



INTERNET ADDICTION AND SOCIAL INTERACTION AMONG SCHOOL ADOLESCENTS

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ABSTRACT

The rapid development of information technology has increased internet use among adolescents, which may affect the quality of social interaction in the school environment. This study aimed to analyze the relationship between the level of internet addiction and adolescents' social interaction at school. A quantitative study with a cross-sectional design was conducted. The sample consisted of 83 students selected using purposive sampling. The research instruments included the Internet Addiction Test (IAT) and a school-based social interaction questionnaire adapted from Diana Rachmawati (2018), in which all items were found to be valid and the reliability of the social interaction instrument showed a Cronbach's Alpha value of 0.763. Data were analyzed using univariate and bivariate analyses with the Spearman rank correlation test. The results showed that most respondents were female (54.2%) and aged 16 years (51.8%). Most students had a mild level of internet addiction (55.6%), while social interaction was predominantly categorized as poor (50.6%). A significant negative relationship was found between internet addiction and social interaction ($r = -0.225$; $p = 0.041$), indicating a weak correlation. In conclusion, higher levels of internet addiction are associated with lower quality of adolescents' social interaction in the school environment.

Keywords: adolescent; internet addiction; social interaction

INTRODUCTION

The rapid development of digital technology in recent years has brought significant changes to adolescents' lives, particularly in the way they communicate, learn, and build social relationships. Adolescents have become one of the largest groups of internet users, both globally and nationally. Advances in digital technology enable rapid interactions through instant messaging, online forums, and social media, which in turn have transformed patterns of social communication and blurred the boundaries between private and public spaces (Statistika, 2023). Globally, the number of internet users has reached approximately 5.5 billion, representing about 68% of the world's population (Union, 2024). In Indonesia, a survey conducted by the Indonesian Internet Service Providers Association (APJII) showed that in 2024 the number of active internet users reached 221,563,479 individuals, accounting for approximately 79.5% of the total population. The 12–27 age group represented the largest proportion of users at 34.40%, indicating a high level of adolescent engagement in daily internet use (APJII, 2024). The internet has become an inseparable part of modern life due to its ease of access, which allows individuals to connect anytime and anywhere. Among adolescents, the internet is used to support learning processes, seek academic information, and build social networks. Adolescence itself is a transitional period from childhood to adulthood, characterized by identity exploration and an increased need for social recognition (Novianty et al., 2019). However, high intensity of internet use without adequate control has the potential to negatively affect adolescents' social development (Novianty et al., 2019).

One of these negative impacts is internet addiction, a condition in which individuals lose control over their internet use, leading to disruptions in daily activities. Among adolescents, internet addiction is commonly triggered by excessive use of social media and online gaming. Internet use that initially serves productive purposes and supports learning processes can develop into

compulsive behavior that is difficult to control, thereby diverting adolescents' attention from their academic and social responsibilities (Novianty et al., 2019).

Internet addiction has a detrimental impact on the quality of adolescents' social interactions, particularly within the school environment. Adolescents who experience internet addiction tend to withdraw from social relationships, participate less in school activities, and experience difficulties in engaging in direct communication with teachers and peers. Studies indicate that the higher the intensity of uncontrolled internet use, the lower the quality of adolescents' social relationships at school (Yusuf et al., 2020). This is consistent with the findings of Utami & Nurhayati, (2019) which suggest that adolescents tend to prefer interactions in the virtual world over building direct social relationships. In addition, internet addiction may lead to psychological consequences such as stress, physical fatigue, and feelings of awkwardness during face-to-face interactions due to habituation to digital self-expression (Suryani et al., 2020).

Healthy social interactions within the school environment play a crucial role in supporting adolescents' emotional balance, adaptive abilities, and academic success. Feeling accepted and valued by both peers and educators can enhance learning motivation and strengthen adolescents' social skills (Allen et al., 2018; Eccles & Roeser, 2011). Positive social support at school has also been shown to reduce stress levels, increase self-confidence, and encourage active student engagement in the learning process (Fabris et al., 2023). Supportive relationships within the school environment not only influence academic achievement but also contribute to adolescents' overall mental health (Wong et al., 2021). Students aged 15–17 years are in a critical phase of psychosocial development. During this stage, adolescents begin to form social values, personal identity, and self-confidence through interactions with environments beyond the immediate family. Peers and the school environment play an important role in this process through various activities, such as group discussions, student organizations, extracurricular activities, and religious programs, which are expected to support character development and the enhancement of social skills (de Carvalho et al., 2025). The preliminary study showed that some adolescents with internet addiction tend to experience changes in their patterns of social interaction. This condition is reflected in students' tendency to remain in the classroom and use their devices during break time, as well as their delayed responses when engaged in direct communication. This situation is of particular concern given that adolescents aged 15–17 years are in a vulnerable developmental phase and are facing increasing academic demands. Therefore, research on internet addiction and adolescents' social interaction in the school environment is necessary to analyze the relationship between the level of internet addiction and the quality of adolescents' social interaction, thereby providing empirical evidence as a basis for nursing prevention and intervention efforts.

METHOD

This study employed a quantitative design with a cross-sectional approach. The sample consisted of 83 students selected using purposive sampling, with respondents aged 15–17 years. Data were collected using the Internet Addiction Test (IAT) to measure the level of internet addiction and a social interaction questionnaire in the school environment adapted from Utami & Nurhayati, (2019). The social interaction instrument was tested for validity using Pearson Product Moment correlation, and all 14 items showed correlation coefficients (r) greater than the critical value (r table = 0.444), indicating that all items were valid. Reliability testing using Cronbach's Alpha yielded a value of 0.763, indicating good internal consistency. The IAT instrument was not subjected to further validity and reliability testing as it is a standardized and well-established instrument. Data collection was conducted after respondents provided informed consent. Data analysis included univariate analysis to describe respondent characteristics and bivariate analysis to examine the relationship between variables using the Spearman rank correlation test, with a significance level set at $p < 0.05$.

RESULT

Table 1.
Frequency Distribution of Respondents' Characteristics Based on Age (n = 83)

Age	f	%
16 years	43	51.8
17 years	38	45.8
18 years	2	2.4

Table 1, the age distribution of respondents in this study indicates that out of a total of 83 respondents, the majority were 16 years old, accounting for 43 students (51.8%). Nearly half of the respondents were 17 years old, totaling 38 students (45.8%), while only a small proportion of respondents were 18 years old, consisting of 2 students (2.4%).

Table 2.
Frequency Distribution of Respondents' Characteristics Based on Gender (n = 83)

Gender	f	%
Male	38	45.8
Female	46	54.2

Table 2, the distribution of respondents by gender shows that out of the 83 respondents, the majority were female, totaling 45 students (54.2%). Nearly half of the respondents were male, with 38 students (45.8%).

Table 3.
Frequency Distribution of Respondents Based on Level of Internet Addiction (n= 83)

Level of Internet Addiction	f	%
Normal	16	29.3%
Mild Addiction	47	55.6%
Moderate Addiction	19	22.9%
Severe Addiction	1	1.2%

Table 3, the 83 respondents, nearly all experienced some level of internet addiction. The majority of respondents were classified as having mild internet addiction, totaling 47 students (55.6%). A smaller proportion fell into the moderate addiction category, with 19 students (22.9%), and only a very small proportion were classified as having severe addiction, comprising 1 student (1.2%). Meanwhile, 16 respondents (29.3%) were categorized as having normal levels of internet use.

Table 4.
Frequency Distribution of Respondents Based on Adolescents' Social Interaction with the School Environment (n= 83)

Adolescents' Social Interaction with the School Environment	f	%
Good social	41	49.4
Poor social	42	50.6

Table 4, out of the 83 respondents, the majority demonstrated poor social interaction with the school environment, totaling 42 students (50.6%). Nearly half of the respondents exhibited good social interaction with the school environment, accounting for 41 students (49.4%).

Table 5.
Relationship Between the Level of Internet Addiction and Adolescents' Social Interaction with the School Environment

Variabels	R (correlation)	p value (0,05)
Level of Internet Addiction and Adolescents' Social Interaction with the School Environment	-0,225	0,041

Based on the results of the Spearman's rank correlation test, the correlation coefficient was -0.225 with a significance value of $p = 0.041$. These findings indicate a weak but statistically significant negative relationship between the level of internet addiction and adolescents' social interaction with the school environment at a 95% confidence level. The negative direction of the relationship suggests that higher levels of internet addiction tend to be associated with lower levels of adolescents' social interaction within the school environment, and vice versa. However, the relatively small magnitude of the correlation indicates that the practical strength of this relationship is limited, suggesting that other factors beyond these two variables may also influence adolescents' social interactions.

DISCUSSION

Level of Internet Addiction Among Adolescents

The majority of respondents were classified as having mild internet addiction, totaling 47 students (55.6%). A smaller proportion of respondents were categorized as having moderate internet addiction, comprising 19 students (22.9%), and only a very small number were classified as having severe internet addiction, with 1 student (1.2%). Meanwhile, 16 respondents (29.3%) were categorized as having normal levels of internet use. These findings are consistent with a study by Nurlianawati (2020), which reported that most senior high school students experienced mild to moderate levels of internet addiction. This condition warrants careful attention because, according to Young & Abreu, (2017), excessive internet use can develop into compulsive behavior that disrupts social and academic functioning. This indicates that although the majority of students have not yet reached severe levels of addiction, patterns of excessive internet use still have the potential to affect the quality of social relationships. Therefore, early intervention is essential to prevent the progression of internet addiction to more severe levels.

According to Caplan, (2010), internet addiction is not only characterized by excessive duration of use but also by psychological dependence, such as feelings of anxiety when not connected to the internet, difficulty in controlling online time, and neglect of direct social interactions. Thus, although the majority of respondents in this study were classified as having mild internet addiction, the potential for progression to moderate or severe levels remains if internet use is not adequately controlled. Research by Kuss & Griffiths, (2017) indicates that internet addiction among adolescents can disrupt psychosocial functioning, including decreased face-to-face communication skills, reduced academic performance, and the emergence of feelings of isolation. These findings are consistent with the study conducted Nurlianawati et al., (2020), which found that most senior high school students experienced mild to moderate levels of internet addiction, and that this tendency had a negative impact on the quality of direct communication with peers.

Furthermore, these results are consistent with the study conducted by which found that adolescents with mild levels of internet addiction are at a higher risk of experiencing social problems, such as conflicts with peers and a reduced quality of relationships with family members. The study by Yusuf et al (2020) further supports these findings, indicating that adolescents who spend more time online tend to encounter difficulties in engaging in face-to-face social interactions. In other words, even mild levels of internet addiction can have tangible negative effects. Therefore, the findings of this study underscore the importance of digital literacy education and effective time management of internet use among adolescents. Preventive efforts can be implemented by involving teachers and parents in providing guidance and creating a learning environment that balances the use of technology with direct social interaction. This is in line with Young, (2009) who emphasized the importance of self-regulation and social support in preventing the development of internet addiction during adolescence.

Adolescents' Social Interaction with the School Environment

The majority of respondents demonstrated poor social interaction with the school environment, totaling 42 students (50.6%), while nearly half of the respondents exhibited good social interaction, accounting for 41 students (49.4%). These results indicate that a number of students still experience difficulties in building social relationships at school, both with peers and teachers. According to Soekanto, (2012) social interaction is the foundation of social relationships and involves processes of communication, cooperation, and adaptation within the social environment. When social interaction is categorized as poor, it may create barriers to students' socialization processes at school. This condition can have negative implications for personality development, academic achievement, and students' social skills.

The findings of this study are consistent with research by Luo et al., (2023) which highlighted that a positive school climate, peer support, and the role of teachers are crucial factors in fostering high-

quality social interactions. In addition, Suryani et al., (2020) found that students who excessively use the internet tend to have reduced ability to engage in effective face-to-face communication. This suggests that adolescents' involvement in the virtual world may reduce both the frequency and quality of direct interactions at school. Therefore, these findings indicate the need for interventions focused on enhancing students' social skills within the school environment. Furthermore, the findings of this study are consistent with the research by Long et al., (2020) which emphasized the importance of school connectedness. Adolescents with lower levels of connectedness are more vulnerable to social problems, including reduced quality of interactions with peers. The study by Lestari et al., (2023) also reported that internet addiction has a significant impact on decreasing the intensity of direct communication, leading students to prefer interacting through social media rather than engaging in face-to-face interactions.

The Relationship Between the Level of Internet Addiction and Adolescents' Social Interaction with the School Environment

Based on the results of the Spearman's correlation test, a correlation coefficient of $r = -0.225$ was obtained with a significance value of $p = 0.041$ ($p < 0.05$). These results indicate a statistically significant negative relationship between the level of internet addiction and adolescents' social interaction with the school environment at a 95% confidence level. The negative direction of the relationship suggests that higher levels of internet addiction are associated with lower quality of adolescents' social interactions within the school environment, and vice versa. Nevertheless, the strength of the relationship identified in this study was relatively weak. This represents one of the limitations of the findings, as although the relationship was statistically significant, the low correlation coefficient is not sufficiently strong to indicate a substantial effect between the two variables. This condition may be influenced by the distribution of respondents, the majority of whom were classified as having mild internet addiction (55.6%), resulting in limited data variability and a reduced correlation strength. In addition, other variables may also influence adolescents' social interactions, such as school climate, peer support, relationships with teachers, and students' personality traits, as emphasized by Luo et al., (2023). Therefore, the findings of this study should be interpreted with caution due to the limited scope of the data and the weak strength of the relationship observed.

These findings are consistent with studies by Lestari et al., (2023) and Yusuf et al., (2020) which reported a significant negative relationship between internet addiction and the quality of adolescents' social interactions. These studies explained that excessive internet use, particularly for social media and online gaming activities, can reduce the time and opportunities for direct social interaction, thereby hindering the development of real-world social skills. According to Bandura's theory of reciprocal determinism A, (1986), individual behavior (internet use) dynamically interacts with personal factors (social skills) and environmental factors (school context). When excessive internet use dominates adolescents' time, interaction with the school environment decreases, which may ultimately affect the quality of social relationships, participation in school activities, and the social support they receive.

CONCLUSION

This study demonstrates a significant negative relationship between the level of internet addiction and adolescents' social interactions within the school environment, with a weak strength of association. Higher levels of internet addiction are associated with lower quality of adolescents' social interactions. Although the majority of respondents were classified as having mild internet addiction, uncontrolled internet use still has the potential to hinder face-to-face communication and social participation at school. The weak strength of the relationship indicates that adolescents' social interactions are influenced by various factors beyond internet addiction, such as the school environment, social support, and individual characteristics.

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