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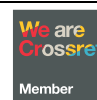
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Original Article

The Impact of Self-Control on Internet Gaming Disorder Among Students

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Abstract. This study aimed to examine the relationship between self-control and Internet Gaming Disorder (IGD) among students at SMPIT Daarussalam Cibitung and its implications for school guidance and counseling services. A quantitative correlational design was employed. The population consisted of 170 students, from which 119 participants were selected using the Slovin formula and simple random sampling. Data were collected using self-report Likert scales measuring self-control and Internet Gaming Disorder and were analyzed using descriptive statistics, assumption testing, Pearson correlation, and simple linear regression. The results showed that self-control significantly and negatively predicted Internet Gaming Disorder ($\beta = -.265$, $p = .004$), indicating that students with higher self-control tended to report lower levels of IGD. Self-control explained 7% of the variance in Internet Gaming Disorder ($R^2 = .070$), suggesting that self-control is a significant but limited psychological factor associated with problematic gaming. These findings highlight the importance of strengthening students' self-regulation within guidance and counseling services while also considering other psychological, social, family, and gaming-related factors associated with IGD.

Keywords: Self-Control; Internet Gaming Disorder (IGD); Adolescents

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Introduction

Digital gaming has become an increasingly prominent part of adolescents' everyday lives, providing opportunities for entertainment, social interaction, competition, and achievement. For most adolescents, gaming remains a recreational activity. However, difficulties arise when gaming becomes persistent, difficult to control, and begins to interfere with important areas of daily functioning (Schettler et al., 2022). Recent evidence indicates that problematic gaming is particularly relevant during childhood and adolescence. A systematic review and meta-analysis involving 251,037 children and adolescents reported a pooled global prevalence of Internet Gaming Disorder (IGD) of approximately 10%, although prevalence estimates varied considerably across studies because of differences in populations, instruments, and diagnostic approaches (Barboza et al., 2026). This variation suggests that IGD should not be understood simply in terms of the amount of time spent gaming. Rather, attention should be directed toward the psychological and behavioral processes that distinguish recreational gaming from problematic patterns of gaming (Slack et al., 2022).

Conceptual clarity is particularly important because the terms Internet Gaming Disorder and Gaming Disorder are related but originate from different diagnostic frameworks. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR) retains Internet Gaming Disorder in Section III as a condition requiring further research. The proposed DSM framework describes a persistent and recurrent pattern of internet gaming associated with

clinically significant impairment or distress and identifies nine symptom criteria, including preoccupation with gaming, withdrawal, tolerance, unsuccessful attempts to control gaming, loss of interest in other activities, continued excessive gaming despite psychosocial problems, deception regarding gaming, gaming as an escape from negative mood, and jeopardizing or losing important relationships or educational or occupational opportunities because of gaming (American Psychiatric Association, 2022). In contrast, the International Classification of Diseases, Eleventh Revision (ICD-11) formally recognizes Gaming Disorder, defined by impaired control over gaming, increasing priority given to gaming over other activities, and continuation or escalation of gaming despite negative consequences; the ICD-11 construct can involve either online or offline gaming (WHO, 2024). In the present study, the term Internet Gaming Disorder (IGD) is retained to maintain consistency with the DSM-based construct and the terminology specified in the study title.

The relevance of IGD to students extends beyond gaming behavior itself because problematic gaming may interfere with developmental and educational functioning. When gaming increasingly dominates attention and daily routines, students may experience difficulties maintaining academic responsibilities, sleep patterns, family relationships, and social functioning (Li et al., 2026). Recent evidence from Indonesia illustrates that IGD is already observable among school-age populations. Suryani et al. (2026), in a study involving 2,320 junior high school students from public and private schools in Jakarta, found that 2.2% of participants met the criteria for IGD using the Internet Gaming Disorder Test-10. The study also identified associations with gaming duration, gender, and the use of multiple gaming devices, although patterns differed between public and private schools. These findings are important because they demonstrate that clinically relevant problematic gaming occurs among Indonesian junior high school students and that its occurrence cannot be separated from the context in which adolescents access and engage with games.

Nevertheless, access to games, gaming duration, and device use alone may not fully explain why some students are able to regulate their gaming while others experience increasing difficulty disengaging from it. One psychological factor that may help explain these individual differences is self-control (Hu et al., 2025). Self-control refers broadly to the capacity to regulate thoughts, emotions, impulses, and actions in accordance with personally valued or longer-term goals (Napolitano, et al. 2024; Nusantara & Syahputra, 2025). In the context of digital gaming, self-control allows an individual to interrupt an immediate desire to continue playing, regulate gaming duration, redirect attention toward academic or social responsibilities, and tolerate the discomfort associated with postponing an immediately rewarding activity (Zhuang et al., 2023). Gaming environments can provide rapid and repeated rewards through achievement, competition, progression, social recognition, and emotional relief (Pirrone et al., 2024). Consequently, students may face a recurring conflict between the immediate gratification obtained from gaming and longer-term goals such as studying, sleeping adequately, completing assignments, or maintaining responsibilities. From this perspective, self-control functions as a psychological regulatory resource that enables students to resist or postpone short-term gaming rewards when those rewards conflict with more important goals. Recent research has similarly argued that individuals with stronger self-control are more capable of prioritizing long-term goals rather than selecting immediate gratification through internet-related activities (Zhou et al., 2024).

The theoretical relevance of self-control is also closely connected with the defining characteristics of IGD itself. A central feature of problematic gaming is difficulty controlling the initiation, frequency, intensity, duration, termination, or context of gaming. Thus, deficient self-regulation is not merely an external correlate of problematic gaming, it is closely related to the behavioral process through which gaming may become increasingly dominant over other activities (Cudo, et al., 2023). Students with lower self-control may be more likely to respond immediately to gaming-related cues, experience greater difficulty terminating a gaming session, postpone academic responsibilities, and repeatedly choose short-term emotional or social

rewards from gaming despite awareness of longer-term consequences (Dong et al., 2021; Fong et al., 2024). In contrast, students with stronger self-control may be better able to establish gaming limits, shift attention away from gaming cues, and maintain behavior that is consistent with educational and interpersonal goals. This theoretical mechanism provides a clear basis for expecting self-control to be negatively associated with IGD symptoms.

Recent empirical evidence supports the role of self-control in problematic gaming. Fong et al. (2024), studying 2,064 middle-school adolescents, found that low self-control was associated with greater IGD symptoms, while Zhou et al. (2024) reported a significant negative association between self-control and IGD and identified internet-use motives as potential explanatory mechanisms. A systematic review and meta-analysis by Hu et al. (2025), synthesizing 46 studies involving 64,681 adolescents and emerging adults, similarly found a moderate negative association between self-control and problematic gaming ($r = -.287$, 95% CI $[-.33, -.25]$). However, longitudinal evidence suggests that this relationship is more complex. Qi et al. (2025), using three-wave data from 1,359 primary and secondary school students, found that higher self-control predicted lower subsequent gaming-disorder symptoms in a traditional cross-lagged model, but this relationship was no longer significant in a random-intercept cross-lagged panel model. Similarly, Zhu & Qi (2025), studying 3,264 children and adolescents, found reciprocal relationships between beliefs about self-control and gaming-disorder symptoms. These findings indicate that self-control is consistently associated with problematic gaming, although its direction and underlying mechanisms remain insufficiently resolved.

This issue is particularly relevant in Indonesia. Faron & Hastuti (2024) examined self-control in online gaming behavior among 200 seventh-grade junior high school students, while Felinaweny & Kurniawan (2025) investigated self-control and online game addiction among 125 junior high school students using the Game Addiction Scale. More recently, Kamila et al., (2026) examined the effect of self-control on online game addiction among senior high school students. Beyond studies directly examining self-control, Farhana et al. (2026) further demonstrated that online gaming addiction was significantly associated with students' social interaction among Indonesian junior high school students, highlighting the broader psychosocial consequences of problematic gaming in the school context. Although these studies confirm the relevance of self-control to problematic gaming among Indonesian adolescents, their outcomes—online gaming behavior and online game addiction—are not necessarily conceptually equivalent to DSM-based Internet Gaming Disorder. In contrast, Suryani et al. (2026) specifically assessed IGD using the IGDT-10 among 2,320 junior high school students in Jakarta and reported that 2.2% met the criteria for IGD, but the study primarily focused on prevalence and gaming-related characteristics such as duration, gender, school context, and device use. Thus, evidence specifically examining the contribution of self-control to DSM-based IGD among Indonesian students remains limited, representing an important conceptual and empirical gap.

The novelty of the present study therefore lies in examining self-control specifically in relation to DSM-based Internet Gaming Disorder within the Indonesian student population. This is important because international evidence has largely been derived from populations outside Indonesia, including adolescents in China and Hong Kong and university students in China and Japan (Fong et al., 2024; Qi et al., 2025; Zhou et al., 2024; Zhu & Qi, 2025). Moreover, Hu et al. (2025) reported substantial heterogeneity across studies ($I^2 = 96.5\%$), suggesting considerable variation across populations and contexts. Together with the mixed longitudinal findings, this indicates that the magnitude, direction, and generalizability of the self-control–gaming disorder relationship remain unresolved. Examining Indonesian students therefore provides a more contextually grounded test of whether self-control functions as a meaningful psychological factor associated with IGD.

The urgency of this study lies in the need to identify psychological factors that may explain why some students are able to regulate their gaming behavior while others experience impaired control and functional interference. Self-control is particularly relevant because it reflects the

ability to inhibit immediate impulses and prioritize longer-term goals, making it an important factor for understanding and preventing problematic gaming among students.

Therefore, this study aims to examine the contribution of self-control to Internet Gaming Disorder among students. It is hypothesized that self-control significantly and negatively predicts IGD, such that students with higher self-control are expected to report lower levels of IGD symptoms.

Method

This study employed a quantitative research design with a correlational approach to examine the effect of self-control on Internet Gaming Disorder (IGD) among students at SMPIT Daarussalam Cibitung. The study focused on determining whether self-control significantly predicts students' levels of Internet Gaming Disorder.

Participants

The population of this study consisted of 170 students enrolled at SMPIT Daarussalam Cibitung during the 2024/2025 academic year. Based on the Slovin formula with a 5% margin of error, a sample of 119 students was selected. Of the 119 participants, 75 (63.0%) were female and 44 (37.0%) were male. The study population consisted of 170 students of SMPIT Daarussalam Cibitung in the 2024/2025 academic year. The minimum sample size was determined using the Slovin formula with a 5% margin of error, resulting in a required sample of approximately 119 students. Participants were subsequently selected using simple random sampling, providing each member of the population with an equal opportunity to be included in the study.

Materials and Apparatus

Data were collected using two self-report instruments: the Self-Control Scale and the Internet Gaming Disorder (IGD) Scale. The Self-Control Scale was developed based on Averill's conceptualization of self-control, which encompasses behavioral control, cognitive control, and decisional control (Averill, 1973). The initial scale consisted of 33 items and was evaluated using Pearson's product-moment correlation. At a significance level of .05, the critical correlation value was $r = .176$; therefore, items with calculated correlation coefficients greater than .176 were considered valid. Of the 33 items tested, 26 items met the validity criterion, while seven items were removed. Higher item-validity coefficients indicate stronger evidence that the items adequately represent the construct being measured (Syahputra et al., 2025). The final 26-item Self-Control Scale demonstrated excellent internal consistency, with a Cronbach's alpha coefficient of $\alpha = .911$.

Internet Gaming Disorder was measured using a scale developed based on Griffiths' components model of behavioral addiction, which conceptualizes addictive behavior through salience, mood modification, tolerance, withdrawal, conflict, and relapse (Griffiths, 2005). The initial IGD Scale consisted of 55 items. Item validity was examined using Pearson's product-moment correlation with the same validity criterion of $r > .176$. Of the 55 items tested, 54 items met the validity criterion, while one item was removed. The final 54-item IGD Scale demonstrated excellent internal consistency, with a Cronbach's alpha coefficient of $\alpha = .965$.

Both instruments used a four-point Likert response format consisting of Strongly Agree, Agree, Disagree, and Strongly Disagree. Scores were calculated according to the direction of each item, with reverse scoring applied to negatively keyed items where appropriate. Higher scores on the Self-Control Scale indicated higher levels of self-control, whereas higher scores on the IGD Scale indicated greater levels of Internet Gaming Disorder.

Procedures

The study was conducted at SMPIT Daarussalam Cibitung after obtaining permission from the school. Prior to data collection, participants were informed about the purpose of the study, the procedures involved, the voluntary nature of participation, and the confidentiality of their responses. Informed consent was obtained before participation, and participants were informed that they could withdraw from the study at any time without any consequences. A total of 119 students who met the sampling criteria participated in the study. Data collection was conducted directly at the school under the coordination of the researchers and school personnel. Participants were provided with clear instructions before completing the questionnaire and were encouraged to provide responses that reflected their actual conditions. During the data collection process, the researchers ensured that participants completed the questionnaire independently and that their identities and responses remained confidential. After completion, all responses were collected, checked for completeness, coded, and prepared for statistical analysis.

Design or Data Analysis

Data were analyzed using IBM SPSS Statistics version 22 for Windows. Descriptive statistics were first used to summarize the characteristics and distribution of the study variables. Prior to hypothesis testing, the assumptions of normality and linearity were examined to determine whether the data met the requirements for parametric analysis. Normality was assessed using the Kolmogorov–Smirnov test, while linearity analysis was conducted to determine whether the relationship between self-control and Internet Gaming Disorder was linear. Pearson’s product-moment correlation was subsequently used to examine the direction and strength of the relationship between self-control and Internet Gaming Disorder. Simple linear regression analysis was then performed to determine the predictive effect of self-control on Internet Gaming Disorder. Statistical significance was evaluated at the .05 level.

Results and Discussions

The results are presented in several stages, beginning with descriptive statistics for self-control and Internet Gaming Disorder, followed by assumption testing, correlation analysis, and simple linear regression analysis. These analyses were conducted to describe the distribution of the study variables and to examine the predictive effect of self-control on Internet Gaming Disorder among the participants. Table 1 presents the distribution of participants’ self-control scores across the predetermined categories. Overall, most participants demonstrated relatively high levels of self-control.

Table 1. Frequency Distribution and Percentage of Self-Control (X) Based on Categories (n=119)

Interval Skor	Kategori	Frekuensi	%
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≥ 147	Very High	11	9%
106-126	High	66	55%
85-105	Moderate	42	35%
48-84	Low	0	0%
≤ 47	Very Low	0	0%
Total		119	100%

Based on the table above, out of 119 respondents, 11 students (around 9%) had very high self-control, 66 students (55%) were in the high category, and 42 students (35%) were in the moderate category. No students were found in the low or very low categories. These findings indicate that, in general, students' self-control levels are in the high category.

Table 2. Frequency Distribution and Percentage of Internet Gaming Disorder (Y) Based on Categories (n=119)

Interval Skor	Kategori	Frekuensi	%
≥ 270	Very High	6	5%
184-226	High	26	22%
141-183	Moderate	55	46%
98-140	Low	28	24%
≤ 97	Very Low	4	3%
Total		119	100%

Based on the table above, out of 119 respondents, 6 students (5%) had a very high tendency toward Internet Gaming Disorder, 26 students (22%) were in the high category, 55 students (46%) were in the moderate category, 28 students (24%) were in the low category, and 4 students (3%) were in the very low category. These results show that, in general, students' tendencies toward Internet Gaming Disorder are in the moderate category.

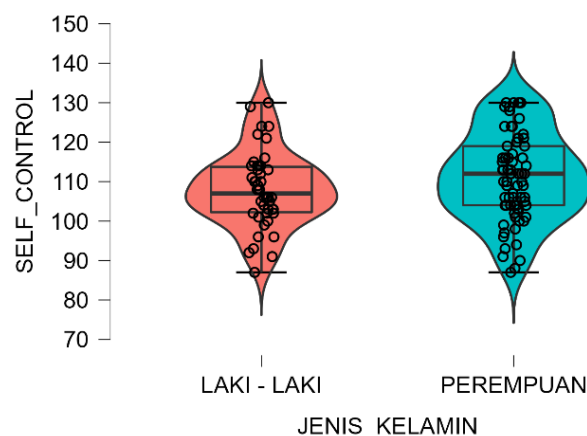


Figure 1. Violin Plot of Self-Control by Gender

The violin plot shows that self-control scores were relatively similar between male and female students, with substantial overlap in their distributions. Female students showed a slightly higher median self-control score and a somewhat wider central distribution than male

students. However, both groups displayed considerable variation in scores, indicating that self-control levels varied within each gender group. These descriptive patterns should not be interpreted as evidence of a statistically significant gender difference without further inferential testing.

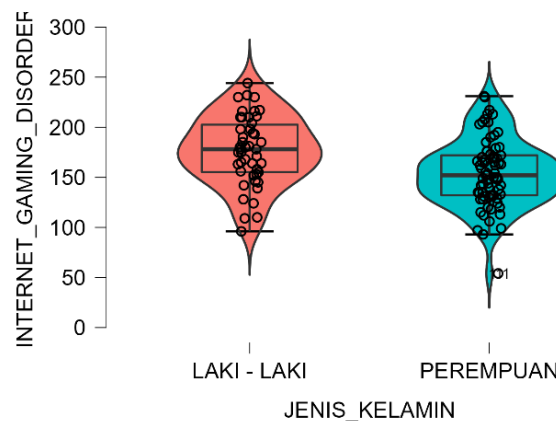


Figure 2. Violin Plot of Internet Gaming Disorder Scores by Gender

The violin plot shows that Internet Gaming Disorder scores differed descriptively between male and female students. Male students exhibited a higher median IGD score, with most scores concentrated at relatively higher levels compared with female students. Female students showed a lower median and a broader lower-tail distribution, including a small number of relatively low IGD scores. Nevertheless, the distributions of the two groups substantially overlapped. Therefore, the figure indicates a descriptive tendency for male students to report higher IGD scores, but it does not by itself establish a statistically significant gender difference.

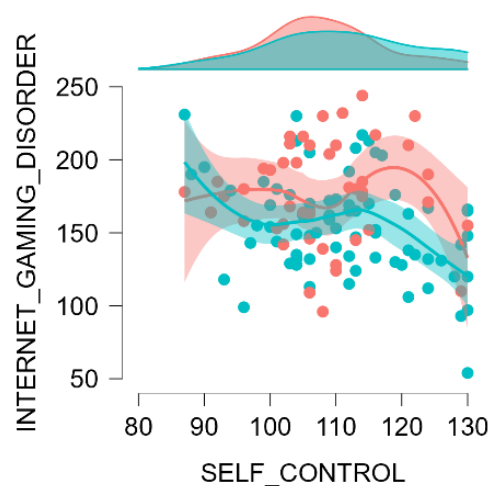


Figure 3. Scatter Plots Self– Control dan Internet Gaming Disorder

The scatter plot above shows the relationship between self-control and Internet Gaming Disorder (IGD), distinguished by gender. Overall, the trend indicates a negative correlation,

where higher self-control is associated with lower IGD scores. The red points and curve represent male students, who generally have higher IGD scores with greater fluctuation. The blue points and curve represent female students, showing a more consistent decline in IGD as self-control increases. The shaded areas around the curves represent confidence intervals, indicating data variability. Additionally, the density plots at the top show that female students tend to have higher self-control scores compared to males.

Table 4. Normality Test Results

		<i>Self - Control</i>	<i>Internet Gaming Disorder</i>
N		119	119
Normal Parametersa,B	Mean	109.8	162.9
	Std.Deviation	10.67969	35.66948
Most Extreme Differences	Absolute	0.078	0.046
	Positive	0.078	0.039
	Negative	-0.050	-0.46
Kolmogorov-Smirnov Z		0.851	0.498
Asymp. Sig. (2-Tailed)		0.464	0.965

Based on the normality test conducted in this study using the Kolmogorov-Smirnov method, it can be concluded that the data for both variables, namely self-control and Internet Gaming Disorder, are normally distributed. This is indicated by the significance values (asyp. sig. 2-tailed) for each variable being greater than 0.05. For the self-control variable, the significance value is 0.464, while for the Internet Gaming Disorder variable it is 0.965. Since both values exceed the 0.05 threshold, it can be concluded that the data for both variables do not significantly deviate from a normal distribution, thus meeting the normality assumption required for parametric statistical analysis.

Table 5. Linearity Test Results (ANOVA Table)

			Sum Of Squares	Df	Mean Square	F	Sig.
<i>Internet Gaming Disorder Self-Control</i>	Between Groups	(Combined)	48899.166	37	1321.599	1.057	.408
		Linearity	10562.125	1	10562.125	8.451	.005
		Deviation From Linearity	38337.041	36	1064.918	.852	.699
	Within Groups		101233.624	81	1249.798		
	Total		14710.800	118			

The linearity test results indicate that the significance value for "Deviation from Linearity" is 0.699, which is greater than 0.05. Therefore, it can be concluded that there is no significant

deviation from linearity, and the relationship between self-control and Internet Gaming Disorder is linear.

Table 6. Regression Analysis Results

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	T	
1 (Constant)	260.279	32.859		7.921	.0
<i>Self - Control</i>	-.886	.228	-.265	-2.976 t	0.04

As shown in Table 6, self-control had a negative and statistically significant effect on Internet Gaming Disorder. The unstandardized regression coefficient for self-control was $B = -0.886$, indicating that every one-point increase in self-control was associated with an estimated 0.886-point decrease in the Internet Gaming Disorder score. The standardized regression coefficient was $\beta = -.265$, showing that the direction of the relationship between self-control and Internet Gaming Disorder was negative. The regression coefficient was statistically significant, $t = -2.976$, $p = .004$, indicating that self-control significantly predicted Internet Gaming Disorder among the students. The constant value of 260.279 represents the predicted IGD score when the self-control score is zero. Accordingly, the regression equation can be expressed as $\hat{Y} = 260.279 - 0.886X$.

Table 7. F-Test Results

R	R Square	Adjusted R Square	Std. Error of the Estimate	R	R Square
1 regression	10562.125	1	10562.125	8.854	.004b
residual	139570.665	117	1192.912		
total	150132.790	118			

As shown in Table 7, the regression model was statistically significant, $F(1, 117) = 8.854$, $p = .004$. Since the significance value was below .05, the null hypothesis was rejected, indicating that self-control significantly predicted Internet Gaming Disorder among the students. This result confirms that the regression model provides a statistically meaningful explanation of the relationship between self-control and Internet Gaming Disorder.

Table 8. Model Summary Results

R	R Square	Adjusted R Square	Std. Error of the Estimate
.265 ^a	.070	.062	34.53855

Based on Table 8, the regression model produced an R value of .265, indicating the overall strength of the association between the observed and predicted Internet Gaming Disorder scores. The direction of the relationship should be interpreted from the regression coefficient reported in Table 6, where the standardized coefficient was negative ($\beta = -.265$), indicating that higher self-control was associated with lower Internet Gaming Disorder scores.

The coefficient of determination (R^2) was .070, indicating that self-control explained 7.0% of the variance in Internet Gaming Disorder. The adjusted R^2 value of .062 shows that, after adjustment for the sample size and number of predictors, approximately 6.2% of the variance remained explained by the model. The standard error of the estimate was 34.54, representing the average magnitude of prediction error in the IGD score metric.

Although the regression model was statistically significant, the relatively low R^2 indicates that self-control accounted for only a limited proportion of the variability in Internet Gaming Disorder. Therefore, substantial variation in IGD scores remained unexplained by the present model and may be associated with other psychological, social, family, or gaming-related factors not examined in this study.

From a theoretical perspective, this finding can be explained through [Averill \(1973\)](#) conceptualization of self-control, which comprises behavioral control, cognitive control, and decisional control. Behavioral control enables students to regulate their behavioral responses, including deciding when to stop or limit gaming. Cognitive control enables them to evaluate gaming-related situations and anticipate possible consequences, while decisional control allows them to choose actions that are more consistent with longer-term goals. These regulatory capacities are particularly relevant to IGD because [Griffiths \(2005\)](#) components model describes problematic gaming as involving processes such as salience, tolerance, withdrawal, conflict, and relapse. When self-control is sufficiently developed, students may be better able to prevent gaming from becoming increasingly dominant in their everyday activities.

Recent studies that were not used in establishing the background of the present study provide additional support for this interpretation. [Kim et al. \(2025\)](#), using three years of longitudinal data from 968 adolescent gamers, showed that self-control played an important role in pathways linking negative emotional experiences, academic stress, aggression, and pathological gaming. Their findings indicate that self-control operates as a regulatory mechanism through which psychological difficulties can be translated into problematic gaming behavior. Similarly, [Yu et al. \(2025\)](#), in a three-wave longitudinal study involving 759 middle-school students, found that learning burnout contributed to IGD partly through diminished self-control and subsequent peer alienation. This finding provides evidence that weakened self-control may represent one of the psychological pathways through which adolescents become increasingly vulnerable to IGD.

Further evidence comes from [Liu et al. \(2025\)](#), who conducted a six-wave longitudinal investigation and found that persistent sleep disturbance was associated with greater subsequent IGD partly through reduced self-control. Conversely, better sleep trajectories were associated with stronger self-control and a lower likelihood of problematic gaming. In another recent study involving 710 Malaysian youth who played multiplayer online battle arena games, [T'ng et al. \(2025\)](#) found that self-control significantly mediated the relationship between impulsivity and IGD. Their findings suggest that impulsive tendencies do not necessarily translate directly into problematic gaming; rather, the ability to regulate these impulses through self-control plays an important role in determining whether gaming behavior develops into IGD.

The mechanism underlying the relationship found in the present study may therefore be understood as a continuous process of behavioral regulation ([Mao et al., 2025](#)). Online games frequently provide immediate reinforcement through achievements, competitive success, progression systems, social recognition, and repeated opportunities to continue playing ([Pirrone et al., 2024](#)). Students with stronger self-control are more capable of interrupting the impulse to pursue these immediate rewards, establishing limits on gaming time, shifting attention toward academic or social responsibilities, and evaluating the consequences of prolonged gaming ([Kowalik & Delfabbro, 2026](#)). In contrast, students with weaker self-control may have greater difficulty disengaging from gaming once rewarding experiences have been activated ([Mao et al., 2025](#); [Kowalik & Delfabbro, 2026](#)). Repeated difficulty in terminating play may gradually increase gaming salience, interfere with other responsibilities, and strengthen patterns of persistent gaming ([Kowalik & Delfabbro, 2026](#)).

This explanation is also supported by recent longitudinal network evidence. [Liang et al. \(2025\)](#), studying 1,186 adolescents across two measurement waves, found that compensatory online gaming was a particularly important predictor of subsequent IGD and that low self-control occupied an important position within the psychological network surrounding IGD. Their results emphasize that self-control does not operate in isolation but interacts with motivational and psychological processes associated with problematic gaming. Thus, the negative relationship identified in the present study can be interpreted as reflecting the protective regulatory function of self-control: stronger behavioral, cognitive, and decisional regulation may enable students to resist immediate gaming reinforcement and maintain gaming within manageable limits, whereas weaker regulation increases vulnerability to persistent and difficult-to-control gaming behavior.

The importance of preventing this progression is also supported by recent evidence from Indonesian students. [Pratiwi et al. \(2025\)](#) found that Internet Gaming Disorder significantly predicted phubbing behavior among vocational high school students, with IGD accounting for 61.4% of the variance in phubbing. Their findings indicate that problematic gaming may extend beyond gaming behavior itself and interfere with face-to-face social interaction, as students with higher IGD tendencies were also more likely to disengage from direct interpersonal communication in favor of digital activities. This finding illustrates that difficulties in regulating gaming may eventually be reflected in broader patterns of students' social functioning.

Self-control may influence Internet Gaming Disorder by regulating how students respond to gaming-related rewards and urges to continue playing. Online gaming provides highly salient rewards that can capture attention and encourage repeated engagement, particularly when several forms of reward are experienced simultaneously. [Wang et al. \(2024\)](#) demonstrated that adolescents with IGD showed distinctive processing of monetary and social rewards, including faster responses when multiple rewards were presented together. In this context, stronger self-control may enable students to regulate their responses to rewarding gaming cues, delay immediate gratification, and disengage from gaming when it conflicts with academic, social, or personal responsibilities. Conversely, when self-control is weaker, the motivational value of gaming rewards may be more difficult to resist, increasing the likelihood that gaming becomes persistent and increasingly difficult to regulate.

The influence of self-control on IGD can also be understood through the interaction between gaming craving and inhibitory regulation. [Tu et al. \(2025\)](#) showed that adolescents with IGD experienced gaming-related craving and that strengthening cognitive regulation through reappraisal reduced craving while improving inhibitory control specifically in gaming-cue contexts. This suggests that the ability to cognitively regulate responses to gaming cues can determine whether an urge to play develops into continued behavior. Consistent with this mechanism, [Hrbackova et al. \(2025\)](#), studying 2,697 adolescents, found that higher self-control was associated with lower levels of excessive and impulsive digital media use and predicted stronger self-regulation in digital environments. Therefore, stronger self-control may reduce vulnerability to IGD by enabling students to inhibit gaming impulses, regulate responses to gaming cues, and maintain control over the initiation, duration, and termination of gaming behavior.

The findings of this study have practical implications for school guidance and counseling services because the significant negative relationship between self-control and Internet Gaming Disorder suggests that strengthening students' self-regulatory abilities may help reduce vulnerability to problematic gaming. School counselors may therefore incorporate activities related to impulse control, time management, goal setting, decision-making, awareness of gaming triggers, emotional regulation, and healthy digital habits. However, because self-control explained only a relatively small proportion of the variance in IGD, preventive efforts should not focus solely on individual self-regulation. A broader approach involving parents and teachers is also needed to establish appropriate gaming boundaries, encourage balanced daily

routines, monitor changes in academic and social functioning, and identify early signs of excessive gaming.

This study also has several limitations. The cross-sectional design does not allow a definite causal conclusion regarding the relationship between self-control and IGD, the sample was drawn from only one junior high school, and both variables were measured using self-report questionnaires that may be affected by social desirability or response bias. In addition, self-control explained only 7% of the variance in IGD, indicating that substantial variability remains unexplained. Future research should therefore use longitudinal designs, involve larger and more diverse samples from multiple schools and regions, and combine self-report measures with other sources of data such as parental reports, teacher reports, gaming-duration records, or objective digital-use data. Future studies should also examine additional factors such as impulsivity, gaming motives, loneliness, social anxiety, emotional distress, sleep problems, parental monitoring, peer influence, family functioning, and gaming-related reward mechanisms using more comprehensive analytical approaches such as multiple regression, mediation or moderation analysis, structural equation modeling, or longitudinal network analysis

Conclusions

This study concludes that self-control plays an important role in understanding Internet Gaming Disorder among junior high school students. Students with stronger self-control tend to demonstrate a lower tendency toward problematic gaming, suggesting that the ability to regulate impulses, evaluate consequences, and make decisions consistent with longer-term goals may help adolescents maintain healthier gaming behavior. The findings contribute to the existing literature by providing evidence from an Indonesian school context and by reinforcing the relevance of self-control as one psychological factor associated with Internet Gaming Disorder among adolescents.

The findings also highlight the need for preventive efforts that address self-regulation while recognizing that problematic gaming is influenced by a broader range of psychological, social, family, and gaming-related factors. Guidance and counseling services can play an important role in helping students develop healthier digital habits, manage gaming impulses, and balance gaming with academic and social responsibilities. Nevertheless, the study is limited by its cross-sectional design, the use of a single-school sample, and reliance on self-report measures. Future research should involve larger and more diverse populations, employ longitudinal designs, and examine additional factors such as gaming motives, impulsivity, emotional distress, peer relationships, parental monitoring, and family functioning to provide a more comprehensive understanding of Internet Gaming Disorder among adolescents

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