THE ROLE OF PEER SOCIAL SUPPORT AND LONELINESS IN PREDICTING ONLINE GAMING ADDICTION AMONG ELEMENTARY SCHOOL CHILDREN

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Abstract

The advancement of digital technology has led to a significant increase in online game usage among elementary school children. While gaming may offer certain cognitive and emotional benefits, excessive use poses a risk of addiction, which can negatively impact children's academic, social, and psychological well-being. This study aims to examine the role of peer social support and loneliness in predicting online gaming addiction among elementary school students. Employing a quantitative approach with a causal-comparative method, the study involved 62 students from grades IV to VI in Bekasi Regency and Municipality, selected through random sampling based on criteria for online gaming addiction. Data were collected using three psychological scales, each validated and tested for reliability. Data analysis was conducted using multiple linear regression, preceded by classical assumption tests. The results revealed that neither peer social support nor loneliness, whether individually or jointly, significantly predicted online gaming addiction. These findings suggest that online gaming addiction in elementary-aged children cannot be explained solely by psychosocial factors, but must also consider other elements such as parental supervision, self-control, and game design features. The study highlights the need for more comprehensive and context-based intervention strategies tailored to children's environments.

Keywords*: online gaming addiction; peer social support; loneliness; elementary school children*

Introduction

The development of information and communication technology has significantly transformed children's patterns of social interaction and play activities. One of the most prominent shifts is the emergence of online gaming as a primary form of entertainment, even among elementary school-aged children (Putra & Mahmud, 2021). Online games

are no longer exclusive to adolescents and adults; instead, they are now easily accessible to children. The widespread availability of personal devices, stable internet connections, and free-to-play yet addictive game models has increased children's exposure to and immersion in the digital gaming world (Kuss et al., 2021).

While playing games can offer certain benefits—such as improved coordination and problem-solving skills, enhanced mood and emotional well-being, and increased dopamine levels that may boost motivation—excessive and uncontrolled gaming can lead to psychosocial disturbances and a decline in academic performance. One of the most frequently reported consequences is Internet Gaming Disorder or online gaming addiction (Pontes & Griffiths, 2020). This condition is characterized by compulsive use, failure to regulate gaming time, and continued play despite experiencing negative academic and social consequences. Children affected by gaming addiction often exhibit declining academic performance, sleep disturbances, and social withdrawal (Lemmens et al., 2020).

Elementary school-aged children are in a critical stage of development in which social and emotional skills are being formed. At this stage, peer relationships play a significant role in shaping children's identity and self-concept (Santrock, 2020). Peers serve not only as sources of emotional support but also as social mirrors that influence behavior and internalized values. Peer social support can provide children with a sense of acceptance, safety, and appreciation, which are essential for their mental well-being (Mulyadi & Permana, 2022). Conversely, when children feel isolated or lack support from their peers, they are more likely to experience loneliness. Loneliness in children is a serious emotional condition, as they have not yet developed the emotional maturity required to manage such feelings adaptively (Yeo et al., 2021).

In the context of the digital era, children who feel lonely or lack adequate social support often seek refuge in the virtual world, including through online gaming activities. Online games offer opportunities for virtual interaction, the construction of alternative identities, and the achievement of goals that may not be attainable in the real world (Chen et al., 2020). The relationship between social support, loneliness, and online gaming addiction can be understood through Basic Psychological Needs Theory, which posits that

individuals have fundamental needs to feel connected, competent, and autonomous. When these needs are unmet in real life, individuals are likely to seek compensation in virtual environments (Deci & Ryan, 2000; as reviewed by Zhou et al., 2021).

Previous studies have shown that peer social support is significantly and negatively associated with levels of digital addiction. Children who perceive strong support from their peers tend to exhibit better self-control and are less likely to engage in compulsive gaming as a form of escapism (Tang et al., 2021). Loneliness has also been identified as a strong predictor of online gaming addiction. Children who experience feelings of loneliness are more likely to engage in prolonged gaming sessions as a means of compensating for unmet social affiliation needs (Lemmens et al., 2020).

Although numerous studies have investigated online gaming addiction among adolescents and young adults, research that specifically focuses on elementary school-aged children remains limited. This age group, however, is critically important, as it represents a formative stage in the development of long-term habits and behavioral patterns (Prasetya & Damayanti, 2022). The scarcity of studies involving children also results in a lack of empirical data needed to design effective preventive measures or early intervention programs. Therefore, there is a pressing need for research that specifically examines the role of social and emotional variables in the context of online gaming addiction among elementary school children.

Moreover, a deeper understanding of the relationship between social support, loneliness, and gaming addiction carries important practical implications for teachers, parents, and education policymakers. Strategies to prevent digital addiction in children should not solely focus on regulating screen time, but also on strengthening social and emotional protective factors (Yeo et al., 2021). In the context of primary education in Indonesia, the issue of excessive online gaming among children has already attracted considerable attention. However, it is still often perceived merely as a disciplinary problem, rather than as a consequence of unmet or disrupted social connections in the child's environment (Collins & Feeney, 2004).

By examining the roles of peer social support and loneliness as predictors of online gaming addiction, this study seeks to offer a new perspective on understanding the issue as a complex psychosocial phenomenon. A comprehensive understanding of these dynamics is essential for developing intervention strategies that go beyond merely controlling behavior, and instead focus on strengthening children's social support systems and emotional well-being from an early age. Therefore, this study aims to fill a gap in the literature and provide a scientific contribution that can serve as a foundation for designing more effective and sustainable prevention programs targeting online gaming addiction in elementary school children.

Research questions and objectives

Based on the aforementioned background, the research question posed in this study is: Do peer social support and loneliness, both simultaneously and partially, significantly predict online gaming addiction among elementary school children?

The objective of this study is to empirically examine the influence of peer social support and loneliness in predicting online gaming addiction among elementary school students.

RESEARCH METHOD

Type of Research

This study employed a quantitative research design with a causal-comparative approach. Causal-comparative research is used to identify causal relationships between two or more variables that have occurred naturally, without manipulation (Herdiansyah, 2022). In this study, the independent variables are peer social support and loneliness, while the dependent variable is online gaming addiction. The primary aim of this study is to determine the extent to which the two independent variables predict the level of online gaming addiction among elementary school children.

Research framework and Hypothesis

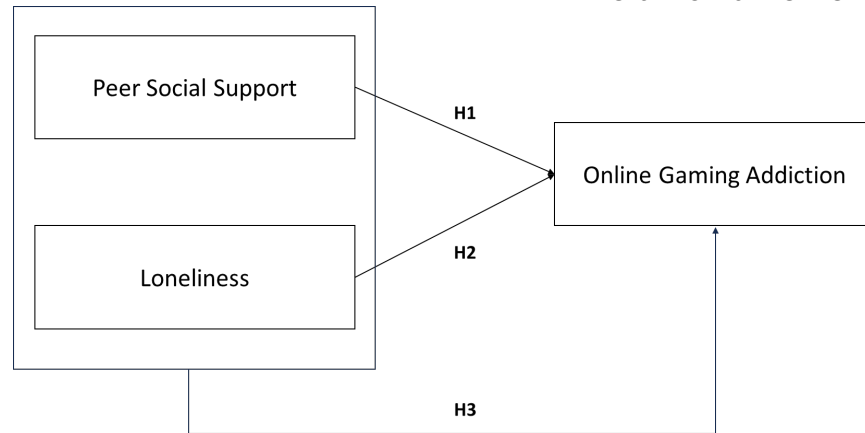This research framework can be seen in Figure 1 below:

Figure 1. Research Framework

Hypothesis

H1 = There is a significant influence of peer social support toward online game addiction in elementary school students.

H2 = there is a significant influence of loneliness toward online game addiction in elementary school students.

H3 = there is a simultaneous influence of social support and loneliness toward online game addiction in elementary school students.c

Population and Sample

The population in this study were all elementary school students who experienced online game addiction in the district and municipality of Bekasi, West Java.

Respondent Criteria

1. Respondents in this study were selected based on the following criteria:
2. Status as active students in grade 4, 5, or 6 of elementary school.
3. Have a habit of playing online games for at least 1 hour every day for the last 3 months.
4. Showing a high or very high score on the online game addiction instrument based on the results of the scale that the researcher has compiled.
5. Obtain written permission from parents or guardians to participate in the study.

6. Not currently participating in a formal psychological intervention related to reducing online game use.

Sampling technique

The sampling technique in this study used the random sampling method (simple random). The selection was made from students who had met the above criteria through an initial selection using an online game addiction screening scale. Based on the screening process, 62 elementary school student respondents in grades 4, 5, and 6 were obtained.

Data Collection Technique

Data was collected using a psychological scale questionnaire consisting of three scales, namely:

1. **Peer Social Support Scale**. This scale was developed based on five dimensions: (1) emotional support, (2) instrumental support, (3) informational support, (4) appraisal support, and (5) support availability. The scale consists of a total of 33 items. Validity testing was conducted using the Pearson Product-Moment correlation technique, resulting in item validity scores ranging from 0.522 to 0.789. The reliability of the instrument was tested using Cronbach's Alpha, yielding a coefficient of 0.882.

2. **Loneliness Scale**. This scale was developed based on four dimensions: (1) emotional loneliness, (2) social loneliness, (3) feelings of alienation, and (4) social inferiority. The scale comprises a total of 22 items. Validity testing was conducted using the Pearson Product-Moment correlation technique, with item validity scores ranging from 0.509 to 0.839. The reliability of the instrument, tested using Cronbach's Alpha, resulted in a coefficient of 0.843.

3. **Online Gaming Addiction Scale**. This scale was constructed based on five dimensions: (1) preoccupation, (2) loss of control, (3) withdrawal, (4) functional impairment, and (5) escapism. The scale contains a total of 25 items. Validity testing using the Pearson Product-Moment correlation technique yielded item validity scores ranging from 0.442 to 0.719. The instrument's reliability, assessed using Cronbach's Alpha, produced a coefficient of 0.810.

Validity dan Reliability test

The validity test was carried out using the Pearson Product Moment correlation technique to determine the extent to which each item correlated significantly to the total scale score. Aitem is said to be valid if the value of r count ≥ r table at the 5% significance level.

Instrument reliability was tested using Cronbach's Alpha. The reliability score is considered good if the alpha coefficient value is ≥ 0.70. Validity and reliability tests were conducted on the pilot data on a small sample before the main data was collected.

Data Analysis Technique

The collected data will be analyzed using statistical software (e.g. SPSS). The stages of data analysis consist of:

Classical Assumption Test

Sebelum dilakukan analisis regresi, terlebih dahulu dilakukan uji asumsi klasik untuk memastikan data memenuhi kriteria analisis:

Normality Test: To see if the data is normally distributed, using the Kolmogorov-Smirnov test.

Linearity Test: Using a scatterplot to determine whether the data distribution follows a linear line.

Multicollinearity Test: To see whether there is a strong relationship between independent variables, using the VIF (Variance Inflation Factor) and Tolerance values.

Hypothesis Test

Hypothesis testing in this study was conducted using multiple regression analysis. This test is used to see the simultaneous and partial effects of peer social support and loneliness on online game addiction. The significance criterion was set at the $p < 0.05$ level.

RESULTS AND DISCUSSION

Result

Classical Assumption Test

    a. Normality test

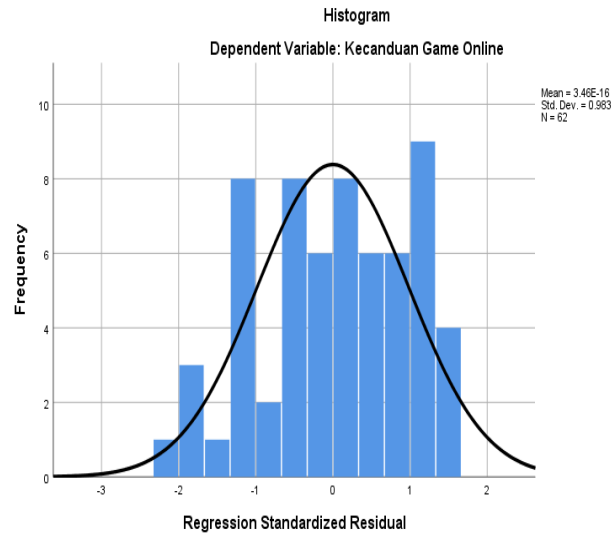

Figure 2. Normality testing

Figure 3. Histogram

Based on the normality test results in figure 2 above, using the One-Sample Kolmogorov-Smirnov Test, the Asymp. Sig. (2-tailed) of 0.200 (> 0.05), indicating that the data follows a normal curve distribution. Reinforced by the histogram results data in figure 3 above which shows that the data distribution follows a normal curve.
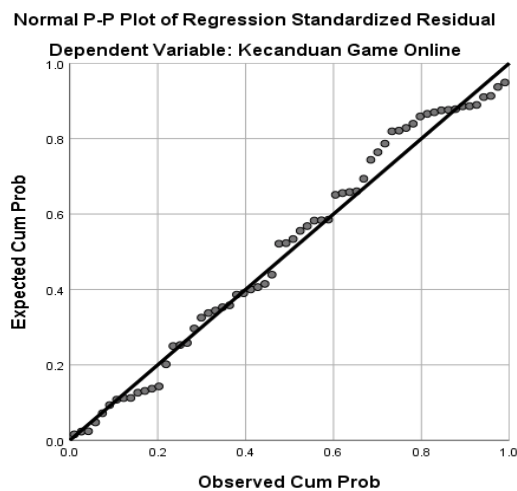
    b. Linearity test

Figure 4. Linearity testing

Based on the P-Plot of Regression Standardized Residual matrix output in figure 4 above, it can be seen that the data distribution follows a linear line. This indicates that the data distribution follows the linearity rule. Thus, the linearity requirement has been fulfilled.

c. Multicollinearity test

Table 1. Multicollinearity test result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	72.047	8.136		8.855	.000		
	Dukungan Sosial Teman Sebaya	-.103	.188	-.071	-.545	.588	.992	1.008
	Rasa Kesepian	.093	.177	.069	.528	.599	.992	1.008

a. Dependent Variable: Kecanduan Game Online

Symptoms of multicollinearity are conditions in regression analysis in which two or more independent variables have a very high correlation relationship with each other. This will confuse the interpretation of the effect of each independent variable on the dependent variable. For this reason, multicollinearity symptoms should ideally not occur in research that uses regression models (Herdiansyah, 2022). Based on the Coefficients output in table 1 above, it can be seen in the collinearity Statistics section, the tolerance score is 0.992 (< 1.00) and the VIF score is 1.008 (< 5), thus it can be said that there are no symptoms of collinearity in the data.

Hypothesis test

The t-test is to see the partial effect of each independent variable on the dependent variable.

Table 2. t-test result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	72.047	8.136		8.855	.000		
	Dukungan Sosial Teman Sebaya	-.103	.188	-.071	-.545	.588	.992	1.008
	Rasa Kesepian	.093	.177	.069	.528	.599	.992	1.008

a. Dependent Variable: Kecanduan Game Online

Based on the coefficients output in table 2 above, the Sig score of the peer social support variable shows a score of 0.588 (> 0.05). This indicates that partially, there is no effect of peer social support on online game addiction. Similarly, the loneliness variable, obtained a Sig. score of 0.599 which indicates that there is no effect of loneliness on online game addiction. Based on these results, it can be concluded that **H1 and H2 are both rejected.**

F-test to see the simultaneous influence of the two independent variables on the dependent variable

Table 3. F-test result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.002	2	29.001	.264	.769[b]
	Residual	6473.417	59	109.719		
	Total	6531.419	61			

a. Dependent Variable: Kecanduan Game Online

b. Predictors: (Constant), Rasa Kesepian, Dukungan Sosial Teman Sebaya

Based on the ANOVA output in table 3 above, the Sig score of the peer social support variable simultaneous loneliness variable, obtained a Sig. score of 0.769 which indicates that there is no effect of peer social support and loneliness simultaneously on online game addiction. Based on these results, it can be concluded that **H3 is rejected**.

Discussion

The results of the multiple linear regression analysis in this study indicate that peer social support does not have a significant influence on online gaming addiction among

elementary school students. This suggests that, although peer relationships are important in children's lives, such influence is not necessarily decisive in curbing compulsive gaming behavior (Cheung & Sim, 2014). Elementary school-aged children remain highly dependent on parental supervision and family environment regulation, rather than solely on peer relationships (Kuss et al., 2021; Prasetya & Damayanti, 2022). Factors such as permissive parenting styles, parents' own habits of gadget use, and limited opportunities for outdoor physical activities are likely to play a stronger role in shaping children's gaming habits.

Furthermore, loneliness also did not show a significant effect on online gaming addiction. This finding contradicts previous studies suggesting that loneliness is a strong predictor of addictive behavior in digital media use (Yeo et al., 2021; Zhou et al., 2021). However, in elementary school-aged children, the ability to recognize and express emotions such as loneliness has not yet fully matured. As a result, responses to loneliness scales may not accurately reflect children's actual psychological conditions, which can influence the strength of the statistical relationship between variables (Delgado & Martinez, 2022). In line with this, Lemmens et al. (2020) also recommend that research involving younger children should incorporate observational and qualitative approaches to better understand their emotional states.

The nonsignificant results may also be attributed to the homogeneous characteristics of the sample. All participants in this study were children who scored high on online gaming addiction based on a validated measurement instrument. When all respondents fall into the "high-risk" category, the potential for predictor variables (social support and loneliness) to explain variation in addiction outcomes becomes limited (Creswell & Creswell, 2022). Consequently, the lack of sufficient variability in the data reduces the sensitivity of the regression model. Future research is recommended to adopt a comparative approach between addicted and non-addicted groups in order to evaluate the role of each variable with greater precision (Kuss et al., 2021; Deng et al., 2022).

Moreover, the increasingly sophisticated design of online games plays a significant role in explaining children's addictive behaviors. Many contemporary online games incorporate virtual social features such as leaderboards, clans, or real-time interactions

with other players, offering children alternative social experiences (Pontes & Griffiths, 2020; Chen et al., 2020). Consequently, children may feel "connected" even if they lack peer relationships in their physical environment. This indicates that the need for social connection can be fulfilled virtually, which may explain why loneliness and peer social support did not show a significant influence on addiction (Fletcher, 2008).

These findings carry important implications, suggesting that interventions targeting online gaming addiction should adopt a more comprehensive and systemic approach. Strengthening peer relationships alone may not be sufficient; effective intervention should also involve screen time regulation, parental education, and the promotion of alternative activities that foster creativity, physical engagement, and direct social interaction (Prasetya & Damayanti, 2022; Mulyadi & Permana, 2022). This aligns with the holistic approach to child development, which emphasizes the balance between cognitive, emotional, and social growth as a foundation for preventing maladaptive behaviors, including digital gaming addiction (Santrock, 2020; Yeo et al., 2021).

Comparison with Previous Studies

Several previous studies, such as those conducted by Tang et al. (2021) and Lemmens et al. (2020), have emphasized that peer social support serves as a protective factor against digital addiction. However, this study did not find evidence to support that claim. A possible explanation is that, for elementary school-aged children, peer relationships have not yet become a primary influence in decision-making or behavior, unlike adolescents, who are more susceptible to social pressure and peer conformity (Santrock, 2020).

Meanwhile, loneliness often regarded as a major risk factor in addictive behaviors (Yeo et al., 2021) also did not exhibit a significant effect. This may be due to children's limited reflective capacity to consciously recognize and express feelings of loneliness. As a result, psychological scale assessments may not fully capture the actual psychological experiences of the children.

Theoretical and Practical Implications

Theoretically, these findings contribute to the development of scholarly discourse on online gaming addiction among children. The nonsignificant results indicate that predictive models relying solely on psychosocial variables such as peer support and loneliness are insufficient to explain gaming addiction in elementary school students. This highlights the need for more complex and integrative models that incorporate personal variables such as self-control, executive functioning, or family-based gadget use patterns (Pontes & Griffiths, 2020).

Practically, the findings suggest that prevention strategies for gaming addiction in children should not be limited to enhancing peer interactions. Instead, they should prioritize parental education, supervision of technology use, and the improvement of family relationships. Intervention programs such as digital parenting training, fostering emotional communication within the family, and school-based outreach initiatives may serve as strategic approaches.

Research Limitations

This study has several limitations. First, the limited number of respondents (n = 62) restricts the generalizability of the findings. Second, the study employed a quantitative approach using self-report scales, which may not fully capture the psychological dynamics of children in depth. Third, all participants were children who had already met certain criteria for gaming addiction, and no comparison was made with a control group (non-addicted children), which may have affected the predictive power of the independent variables.

Therefore, future research is strongly recommended to adopt a longitudinal design and a mixed-methods approach to gain a more comprehensive understanding of the development of gaming addiction over time, as well as the psychosocial factors involved in its dynamics.

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