Self-control can act as a protective factor against the development of internalization and externalization problems in adolescents (McDermott et al., 2017). The ability to control impulses and delay gratification allows children and adolescents to have healthy bodies (Tsukayama et al., 2010). Low self-control is also associated with more antisocial and rule-breaking behavior; low levels of self-control are more strongly associated with antisocial and rule-breaking behavior among adolescents (Laird et al., 2011).

Self-control has consistently been found to be associated with a variety of risk health behaviors (Astolfi et al., 2021). Self-control is the ability to regulate behavior and inhibit impulses and the ability to achieve goals despite temptations or distractions (Paschke et al., 2016). Yang (2020) stated that there is a significant correlation between self-efficacy, self-control, and internet addiction. Self-control is related to the severity of internet addiction (Mei et al., 2016). Individuals with a present-oriented time perspective tend to exhibit poorer self-control, increasing internet addiction and procrastination. Individuals with a future-oriented time perspective, on the other hand, tend to have stronger self-control, reducing the risk of procrastination and internet addiction (Kim et al., 2017). Adolescents who lack self-restraint have few other ways to satisfy their emotional needs, they may increasingly use the Internet to do so. Thus, their repeated decisions to indulge in internet use may encourage internet addiction. In contrast, other researchers argue that such decisions are not necessarily impulsive, so self-control may not be related to internet addiction. In other words, when adolescents are addicted to the Internet, they make rational decisions because they know the characteristics of the Internet as anonymity, convenience, and escape, not because of impulse

In view of impulsivity theory, adolescents who restrain more self-will than others and are less impulsive such adolescents are more likely to sacrifice short-term entertainment to invest effort to achieve long-term goals. Adolescents with low self-control tend to avoid studying for the next day's exam by watching videos on the Internet. In contrast, students with lower self-control than others are more likely to make decisions based on short-term benefits (such as watching Internet videos) rather than investments for long-term benefits, such as studying for an exam (Li et al., 2021b). The cognitive-behavioral model of general problematic Internet use supports the hypothesis of a relationship between self-control and Internet addiction, when the mood is negative, this condition can encourage individuals to use online interactions for mood regulation, a behavior associated with a lack of self-control (LaRose et al., 2003), individuals with low self-control deficiencies are more likely to use the Internet inappropriately or become addicted (Caplan, 2010). Du and Zhang (2022) revealed that self-control can be a mediator variable in the relationship between physical activity and

internet addiction among adolescents, self-control is an important variable in reducing levels of internet addiction in adolescents. Güme and Eryılmaz (2022) also found the mediating role of self-control on the relationship between life goals and internet addiction. These findings emphasize the role of self-control and goal striving in explaining the relationship between life goals, need satisfaction, and internet addiction.

Another factor that can also be considered in analyzing internet addiction is the self-regulation factor. Previous studies have shown a relationship between self-regulation and internet addiction, for example Debbarma and Umadevi (2021), as well as LaRose et al. (2003). Lazuras et al. (2019) views self-regulation as people's capacity to focus on long-term goals and resist temptations and urges for immediate gratification, self-regulation involves the ability to change thoughts, actions, and emotions in a way that is consistent with achieving goals, whether those goals are set by one, society, or both. Self-regulation has gained a lot of attention over the last 15 years, and some researchers have even declared it to be humanity's greatest strength, and a key to success in life (Baumeister et al., 2002). Failures in self-regulation have been linked to a number of detrimental psychological and behavioral impacts, such as drug use, impulse buying and overspending behavior, low school performance, relationship problems, violence, sexual risk taking, and long-term unemployment (Lazuras et al., 2019).

Related self-regulation to internet addiction, Debbarma and Umadevi (2021) explains that self-regulation plays an important role to avoid internet addiction among people who use it. Regulation implies the modulation of thoughts, behavior, attention through the deliberate or automatic use of specific mechanisms and supporting meta-skills. Another additional aspect of self-regulation has been defined as an individual's ability to be able to focus on predetermined goals despite certain distractions. Self-regulation also includes regulating feelings and attention. It is understood that self-regulatory mechanisms play an important role in controlling disorders such as internet addiction. McClelland et al. (2018) revealed that self-regulation has important implications for individual psychological health and well-being throughout the life course, individual development cannot be separated from the concept of self-regulation. Self-regulation is fundamental to the successful achievement of adaptive developmental tasks at all stages of life. There are important features of self-regulation, such as initiating self-regulation efforts to achieve personal goals, self-regulation efforts aimed at achieving desired outcomes and efforts aimed at avoiding undesirable outcomes (Heatherton, 2011).

Self-regulation is an important protective factor related to negative and risky behavior, and self-regulation is also a protective factor that interacts with other risk factors that influence behavior or becomes a buffer factor against risky behavior (Quinn and Fromme, 2010). Risk factors are all stressful life events, such as poverty, family breakdown, some form of violent experience, emotional loss, illness, unemployment, war, natural disaster, or other factors that theoretically increase the likelihood of a problem occurring or problems maintaining life sustainability (Dias and Cadime, 2017). Self-regulation is an ability that involves the capacity to maintain effort and orientation towards desired goals, while controlling impulses that arise (Martin and McLellan, 2008). Self-regulation may also moderate the relationship between risks and adjustment in children. Children who have low self-regulation are more vulnerable to various risks (Lengua, 2002). Better self-regulation has also been identified as a protective factor for the academic achievement of low-income children; self-regulation predicts children's academic skills at school (Li-Grining et al., 2023). Self-regulation in the early school years is positively related to academic achievement (mathematics and literacy), and

negatively related to externalizing problems (aggressive and criminal behavior), depressive symptoms, obesity, smoking and illegal drug use, in the school years later or adolescents years (Robson et al., 2020).

Internet use is proven to have a very strong impact on adolescents, especially when adolescents face anxiety and depression which affect their social life and relationships with their families, and self-regulation will be an important aspect that will help regulate internet use in adolescents. Self-regulation plays an important role for adolescents to avoid internet addiction (Debbarma and Umadev, 2021). The social cognitive view of media addiction is that a lack of self-regulation can occur in all media consumers, even among those whose media consumption patterns are generally considered the norm. The so-called "symptoms" of addiction are now understood to be indicators of a lack of self-regulation (LaRose et al., 2003). Mascia et al. (2020) found a negative relationship between internet addiction and self-regulation. An individual's failure to self-regulate can lead to such a prolonged interest in a particular activity that this situation can turn into an addiction (Zimmerman, 2000). Van Deursen et al. (2015) suggest that low levels of self-regulation can sometimes pose a risk of addiction to smartphone use. Individual self-control ability can be said to be one of the most powerful adaptations and beneficial to individuals. Individuals will be happy and healthy when they and their environment are in the most compatible condition, and this suitability can be significantly increased by changing themselves to adapt to the external environment (Li et al, 2021a).

The current research wants to examine the role of self-control as a mediator in the relationship between self-regulation and internet addiction, considering that there is still limited research on self-regulation related to internet addiction. Previous research has focused more on self-control as a protective factor, but self-regulation is also an important protective factor to consider, also remember that the concepts of self-regulation and self-control are different concepts from each other, and these two concepts are closely related because they both strengthen each other. Therefore, it is important to consider these two factors to see to what extent they correlate with internet addiction.

Materials and Methods

Participants in this research were adolescents in an area in Jakarta, Indonesia, with an age range of 12 to 19 years who still had secondary school education, the use of a purposive sample was used in this research. To achieve the objectives of this research, researchers used a survey method with an inferential quantitative approach, using mediation analysis with the help of the JASP Team (2024) application. The dependent variable in this research is internet addiction, and self-regulation is the independent variable. Analysis in research uses a mediation analysis model, this model is an equation that describes the relationship between two or more independent variables or predictors (X1, X2,...Xn) and one dependent variable (Y). The purpose of simple mediation analysis is to predict the value of the dependent variable (Y). Apart from that, it aims to determine the direction of the relationship between the dependent variable and the independent variables. The regression test will use the SPSS application. The dependent variable in this research is internet addiction (Y) which is influenced by 2 independent variables, namely parental attachment or X and self-control (M).

Brief scale self-control

To assess self-control in adolescents, the Indonesian version of the brief self-control scale, and revised into a 10-item short version of the scale by De Ridder et al. (2011). This scale has been adapted into an Indonesian version by Arifin and Milla (2020), the reliability test carried out found that Cronbach's alpha was quite good (α=.81)

Internet addiction test

To measure internet addiction in adolescents, we used the internet addiction test developed by Young (1998), Siste et al. (2021) adapted the original version of the IAT into an Indonesian version. The reliability test in the current research found a very good Cronbach's alpha value (α=.86).

Shirt version self-regulation scale (SSRQ)

To measure self-regulation in adolescents, a short version of the self-regulation scale adapted from Pichardo et al. (2014) into an Indonesian version and a brief version by Tresnadiani and Taufik (2020), this scale consists of 9 statement items. SSRQ consists of 3 important factors, namely goal setting, persistence, and decision making. Tresnadiani and Taufik (2020) found good reliability results on the adapted short version of the scale. The reliability of the self-regulation construct showed an α value>0.70.

Results and Discussion

The objective of this research is to assess the role of self-control acting as a mediator in the relationship between self-regulation and internet addiction among high school (SMA) students. 122 adolescents were involved in this study, consisting of 58 (47.5%) male adolescents and 64 (52.5%) female adolescents. Before the analysis is carried out, several statistical test requirements are carried out. The first test is to assess the reliability of the measuring instruments of the three measuring instruments used, all three meet the reliability of the measuring instrument, self-regulation α>0.788, self-control α>0.533, and internet addiction with α>0.864. A normality test was also carried out, the significance of the Kolmogorov-Smirnov value on internet addiction was and the Shapiro-Wilk test was also found to be p<0.05, which means that internet addiction data is not normally distributed. The Lavene test was also carried out to determine whether the data on the dependent variable was homogeneous. The results of the Lavene test showed that p<0.05, which means the data on the dependent variable (internet addiction) was not homogeneous. The categorization of data in this study is guided by the median value to divide the low category and the high category for internet addiction (Me=25), self-regulation (Me=22), and self-control (Me=35) (*Table 1*).

***Table 1**. Prevalence of internet addiction based on the number of hours a day using the internet.*

Type	Hour	1-3	%	4-6	%	7-9	%	>10	%	Total	%
IAT	Low	23	18.85	32	26.23	9	7.38	1	0.82	65	53.28
	High	19	15.57	22	18.03	13	10.66	3	2.46	57	46.72
Total	-	42	34.43	54	44.26	22	18.03	4	3.28	122	100.00

Descriptive analysis was also carried out to assess the prevalence of each variable measured, descriptive results showed that internet addiction (IAT) had a prevalence of

46.72%, self-control in the high category was 45.9% or 54.1% indicated low self-control, and self-regulation amounting to 52.46% with a low level of self-regulation (*Table 2*). High prevalence based on gender can be seen that 28.69% of male adolescents and 18.03% of female adolescents have a high prevalence of internet addiction. In terms of self-regulation, it can be seen that 26.23% of male adolescents and 26.23% of female adolescents show low self-regulation, and for self-control, it can be seen that 23.77% of male adolescents and 22.13% of female adolescents show high self-control. Analysis of high and low differences based on the number of hours using the internet with the internet addiction category was also carried out. It was found that internet use for 4-6 hours had the highest prevalence rate of internet addiction (18.03%), internet use for 1-3 hours had a prevalence rate of 15.57%, and 7-9 hours with a high prevalence of internet addiction 10.66%. Based on gender, it can be seen that women dominate the number of respondents in the research, namely 52.5% and men 47.5%. of 122 adolescents who use the internet during a day, 34.4% use the internet for 1-3 hours, 44.3% use the internet for 4-6 hours, 18% use it for 7-9 hours, and 3.3% use the internet for more than 10 hours. Based on gender, it can be seen that the average internet addiction score for male adolescents is higher (M=28.95, SD=11.72) compared to female adolescents (M=23.06, SD=9.58), while in Self-control scores there was no significant difference. on average, while in self-regulation the average value of self-control for females is greater (M=22.5, SD=64) than for males (M=21.81, SD=58).

***Table 2**. Prevalence of internet addiction, self control, self regulation based on gender*.

Type	Gender	Male	%	Female	%	Freq.	%
SR	Low	32	26.23	32	26.23	64	52.46
	High	26	21.31	32	26.23	58	47.54
Total	-	58	47.54	64	52.46	122	100.00
IAT	Low	23	18.85	42	34.43	65	53.28
	High	35	28.69	22	18.03	57	46.72
Total	-	58	47.54	64	52.46	122	100.00
BSCS	Low	29	23.77	37	30.33	66	54.10
	High	29	23.77	27	22.13	56	45.90
Total	-	58	47.54	64	52.46	122	100.00

Table 3 presents data regarding the prevalence of internet addiction, self-regulation, and self-control based on categories of hours of internet use. The highest prevalence of internet addiction was found in internet users 4-6 hours (18.03%), the second highest was in the 1-3 hour time span (15.57%). For self-control, the lowest prevalence was found in the 4-6 hour period (22.13%), and the second lowest was in the 1-3 hour period (16.39%). Meanwhile, the prevalence was low in self-regulation, found to be a time span of 4-6 hours (22.95%), and the second lowest was a time span of 1-3 hours (16.39%). The correlation results show that *Table 4* shows the results of the regression test which shows that self-control explains 49.5% of internet addiction, while self-regulation explains 34.9% of internet addiction. Self-regulation has a very significant relationship (r=-.533) with self-control, and self-control is also known to have a very significant relationship with internet addiction (r= -.476). Self-regulation was also found to be very significantly correlated with internet addiction. A negative correlation was also found in the correlation between internet addiction and gender (r= -.262), and self-control was also significantly correlated with the number of hours using the internet. The results of the regression test show that self-control can explain internet addiction by 25% ($F=19.293$, $P<0.001$), while self-regulation explains internet addiction by 12% ($F=16.624$, $p<0.001$) (*Table 5*).

Table 3. *Prevalence of internet addiction, self-control and self-regulation based on hours of use.*

Type	Category	1-3	%	4-6	%	7-9	%	>10	%	Total	%
IAT	Low	23	18.85	32	26.23	9	7.38	1	0.82	65	53.28
	High	19	15.57	22	18.03	13	10.66	3	2.46	57	46.72
	Total	42	34.43	54	44.26	22	18.03	4	3.28	122	100.00
SC	Low	20	16.39	27	22.13	17	13.93	2	1.64	66	54.10
	High	22	18.03	27	22.13	5	4.10	2	1.64	56	45.90
	Total	42	34.43	54	44.26	22	18.03	4	3.28	122	100.00
SR	Low	22	18.03	28	22.95	12	9.84	2	1.64	64	52.46
	High	20	16.39	26	21.31	10	8.20	2	1.64	58	47.54
	Total	42	34.43	54	44.26	22	18.03	4	3.28	122	100.00

Table 4. *Spearman's rho correlation between variables.*

Category	Gender	Age	Hour	IAT	BSC	SR
Gender	1					
Age	0.128	1				
Hour	.191*	.178*	1			
IAT	-.262**	-0.044	.215*	1		
BSC	-0.019	0.082	-.216*	-.476**	1	
SR	0.088	0.068	0.074	.319**	-.535**	1

*Note: *Correlation is significant at the 0.05 level (2-tailed); **Correlation is significant at the 0.01 level (2-tailed).*

Table 5. *Variance explain.*

Model	R	R^2	p	Beta	F
Self-regulation	.349a	0.12	<0.001	.349	16.624
Self-control	.495b	0.25	<0.001	-.414	19.293

Note: Dependent Variable: IAT.

The results of the mediation analysis show that the path a regression model, namely the direct impact of self-regulation on self-control is significant, the coefficient of path a (*Table 6*), self-regulation (X) on self-control (M) coefficient=-0.820, k<0.001, standard error=0.119, LLCI=-1.053 and ULCI=-0.586. In path b, it is the effect of M to Y. The coefficient for path b is -0.73 and is significant at the p<0.001 level. Path c' is the influence of X on Y or the direct effect from Path c is the total effect of X on Y. The total effect can also be calculated by adding up the direct effects plus indirect effects, or adding path a + path (a*b). The total effect coefficient is 0.954 and is significant at the p<0.001 level. From the results of the mediation analysis, the bootstrap non-standardized indirect effect value is 0.59 and the 95% confidence interval (CI) ranges from 0.29 to 0.95 and does not include a zero value in the 95% confidence interval range, it can be concluded that there is an indirect effect which is significant self-regulation of internet addiction through self-control with Effect size d standardized coefficient of indirect effect X to Y which is 0.218. The Sobel Test calculation is also used to estimate whether there is a significant impression (indirect impression) or not. The Sobel test was developed by Preacher and Leonardelli (2001), calculation for the Sobel Test with a calculation formula (Eq. (1):

Z-value = a*b/SQRT(b2*sa2 + a2*sb2) Eq. (1)

***Table 6**. Parameter estimates.*

Category		Estimate	Std. Error	z-value	p	95% confidence interval	
						Lower	Upper
Direct effects	SR→IAT	0.356	0.254	1.40	0.160	-0.141	0.853
Indierct effects	SR→BSC→IAT	0.598	0.160	3.743	$1.815x10^{-4}$	0.285	0.912
Total effects	SR→IAT	0.954	0.232	4.111	$3.938X10^{-5}$	0.499	1.409
Path coefficients	BSC→IAT	-0.730	0.164	-4.461	0.001	-1.51	-0.409
	SR→IAT	0.356	0.254	1.404	0.160	-0.14	0.853
	SR→BSC	-0.820	0.119	-6.883	0.001	-1.053	-0.586

The results of the Sobel test show that there is an indirect influence between self-regulation and internet addiction (IAT) with the mediator variable self-control (BSC), z value=2.094, p-value=>0.05. Path a and path b in the Sobel test show that the significance of path a, p<0.001 (p-value=0.000), and the significance of path b, p<0.001(p-value=0.000), which can be interpreted as that both paths a and b significant and it can be concluded that there is a partial mediation effect of self-control on the relationship between self-regulation and internet addiction (*Figure 1*).

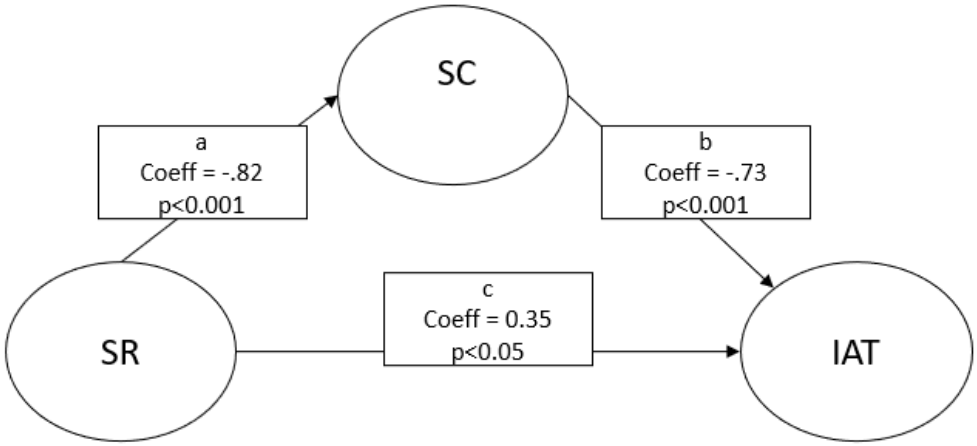

***Figure 1.** Mediation of self-control between self-regulation and internet addiction.*

The current research aims to determine the role of self-control in the relationship between self-regulation and internet addiction. The research results show that self-control can partly mediate the relationship between self-regulation and internet addiction. The results of this study are in line with the research results Song and Park (2019), that self-control can partially mediate the relationship between stress and internet addiction. Du and Zhang (2022) also found the role of self-control in the relationship between physical activity conditions and internet addiction, the results of this study provide an understanding that self-control is an important protective factor in internet addiction. Individuals with a higher level of self-control are able to overcome their internal desires and regulate their emotions and behavior rationally to achieve their goals, therefore, they can rationally control their behavior in using the Internet and avoid the emergence of symptoms of Internet addiction. Agbaria (2021) also found that self-control can fully mediate the positive relationship between internet addiction and aggressive behavior, with self-control being a protective factor, self-control is the main individual characteristic that can protect someone from internet addiction. Öztekin and Ata (2023) also found the mediating role of self-control in the relationship between

resilience and internet addiction. Öztekin and Ata (2023) further stated that increasing self-control through psychological resilience is a reliable and practical way to effectively overcome the problem of internet addiction among young adults.

As previously understood, self-control is a mechanism that every individual has to be able to change his own behavior, resist temptation, change his mood, and act to achieve personal goals. A process of overriding natural, habitual, or learned responses by changing behavior, thoughts, or emotion. Good self-control in individuals can protect individuals from maladaptive behavior such as internet addiction, with a mechanism of restraint against direct gratification. Meanwhile, the results of the study also reveal that there is a very significant correlation between self-regulation and internet addiction (Gámez-Guadix et al., 2015). Zimmerman (2000) views self-regulation as a proactive process in which people regulate and manage thoughts, emotions and behavior to achieve goals. Poor self-regulation plays an important role in the maintenance of internet addiction. In common models of problematic Internet use, self-regulation is also understood as a component of Internet addiction (Billieux and Van der Linden, 2012).

Actually, self-control is part of self-regulation, Billieux and Van der Linden (2012) revealed that controlled aspects of self-regulation depend on the effectiveness of executive processes e.g., strong response inhibition, switching, therefore, a person who is addicted to the internet must use controlled self-regulatory capacities when he or she wants to inhibit the behavior. Błachnio and Przepiorka (2016) also found that self-control and self-regulation, these two factors are important in predicting addictive behavior towards social media applications. LaRose et al. (2003) revealed that self-regulation deficiency is a factor that causes individuals to become addicted to the internet. Baumeister et al. (2006) also reinforces current research findings that self-regulation is a highly adaptive and distinctive human trait that allows people to override and change their responses, including changing themselves to meet social and other standards. Furthermore regular practice in self-regulation can result in major improvements in self-regulation. Another research finding is that almost half of the adolescents in this study could be categorized as experiencing internet addiction. More than half of the research participants also showed low self-control and self-regulation. Using the internet for 4 to 7 hours was found to be more at risk of experiencing internet addiction. Differences in internet addiction based on gender show that adolescent males have higher levels of internet addiction compared to adolescent's females. However, self-regulation shows that females are better at self-regulation compared to males.

Conclusion

The findings in this study indicate that self-control can mediate the relationship between self-regulation and internet addiction. Self-regulation and self-regulation are important protective factors for adolescents from problematic behavior such as internet addiction. Parties concerned with the problem of internet addiction in adolescents are expected to be able to equip adolescents with self-regulation and self-control skills to protect adolescents from potential internet addiction.

Acknowledgement

The journal article is fully funded by the Research and Community Service Institute of Mercubuana Indonesia University through the Research Grant Program, 2024.

(funding number: 02-5/1622/B-SPK/V/2024). The content is entirely the responsibility of the author. This research is in line with the university's research master plan on information and communication technology. referring to the research map from 2017 - 2045, there are 10 research focuses, New media literacy, related to the evaluation of the use of new media related to the internet. Currently, many studies lead to this study and are especially related to the science of psychology that studies behavior. This evaluation will investigate whether the existence of this new media has an impact on the mental health and psychological well-being of individuals.

Conflict of interest

The authors confirm that there is no conflict of interest involving any party in this research study.

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