



## THE RELATIONSHIP BETWEEN ONLINE GAMES ON SLEEP QUALITY IN ADOLESCENT GIRLS AT SENIOR HIGH SCHOOL KARTIKA XIX-2 BANDUNG CITY

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### Abstract

Games online can be accessed wherever and whenever. Playing games can make players happy, because it gives psychological satisfaction. The more interested in playing the game, the more time is spent to achieve pleasure. It can be said that someone is experiencing addiction if the individual is stopped from play will feel anxiety. This causes time to sleep to be used to play games as a result, a problem arises, namely sleep quality. The purpose of this study was to determine the relationship between online gaming and sleep quality in adolescent girls. This type of research is quantitative with a cross sectional approach. The population is teenage girls who play online games. The sampling technique used purposive sampling of 71 samples. The independent variable is online game addiction and the dependent variable is adolescent sleep quality. Data collection using the IAT and PSQI questionnaires. The univariate analysis test used descriptive statistics to see the distribution of age, duration of playing online games, online game addiction and sleep quality. The bivariate analysis test used Spearman rank correlation to see the relationship between online gaming and sleep quality. The results of univariate analysis of most adolescents' age are 16 years 40%, with the duration of playing online games for 3-6 hours / day 56.3%, who experience mild and moderate addiction equally 33.8%, who experience poor sleep quality 76%. The results of bivariate analysis using the spearman rank correlation test showed a p value of 0.03, with a coefficient coefficient of 0.345. There is a relationship between online gaming and sleep quality in adolescents. It is recommended to play online games < 3 hours / day from and parents can control play time management and sleep time. It is expected to continue this research by adding other variable factors that affect sleep quality in adolescents.

**Keywords:** Adolescents, Online gaming, Sleep quality

### Introduction

Online games are virtual world games that can only be connected when using the internet network. Online games can involve one person or several people on the same server. Technology is currently developing rapidly so that the use of online games is more accessible anywhere and anytime.

According to a report from the Global Digital Overview in 2020 around the world there are approximately 60% of online game users who reach 4.5 billion people. While Indonesia itself is the third country with the largest number of online game players, according to the We Are Social report there are 94.5%, namely more than 52 million residents currently playing online games, the female esports community in Indonesia is 47%. One of the most popular online game user areas in Indonesia

is in West Java Province, which is located in major cities, such as Bandung, Bekasi and Bogor. It can be found from this research data that, as many as 11% in Bogor which is the lowest percentage and 57% of online game users are in Bandung City being the highest percentage.

One of the reasons why teenagers like to play online games is because it can make them feel happy, and can produce psychological satisfaction such as being free from social pressure, free from frustration and anxiety, can feel peaceful and happy. If players get this satisfaction, they will be more interested in playing online games repeatedly. Teenagers' interest in online games will cause the intensity of their play to increase, meaning that the change in the amount of time to play online games is increasing in order to get the effect of changes in feelings, and the players feel that from the game they will get a sense of comfort and pleasure when they have finished the game, and vice versa if they delay or stop playing the game they will feel anxiety and boredom. These things are a reference for players to be said to experience addiction or addiction to online games.

From the research data, there are 54.1% of adolescents aged 15-18 years who experience online game addiction in Indonesia with 77.5% of male adolescents and 22.5% of female adolescents who use time to play online games around 2-10 hours per week. Based on the research conducted, it was found that at the age of 12-22 years, 64.45% of male adolescents and 47.85% of female adolescents who played online games stated that they were addicted to online games.

The phenomenon of online gaming has certainly caused adolescents to become addicted until the time to rest / sleep is used to play online games and as a result there is a decrease in the quality of adolescent sleep. Globally, the prevalence of sleep quality disorders in the world varies from 15.3% - 39.2%. This proves that in Indonesia most of the quality of sleep in adolescents is less fulfilled to reach 63%.

Decreased and poor quality of sleep can have a negative impact on health. Some studies have also shown that poor sleep quality can cause a person's psychological condition to worsen. One of the symptoms that will arise in people who lack sleep is that they will be easily frustrated, irritable, stomach aches, pain in the joints are lackluster, and often complain of experiencing headaches, and muscles. Furthermore, research conducted by Dinges et al, shows that a person's unfulfilled sleep can cause a person to feel more depressed, less happy, physically weak, and feel very tired both physically and mentally.

Based on the description above, researchers are interested in conducting research that focuses on online games and their impact with the aim of discussing the problems to be studied, so that researchers take the problem in this study is "The Relationship Between Online Games and Sleep Quality in Adolescent Girls in Bandung City" researchers see from the real environment, that many young women who play online games are willing to sacrifice their sleep time to play. Seeing this certainly has a bad impact on sleep quality and causes mental and physical health, especially in adolescent girls.

## **Method**

The researcher used a type of Quantitative research with the design used in this study was Cross sectional by looking at the quality of sleep in adolescent girls who play online games. This study aims to determine the relationship between online gaming and sleep quality.

The population is adolescent girls with a sample who play games. Calculating the sample size using the unpaired categorical analytical formula with the results of 65 samples.

The data source is primary data, the researcher will use a questionnaire to collect all data. The measuring instruments used are the IAT and PSQI instruments. Data collection is done in real time directly filled in by adolescents and then the data is processed to minimize errors and then analyzed using SPSS.

## Results

Based on data analysis, it is known that the most respondents playing online games are 16 years old, namely 29 respondents (40.8%), who play online games for 3-6 hours, namely 40 respondents (56.3%), while experiencing mild addiction and moderate addiction with the same number of 24 respondents (33.8%), and who experience the worst sleep quality there are 54 respondents (76%). The results of the spearman correlation test show Sig. (1-tailed) with a p value <0.05 so that it is significant <a and means that H0 is rejected, which means that there is a relationship between addiction to playing online games and sleep quality, and a correlation coefficient of 0.345 is obtained, meaning that the level of correlation strength between online game addiction and sleep quality is 0.345 or sufficient correlation, and the coefficient value of the spearman correlation test is negative (-0.345), which means that the variable is unidirectional or the higher the level of online game addiction in adolescent girls, the lower or worse sleep quality.

**Table 1. Characteristics of respondents**

Indicator	n	Presentase
Age		
15 Years	16 Sample	22,5%
16 Years	29 Sample	40,8%
17 Years	11 Sample	15,4%
18 Years	25 Sample	32,2%
Duration of Playing Online Games		
3-6 hours/day	40 Sample	56,3%
7-10 hours/day	25 Sample	35,2%
11-13 hours/day	6 Sample	8,4 %
Online Gaming Addiction		
No Addiction	16 Sample	23,9%
Mild Addiction	24 Sample	33,8%
Moderate Addiction	24 Sample	33,8%
Severe Addiction	7 Sample	8,4 %
Sleep Quality		
Good	17 Sample	24 %
Poor	54 Sample	76 %
<b>Total</b>	<b>71 Sample</b>	<b>100%</b>

Source: Primary Data 2023

**Table 2 Relationship between Online Games and Sleep Quality**

Online Gaming Addiction	Sleep Quality				Total	Sig. (1-tailed)	
	Poor		Good				
	n	%	n	%			
No Addiction	7	11,2%	9	12,6%	17	23,9%	0,03
Mild Addiction	19	26,7%	5	7%	24	33,8%	
Moderate Addiction	23	32,3%	1	1,4%	24	33,8%	
Severe Addiction	5	5,6%	2	2,8%	6	8,4%	
<b>Total</b>	<b>54</b>	<b>76%</b>	<b>17</b>	<b>23,9%</b>	<b>71</b>	<b>100%</b>	

Source: Primary Data 2023

## Discussions

The research that discusses the relationship between online games and sleep quality has collected data and the most respondents using online games are 16 years old, namely 29 respondents (40.8%). According to the theory proposed by Ida Umami in 2019, middle adolescence shows the development of new thinking abilities, which raises interest in becoming independent in society. Compared to adults, adolescents tend to be more vulnerable to dependence on online games. Adolescence is often characterized by an unstable state, which encourages experimentation and curiosity towards new things. With age, maturity of thought and societal responsibility usually increase. Age is often a determinant in a person's readiness and it is believed that public trust tends to be higher in individuals who are more emotionally mature, compared to those who have not reached an adequate level of maturity.

According to the results of the research conducted, adolescents who play online games with the longest duration of time are for 3-6 hours (56.3%). This is in line with research by Erik et al (2020) which states that adolescents spend more than two hours / day playing online games. Another study from Yustina et al (2021) states that playing online games for more than 3 hours per day is abnormal. This theory can be related to the theory put forward by Lawrence Green, where behavior and life style, namely the habit of playing online games with a high duration which further affects health behavior in this case the danger of high duration of playing online games will be felt on the quality of sleep of adolescents which will result in quality of life or quality of life and in this case is poor sleep quality. From the theories above, it is clear that the health behavior of adolescents is not normal, From the theories above, it is very clear that the impact of playing games with a long duration not only causes poor sleep quality but will also cause a bad lifestyle / life habits.

The distribution of the highest level of online game addiction is at the mild and moderate level of online game addiction, which reaches 33.8%, from research, the causes of this phenomenon of online game addiction occur due to various factors, namely age, gender, and duration of playing different games. This is in line with research conducted by kristiawan and yunanto (2020), which says most teenage respondents of 51.9% experience online game addiction. Other researchers also said that adolescents can easily experience online game addiction as much as 70%. The results of a literature review conducted by rumi et al (2022), stated that adolescents who were addicted to online games were 41.7%.

While in this study the results showed that most adolescents experienced online game addiction based on the IAT questionnaire, this questionnaire uses a structured addiction test based on DSM-V criteria, Diagnostic and Statistical Manual of Mental Disorders. the criteria are divided into 8 categories: preoccupation, social withdrawal, tolerance (for the level of time spent or excessive online), difficulty controlling addiction, neglecting work, losing social communication and interests, self-control ability, and hiding from friends and relatives.

Poor sleep quality experienced by some adolescents reached 76%. Based on data from the Ministry of Health in 2018, data in Indonesia shows that most of the quality of sleep in adolescents is less fulfilled, namely as much as 63%.<sup>38</sup> In accordance with the contents of the Pittsburgh Sleep Quality Index questionnaire which consists of seven components, namely subjective sleep quality, sleep latency, night sleep duration, sleep efficiency, nighttime sleep disturbances, use of sleeping pills, and disruption of activities during the day, individual assessment here is very subjective which also affects the filling of the questionnaire. Sleep quality is when a person can be confirmed to start drowsy and follow his rest, the quality of a person's sleep can be described by the allocation of time he falls asleep, and the objections felt during rest or after waking up. According to Potter and Perry (2005) the need for adequate sleep is determined in addition to the number of hours of sleep (quantity of sleep), coupled with the depth (quality of sleep). Sleep quality is a person's satisfaction with sleep,

so that the person does not show feelings of fatigue, easily aroused and restless, lethargy and apathy, blackness around the eyes, swollen eyelids, red conjunctiva, sore eyes, divided attention, headaches and frequent yawning or drowsiness. The impact of poor sleep quality is also felt by many people, such as decreased daily activities, fatigue, weakness, unstable vital signs, poor neuromuscular conditions, slow wound healing process, and decreased immunity. In addition, poor sleep quality can also cause negative psychological impacts on humans such as stress, depression, anxiety, lack of concentration and ineffective coping. The researcher argues that adolescents have poor sleep quality because they play games for too long, so that a lot of sleep time is wasted. Teenagers in general have not been able to manage the time to play games, causing poor sleep quality due to insufficient or irregular sleep time.

Researchers used the Spearman rank correlation test to determine the relationship between online gaming and sleep quality in adolescent girls with the results of Sig. (1-tailed) is  $<0.05$  so that it is significant  $<\alpha$  and  $H_0$  is rejected, which means that there is a relationship between addiction to playing online games and sleep quality. This is in line with Nurdilla's research (2018), which states that there is a relationship between addiction to playing online games and adolescent sleep quality. This is also in line with research which says that adolescents who are addicted to playing online games generally have poor sleep quality. Other researchers say there is a significant relationship between online game addiction and sleep quality in adolescents. Other researchers state that there is a relationship between the habit of playing online games and the quality of adolescent sleep with the results of  $p = 0.001$ . The results of a literature review of 16 journals conducted by Hastanti (2022) show that adolescents who are addicted to playing online games generally have poor sleep quality, namely 63.7%.<sup>35</sup> From this study, a correlation coefficient of 0.345 was also obtained, which means that the level of correlation strength between online game addiction and sleep quality is sufficient. This is in line with the research of Susanti et al (2022), which states that the value of the relationship between online game addiction and sleep quality is very sufficient. It is also obtained that the coefficient value of the Spearman correlation test is negative (-0.345), which means that the variable is unidirectional or the higher the level of online game addiction in adolescent girls, the lower or worse the sleep quality. This is in line with the findings from research conducted by Andika in 2020, as mentioned in Hastanti's work in 2022, which showed that higher levels of online game addiction correlated with lower sleep quality in college students who were active in the online gaming community.

Based on the description above, it can be concluded that addiction to playing online games can affect sleep quality, especially in adolescents. Teenagers often forget to rest or sleep because their time is used to play online games. This will have an impact on mental health, decreased endurance, decreased learning achievement, irritability, depression, lack of concentration, and fatigue.

## **Conclusion**

Based on the research that has been done, conclusions can be drawn, namely:

The results of the univariate analysis of the characteristics obtained from 71 respondents that the most age is the age of 16 years, namely 25 people (35.2%), the duration of playing for approximately 6 hours, namely 40 people (56.3%), while mild online game addiction and moderate online game addiction with the same results are 24 people (33.8%), and the highest quality of sleep experiencing poor sleep quality is 54 people (76%).

There is a relationship between the level of addiction to playing online games and sleep quality, with a sufficient level of correlation strength, and the coefficient value of the correlation test is negative or unidirectional, namely the higher the level of online game addiction in adolescent girls, the lower or worse the sleep quality.

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