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The relationship between self-control and online game addiction in adolescents

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ABSTRACT

The use of the internet and digital devices has become an important part of teenagers' daily lives, raising concerns about the increasing phenomenon of online gaming addiction. This study aims to examine the relationship between self-control and online gaming addiction among junior high school students in Padang. This study uses a quantitative approach with a correlational design and involves 125 respondents selected through purposive sampling. Data were collected using the Game Addiction Scale (reliability = 0.851) and the Self-Control Scale (reliability = 0.793). Data analysis was performed using Pearson's product-moment correlation technique with the help of the SPSS 20 for Windows program. The results showed a significant positive correlation between self-control and online game addiction ($r = 0.483$; $p < 0.05$). These findings indicate that adolescents with high levels of self-control also show a high tendency toward online gaming behavior, meaning that self-control in the context of adolescence does not always function as a protective factor but can be adaptive to social and digital environmental pressures.

INTRODUCTION

Advances in information and communication technology have brought about major changes in various aspects of modern society. The internet is now not only a means of communication and information, but also a primary medium for social, economic, and entertainment activities. According to a report by the Indonesian Internet Service Providers Association (Asosiasi Penyelenggara Jasa Internet Indonesia, 2023), internet penetration in Indonesia has reached 78.19% of the total population, with more than 215 million users. Among the various popular online activities, online gaming has become one of the most popular forms of digital entertainment. A report by We Are Social & Hootsuite (2023) shows that around 43% of internet users in Indonesia are active in gaming, and most of them are teenagers who use mobile devices because of their ease of access and practicality.

Teenagers' involvement in online games reflects a new social phenomenon that has grown alongside the development of digital technology. Teenagers tend to use online games as a means of socializing, expressing themselves, and overcoming stress or boredom (Young & Abreu, 2017). However, excessive use can lead to addictive behavior. The World Health Organization (2018), through the International Classification of Diseases (ICD-11), categorizes gaming disorder as a mental disorder characterized by the loss of control over gaming activities, an increased priority given to gaming over other activities, and the continuation of gaming behavior despite negative consequences. Recent studies also confirm that online gaming addiction affects the psychological well-being, social relationships, and academic performance of adolescents (Choi et al., 2021; Kumari & Dhiksha, 2022).

Psychologically, this addictive behavior is often associated with weak self-control. Self-control is an individual's ability to regulate emotions, thoughts, and actions so that they are not driven by momentary impulses (Retnowati & Kuswanto, 2020). Zhou and Xing (2021) emphasize that individuals with low self-control tend to find it difficult to limit their playing time and are more prone to addictive behavior. In the context of adolescent development, this phase is a period characterized by emotional

instability and identity search, making them more vulnerable to compulsive behaviors such as excessive gaming (Brand et al., 2017; Kuss & Griffiths, 2014).

Several previous studies have shown a negative relationship between self-control and online gaming addiction (Budhi & Indrawati, 2016; Hutasuhut, 2021), but inconsistent results have been found, especially in adolescent groups with different social and cultural contexts. Most studies have focused on college students or young adults, while studies highlighting early adolescents—especially junior high school students—are still limited. In fact, this period is a critical phase for the formation of digital behavior and self-regulation skills. Preliminary survey findings in Padang show that most junior high school students spend more than three hours per day playing online games, with some experiencing sleep disturbances, fatigue, and negative emotions when not playing. This condition indicates a weak ability to control oneself in regulating playing time and balancing daily activities.

Previous studies by Hutasuhut (2021), Irfan (2021), Zai (2022), and Nur (2018) have examined the relationship between self-control and online game addiction. However, most of them focused on high school and vocational school students and used different theories related to game addiction. This study attempts to fill this gap by examining the relationship between self-control and online game addiction among junior high school students in Padang, using the game addiction theory from Lemmens et al. (2009). Thus, this study not only provides new insights into the dynamics of self-control in early adolescence but also strengthens the theoretical foundation for understanding addictive behavior in the digital age.

This phenomenon shows that there is a gap between advances in digital technology and people's ability, especially teenagers, to manage their digital behavior in a healthy way. Studies on the correlation between online gaming addiction and self-control are crucial to improving our understanding of the psychological components that play a role in the formation of addictive behavior in the digital age. The results of this study not only contribute theoretically to the literature on digital behavior and adolescent psychological development, but also have practical benefits for prevention and education efforts that help adolescents learn to use technology in a healthier and more balanced way. Thus, this study aims to examine the relationship between self-control and online game addiction among junior high school students in Padang. Another objective of this study is to gain a better understanding of the extent to which self-control abilities influence the level of addiction to online games.

RESEARCH METHODS

This study uses a quantitative approach with a correlational design, which aims to determine the relationship between self-control and online game addiction in adolescents. A quantitative approach was chosen because it allows for objective hypothesis testing through statistical analysis of numerical data (Noor, 2012; Sugiyono, 2013).

The research population consisted of 234 junior high school students in Padang from grades VII, VIII, and IX. The research sample consisted of 125 students selected using purposive sampling with the following criteria: (1) adolescents aged 13–16 years, (2) actively playing online games for at least the last 12 months for 8–10 hours per day or about 30 hours per week (American Psychiatric Association, 2013), and (3) playing various types of online games through digital devices such as smartphones or computers.

Table 1. Population of Junior High School Students in Padang in Grades VII, VIII, and IX

No	Grade	Total
1.	VII	96
2.	VIII	67
3.	IX	71
	Total	**234**

The research instruments consisted of two scales, namely a self-control scale adapted from Tangney et al. (2004) and modified by Wahdah (2016), and an online game addiction scale adapted from the Game Addiction Scale (Lemmens et al., 2009) and used in Rahmayani & Rinaldi (2024) study.

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Both scales use a Likert scale model with five response categories. Content validity testing was conducted to ensure the suitability of the items with the indicators being measured, while reliability testing yielded a coefficient of $\alpha = 0.793$ for self-control and $\alpha = 0.851$ for online game addiction, indicating high reliability (Azwar, 2013).

Table 2. Self-Control Assessment Scale

Category	Item *Favorable*	Item *Unfavorable*
Sangat (S)	5	1
Sebagian Besar (SB)	4	2
Agak (A)	3	3
Sedikit (S)	2	4
Sangat Tidak (ST)	1	5

Note: The study used a rating scale from 1 to 5. For positive statements, the answer is S "*Sangat*" the score is 5, SB "*Sebagian Besar*" the score is 4, A "*Agak*" the score is 3, S "*Sedikit*" the score is 2, and ST "*Sangat Tidak*" the score is 1. Meanwhile, for negative statements, scores are given in reverse, namely ST "*Sangat Tidak*" the score is 5, S "*Sedikit*" the score is 4, A "*Agak*" the score is 3, SB "*Sebagian Besar*" the score is 2, and S "*Sangat*" the score is 1.

Table 3. Online Gaming Addiction Assessment Scale

Category	Favorable Item	Unfavorable Item
Sangat Sering (SS)	5	1
Sering (S)	4	2
Kadang-kadang (KD)	3	3
Jarang (J)	2	4
Tidak Pernah (TP)	1	5

Note: This study uses a measurement scale from 1 (one) to 5 (five). For positive statements, the answer SS "*Sangat Sering*" the score is 5, S "*Sering*" the score is 4, KD "*Kadang-kadang*" the score is 3, J "*Jarang*" the score is 2, dan TP "*Tidak Pernah*" the score is 1. However, for negative statements, the scores are given in reverse, namely: TP "*Tidak Pernah*" the score is 5, J "*Jarang*" the score is 4, KD "*Kadang-kadang*" the score is 3, S "*Sering*" the score is 2, dan SS "*Sangat Sering*" the score is 1.

The data analysis technique used was Pearson's Product Moment correlation test to determine the relationship between self-control (X) and online game addiction (Y). Data processing was performed using SPSS version 20 for Windows.

RESULTS AND DISCUSSION

Result

This study involved 125 junior high school students in Padang who were selected using purposive sampling techniques from a total population of 234 students in grades VII, VIII, and IX. The sample selection was based on specific criteria, namely early adolescents aged 13 to 16 years, actively playing online games for at least 12 months, and having a playing duration of 8–10 hours per day or 30 hours per week.

Table 4. Overview of Research Subjects

Research Subject Overview			
Demographic Data	**Criteria**	**Total**	**Percentage**
Age	13	71	57%
	14	31	25%
	15	20	16%
	16	3	2%
Total		125	100%
Grade	VII	51	41%
	VIII	29	23%
	IX	45	36%
Total		125	100%

Research Subject Overview			
Demographic Data	**Criteria**	**Total**	**Percentage**
Gender	Male	81	65%
	Female	44	35%
	Total	125	100%
Play Duration	8–10 hours per day	117	94%
	More than 10 hours per day	8	6%
	Total	125	100%

This study used two main variables, namely self-control (X) and online game addiction (Y). Descriptive analysis results showed that the empirical mean value of self-control was 67.94 (SD = 11.56) and the empirical mean value of online game addiction was 67.74 (SD = 13.73). When compared to the hypothetical mean values, both fall into the high category. This indicates that junior high school students in Padang have a relatively good level of self-control, but at the same time also show a high tendency toward online game addiction behavior.

Table 5. Descriptive Data on Self-Control and Online Gaming Addiction

Variable	Hypothetical Score				Empirical Score			
	Min	**Max**	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**
Self-Control	20	100	60	13.33	38	95	67.94	11.556
Online Gaming Addiction	19	95	57	12.67	30	91	67.74	13.727

Based on the categorization of scores, 44% of respondents had a high level of self-control, 40% had a moderate level, and 16% had a low level. Meanwhile, the online gaming addiction variable showed that 32.8% of respondents were in the very high category, 41.6% were high, and 25.6% were moderate. These findings illustrate that although most adolescents have the ability to control themselves, the intensity of online gaming is still high and has the potential to lead to addictive behavior.

Table 6. Categorization of Self-Control

Category	Score	Frequency	Percentage
Very Low	$X < 40{,}005$	1	.8%
Low	$40{,}005 < X \leq 53{,}335$	14	11.2%
Moderate	$53{,}335 < X \leq 66{,}665$	37	29.6%
High	$66{,}665 < X \leq 79{,}995$	55	44.0%
Very High	$79{,}995 < X$	18	14.4%
Total		**125**	**100%**

Table 6 shows that there were 55 respondents in the high category with a range of 44.0%. This shows that the subjects in this study had high self-control.

Table 7. Hypothetical Mean and Empirical Mean Scores for Self-Control Based on Aspects

Variable	Hypothetical Score				Empirical Score			
	Min	**Max**	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**
Self-Dicipline	4	20	12	2.67	6	20	14.06	3.176
Deliberate/ Nonimpulsive	7	35	21	4.67	7	35	23.53	5.079
Healthy Habits	3	15	9	2	5	15	10.14	2.365
Work Ethic	4	20	12	2.67	4	20	13.20	3.379
Reliability	2	10	6	1.33	3	10	7.01	1.753

Assumption Testing

Before conducting inferential analysis, normality and linearity tests were performed to ensure that the data met the requirements for correlation analysis. The Kolmogorov-Smirnov normality test showed an Asymp. Sig (2-tailed) value of 0.524 (> 0.05), indicating that the data was normally

distributed. The linearity test yielded a p-value of 0.168 (> 0.05), indicating a linear relationship between self-control and online gaming addiction.

Tabel 8. Normality Test

N	Kolmogorov-Smirnov Z	Asymp. Sig. (2 tailed)	Description
125	.812	.524	Normal

Tabel 9. Linearity Test

	Sum of Squares	df	Mean Square	F	Sig	Description
Deviation from Linearity	7306.391	43	169.916	1.283	.168	**Linear**

Correlation Test

The results of the analysis using the Pearson Product-Moment correlation test show a correlation coefficient value of r = 0.483 with a significance of p = 0.000 (< 0.05). This indicates that there is a significant positive relationship between self-control and online game addiction among junior high school students in Padang. Thus, the higher a person's level of self-control, the higher their tendency to engage in intense online gaming behavior.

Table 10. Correlation Test

Correlations		
	Online Gaming Addiction	**Self-Control**
Pearson Correlation	1	.483
Sig. (2-tailed)		.000

Discussion

Based on the results of descriptive analysis, this study shows that the level of involvement of junior high school students in Padang in playing online games is relatively high. Of the 125 respondents, 117 (94%) played between 8 and 10 hours per day. This fact indicates that playing online games has become an important part of their daily routine. Based on aspects adapted from Lemmens et al. (2009), such as relapse, conflict, and problems, it is known that all three are in the very high category. This condition illustrates that adolescents have difficulty controlling their urge to play, often face social conflicts, and feel negative impacts on their learning activities, sleep patterns, and physical health.

These findings reinforce the theories and opinions of experts who explain that online game addiction is characterized by a recurring urge to play and an inability to control playing time (Imanuel, 2009; Yee, 2006). Internal factors such as boredom, lack of self-discipline, and external factors such as social environment and lack of parental supervision also reinforce addictive behavior. This underscores that online gaming addiction among adolescents is not merely a matter of gaming habits but is also linked to complex psychological and social aspects.

Descriptively, the results also show that adolescents' level of self-control is in the high category (empirical mean = 67.94), higher than the hypothetical value (60). However, high self-control is not consistent with low levels of addiction, because adolescents with high self-control scores also show a strong tendency toward addictive behavior. These findings show that self-control abilities have not been fully applied in the context of online gaming. According to Tangney et al. (2004), self-control includes the ability to regulate impulses, adjust behavior to social norms, and manage emotions. During adolescence, these abilities are still in a stage of emotional and social development that is not yet stable, so even though they have self-control awareness, individuals are easily influenced by their environment and peer pressure.

These results are also in line with the research by Retnowati and Kuswanto (2020), which explains that self-control plays an important role in suppressing impulsive behavior. However, self-control that is not accompanied by discipline and awareness of responsibility tends to fail to curb addictive behavior. Thus, the high self-control scores in this study do not always reflect the actual ability

to control gaming behavior, but rather indicate a gap between cognitive awareness and actual application.

Furthermore, the results of the Pearson Product Moment correlation test show a positive and significant relationship between self-control and online game addiction ($r = 0.483$; $p = 0.000$). This means that the higher an individual's perception of self-control, the higher their level of online game addiction. These results differ from the majority of previous studies, such as those conducted by Budhi & Indrawati (2016) and Irfan (2021), which found a negative relationship between the two variables. In Budhi & Indrawati's study, good self-control reduced the intensity of gaming among university students, while Irfan's study involving Madrasah Aliyah teenagers found that religious values and a disciplined environment could strengthen self-control, thereby suppressing addictive behavior.

However, the findings of this study support the results of Zai's (2022) research, which also found a positive relationship in certain social contexts. This can be explained through adolescents' subjective perceptions of their self-control abilities. They feel capable of managing their play time, when in reality they still spend hours in front of the screen. Thus, self-control in this study reflects cognitive perceptions rather than actual behavior. External factors such as digital culture, peer support, and social norms in the school environment also weaken the function of self-control in practice.

This phenomenon shows that the relationship between self-control and online gaming addiction is complex and contextual. In adolescents, self-control can function adaptively or otherwise depending on environmental influences and self-perception. Theoretically, these results expand our understanding that self-control is not always a protective factor against addiction, but can instead function as a justification for excessive gaming behavior.

The implications of this study suggest that interventions targeting online gaming addiction in adolescents should not only focus on enhancing self-control but also strengthen awareness of actual behavior, time management, and social support from the surrounding environment. Digital education programs for students, parents, and teachers should be designed to foster an understanding of healthy gaming limits and promote responsible digital habits.

The limitations of this study lie in the use of a correlational design, which does not allow researchers to determine the causal relationship between self-control and online gaming addiction. In addition, self-control measurement is still self-reported, which has the potential for perceptual bias. For future research, it is recommended that a longitudinal or experimental approach be used, involving mediating variables such as parental supervision or emotional regulation, in order to understand the dynamics of self-control and online gaming addiction more comprehensively.

CONCLUSION

Overall, this study shows that junior high school students in Padang have a high level of online game addiction despite having relatively good self-control. These findings indicate that self-control does not fully function as a protective factor against addictive behavior, but is still influenced by social and digital cultural pressures in the adolescent environment. The positive and significant relationship between self-control and online game addiction shows that adolescents' perceptions of their ability to control themselves are not always reflected in their actual behavior when using technology. This condition confirms that self-control does not only depend on cognitive awareness, but also on emotional and social factors that shape digital behavior. This research provides important insights for the development of educational interventions and digital mentoring that emphasize a balance between self-awareness, time management, and healthy technology use among adolescents.

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