

# Internet Gaming Disorder among Rural Adolescents: A Cross-Sectional Study in Aceh, Indonesia

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## ABSTRACT

**OBJECTIVE:** To assess the Internet gaming disorder in Aceh Besar, Indonesia.

**METHODOLOGY:** The data collection involved gathering sociodemographic details and utilizing the 9-item Internet Gaming Disorder Scale in a dichotomous choice format. Descriptive statistics, such as frequency distribution and percentage, were employed for data analysis.

**RESULTS:** The findings revealed that 53.2% of adolescents were classified as at-risk gamers, indicating a notable prevalence of Internet Gaming Disorder.

**CONCLUSION:** This underscores the importance of parental support, supervision, and adolescent self-control, along with the involvement of mental health care providers in the community, to educate and prevent the onset of internet gaming disorder among adolescents.

**KEYWORDS:** Internet gaming disorder; adolescents; Indonesia

## INTRODUCTION

Advancements in technology contribute significantly to the convenience and efficiency of human life<sup>1</sup>. However, technological progress can have adverse consequences despite these benefits when misused. The swift evolution of the internet in the modern technology era has profoundly impacted the realm of online games<sup>1</sup>. Globally, online gaming has emerged as an exceedingly popular and rapidly expanding leisure activity, with an estimated 2.7 billion people engaging in it as of 2020<sup>2</sup>. One detrimental outcome of online games is the potential for users to develop addiction<sup>1</sup>. Concerns about compromised gaming behaviour have arisen with the widespread adoption of gaming, particularly among adolescents<sup>3</sup>. The term used to describe a condition in which individuals excessively partake in gaming, disrupting both their schedule and behaviour to the detriment of their health and overall well-being, is known as Internet Gaming Disorder (IGD)<sup>3</sup>.

The American Psychiatric Association (APA) categorizes IGD as a mental health issue. The World Health Organization (WHO) has designated IGD as a health emergency, identifying it as one of the mental health problems requiring preventive measures due to its increasing incidence<sup>4</sup>. Given the current trends, IGD poses a threat that adolescents may not fully comprehend, posing risks to their health, particularly mental well-being. Adolescents are more susceptible to online game addiction than adults<sup>5</sup>. The prevalence

of IGD is likely to surge with the continuous advancement of technology, primarily attributed to the easy accessibility of the internet and the broadening coverage of online networks<sup>6</sup>.

Earlier studies indicate that around 2.5% of Slovenian adolescents grappled with IGD<sup>7</sup>, while in the Netherlands, the prevalence ranged from 3.8% to 5.4%<sup>8</sup>. South Korea recorded a rate of 5.9%<sup>2</sup>, Germany reported 5.7%<sup>9</sup>, and most prevalence rates of IGD were higher in males than females<sup>10</sup>. In Indonesia, a study revealed that 20.62% of adolescents were affected by IGD.

IGD is linked to various detrimental health and psychosocial issues, including heightened stress, obesity, diminished performance, job instability, decreased academic accomplishments, sleep disturbances, related disorders, depression, lower psychosocial well-being, and anxiety<sup>11</sup>. Another study identified elevated symptoms of depression, poor sleep quality, male gender, and prolonged gaming as significant risk factors for IGD<sup>2</sup>. IGD also diminishes adolescents' interest in activities unrelated to online games<sup>11</sup>. Psychological aspects in adolescents with IGD are marked by disorders such as emotional disturbances, a propensity for using inappropriate language, and increased irritability. The addiction mechanism of IGD shares similarities with substance addiction<sup>11-13</sup>, as individuals feel unable to control the urge to play games and their gaming behaviour<sup>14</sup>. Additionally, addicted gamers exhibit a strong desire to persist in playing, and when they abstain, they encounter withdrawal symptoms leading to discomfort. The adolescent demographic is notably susceptible to online gaming, underscoring the importance for parents to comprehend the dynamics involved, closely monitor their children, exhibit self-restraint, and for

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community mental health nurses to contribute to the advancement of family and adolescent education on IGD prevention. This study seeks to ascertain the prevalence of internet gaming disorder among adolescents in rural areas.

## METHODOLOGY

### Study Design

This *cross-sectional study* was conducted among 124 adolescents in the Aceh Besar District of Indonesia.

### Instrument

The study comprises inquiries about sociodemographic details such as age, gender, gaming habits, social media usage, feelings of loneliness, family communication, and occurrences of eating and sleep disorders. Screening for Internet gaming disorder utilized the 9-Item Internet Gaming Disorder Scale developed by Lemmens JS 2015<sup>8</sup>. The questionnaire features nine questions, each answered on a 5-point scale: 1= never, 2= rarely, 3= sometimes, 4= often, and 5= very often. Scores are calculated by summing the responses, ranging from 9 to 45, with higher scores indicating a greater severity of gaming disorder.

### Data Analysis

The characteristics of each research variable were presented in mean or median standard deviation (SD) for the numerical variable. At the same time, the use of proportion or percentage values was reported for the categorical data.

### Ethical Statement

The ethics committee of the Faculty of Nursing, Universitas Syiah Kuala, approved the study (reference number:113101210623). They participated in the study voluntarily. Parents or guardians signed the informed consent voluntarily.

## RESULTS

Among the 124 participants in this study, the predominant demographic consisted of males (52.4%) aged 15 years (52.4%). The majority played a single type of game (39.5%) and preferred coffee shops as their gaming venue (55.6%). Smartphones were the most commonly used devices (55.2%), with most devices priced between IDR 1-5 million (100%). Most gaming expenditures fell below IDR 1 million (52.4%), and all respondents tried to curtail their gaming activities (100%). Notably, a substantial portion reported experiencing reduced feelings of loneliness (77.4%), frequent communication with parents (80%), the absence of eating disorders (90.3%), and a lower incidence of sleep disorders (79.8%). **Table I** presents a detailed list of the respondents' characteristics.

Furthermore, more than half (53.2%) met the criteria as risky gamers, while only 1.6% were disordered gamers. The remaining 45.2% had no problem with gaming disorder.

**Table I: Characteristic Respondents**

| Characteristics                                  | f   | %    |
|--|-----|------|
| <b>Gender</b>                                    |     |      |
| Female   | 59  | 47.6 |
| Male   | 65  | 52.4 |
| <b>Age (Years)</b>                               |     |      |
| 14   | 4   | 3.2  |
| 15   | 65  | 52.4 |
| 16   | 31  | 25.0 |
| 17   | 24  | 19.4 |
| <b>Number of games played</b>                    |     |      |
| 1  | 49  | 39.5 |
| 2  | 31  | 25.0 |
| >2   | 44  | 35.5 |
| <b>Where do the plays</b>                        |     |      |
| At Home  | 45  | 36.3 |
| At School  | 10  | 8.1  |
| Coffee Shop                                      | 69  | 55.6 |
| <b>Smartphone price mostly</b>                   |     |      |
| Rp. 1-5 million                                  | 124 | 100  |
| <b>Money Spend for gaming</b>                    |     |      |
| None   | 57  | 46   |
| Rp. < 1 Juta                                     | 65  | 52.4 |
| Rp. 1-2 million                                  | 2   | 1.6  |
| <b>Efforts to reduce the frequency of gaming</b> |     |      |
| Yes  | 124 | 100  |
| <b>Loneliness</b>                                |     |      |
| No   | 96  | 77.4 |
| Yes  | 28  | 22.6 |
| <b>Communication with parents</b>                |     |      |
| Seldom   | 22  | 17.7 |
| Sometimes  | 22  | 17.7 |
| Often  | 80  | 64.5 |
| <b>Eating disorders</b>                          |     |      |
| No   | 112 | 90.3 |
| Yes  | 12  | 9.7  |
| <b>Sleep disorders</b>                           |     |      |
| No   | 99  | 79.8 |
| Yes  | 25  | 20.2 |

## DISCUSSION

The findings indicate a majority of 52.4% male respondents. Consistent with a previous finding<sup>2</sup>, male adolescents are predominantly identified as risky gamers at 87.5%. Similarly, another study

demonstrated a higher prevalence of Internet Gaming Disorder (IGD) in males compared to females, particularly at a younger age versus older age<sup>15</sup>. Another study conducted in China by the same researchers<sup>16</sup> supports these results, highlighting that males tend to experience IGD more frequently than female, attributing this disparity to the perceived greater difficulty males have in self-control than females.

Most participants in this study were 15 years old, accounting for 52.4%. Insights from IGD research spanning seven European countries involving 12,938 adolescents aged 14-17 revealed that 1.6% met the IGD criteria, with an additional 5.1% at risk<sup>16</sup>. A similar study emphasized the substantial impact of gender on IGD incidence, showing a statistically significant relationship between them<sup>17</sup>; this indicates that males have a 2.1 times greater risk of being affected by IGD than females. In summary, adolescence emerges as a period susceptible to IGD involvement. Additionally, an earlier study indicated that gaming cues are more frequently generated by males than females<sup>15</sup>. The research also highlighted that the primary locations for online gaming are often coffee shops, comprising 55.6%. Further support for the influence of the playing environment on IGD incidence was found in a study conducted by Rho MJ 2018<sup>18</sup>, emphasizing the significance of the playground in the occurrence of IGD.

The findings revealed that 77.4% of respondents did not experience loneliness. An earlier study suggests that teenagers engage in online games to occupy their free time, alleviate stress, and foster new friendships and connections<sup>1</sup>. Given adolescents' inherent need for interpersonal relationships, online games satisfy these affiliative needs. Adolescents also recognize gaming as a decisive element for building meaningful relationships within the gamer community<sup>19</sup>. Additionally, this study discovered that 64.5% of respondents reported frequent communication with parents<sup>19</sup>. Previous research has established a link between conflicts with parents and higher rates of Internet Gaming Disorder (IGD) a year later<sup>20</sup>. Similarly, adolescents with lower commitments to family social activities exhibited higher IGD symptoms; this underscores the importance of prioritizing effective prevention strategies that foster strong parent-child relationships<sup>21</sup>.

A significant portion of the present population comprised risky gamers, aligning with the observation that they exhibit increased frequency and susceptibility to online game addiction<sup>16</sup>. Adolescents emerge as the demographic most susceptible to Internet Gaming Disorder (IGD) addiction, potentially becoming immersed in the virtual realm, experiencing psychological distress, and facing challenges in both

personal well-being and social relationships. Moreover, their heightened engagement in online activities exposes them to new technologies and platforms, potentially leading to aggressive and excessive behaviours<sup>6</sup>.

Previous research also indicated that 4% of participants were at a high risk of Internet Gaming Disorder (IGD), with an overall prevalence of 6% exhibiting IGD tendencies<sup>22</sup>. In a comparable study, Bumozah, Quwaidhi, and Al-Ghadeeb reported a prevalence rate of 8.8%, revealing that 19.3% of respondents were categorized as risky gamers<sup>23</sup>. Numerous studies have established a connection between internet addiction and mental health disorders such as anxiety and depression. Lastly, the prevalence of IGD among upper secondary students in rural Thai communities is 5.4%, with the difference being relatively small, suggesting that sociocultural factors may not be strongly correlated with IGD in this context<sup>23</sup>.

## CONCLUSION

In conclusion, the study sheds light on significant patterns and vulnerabilities related to Internet Gaming Disorder (IGD) among adolescents. The predominance of male respondents, mirroring the findings of previous research, underscores the higher risk associated with male adolescents, who are often identified as predominantly risky gamers. The age distribution with a substantial proportion being 15 years old, aligns with the broader vulnerability of adolescents to IGD, as evidenced by European research indicating a noteworthy prevalence and risk percentage among this age group. The choice of coffee shops as the primary location for online gaming indicates environmental factors influencing IGD incidence, corroborating prior research on the subject. The study's spotlight on the role of online gaming in addressing adolescents' social needs further emphasizes the multifaceted nature of IGD.

Additionally, the positive correlation between frequent communication with parents and lower IGD risk highlights the pivotal role of strong parent-child relationships in mitigating IGD. Recognizing the vulnerability of adolescents to IGD, preventive measures, mainly targeted at risky gamers, are crucial. Community mental health nurses are identified as key players in educating adolescents about health issues and preventing IGD. Future research should delve into the intricate dynamics of family support and its association with internet gaming disorder.

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**Data Sharing Statement:** The corresponding author can provide the data proving the findings of this study on request. Privacy or ethical restrictions bound us from sharing the data publically.

#### AUTHOR CONTRIBUTION

Martina: Designed the study, wrote the initial manuscript

Alfiandi R: Conducted data collection and data analysis

Novitayani S: Conducted data collection and data analysis

Dineva F: Conducted data collection and data analysis

Marthoenis: Supervised data collection, data analysis and manuscript preparation

All authors have agreed for the final version of the manuscript.

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