

The Quality of Life of Adolescents Experiencing Online Game Addiction During the COVID-19 Pandemic

Yanuar Fahrizal*, Hafizuddin Slamet Irmawan

School of Nursing, Universitas Muhammadiyah Yogyakarta, Yogyakarta 55183, Indonesia

*E-mail: yanuarfahrizal@umy.ac.id

Abstract

The availability of the internet and the increase in stress in adolescents caused by the pandemic have led adolescents to frequently seek entertainment through online games. Online gaming can negatively impact adolescents by causing a decline in their physical health, psychological issues, difficulty forming healthy social relationships, and decline their quality of life. This study identified the relationship between online game addiction and the quality of life of adolescents during the COVID-19 pandemic. This research utilized a cross-sectional approach and involved 96 adolescents as the research sample selected using the incidental sampling method. Data collection was carried out using the Game Addiction Scale for Adolescent and WHOQOL-Bref, while the Spearman Rho test was used for data analysis. The results of the data analysis showed a significance p-value of 0.000 ($p < 0.05$) and $r = -0.711$, indicating that there was a unidirectional relationship between online game addiction and quality of life. Thus, it can be concluded that the higher the level of online game addiction, the lower the quality of life of adolescents.

Keywords: addiction, adolescent, online game, quality of life

Abstrak

Kualitas Hidup Remaja yang Mengalami Kecanduan Game Online Selama Pandemi COVID-19. Ketersediaan internet dan meningkatnya stres remaja akibat pandemi membuat remaja sering mencari hiburan melalui game online. Bermain game online secara berlebihan dapat menyebabkan mereka mengalami kecanduan. Hal tersebut dapat menimbulkan dampak negatif seperti penurunan kesehatan fisik, masalah psikologis, hubungan sosial dan penurunan kualitas hidup mereka. Penelitian ini bertujuan untuk mengidentifikasi hubungan antara kecanduan game online dengan kualitas hidup remaja selama pandemi COVID-19. Penelitian ini menggunakan pendekatan cross-sectional dan memilih 96 remaja sebagai sampel penelitian yang dipilih dengan metode incidental sampling. Pengumpulan data dilakukan dengan menggunakan Game Addiction Scale for Adolescent dan WHOQOL-Bref, sedangkan analisis data menggunakan uji Spearman Rho. Hasil analisis data menunjukkan signifikansi nilai p sebesar 0,000 ($p < 0,05$) dan $r = -0,711$, menunjukkan bahwa terdapat hubungan searah antara kecanduan game online dengan kualitas hidup. Dengan demikian, dapat disimpulkan bahwa semakin tinggi tingkat kecanduan game online maka kualitas hidup remaja akan semakin rendah.

Kata Kunci: game online, kecanduan, kualitas hidup, remaja

Introduction

The COVID-19 pandemic has led governments worldwide to apply social restrictions and enforce work-from-home and school-from-home measures. A school-from-home instructional format is likely to cause students to isolate themselves by engaging in other activities, such as playing video games (Ko & Yen, 2020). Social

restrictions have been carried out with the aim of reducing and stopping the transmission of COVID-19. However, the application of social restrictions can have a negative impact, especially on psychosocial issues. Social distancing, self-quarantine, and regional quarantine have increased the risk of depression and anxiety (Marroquín et al., 2020; Venkatesh & Edirappuli, 2020). The increase in the rates of

anxiety and depression (16 – 28%) is evidence of the general psychological reaction to the COVID-19 pandemic (Rajkumar, 2020). A total of 30.9% of severe psychological impacts due to the COVID-19 pandemic have been reported in the Middle East and North Africa (MENA) region (Al Dhaheri et al., 2021). Thus, the pandemic has caused a significant decrease in social welfare (Choi et al., 2021). Moreover, the impact is likely to be greater in developing countries (Melo & Soares, 2020). As a result, there is a significant relationship between psychological stress, such as anxiety and depression, and online game addiction in adolescents (Carras et al., 2020; Fazeli et al., 2020; Sitorus et al., 2020).

The COVID-19 pandemic has also led to an increase in internet dependence with a total of 46.8% of participants and 16.6% experiencing an increase in hours of internet use (Sun et al., 2020). The majority of adolescents use the internet 30 days a month (40%), and the majority use the internet for 1 – 2 hours a day (33%) (Ekayanti et al., 2019). The prevalence of severe internet dependence increased from 4.3% to 23% after the onset of the pandemic, and the dependence rate increased 20 times from 3% to 60% (Sun et al., 2020). The constant availability of the internet has led to a significant “gaming boom” in almost all age groups (Ružić-Baf et al., 2016).

The Special Region of Yogyakarta has infrastructure that supports adolescents in playing games online through a game center and internet connection. An online game is defined as a game that can be of various genres and can be played using an internet connection via a local area network (LAN) and Wi-Fi (Tang et al., 2017). The increasing features of online games and the number of new online games are attracting more adolescents who are spending most of their time playing games daily (Lee & Kim, 2017). In Indonesia, the number of online game players reached 60 million in 2018 and is estimated to reach 100 million in 2020 (Mobile Marketing Association, 2019).

Of the many online game players, most are male adolescents (Donati et al., 2021). Furthermore, it is predicted that there will be an increase in the hours spent playing online games via the personal computers (PCs) of adolescents addicted to online games (Kim & Lee, 2021). A person tends to experience online game addiction if they play games for a long time (Gentile et al., 2017). Addicted individuals are more likely to spend three hours or more a day playing games and play 4 – 5 days a week (Jap et al., 2013). Furthermore, adolescents are more at risk of experiencing online game addiction than adults (Choi et al., 2018). For instance, in Indonesia, it is estimated that 10.15 – 10.3% of adolescents are addicted to online games (Jap et al., 2013; Sitorus et al., 2020). Adolescents are in a developmental period of searching for their identity, and their ability to reason logically is maturing during this time. Adolescents are not yet flawless in their ability to reason logically; thus, they often pay less attention to the risks of an action, one of which is addiction to online gaming.

Therefore, the phenomenon of online game addiction in adolescents requires serious research attention. The World Health Organization (WHO) has been considering addiction to online games as a mental health disorder, and in 2018 ‘gaming disorder’ was included in the eleventh edition of the International Classification of Diseases (ICD-11) (WHO, 2020). There is a relationship between online game addiction and the regulation of emotion in adolescents; out of 235 respondents, only 147 could highly regulate emotions (Nurazmi et al., 2018). The ability to communicate with others, engage in social engagement, and get enough sleep are all negatively correlated with an individual's level of online game addiction. (Fazeli et al., 2020; Yusuf et al., 2019). Thus, game addiction affects their quality of life.

Quality of life is an individual's perception of both their physical and psychological position in the community, which aligns with society's existing values, culture, hopes, expectations,

and a multidimensional point of view (WHO, 2012). There are four dimensions of the concept of quality of life: the physical health dimension, the psychological dimension, the social relationship dimension, and the environmental dimension (WHO, 2012). The factors that affect quality of life are gender, age, education, occupation, marital status, income, relationships with others, reference standards, and physical health. In addition, spending too much time playing online games can interfere with daily life and cause changes in one's health status (Fahrizal et al., 2019).

Few studies have identified the effects of online game addiction on the quality of life of adolescents, although background exposure has shown that online game addiction can cause a decrease in the quality of life of adolescents. According to the preliminary study that we conducted, playing games excessively or addiction to games has a negative impact on adolescents' behavior. For example, they might sleep too late, which interferes with rest time, teenagers swear frequently when playing online games together, and teenagers rarely engage in physical activity when playing games for long periods of time. Aim of the study is to determine the relationship between online game addiction and the quality of life of adolescents during the COVID-19 pandemic.

Methods

This research used a correlational design with a cross-sectional approach. An incidental sampling strategy was employed when choosing the research sample, which involved picking anyone who happened to run into the researcher and met the requirements for inclusion in the sample (Polit & Beck, 2018). The research sample involved 96 respondents, a size determined as appropriate according to Lemeshow's formula. The research was carried out in several game centers in Yogyakarta and Bantul from February to April 2021. The Game Addiction Scale for Adolescents and the WHOQOL-BREF questionnaires created by WHOQOL Group as

a development of the WHOQOL-100 questionnaire were employed (Lemmens et al., 2009; WHO, 2004). The questionnaire was translated into Indonesian and had previously undergone validity and reliability testing. The 22 statement items of the Game Addiction Scale for Adolescents were declared valid, with the r results $>$ r table (0.361), and the reliability test obtained a Cronbach's alpha value of 0.907 ($>$ 0.6) and was declared reliable (Fahrizal & Pratama, 2021). The Game Addiction Scale for Adolescents consists of several components: salience, tolerance, mood modification, relapse, withdrawal, conflict, and problems. Meanwhile, the WHOQOL-BREF consists of the physical, psychological, social, and environmental dimensions. Data on adolescent quality of life and online game addiction were acquired in the form of ratio data (numerical). Furthermore, the data analysis was carried out using the Spearman test to determine the relationship between the two variables due to the data not being normally distributed (Dahlan, 2014).

This study was approved by the Committee on Ethics of the Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta (confirmation number: 050/EC-KEPK FKIKUMY/II/2021). The researchers acquired informed consent from all participants and kept their identities confidential using a participant code that only the research team could access.

Results

55 respondents (57.3%) were middle adolescents (15 – 17 years old). In terms of education, 66 respondents (66.7%) were in senior high school. Regarding the length of time spent playing online games, all respondents had played games for more than one year, and most played more than 3 hours in one day, as presented in Table 1.

Tables 2 and 3 provide a description of the quality of life scores in general and in detail according to each domain. The mean quality of life score was 52.45, and the minimum and

maximum scores were 20.50 and 90.75, respectively. For the online game addiction score, the mean was 78.05, and the minimum and maximum scores were 46.00 and 110.00, respectively.

The results of the Spearman test are shown in Table 4. The significance was 0.000 ($p < 0.005$),

and the r-value was -0.711, indicating a significant relationship between adolescents' addiction to online games and their quality of life. Furthermore, a correlation of -0.711 indicated a strong relationship, while a negative result indicated a unidirectional relationship. This means that the higher the online game addiction score, the lower the adolescent's quality of life.

Table 1. Description of Respondents' Characteristics

Characteristics	Frequency (n)	Percentage
Gender		
Male	96	100
Female	0	0.0
Age		
Early (14 years)	18	18.8
Middle (15 – 17 years)	55	57.3
Late (18 years)	23	24.0
Education Level		
Elementary School	0	0.0
Junior High School	30	33.3
Senior High School	66	66.7
Duration Spent Playing Online Game per Day		
> 3 hours	96	100
< 3 hours	0	0.0

Table 2. Description of Adolescents' Quality of Life Scores and Online Game Addiction Scores

Variable	Mean	Median	Mode	Std. Dev	N
Adolescent quality of life score	52.45	48.5	48.5	15.722	96
Online game addiction score	78.05	80.0	77.0	16.067	96

Table 3. Description of the Quality of Life Domain Score

Domain	Mean	Median	Mode	Std. Dev	N
Domain 1 (Physical)	18.78	17.0	16.0	4.27	96
Domain 2 (Psychological)	18.47	18.0	15.0	4.10	96
Domain 3 (Social)	9.48	9.0	8.0	2.43	96
Domain 4 (Environmental)	26.69	27.0	29.0	5.42	96

Table 4. The Relationship Between Online Game Addiction and Adolescents' Quality of Life

Spearman's Test	Variable of Game Addiction	Variable of Adolescent Quality of Life
Variable of Online Game Addiction	1.000	-.711(**)
	.	.000
Variable of Adolescents' Quality of Life	-.711 (**)	1.000
	.000	.

Discussion

This study showed that adolescents experience online game addiction. The COVID-19 pandemic has resulted in rising cases of video game addiction among students (Nugraha et al., 2021). The level of online game addiction among adolescents in Padang, Indonesia mainly corresponded to the moderate category with a mean score of 63.32 (Yanti et al., 2019). This level of addiction can occur because adolescents had particular motivations, such as socializing, escaping from problems, coping, and entertainment, during the pandemic (Novtrianti & Diantina, 2019). However, adolescents have the authority to control, regulate, and direct their behaviors and impulses, which means that adolescents who have good control of themselves have a lower level of addiction (Masyita, 2016).

The results revealed that the adolescents' average quality of life score was 52.45 (SD: 15.722). Adolescents with online game addictions often miss various parts of life because they are addicted to gaming. As a result, they become less physically active, sleep less, and often eat late (Männikkö et al., 2015). An increased likelihood of musculoskeletal symptoms was linked to weekday online gaming for more than five hours a day in combination with escape motives (OR 2.494, 95% CI 1.598 – 3.892) (Hellström et al., 2015). Nofianti (2018) showed that adolescents who played games online with high intensity had poor sleep quality, an issue affecting 101 respondents (85.1%). Another study showed that children who played online games for longer than six hours had the worst sleep quality (75%) (Ahmed et al., 2022; Jeong et al., 2021). In addition, being addicted to online games also disturbs adolescents' sleeping patterns. This was proven by Gurusinga (2020), whose study showed that 53.6% of adolescents addicted to online games had interrupted their sleeping patterns. Middle adolescents are likely to have a lower quality of life (34.37%) than early adolescents, since middle and late adolescents experience more pressure, such as aca-

dem, social, and emotional pressures (Heng et al., 2020).

This study indicated a significant relationship between online game addiction and adolescents' quality of life ($p = 0.000$ and $r = -0.711$). Online game addiction has detrimental effects on one's mental, social, and economical well-being (Novrialdy, 2019). Adolescents with internet gaming disorders have a much lower health-related quality of life than those who do not (Wartberg et al., 2017). These issues occur due to the negative impacts generated by excessive online game playing, which can affect physical, psychological, and social capabilities. Participants with gaming addictions reported significantly worse subjective sleep quality, greater sleep disturbance, shorter sleep duration, and greater daytime dysfunction compared to those who were not addicted to gaming (Zaman et al., 2022). The motivations of online gamers were categorized as "recreational," "escapers," and "competitive." "Escapers" players were at a greater risk of acquiring pathological disorders, showing higher internet gaming disorder scores than the other groups; they also had lower psychological scores and were more neurotic and introverted than the other groups (Larrieu et al., 2022).

Wartberg et al. (2017) showed that adolescents are likely to make more new friends through online games. As a result, they have only a few friends in reality, which leads them to have little social support. This can later cause a decrease in adolescents' quality of life (Gomes et al., 2020). Furthermore, playing online games with high intensity causes adolescents to lose interest in hobbies and other activities (Ariatama et al., 2019). Adolescents with excessive online gaming habits engage in fewer activities than those who do not (Sugaya et al., 2019). Family relationships are also negatively affected by internet gaming disorder (Purwaningsih & Nurmala, 2021).

Playing online games cause a decline in their physical and psychological health and social

relationships, resulting in a decrease in the adolescents' quality of life (Haryono & Kurniasari, 2018). Internet gaming disorder has been substantially associated with the formation of concentration issues, loneliness, and sadness, all of which are accompanied by strong relationship strength (Montag et al., 2021). Negative emotional coping is strongly linked to online gaming disorder (Liao et al., 2020). There are statistically significant positive correlations between IGD-20 questionnaire scores and the scores for attention deficit ($r = 0.234$; $p = .001$), hyperactivity ($r = 0.235$; $p = .001$), depression ($r = 0.166$; $p = .003$), and anxiety ($r = 0.1268$; $p = .002$) disorders (Almutairi et al., 2023).

For a male, completing a challenge or mission in a video game generates a sense of pride and satisfaction. Men are 2.9 times more likely than women to fall into the category of addicted gamers (Wittek et al., 2016). One of the characteristics of middle adolescents is trying to seek new friends (Batubara, 2010). Aside from being a form of entertainment, online games can also be used to make new friends and interact with other adolescents.

The sample did not represent different regions with different sociocultural and economic characteristics and the researchers have not considered the psychological condition of the respondents, which is a limitation of this study, and the sampling technique used was also a limitation because accidental sampling techniques can be biased and unrepresentative.

Conclusion

Adolescents' quality of life declines as their online game addiction increases. There needs to be control from adolescents and their families in the time spent playing online games, so they do not become addicted. The role of nurses is needed both in the community and in educational institutions to carry out health promotion and prevent online game addiction in children and adolescents.

Acknowledgements

The research team would like to thank the Research and Innovation Institute of Universitas Mumahmadiyah Yogyakarta as a research grant provider. We would also like to thank all the participants who were willing to participate in the research process.

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