



The Relationship Between *Online Game Addiction* And Sleep Quality In Grade IX Junior High School Students

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Abstrak

Adiksi game online adalah salah satu masalah yang timbul akibat perkembangan teknologi seperti perangkat digital dan internet. Terdapat 5,5% penduduk usia 10-14 tahun dan 9,6% penduduk usia 15-19 tahun di Indonesia menggunakan internet dengan alasan untuk bermain game online. Game online dapat dimainkan tanpa batas waktu yang bisa menyebabkan adiksi dengan gejala tidak dapat mengontrol rasa ingin bermain game, memiliki prioritas bermain game lebih tinggi daripada aktivitas lain, dan tetap memilih bermain game walaupun mengetahui adanya pengaruh negatif. Adiksi game online mengakibatkan pengurangan durasi tidur sehingga menyebabkan masalah pada kualitas tidur. Tujuan penelitian ini untuk menemukan hubungan adiksi game online dengan kualitas tidur pada siswa laki-laki kelas IX SMPN 1 Kota Serang pada bulan Januari hingga Maret 2022. Penelitian ini memakai desain analitik dengan pendekatan cross sectional. Pengambilan sampel penelitian menggunakan teknik consecutive sampling. Pengumpulan data dilakukan memakai kuesioner Indonesian Online Game Addiction Questionnaire dan Pittsburgh Sleep Quality Index yang sudah tervalidasi dalam bahasa Indonesia kemudian dianalisis dengan uji chi square di program statistik SPSS (Statistical Product and Service Solutions) versi 22. Didapatkan jumlah sampel sebanyak 148 responden dan terdapat hubungan yang bermakna antara adiksi game online dengan kualitas tidur dengan nilai p 0,000. Kesimpulan dari penelitian ini didapatkan adiksi game online berpengaruh dalam kualitas tidur siswa laki-laki kelas IX SMPN 1 Kota Serang

Abstract

Online game addiction is one of problems due to technology advancement such as digital devices and internet. Online games can be played indefinitely which lead addiction with symptoms such as not capable to control the desire of play game, having higher priority in playing game than other activities, and still choosing to play game even though knowing that there are negative effects. Online game addiction affects sleep duration that can lead to sleep quality problems. This research aims to investigate the association between online game addiction and sleep quality of 9th grade male students at SMPN 1 Kota Serang on January until March 2022. This research was conducted by using the analytic design with a cross sectional approach. Sampling used a consecutive sampling technique. The data was collected by using validated in Indonesian of Indonesia Online Game Addiction Questionnaire and Pittsburgh Sleep Quality Index and analyzed with chi square test in SPSS (Statistical Product and Service Solutions) version 22. The total sample obtained of 148 respondents and there is a significant association between online game addiction and sleep quality with p-value 0,000. This research concluded that online game addiction affects sleep quality.

Keywords:

online game addiction, sleep quality.

INTRODUCTION

The understanding of technology is constantly developing causing people to become accustomed to the presence of the internet (Nurdilla, 2018). In 2019-2020 in Indonesia there was research by the Indonesian Internet Service Providers Association (APJII), as many as 196.71 million of the 266.91 million population have used the internet where users aged 10-14 years show a figure of 5.5% and the age of 15-19 years old by 9.6%. APJII reports that in 2019-2020 someone used the internet for various reasons and one of the reasons internet use was used for *online gaming* activities (Asosiasi Penyelenggara Jasa Internet Indonesia, 2020). *Online games* are gaming sites that allow their users to access through internet channels (Nurdilla, 2018). Overplaying characters can cause addiction (Altintas, Karaca, Hullaert, & Tassi, 2019).

The *World Health Organizations* stipulates that game addiction is included in the International Statistical Classification of Diseases-11 (ICD-11) and explains that *game* addiction is defined as a pattern of characters playing games either *online* or *offline* which is indicated by not being able to control the feeling of wanting to play *games*, has a priority that doing this game is higher than other activities, and still chooses to do this game even if you know of a negative influence (Altintas et al., 2019). *The American Psychiatric Association* (APA) in the *Diagnostic and Stastistic Manual of Mental Disorders* (DSM-5) states that a person spends 8-10 hours of *gaming* time per day or 30 hours per week when indicated by *online game* addiction (American Psychiatric Association, 2013). Research suggests that *online gaming* addiction is more common in teenagers (I. L. K. Wong & Lam, 2016). Research conducted globally found the prevalence of *online game* addiction at 3.05% (Aigner, 2021). Research conducted in Asia states that as many as 1.6-18.4% of adolescents experience *addiction to online games* (King et al., 2020; Mak et al., 2014; S. M. S, 2016). The results of research conducted in Indonesia revealed that 10.15% of adolescents are indicated to experience *online game* addiction (Jap, Tiatri, Jaya, & Suteja, 2013). Research on the prevalence of *game* addiction conducted in several schools in Indonesia, namely at SMP Teratai Putih Global Bekasi was obtained by 64.7%, in SMPN 13 Pekanbaru by 62.9% (Nurdilla, 2018 ; Widiyani et al., 2021). Research at junior high schools in Jakarta showed that 84.3% of respondents indicated addiction to *online games* (Octavia, Surilena, & Gustiawan, 2020). Most individuals with *online gaming* addiction are men because women play fewer online games, namely 87.4% of teenage boys and 45.6% of teenage girls play *online games* (Dong, Wang, Du, & Potenza, 2018; Li, L., Yu, Q., Zhang, L., Jin, 2015).

Online game addiction can cause sleep quality problems due to a reduction in sleep duration where *online gaming* activities are activities that can be run using digital devices and internet access with unlimited time (H. Y. Wong et al., 2020). Psychological stimuli such as excited mood are received by someone who has an addiction to *online games* because playing *games* can reduce drowsiness (Hale et al., 2018). Once drowsiness is reduced, individuals with *online gaming* addiction will have delayed sleep times and slower wake-up times (Van Der Lely et al., 2015). In addition, digital devices used to emit blue *light* can suppress the hormone melatonin to improve sleep (H. Y. Wong et al., 2020).

Sleep is a physiological process when the body and mind are in a state of rest for some time (Jawabri & Raja, 2019). The quality of sleep is one of the elements that must be given attention in order for a person to get enough sleep (Fenny & Supriatmo, 2016). The length of sleep, the time it takes to fall asleep, aspects such as sleep loss and depth of sleep, as well as the frequency of wakefulness are aspects of sleep quality (Nilifda, Nadjmir, & Hardisman, 2016). Currently an estimated 150 million people in the world and about 17% of the population in developing countries suffer from sleep problems (Berhanu, Mossie, Tadesse, & Geleta, 2018). Research in Asia mentions that about 17% of people have sleep quality problems (S. S., W., F.X., M., & N.-B., 2012). Based on research in Indonesia, 38.8% of adolescents living in urban centers experience sleep problems and 37.7% of adolescents living in urban areas also experience the same (Nur'aini, Sofyani, Supriatmo, & Lubis, 2014). Several regions in Indonesia show that as many as 60% of teenagers in Pekanbaru, 52.9% of teenagers in Bekasi and 68.6% of teenagers in Tangerang have poor sleep quality (Nurdilla, 2018 ; Widiyani et al., 2021 ; Novita et al., 2019).

Based on this background description, a study was conducted related to the relationship between *online game* addiction and sleep quality in grade IX male students of SMPN 1 Serang City

METHOD

This research uses an analytical research design with a *cross-sectional* approach, carried out at SMPN 1 Serang City in January-March 2022. The sample size in this study was 148 students. The study using a *consecutive sampling* technique with a research sample was a male student in class IX for the 2021/2022 school year. The inclusion criteria are students who are willing to follow the research procedure and become the subject of the study and approve the research consent form. The criteria excluded are students who take drugs with insomnia or drowsiness effects (alpha blockers, *beta blockers*, antidepressants, antihistamines), smoking and consumption alcohol, have the habit of drinking coffee. The study's free variable is *online game* addiction, and the bound variable is sleep quality. *Online game* addiction was measured using the *Indonesian Online Game Addiction Questionnaire* (IOGAQ) questionnaire and sleep quality using the *Pittsburgh Sleep Quality Index* (PSQI) questionnaire that had been validated in Indonesian (Jap et al., 2013; Alim, 2015). Data analysis was carried out univariately to describe the characteristics of the study respondents presented in the form of a table, and bivariate data will be analyzed using tests *Chi-square* is presented in the form of a table.

RESULTS AND DISCUSSION

Research Results

Penelitian conducted on male students of SMPN 1 Serang City in January-March 2022 obtained a sample of 148 male students who met the inclusion criteria. The highest number of male students with the age of 15 years with 76 (51.4%) students, the data is described in table 1. Based on the *Indonesian Online Game Addiction Questionnaire* questionnaire in table 2, the number of mild *online game* addictions has the largest number and percentage of 79 (53.4%) students compared to severe addiction 26 (17.6%) students and those who are not addicted 43 (29.1%) students. Based on the *Pittsburgh Sleep Quality Index* questionnaire in table 3, the poor sleep quality rate in male students had the largest number and percentage of 104 (70.3 %). Meanwhile, male students with good quality were 44 (29.7%). Statistically in table 4 it was obtained that between the addiction of *online games* and the quality of sleep obtained a meaningful relationship with a p value of 0.000 (p value < 0.05).

Table 1. Characteristics of the study sample

Characteristic	N (%)	Mean (SD)	Median (Min-Max)
Age (years)		14,62 (0,59)	15 (14 – 16)
14	64 (43,2%)		
15	76 (51,4%)		
16	8 (5,4%)		

Based on this table, it can be seen that the majority of respondents were 15 years old at 51.4%, then 14 years old at 43.2% and the remaining 16 years old at 5.4%.

Table 2. Online game addiction results

Online Game Addiction	Amount (%)
Severe Online Game Addiction	26 (17,6%)
Mild Online Game Addiction	79 (53,4%)
No Online Game Addiction	43 (29,1%)

Table 2 shows severe online game addiction at 17.6%, then moderate at 53.4% and the remaining 29.1% are not addicted.

Table 3. Sleep quality results

Sleep Quality	Amount (%)
Poor Sleep Quality	104 (70,3%)
Good Sleep Quality	44 (29,7%)

Then in table 3 regarding sleep quality, 70.3% had good sleep quality and the remaining 29.7% had good sleep quality.

Table 4. The relationship of *online game* addiction with sleep quality

Group			Group		Total	p-value
			Poor Sleep Quality	Good Sleep Quality		
Severe	Online	Game	24	2	26	0,000
Addiction						
Mild	Online	Game	77	2	79	
Addiction						
No	Online	Game	3	40	43	
Addiction						
Total			104	44	148	

Based on this table, it can be seen that the significance value is 0.000, so it can be concluded that there is a relationship Between *Online Game* Addiction And Sleep Quality

Research Discussion

Based on the results of a study on 148 grade IX male students at SMPN 1 Serang City, there is a meaningful relationship between *online game* addiction and sleep quality. This result is in line with the results of research by Widiyani et al (2020) at SMP Bekasi which uses the same questionnaire measuring instrument in the form of IOGAQ and PSQI also has a p value of 0.001 ($p < 0.05$) and is also in line with the research of Nurdilla et al (2018) at one of Pekanbaru Junior High Schools that the relationship was obtained between *online game* addiction and sleep quality in students due to a p value of 0.002 ($p < 0.05$) (Nurdilla, 2018;Widiyani et al., 2021). Research by Wong et al (2020) in Hong Kong states that addiction to *online games* can cause sleep quality problems. This phenomenon can occur due to the availability of the internet and digital devices, making it easier to access (H. Y. Wong et al., 2020). Sourced from the research of Carras et al (2017) that psychosocial factors such as anxiety, depression and social problems make the inability to socialize in the real world causing the person to use *online games* as a release to hide his problems. This situation encourages a person to play *online games* frequently and increases the duration of his playing time (Colder Carras et al., 2017). In addition, the habit of using digital devices before bedtime can prolong sleep latency and shorten sleep duration (Widiyani et al., 2021). This can be caused by the presence of blue light on smartphones that can slow down the onset of sleep (Pilorz et al., 2016).

Online gaming activities are activities carried out using digital devices and internet access with unlimited time so that if the person plays *games* excessively it can cause a reduction in sleep duration (H. Y. Wong et al., 2020). The existence of games without a time limit causes individuals with *online game* addiction to have delayed sleep times and slower wake-up times (Van Der Lely et al., 2015). In addition, digital devices emit blue light that can suppress the hormone melatonin to sleep thereby slowing down the onset of sleep. In the research of H. Y. Wong et al. (2020) analyzed that with the presence of repetitive behavior due to poor and persistent control, addiction can result in negative health impacts in addition to sleep problems, namely social relationship problems and mental disorders. Excessive *online gaming* as a form of escape can interfere with sleep and can eventually lead to stress. The problem of sleep quality is also not only influenced by the addiction of *online games*, but also because of addiction to social media with the same mechanism related to psychological stimulation, namely the fiery mood caused by playing social media supported by the existence of internet networks and electronic media devices (H. Y. Wong et al., 2020).

However, there are also research results that are contrary to this study, such as the research of Peracchia et al. (2017) conducted on adolescents in Italy with an average age of 15 years using the

Assessment of Internet and Computer Game Addiction Scale (AICA-S) measuring tool to calculate the degree of addiction of *online games* and the PSQI questionnaire to measure Sleep quality obtained a p value of 0.08 ($p > 0.05$), which means that there is no meaningful relationship between *online game* addiction and sleep quality. The difference with the research of Peracchia et al (2017) is that in the study, *online game* players were divided into Hard Gamers (playing games for most of the day with a duration of 4-6 hours and *Casual Gamers* (playing games occasionally for less than 1 hour and it was found that the *Hard Gamers* group had good sleep quality. This is because in the study of Peracchia et al (2017) used other risk factors such as physical activity such as exercise which makes sleep more restful and the quality of sleep felt better where in the study the *Hard Gamers* group had better physical activity than the *Casual Gamers* group (Peracchia et al., 2017).

CONCLUSIONS AND SUGGESTIONS

Hasil research on male students of SMPN 1 Serang City in January-March 2022 obtained 148 samples with conclusions: 1) 17.6% of male students experienced severe *online game* addiction, 53.4% experienced mild addiction, and 29.1% did not experience addiction. 2) 70.3% of male students experienced poor sleep quality and 29.7% experienced good sleep quality. 3) A meaningful relationship was found between *online game* addiction and sleep quality in male students at SMPN 1 Serang City (p value 0.000). It is recommended that students can manage the time better in the duration of playing *online games* so as not to interfere with other activities. The school can provide socialization and education about the adverse effects of online games and ask parents to work together to assist supervision in preventing *online game* addiction. In addition, the school can provide guidance facilities for extracurricular activities with more choices so that students do not spend their time playing games. And in the next study, it is hoped that the male and female sex research samples will be used to get clearer differences and use other risk factors related to sleep quality disorders in order to reduce bias

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