

The Relationship between Emotional Intelligence and Internet Game Addiction among Adolescents in Aceh Indonesia

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ABSTRACT

OBJECTIVE: This study aimed to assess the level of Emotional Intelligence (EI) among adolescents and identify the correlation between emotional intelligence and game addiction among them.

METHODOLOGY: This cross-sectional study was conducted among 19 Junior High Schools in Aceh province. Three hundred eighty-two (382) participants engaged in online gaming were involved based on multistage randomized sampling from 2 junior high schools in 9 sub-districts. The data collection tool used the Internet Gaming Disorder Scale–Short-Form (IGDS9-SF) and emotional intelligence screening using the Trait Emotional Intelligence Questionnaire-Short Form (TEIQUE-SF).

RESULTS: The data was analyzed using the Spearman's Rank two-tailed test with a significance value (α) = 0.05, resulting in a p-value = 0.000 and $r = -0.286$, which means that there is a unidirectional (negative) relationship between the game addiction variables and emotional intelligence. The results revealed that the EI Status of adolescents engaged in online gaming was slightly higher, with the frequency of 157 respondents (54.9%), while respondents in the low category showed 129 (45.1%).

CONCLUSION: Based on this study, to prevent game addiction, EI status needs to be improved by considering several related components, such as developing emotional awareness, self-control, social skills, self-motivation and adaptability.

KEYWORDS: Gaming Addiction, Emotional Intelligent, Teenager, School-based

INTRODUCTION

Smartphone-based telecommunications with more sophisticated functions has advantages over computers by providing features such as internet access¹. Gameplay is increasing along with the ease of free internet access. Likewise, the ability to interact broadly has made internet games increasingly common and an essential part of adolescents' daily activities². As a consequence, this habit can lead to addiction. Nowadays, Internet Game addiction is registered in the International Classification of Diseases (ICD-11) and is also considered a disease³. The prevalence of reported game addiction in 2019 among adolescents aged 13 to 15 years varies due to differences in measurement tools and cultural backgrounds. In Europe, it falls within the range of 1.2% to 1.6%; in Asia, it spans from 1.6% to 18.4%⁴, while Indonesia has a gaming addiction rate of 14.23% per year⁵.

Adolescents who are addicted to games can have negative impacts, as in previous studies, namely sleep disorders⁶. The effects of playing games are significant, including decreased academic

achievement, depressive mood disorders, stress and anxiety and social relationship disorders⁷⁻¹⁰. Adolescents grappling with game addiction may undergo physical and psychological disruptions, such as mood swings, heightened aggression and obsession, alterations in sleep and eating habits, physical discomfort, heightened anxiety, delusional thinking, and occasionally, challenges in distinguishing between reality and the virtual world¹¹. Addictive gaming behavior can cause problematic behavior and inhibit emotional intelligence (EI) in adolescents; this is because interest in games can reduce their opportunities to interact with peers. As a result, they risk experiencing barriers to social skills and emotional control¹². The impact of game addiction, when viewed from the EI aspect, is very significant in every aspect, including self-regulation, self-awareness, self-empathy, and social skills. Moreover, if this EI can be maintained optimally, online game addiction can be reduced or limited⁴. Following the statement above, in this research, the independent variable is EI, and the dependent variable is game addiction.

One example of the EI aspect is self-awareness, namely using the internet for entertainment, one of which is playing online games without time limits, which can disturb teenagers' self-awareness, which will encourage them to search for an appropriate self-identity¹. They should realize that the adolescent phase is a critical period of growth and learning where they learn core identity, continuity, and meaning-making competencies. Inappropriate and excessive

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use of entertainment technology and social media is closely related to problems in adolescent development, especially in controlling emotions¹³.

Activities on the online game can be identified and limited with good EI. Teens can also control or seek help if they feel unsafe¹⁴. EI plays a vital role in adolescent psychosocial development. The EI level depends on individuals' skills, such as self-control, which includes self-regulation, self-awareness, and self-motivation¹⁵.

EI is the ability to reason with emotions and utilize the information that influences one's thoughts and actions to motivate himself and manage emotions well, understanding his feelings and those of others around him^{16,17}. Gaming addiction's impact on adolescent EI becomes evident in terms of self-regulation, manifesting as compulsive actions, a decline in self-discipline, and a reduction in physical activity^{10,11,18-20}.

As a result of game addiction, adolescents lose self-regulation when they should be able to control themselves better.

Adolescents grappling with game addiction tend to concentrate heavily on their online activities, resulting in diminished engagement with their immediate surroundings. When this prolonged, sedentary behaviour persists, it can impact the neurotransmitters associated with emotional regulation in the brain, rendering adolescents unable to manage and even identify their emotions effectively. This deficiency in EI may manifest as fluctuating emotions, increased irritability, and heightened anger due to suboptimal emotional control²¹.

This present study is essential to identify the level of EI and gaming addiction in adolescents in Aceh, Indonesia, using the appropriate instruments and mechanisms for analyzing the results of the data that has been collected as well as determining the cut-off points for the criteria for the results obtained based on existing research. However, in Indonesia, the problem of game addiction is that there is no official data from the government, especially the health service, regarding addiction levels. Another problem is limited evidence-based data, and prevention and treatment programs need to be developed further.

METHODOLOGY

Study Design

This cross-sectional study was conducted to identify the correlation between EI and game addiction in adolescents and then assess the level of Emotional Intelligence among adolescents in 19 government Junior High Schools in Banda Aceh, Indonesia.

Population and sample

This research was conducted in Banda Aceh, the capital of the province of Aceh, with all the accessible facilities and accessibility of internet technology that can be obtained for free in public places, as well as in cafes or coffee shops that provide internet facilities for consumers. According to Data Sekolah, the number of Banda Aceh Middle School students based on data

from the Aceh Statistics Center in 2023 was 8260. Furthermore, based on Taro Yamane, the sample size in the present study was 382 adolescents.

The data collection was conducted from August to September 2023. The inclusion criteria include students enrolled in government-owned junior high schools; respondents have played online and offline games. The participants will be excluded if they do not want to be involved in the research and do not have permission from their parents or guardians. The sample determination procedure began by collecting data on all state junior high schools from all sub-districts in Banda Aceh, totaling 19 schools from 9 sub-districts. Next, the schools were randomized, and two schools were selected. The selected schools were randomly assigned to all its classes again and got two courses each in class 7, class 8, and class 9. Furthermore, the researcher involved all students who were selected from the six classes that had been randomized. This process is repeated at each subsequent stage in the second school until the desired sample size is achieved.

Instrument

Data was collected using the Internet Gaming Disorder Scale-Short Form (IGDS9-SF) questionnaire (Pontes & Griffiths, 2015) to identify adolescents level of addiction. It has nine scales that are scored on a Likert scale, with 1 being never and 5 being very often. Higher scores signify a more significant gaming problem. Higher numbers signify a more substantial gaming concern. The overall score goes from 9 to 45. This study used a cut-off point of IGDS9-SF scores in three categories: non-disorder (score range: 0–21) and disorder (score range; 32-45); the IGDS9-SF presented with a high internal consistency (Cronbach alpha a was 0.91)²². The alpha for this instrument was 0.8.

The Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) by Petrides (2009) has been adapted into Indonesian by Tresnawaty (2018) and Hasnah (2018) and has passed the validity test and the Cronbach's alpha value is 0.781 which has high reliability. This questionnaire consists of 30 statements and uses a Likert scale. The level of EI in this instrument is categorized into two levels, namely high and low. The alternative answer choices used in the assessment scale are 1: Strongly Disagree, 2: Disagree, 3: somewhat disagree, 4: Neutral, 5: Somewhat Agree, 6: Agree, and 7: Strongly Agree. TEIQue-SF is divided into high and low categories, with a cut-off point value of 120²³. The TEIQue-SF score is high if the score is more than equal to 120, while an individual is said to have a low TEIQue-SF if the score is less than 120. For this instrument, the alpha Cronbach was 0.88.

Ethical Statement

This study was approved by the Ethics Committee of the Faculty of Medicine, Universitas Syiah Kuala, Komite Etik Penelitian Kesehatan (KEPKK) with

registration number 1171012P, Description Of Ethical Exempted "Ethical Exempted Number: 100/EA/FK/2023. Interm of data collection: The selected adolescents participating in this study were permitted by parents or representative guardians and willing to participate.

RESULTS

Characteristic of Respondent

The selection of students as samples in each class was determined through inclusion criteria, namely being an active student, being permitted by parents or representative guardians and willing to participate in research.

Based on data collection conducted on 382 adolescents, the results of the study can be seen in the following **Table I**.

Table I shows that most respondents are 15 year olds (42.6 %), and girls participated more than boys (68.9%). Furthermore, most respondents (77.3%) played games less than 3 hours per day. Based on **Table I** above, it can be seen that most adolescents had no disorder in game addiction (64%). Meanwhile, in terms of EI, it can be seen that most adolescents had a slightly high level of EI (54.9%). Furthermore, the relationship between game addiction and EI based on the Chi-Square test results with a significance value (α) = 0.05, the p-value is less than 0.05 (0.000). This result means a significant relationship exists between game addiction and EI in adolescents in Banda Aceh City.

Table I: Frequency Distribution Demographic Data, Game Addiction, and EI of School Adolescents in Banda Aceh City (n= 382)

Data	Frequency	Percentage (%)	p-value
Age			
13 Years	96	25.1	.00
14 years	123	32.1	
15 years	163	42.6	
Gender			
Boys	119	31.1	.00
Girls	263	68.9	
Playing game duration			
Less than 3 hours per day	294	77.3	.00
More than 3 hours per day	87	22.8	
Game Addiction			
Disorder	138	36	.00
Non Disorder	244	64	
EI			
High	210	54.9	.00
Low	172	45.1	

DISCUSSION

Based on the research results, it can be seen that respondents who did not have disorders generally

have high EI because they did not have an impact of addiction, such as revealing themselves from their surroundings and anxiety or not surviving without playing games; this can be seen in the data above that the daily duration of playing games for teenagers is still less than 3 hours. Therefore, those less attached to playing online games care more about the people around them and are better at controlling their emotions.

The results of this study are in line with the research of Anggarini PE 2022²¹ regarding the relationship between game addiction and EI of school-age children in Denpasar, using the Spearman Rank test, p-value = 0.000 and correlation value (r) = -0.282, which means there is a relatively strong negative relationship between the two variables. Internet addiction causes adolescents to care less about their surroundings because they more often prefer to interact virtually than directly. This results in difficulties in understanding one's own and other people's emotions and feelings. It can also result in a lack of empathy, difficulty controlling emotions, and inability to express their feelings appropriately.

In addition, this addictive game behaviour can lead to problematic behaviour and inhibit EI. This is because interest in games can reduce their opportunities for peer interaction and physical activity. As a result, adolescents are at risk of having social skills and emotional control barriers. EI has been shown to affect internet or game addiction, likewise, in terms of self-regulation, self-awareness, lack of empathy, and impaired social skills⁴.

Furthermore, the current research found that most respondents had no disorders or non-disorders (64%) and a slightly higher EI (54.9%). In this study, a correlation test was also carried out between EI and game addiction, with the results showing that there was a relationship between these two variables. From the results above, their EI level is automatically high because they can maintain several components that can increase EI, such as still doing activities and socializing, limiting the desire to play games, and controlling emotions well.

Several studies above show that there is a relationship between EI and game addiction. However, the level of game addiction can still affect a person's EI. So, if game addiction increases in teenagers, it will disrupt their emotional intelligence. The EI comprises six components: well-being, emotionality, self-control, sociability, self-motivation, and adaptability. Each element enhances high EI but can decrease if one or two components are low, for example, in aspects of compulsive behavior and loss of self-control^{10,11,18-20}. This present study also revealed that adolescents can perform self-control by managing the duration of play a game, less than 3 hours per day.

Furthermore, related to the present study, there was 36% of participants have a disorder in terms of game

addiction. It can be assumed that less than environmental conditions influenced 50% of the participants. For example, many places in Aceh provide free internet, giving them more time to get access to playing games online. As a result, some of them lost interest in academic performance. It is relevant to previous studies²⁴⁻²⁶. So, adolescents with game addiction sometimes do not have sensitivity to the environment and tend to have violent behaviour. However, this present study showed that the majority of adolescent (64%) have no disorder in terms of gaming addiction; this is because most of them still have strong relationships with their parents, able to perform daily activities independently, and are supported by a good school environment. Furthermore, low levels of EI in teenagers make them more at risk of experiencing gaming addiction tendencies and tending to develop other problematic behaviors. There is a reciprocal relationship between EI and game addiction, which is negative; namely, if a teenager's EI is high, then the risk of addiction will be low. It should be noted that children's limitations in maintaining good EI include the ability to interact with friends to train their adaptive nature by maintaining an excellent emotional level; this can indeed be maintained if there is a high tendency to play games, which adolescents can undoubtedly overcome. However, apart from that, the role of parents and teachers is also very much needed to ensure that the growth and development of adolescents in searching for their identity can run smoothly.

CONCLUSION

The level of addiction to games addiction among school adolescents in Banda Aceh City majority was non-disorder (64.0%). In comparison, the EI level of school-age adolescents in Aceh was mainly in the high category (54.9%). The results showed a significant relationship between EI and game addiction among adolescents in Aceh, with a p-value = 0.000 <0.05. The recommendation for further study is to conduct school program programs to support and maintain EI to prevent and reduce game addiction among adolescents.

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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 CONTRIBUTIONS

Satria B: Initiated research ideas, developed research designs, conducted literature studies, collected data, and wrote research article.

Mustanir: Reviewed related concepts and correspondence.

Oktari RS: Reviewed the article and discussed the research results.

Marthoenis: Reviewed data analysis and validated the study results.

Juanita: Data tabulation and analyzed the data with the appropriate statistical tests.

Maulina: Verified the research data collection and discussed revising the article.

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