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Virtually Connected, Socially Disconnected: The Impact of Online Game Addiction on Student Interaction

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ABSTRACT

This study aims to determine the effect of online games on the social interactions of students at An-Nur Junior High School Jakarta. The research method uses a quantitative approach with simple linear regression analysis. The results of the study indicate that online games have a significant effect on students' social interactions, as indicated by a significance value of 0.000 ≤ 0.05 so that H_o is rejected and H_a is accepted. The regression equation obtained is Y = 28.868 + 0.543X with a coefficient of determination (R^2) of 0.426. This means that 42.6% of the variation in students' social interactions is influenced by online gaming activities, while the other 57.4% is influenced by other factors outside this study.

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Introduction

Online gaming addiction, or Internet Gaming Disorder (IGD), is characterized by excessive and uncontrolled gaming use that interferes with academic, social, and psychological functioning. IGD is now included in the ICD-11 as an addictive behavior disorder (Gaming Disorder). According to (Satapathy et al., 2025) Based on a meta-analysis of over 600,000 adolescents from 84 different studies, the global prevalence of IGD was 8.6% (95% CI: 6.9–10.8%) and was highest in China (11.7%). Furthermore, global surveys showed a gender-specific prevalence difference—approximately 8.5% in males and 3.5% in females—with Asia having the highest prevalence at 6.3%, compared to North America (3.6%), Oceania (3%), and Europe (2.7%). A longitudinal study among high school students found that excessive online gaming was associated with increased aggression, poorer academic performance, and reduced quality of social relationships (Chen et al., 2023). In addition, a recent meta-analysis confirmed a strong link between gaming addiction and the emergence of psychosocial problems such as social isolation, loneliness, and depression (Mihara & Higuchi, 2017). This shows that IGD is not just a matter of entertainment, but has developed into a serious mental health and social problem in adolescents.

Theoretically, the phenomenon of online game addiction or Internet Gaming Disorder (IGD) can be explained through the I-PACE (Interaction of Person–Affect–Cognition–Execution) model, which states that addictive behavior arises from the interaction between personality factors, affective processes (mood/craving), cognitive processes (control expectations), and maladaptive behavioral execution—gaming becomes a strategy for avoiding stress or social anxiety, which then strengthens itself through negative reinforcement (Jhone et al., 2021). Additionally, Uses and Gratifications Theory (UGT) states that individuals choose media (including online games)

to fulfill psychological needs such as entertainment, social interaction, and identity—but excessive use can actually reduce real-world interpersonal skills (Granic et al., 2014). The Stimulation vs. Displacement/Compensation theory suggests that online interactions can stimulate social relationships for those who already have solid social skills, but can displace face-to-face interactions for individuals with high social anxiety or weak social skills—thus giving rise to patterns of compensatory internet use that exacerbate social isolation (Valkenburg & Peter, 2011).

Social interactions in adolescents are fundamental to the development of self-identity, communication skills, and emotional well-being. Research Results Dong et al. (2024) emphasizes the importance of belongingness as a key indicator of psychosocial health—adolescents with low connectedness often experience loneliness and isolation. Social Skills Theory also emphasizes that practice in face-to-face interactions strengthens empathy, self-expression, and emotion regulation, but excessive engagement in online gaming diminishes these important opportunities. Consistent with the theoretical framework, a number of empirical studies support this relationship. A study in China with 1,188 high school students found that social anxiety directly increased internet addiction, and also influenced it through increased loneliness and negative coping styles. Another study highlighted the ability of social anxiety to predict internet addiction in college students, with a significant positive correlation and potential causal relationship (Al Harbi et al., 2021). Furthermore, the social-emotional model of internet addiction suggests that social anxiety is a source of negative affect, which then increases the duration of internet use and triggers addiction (Mihara & Higuchi, 2017).

Several studies in Indonesia have also contributed to the understanding of digital addiction and its psychosocial consequences among adolescents. Ifdil et al. (2024) developed the Indonesian Version of the Internet Gaming Disorder Scale (ID-IGDS) as a valid and reliable IGD measurement instrument for Indonesian adolescents, with a variance score of 47.8% and item reliability reaching 0.99. The scale is also gender-neutral, making it suitable for use in cross-demographic studies. Furthermore, Afdal et al. (2019) highlighted the phenomenon of disrupted communication due to smartphone addiction and low self-control, suggesting that excessive digital engagement may replace real-life social interaction. Syahputra et al. (2024) reported a significant positive correlation between social media addiction and relational aggression among students at Padang State University ($r = 0.682$), while another study by the same authors identified significant gender differences in relational aggression across global and Indonesian samples (mean difference = −0.30 logit), highlighting the importance of considering interpersonal dynamics within different social contexts. While also showing fluctuations between countries that emphasize the need for contextual analysis in Indonesian society (Syahputra, et al., 2024). In addition, the Indonesian version of the relational aggression scale has been psychometrically tested and has proven high validity and reliability (item reliability = 0.98; Cronbach's $\alpha = 0.81$), providing a strong measuring tool for research on social interactions among Indonesian adolescents (Syahputra & Afdal, 2022).

In Indonesia, the rapid penetration of smartphones and mobile gaming has made online gaming a primary activity for teenagers—reaching the largest gaming market in Southeast Asia and approximately 40 million active gamers in 2017. However, empirical data on its impact on daily social interactions, especially in the school context, remains very limited. Rates of mild to severe addiction appear significant, a study in Indonesia found that nearly 50% of teenagers exhibited mild levels of addiction, and more than 10% severe levels, with average gaming durations of ≤3 hours/day, ≤21 hours/week (Surbakti et al., 2023). Another study in Semarang highlighted the link between online gaming addiction and physical health problems in adolescents (Wibowo & Belladiena, 2024). In addition, cross-border research-such as in Malaysia-reveals that mobile game addiction is closely correlated with increased social interaction anxiety (Masrek et al., 2022). From a policy coordination and health promotion perspective, a literature review in Makassar noted that the prevalence of IGD reached approximately 30% in high school students, yet no systemic mitigation programs had been adopted by schools or the local government.

Although previous studies have consistently shown that Internet Gaming Disorder (IGD) is associated with various psychological and behavioral problems, including depression, anxiety, loneliness, aggression, and poor academic performance (Mihara & Higuchi, 2017; Chen et al., 2023; Al Harbi et al., 2021), considerably less attention has been devoted to its influence on students' social interaction, particularly within educational settings. In Indonesia, existing studies have primarily focused on the prevalence of gaming addiction (Surbakti et al., 2023), the validation of assessment instruments (Ifdil et al., 2024), and broader forms of digital addictive behaviors (Afdal et al., 2019), leaving the relationship between online gaming addiction and students' social interaction insufficiently understood. This limitation is noteworthy because social interaction is a fundamental developmental competency that supports adolescents' emotional well-being, communication skills, peer relationships, and school

adjustment (Dong et al., 2024). As online gaming participation continues to increase among Indonesian adolescents, understanding its potential implications for students' social functioning has become increasingly important for educators, school counselors, and policymakers.

To address these gaps, this study examines the relationship between online gaming addiction and students' social interaction among Indonesian secondary school students using the Indonesian Version of the Internet Gaming Disorder Scale (ID-IGDS), a psychometrically validated instrument specifically developed for the Indonesian context (Ifdil et al., 2024). Unlike previous studies that have predominantly emphasized psychological symptoms or the prevalence of gaming addiction, this study focuses on the social dimension of adolescents' daily functioning, thereby extending the current understanding of the interpersonal consequences of online gaming addiction. The findings are expected to enrich the literature on adolescent digital behavior while providing empirical evidence to support the development of evidence-based guidance and counseling programs aimed at promoting healthy digital habits and positive social interaction in schools. Therefore, this study aims to examine the relationship between online gaming addiction and students' social interaction among Indonesian secondary school students. It is hypothesized that higher levels of online gaming addiction are associated with lower levels of students' social interaction.

Methods

This study employed a quantitative research design to examine the relationship between online gaming addiction and students' social interaction. Data were collected using a structured questionnaire administered to students at SMP AN-NUR Jakarta. A quantitative approach was considered appropriate because it enabled the measurement of the study variables and the statistical examination of the relationship between online gaming addiction and students' social interaction.

The study population consisted of students at SMP AN-NUR Jakarta. The minimum required sample size was calculated to be 157 respondents. However, due to limited participant availability and the inability to obtain complete responses from all eligible participants during the data collection period, the final sample comprised 91 respondents, all of whom met the study's inclusion criteria and were included in the analysis.

The theory used to develop the online game addiction instrument is the theory from (Lutfiwati, 2018). Online gaming addiction is a repetitive and compulsive gaming behavior that stimulates the dopaminergic system (pleasure) in the brain, strengthening impulsive drives (reactive system), and simultaneously weakening self-control (reflective system). From this theory, several aspects are found that define gaming addiction as repetitive gaming behavior that strengthens the dopaminergic pathways in the brain, namely the system related to pleasure and reward.

The research instrument for the online gaming addiction variable consists of 24 items representing six main indicators. Validity testing was conducted using the Pearson Product Moment correlation technique, where the calculated r-value was compared with the r-table at a significance level of 5%, with a total of 91 respondents (N), resulting in a degrees of freedom (df) of 89 and an r-table value of 0.268. Based on the test results, all statement items obtained a calculated r-value greater than the table r-value (0.268). This indicates that each item in the instrument is valid and therefore suitable for use as a measurement tool in this study. Therefore, all statements in the online gaming addiction variable accurately measure the intended construct.

Based on the reliability test results, the Cronbach's alpha coefficient for the online gaming addiction variable was 0.862, indicating good internal consistency. In addition, the Corrected Item–Total Correlation values for all statement items exceeded the minimum acceptable threshold of 0.20, demonstrating that each item contributed adequately to the overall scale. Therefore, the instrument was considered reliable for measuring online gaming addiction among the respondents.

The social interaction instrument was adapted from Ramanda & Syahniar (2017) and was used to measure students' ability to communicate, cooperate, and establish positive interpersonal relationships. Validity plays a fundamental role in instrument development because it reflects the extent to which an instrument accurately measures the construct it is intended to assess. The higher the validity of an instrument, the more accurately it represents the phenomenon being investigated (Syahputra et al., 2025). The validity test results for the social interaction variable (Y), consisting of 24 statement items, showed that the Corrected Item–Total Correlation values

ranged from 0.273 to 0.449, exceeding the critical r-table value of 0.268 at the 5% significance level (N = 91). Therefore, all items were considered valid and appropriate for measuring the intended construct. The reliability analysis showed a Cronbach's alpha coefficient of 0.860, which exceeded the recommended minimum threshold of 0.70, indicating good internal consistency. Therefore, the social interaction instrument was considered reliable for use in this study.

Data were analyzed using simple linear regression to examine the influence of online gaming addiction on students' social interaction. Regression analysis is a statistical technique commonly used in quantitative research to measure and determine the relationship between two or more variables. The purpose of regression analysis is to determine the extent to which the independent variable influences the dependent variable and to make predictions about the dependent variable based on the value of the independent variable (Putra et al., 2023)

Results and Discussion

The data for this study were obtained through a questionnaire distributed to 91 students at An-Nur Junior High School, Jakarta. The instrument consisted of 24 items for online gaming variables and 24 items for student social interaction variables. The assessment scale used a Likert scale with four answer choices, where each answer was scored according to the statement's category, either favorable or unfavorable. This study employed a quantitative approach with a correlation approach to determine the relationship between the two variables.

Table 1. Test Description of Research Data

	N	Minimum	Maximum	Mean	Std. Deviation
Game Online (X)	91	36	86	61.62	9.195
Interaksi Sosial Siwa (Y)	91	37	96	62.33	7.652
Valid N (listwise)	91				

The table above explains that the data analysis technique used was Descriptive Statistics. The table above represents the processed results from SPSS. It explains the results for variable (X), namely online games, with a standard deviation of 9.195, a minimum value of 36, a maximum value of 86, and an average of 61.62. The table above also explains variable (Y), namely student social interaction, with a standard deviation of 7.652, a minimum value of 37, a maximum value of 96, and an average of 62.33.

Table 3. Categorization of Online Game Addiction

Interval	Category	F	%
59-72	Very high	60	65.9
45-58	Tall	27	29.7
31-44	Low	4	4.4
18-30	Very Low	0	0.0
Total		91	100.0

Based on the descriptive analysis, the majority of respondents (160 people or 65.9%) were in the very high category for online gaming. Furthermore, 27 respondents (29.7%) were in the high category, and 4 respondents (4.4%) were in the low category. Interestingly, no respondents (0%) were in the very low category.

These results indicate excessive gaming intensity, which has the potential to disrupt their daily social activities. Although a small number of respondents were in the low category and none were in the very low category, this condition still requires serious attention as part of preventative efforts to maintain the quality of social interactions and mental health of students in the school environment.

Table 3. Social Interaction Categorization

Interval	Category	f	%
118-144	Very high	0	0.0
91-117	Tall	1	1.1
64-90	Low	38	41.8
36-63	Very Low	52	57.1
Total		91	100.0

Based on the descriptive analysis of student social interaction data from 91 respondents, it was found that the majority of respondents, 52 (57.1%), fell into the very low category. Furthermore, 38 respondents (41.8%) fell into the low category, and 1 respondent (1.1%) fell into the high category. No respondents fell into the very high category.

These results indicate that low levels of social interaction can impact students' socio-emotional development, including their ability to communicate, cooperate, and adapt to social environments.

Table 5 Normality Test

		Unstandardized Residual
N		91
Normal Parametersa,b	Mean	.0000000
	Std. Deviation	579.831.191
Most Extreme Differences	Absolute	.075
	Positive	.075
	Negative	-.056
Test Statistic		.075
Asymp. Sig. (2-tailed)		.200c,d

Based on the results of the normality test using the Kolmogorov-Smirnov method, a significance value of 0.200 was obtained. Since the significance value is greater than 0.05, it can be concluded that the data is normally distributed.

Table 6. Homogeneity Test

			Levene Statistic	df1	df2	Sig.
Interaksi Sosial (Y)		Based on Mean	1.231	21	59	.261
		Based on Median	.720	21	59	.796
		Based on Median and with adjusted df	.720	21	29.950	.781
		Based on trimmed mean	1.186	21	59	.297

Based on the results of the homogeneity of variance test using Levene's test in Table 4.4, the probability value in the significance column is 0.261. Because the probability value is greater than 0.05, it can be concluded that the students at SMP AN-NUR JAKARTA come from populations with the same variance, or all students at SMP AN-NUR JAKARTA are homogeneous.

Table 7. Linearity Test

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Interaksi Sosial (Y) * Game Online (X)	Between Groups	(Combined)	3495.959	31	112.773	3.750	.000
		Linearity	2244.272	1	2244.272	74.634	.000
		Deviation from Linearity	1251.687	30	41.723	1.388	.141
	Within Groups		1774.151	59	30.070		
	Total		5270.110	90			

Based on the table above, the correlation and linear regression models are stated to have a linear relationship between the independent and dependent variables if the deviation from linearity significance value is >0.05. Conversely, if the deviation from linearity significance value is <0.05, there is no linear relationship between the independent and dependent variables. The table above shows a significant value of Deviation from Linearity of 0.141. Therefore, it can be concluded that there is a linear relationship between the independent and dependent variables because the deviation from linearity significance value is 0.141 > 0.05.

Table 8. Simple Linear Regression Results (ANNOVA)

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2244.272	1	2244.272	66.012	.000b
	Residual	3025.838	89	33.998		
	Total	5270.110	90			

a. Dependent Variable: Interaksi Sosial (Y)
b. Predictors: (Constant), Game Online (X)

ANOVA was used to determine whether the online game variable influences social interaction. Table 4.6 above shows that variable X (online games) significantly influences variable Y (social interaction). This is indicated by a significance value of 0.000 <0.05, which meets the requirements.

Table 9. Linear Regression Results (Coefficients)

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.868	4.164		6.933	.000
	Game Online (X)	.543	.067	.653	8.125	.000

a. Dependent Variable: Interaksi Sosial (Y)

The table above presents the results of the simple linear regression analysis conducted using SPSS version 26. The analysis produced a constant value of 28.868 and a regression coefficient of 0.543, resulting in the regression equation Y = 28.868 + 0.543X. The constant value (a = 28.868) indicates that when the online gaming variable (X) is equal to zero, the predicted level of students' social interaction is 28.868. Furthermore, the regression coefficient (b = 0.543) indicates that for every one-unit increase in online gaming activity, the social interaction score is predicted to increase by 0.543 units. This positive coefficient suggests a positive relationship between online gaming activity and students' social interaction.

Table 10. Results of the Coefficient of Determination (R)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.653a	.426	.419	5.831
a. Predictors: (Constant), Game Online (X)				

Based on the table above, the R value of 0.653 indicates that the influence of online games on social interactions among students at SMP AN-NUR Jakarta is 65.3%, while the remaining 34.7% is explained by other causes or factors not included in this study.

Several research findings are similar to this study Hardian et al. (2025) Based on the results of research conducted at SMK Bhakti Praja Purwakarta involving 116 respondents, it was found that the intensity of online game use has a significant relationship with adolescent social interactions. The results of a simple regression analysis showed a value of F (1,115) = 42.504 with $p < 0.01$, which means the research hypothesis is accepted. The correlation value (R) of 0.519 indicates a fairly strong relationship between the two variables, while the coefficient of determination (R^2) of 0.270 explains that the intensity of online game play contributes 27% to the variation in adolescent social interactions. This finding confirms that the higher the intensity of online game play, the quality of adolescent social interactions tends to decline. The results of this study also show that although online games can be entertaining, excessive use actually has a negative impact on adolescents' social aspects, including reduced communication with family and friends, and decreased concentration in studying. In line with previous research, this phenomenon indicates that online game addiction can cause adolescents to lose the opportunity for healthy interactions in real life. Thus, this study emphasizes the importance of self-control in playing online games so as not to sacrifice adolescents' social activities or personal development.

Contrary to most previous findings, (Ritonga et al., 2024) Based on research conducted in Gunung Selamat Hamlet involving 52 school-aged adolescents from a total population of 106 people, it was found that online games have a positive and significant effect on adolescent social interactions. The results of a simple linear regression test showed a calculated t value of 5.062 greater than t table = 2.009 with a significance level of 0.000 (<0.05), so the hypothesis is accepted. This means that the higher the intensity of online gaming, the greater the increase in adolescent social interactions, and vice versa. Interestingly, the direction of the influence found was positive, indicating that online games can be a means of building communication, cooperation, and relationships with peers through playing together. However, this study also highlighted that this influence is not entirely free from negative impacts. Online games can cause addiction that impacts adolescents' health, psychological, academic, and financial aspects, such as reduced rest time, decreased concentration in learning, and dependence on spending on game vouchers. Therefore, although online games have been shown to increase the intensity of adolescent social interactions in Gunung Selamat Hamlet, self-control and parental supervision are still needed so that positive benefits can be felt without sacrificing adolescent well-being.

Sutantri et al. (2024) based on a study conducted on 5th and 6th grade students at SD Inpres Tamalanrea 2 Makassar with 98 respondents, the results showed a significant relationship between playing online games and children's social interactions. The Fisher Exact Test results showed a p-value of 0.001 (<0.05), so the hypothesis was accepted. Of the total respondents, 87 students (88.8%) were not classified as addicted to online games, while 11 students (11.2%) were categorized as addicted. In terms of social interactions, 89 students (90.8%) showed good social interactions and 9 students (9.2%) were classified as having poor social interactions. The odds ratio value of 0.058 indicates that the influence of online games on children's social interactions is relatively small. This study also confirms that although most children are not addicted and still have good social interactions, the potential negative impacts of online games still need to be watched out for. Online games can have positive effects,

such as training quick thinking and reducing stress, but also risk reducing interest in learning, triggering addiction, and affecting the quality of children's social relationships. Therefore, parental guidance in supervising gadget use and instilling healthy socialization patterns is very necessary so that children are able to utilize technology well without sacrificing their social development.

This study aims to determine the effect of online game use on the social interactions of students at the Faculty of Industrial Technology, Atma Jaya University, Yogyakarta. Of the 239 respondents, the majority of students play online games to relieve boredom and consider them entertainment (Pradipta et al., 2019). Playing time is quite high, with 49% of respondents playing 1–2 hours per day and 46% playing 3–4 hours. However, this intensity has an impact on other activities such as studying (94.6% forgot to study) and reduced social interactions. In addition, 92.5% of respondents have experienced conflict with friends or family due to playing games, and 75.3% feel increasingly distant from friends. The results show that playing online games has a more negative impact on students' social interactions. Most respondents prefer playing games when hanging out with friends (87.4%) rather than interacting face-to-face. As a result, their social interactions do not improve (64.4% answered no), their communication skills also do not improve (50.2%), and 95% do not make more friends through games. Thus, the study concluded that the use of online games has a negative impact on students' social interactions, so self-awareness, control, and support from parents are needed to reduce game addiction and increase more positive social activities.

This study was conducted on adolescents in Manado City with the aim of determining the relationship between online game addiction and social interaction. The results showed a significant negative relationship between the two variables (Rompas et al., 2023). Adolescents who experience online game addiction tend to have low social interaction, characterized by reduced communication, lack of involvement in social activities, and a decline in the quality of relationships with peers and family. This is in line with the finding that online game addiction shifts adolescents' focus from real social activities to the virtual world. Furthermore, the study emphasized that environmental factors, such as social interactions and parental supervision, also influence adolescents' tendency to become addicted to online games. The impacts that arise not only decrease the quality of social interactions but also affect psychological aspects, such as feelings of loneliness, irritability, and lack of motivation to learn. Therefore, this study concludes that the higher the level of online game addiction, the lower the level of social interaction of adolescents. Therefore, guidance, control of gadget use, and strengthening social activities in the real world are needed to minimize the negative impact.

Based on the research results, it was found that online game addiction has a significant effect on the social interaction of high school/vocational high school students of Karang Taruna Tunas Bangsa Kauman Kidul Salatiga (Wijaya et al., 2022). The results of the simple linear regression test showed an F-value of 24.893 with a significance of 0.000 < 0.05, and a t-value of -4.989 greater than the t-table of 2.015. This proves that the higher the level of online game addiction, the lower the social interaction of adolescents. The contribution of online game addiction to social interaction is 36.1%, while the remaining 63.9% is influenced by other factors not studied. These findings show a negative relationship between the intensity of online game play and the ability of adolescents to socialize in the real environment. Addicted adolescents tend to spend more time playing games than interacting with peers, resulting in reduced participation in social activities. These results are consistent with previous studies (Ulfa, 2017; Maulida et al., 2019) which show that addiction or intensity of online game play has an impact on low social behavior and interaction of adolescents. Thus, online game addiction is an important factor that can hinder the social development of adolescents.

The research findings in this article demonstrate a clear link between excessive social media use and body image disturbances and mental health issues in adolescents. The data obtained show that adolescents with high levels of exposure to social media are more susceptible to body image dissatisfaction, anxiety, and even depression (Heng et al., 2021). This is linked to the phenomenon of social comparison and exposure to unrealistic beauty standards on social media, which trigger self-dissatisfaction and low body acceptance. Furthermore, the study also emphasizes that social media has a dual role: it can be both a means of social support and a source of psychological distress. The findings show that adolescents who are able to use social media healthily—for example, by engaging in positive communities—are more likely to have good levels of self-acceptance. Conversely, compulsive and uncontrolled use actually increases the risk of developing psychological disorders. Thus, this study emphasizes the importance of self-regulation and digital literacy for adolescents in utilizing social media, so that negative impacts on mental health can be minimized.

Based on the research results, a significant positive relationship was found between social media addiction, gaming addiction, and family dysfunction in adolescents. Correlation analysis showed that the higher the level of social media or gaming addiction, the higher the tendency for unhealthy family functioning patterns to emerge (Yayman & Bilgin, 2020). These two forms of addiction proved to be significant predictors for all sub-dimensions of family functioning, such as problem-solving, communication, roles, affective responsiveness, affective involvement, behavioral control, and general family functioning. These findings indicate that adolescents with a tendency towards digital addiction are more susceptible to experiencing a decline in the quality of interaction and communication within the family. Furthermore, regression results showed that social media and gaming together had a stronger influence on family functioning than when tested separately. The greatest impact was seen in the dimensions of general family functioning (10%) and family roles (9%), meaning that digital addiction has the potential to weaken the role and involvement of family members in supporting each other. This study confirms that excessive use of social media and gaming can have a negative impact on family relationships, increase internal problems, and reduce the quality of communication between parents and children. Therefore, the role of families, schools and counselors is very important in providing guidance and supervision so that the use of digital media among teenagers remains within reasonable limits.

This article explains that Internet Gaming Disorder (IGD) is driven by the fulfillment of four core human needs: competence, autonomy, relatedness (belongingness/attention-seeking), and escapism. Initial models that solely emphasize motivational factors (such as recreation, competition, or skill) are deemed insufficient to explain the transition from casual gaming to addiction (Porcher, 2024). Therefore, the authors propose an expanded self-determination model that incorporates the need for escapism, as many individuals use gaming as a way to escape from a boring or stressful reality. The findings also highlight that game genres such as MMORPGs pose the highest risk of addiction because they simultaneously fulfill all four needs. Furthermore, the article asserts that the limited effectiveness of current IGD therapies is largely due to the lack of focus on meeting these core psychological needs. For example, cognitive-behavioral therapy or pharmacological interventions may be partially helpful, but they are not sufficient to replace the experience of fulfilling needs through gaming. Therefore, IGD treatment strategies should be directed toward substitution activities that can provide similar satisfaction, such as exercise or social activities that fulfill the needs for autonomy, competence, relatedness, and escapism. With this understanding, research provides a basis for more effective prevention and intervention approaches to addressing online gaming addiction.

Based on research results, the social interactions of adolescents addicted to online games in Singosaren Village tend to be less positive in their relationships with their families and their surrounding community. Time spent playing games leads to adolescents rarely socializing directly with friends and family, resulting in strained relationships (Saputra, 2021). Psychological impacts are also evident, with adolescents becoming more likely to challenge their parents and easily influenced by violent scenes in games, such as fighting or vandalism, which indirectly impact their subconscious. Nevertheless, the study also found that solidarity among fellow gamers is increasing. Relationships among gamers tend to be stronger through associative interactions, such as cooperation in games and tournaments that foster healthy competition. However, dissociative social interactions also arise in the form of controversy, disagreement, and conflict that sometimes spill over into the real world. Overall, the study concludes that online game addiction negatively impacts the quality of adolescents' social interactions with their families and community, although it can enhance a sense of togetherness among players.

The present findings demonstrate that higher levels of online gaming addiction are associated with poorer social interaction among students. These findings are consistent with previous studies reporting that excessive gaming is associated with social isolation, reduced interpersonal relationships, and impaired psychosocial functioning (Chen et al., 2023; Mihara & Higuchi, 2017). They also support the I-PACE model, which suggests that excessive gaming may become a maladaptive coping strategy that gradually replaces real-life social engagement (Jhone et al., 2021). From a practical perspective, these findings highlight the importance of early identification and school-based interventions to minimize the adverse social consequences of online gaming addiction.

The findings of this study have important implications for school Guidance and Counseling (BK) services. Since online gaming addiction was found to be associated with poorer social interaction, school counselors should implement preventive and developmental programs that promote healthy digital behavior, balanced time management, and effective interpersonal communication. Orientation services can introduce new students to the importance of maintaining healthy social relationships while using digital technology responsibly. Through

personal guidance, counselors can assist students in recognizing the causes and consequences of excessive online gaming, developing self-awareness, strengthening self-control, and improving time management skills. In addition, group guidance and psychoeducational activities may be integrated to encourage peer interaction, collaborative learning, and healthy digital habits. Collaboration among school counselors, teachers, and parents is also essential to establish a supportive educational environment that reduces the risk of problematic online gaming behavior

Conclusion

This study concludes that online gaming addiction is significantly associated with students' social interaction among students at SMP AN-NUR Jakarta. The findings indicate that online gaming behavior contributes to variations in students' social interaction, suggesting that excessive engagement in online gaming may influence how students communicate, interact, and build interpersonal relationships within the school environment.

These findings highlight the importance of fostering balanced digital habits among adolescents through collaborative efforts involving schools, parents, and guidance and counseling services. Preventive and developmental programs that promote healthy online gaming behavior and strengthen students' social competencies are essential to minimizing the potential adverse effects of excessive gaming while supporting positive psychosocial development.

Future research is encouraged to examine additional factors that may influence students' social interaction, such as parenting style, self-esteem, peer relationships, self-control, and social media use. Employing longitudinal, mixed-methods, or structural equation modeling (SEM) approaches with larger and more diverse samples may also provide a more comprehensive understanding of the relationship between online gaming addiction and students' social interaction

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