



UNIVERSITAS NAHDLATUL ULAMA SURABAYA

LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT

Kampus A Wonokromo : Jl. SMEA No.57 Tlp. 031-8291920, 8284508 Fax. 031-8298582 – Surabaya 60243

Kampus B RSIJemursari : Jl. Jemursari NO.51-57 Tlp. 031-8479070 Fax. 031-8433670 – Surabaya 60237

Website : unusa.ac.id Email: info@unusa.ac.id

SURAT KETERANGAN

Nomor: 928/UNUSA-LPPM/Adm-I/V/2024

Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) Universitas Nahdlatul Ulama Surabaya menerangkan telah selesai melakukan pemeriksaan duplikasi dengan membandingkan artikel-artikel lain menggunakan perangkat lunak **Turnitin** pada tanggal 06 Februari 2024.

Judul : *Does game addiction have a relationship with adolescent sleep quality?*

Penulis : Umi Hanik^{1*} , Siti Nurjanah¹ , Ratna Yunita Sari¹ , Imamatul Faizah¹ , Riska Rohmawati¹

No. Pemeriksaan : 2024.05.06.414

Dengan Hasil sebagai Berikut:

Tingkat Kesamaan diseluruh artikel (*Similarity Index*) yaitu 17%

Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya

Surabaya, 06 Mei 2024

Ketua LPPM,

Achmad Syafiuddin, Ph.D.

NPP. 20071300

LPPM Universitas Nahdlatul Ulama Surabaya

Website : lppm.unusa.ac.id

Email : lppm@unusa.ac.id

Hotline : 0838.5706.3867

Does game addiction

by Ratna Yunita

Submission date: 06-Feb-2024 02:41PM (UTC+0700)

Submission ID: 2287754348

File name: 23.2023-JIN_September_Balimed_Bu_Umi_Author_Ratna_Q4.pdf (259.17K)

Word count: 2568

Character count: 13488

Does game addiction have a relationship with adolescent sleep quality?



CrossMark

Umi Hanik^{1*}, Siti Nurjanah¹, Ratna Yunita Sari¹, Imamatul Faizah¹, Riska Rohmawati¹

ABSTRACT

Introduction: Addiction to online games is one of the impacts caused by technological developments. One of the effects of online game addiction is a change in sleep quality. This study aims to analyze the relationship between the habit of playing online games with adolescent sleep quality.

Method: This study is a correlation analytic research design with a cross-sectional approach, the research sample was 109 respondents from 150 populations using simple random sampling. The independent variable of this study was the habit of playing online games and the dependent variable was sleep quality. The instrument used in this study is gaming disorder using the 7-item Game Addiction Scale (GAS) and sleep quality using the 10-item Adolescent Sleep-Wake Scale (ASWS). Data analysis using chi-square test.

Results: The result of this study, most of them (55.6%) had fairly bad sleep quality and almost half (44.4%) had very bad sleep quality. Spearman rank test results $p = 0.000$, which means that game addiction has a relationship with adolescent sleep quality.

Conclusion: Game addiction is one of the factors for adolescents' bad sleep quality. It is hoped that adolescents can reduce playing online games because bad sleep quality can interfere with health.

Keywords: *adolescent, game addiction, sleep quality.*

Cite This Article: Hanik, U., Nurjanah, S., Sari, R.Y., Faizah, I., Romawati, R. 2023. Does game addiction have a relationship with adolescent sleep quality?. *Bali Medical Journal* 12(3): 2812-2814. DOI: 10.15562/bmj.v12i3.4355

¹Department of Nursing, Faculty Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, East Java, Indonesia.

*Corresponding author:

Umi Hanik;
Department of Nursing, Faculty Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, East Java, Indonesia;
umihanik@unusa.ac.id

Received: 2023-04-15

Accepted: 2023-08-20

Published: 2023-09-22

INTRODUCTION

Online gaming is a recreational activity that has turned into a very popular industry worldwide, especially in Southeast Asia.¹ In Indonesia, it is recorded that in 2021 it will reach \$641 million and it is projected that in 2025 it will increase to \$783 million.² The prevalence of Internet use climbed from 34.9% (88.1 million users) in 2014 to 51.8% (132.7 million users) in 2016 and 73.7% (193 million users) in 2019, according to data from the Association of Indonesian Internet Service Providers (APJII). Meanwhile, 16.5% of people currently play online games in 2019.³

The activity of playing games can be beneficial activity for most individuals, especially teenagers. The positive effects are demonstrating superior visual, spatial, and attention skills^{4,5} and strong social bonds.^{6,7} However, the negative impact of online gaming activities is very worrying.⁸ Due to repetitive behavioral involvement, excessive online gaming develops into non-substance addiction or impulse-controlled disorder (ICD), which has been shown to have more detrimental effects.⁹

In addition, aberrant breaks in the orbitofrontal cortex, striatum, and sensory regions are likely to be the origin of the association between excessive internet game use and impulse control, reward processing, and somatic representation.¹⁰ One of the negative effects of gaming is that it affects sleep. Where sleep is an important health behavior in maintaining one's well-being.¹¹ Lack of sleep for adolescents will have an impact on decreasing learning concentration, decreasing grades, and affecting mood and mentality.^{12,13} The purpose of this study was to analyze the relationship between game addiction and adolescent sleep quality.

MATERIALS AND METHODS

Design and Sample

This study used cross-sectional research. The target population for this study is all 150 students in grade 8 at state junior high school 2 Beji, who range in age from 13 to 14 years old. The participants were then alphabetically added to a list, from which a random selection was made using

systematic sampling. 109 students in total, 53 men and 56 women, were included in the study. Participants needed to have a device that could run online game applications, such as a smartphone or gaming PC, to meet the inclusion criteria. Refusal to participate in the study resulted in exclusion.

Data collection procedures

The instrument used in this study is a gaming disorder using a 7-item Game Addiction Scale (GAS) by Lemmens et al., (2009)¹⁴ has a validity of 0.877 and reliability of 0.951.¹⁵ sleep quality using a 10-items Adolescent Sleep-Wake Scale (ASWS) by Essner et al., (2015) has validity 0.80 and reliability 0.81.¹⁶

The study was conducted in August 2022 with the following stages: explain the purpose and benefits of the study, maintain confidentiality, informed consent to participate in the study, distribute questionnaires via a Google form, provide education on handling gaming disorders, and improve sleep quality.

Data analysis

IBM SPSS Statistics was used for all data analysis. For categorical data, descriptive statistics like number and percentage were utilized; for continuous data, mean and standard deviation were computed. To compare students' gaming addiction and sleep quality, the rank-spearman exam was used. For testing, the significance level was set at 0.05.

RESULTS

Table 1 shows that most (51.4%) of the participants were female with an average age of 13.48. almost half (42.2%) had a normal level of gamer addiction and almost half (46.8%) had very good sleep quality.

Table 2 shows 46 participants with normal levels of gamers entirely (100%) have very good sleep quality, 27 participants with levels of engaged gamers mostly (74.1%) have fairly good sleep quality, 27 participants with a level of problem gamers almost entirely (85.2 %) have a fairly bad sleep quality. Meanwhile, 4 participants with addicted to gamers level. Most of them (55.6%) had fairly bad sleep quality and almost half (44.4%) had

very bad sleep quality. Spearman rank test results $p = 0.000$, which means that game addiction has a relationship with adolescent sleep quality.

DISCUSSION

The results showed that a small portion (8.3%) of participants were addicted gamers. Playing online games makes someone feel happier because getting more satisfaction from games will make players more interested in playing them.¹⁷ Playing online games is entertainment and eliminates boredom with activities that have been done before. Even though they do not know specifically the driving factors and negative impacts of playing online games. The signs that usually occur in people who are addicted to online games are psychological, physical, and social. A sign of psychological disorders, teenagers experiencing addiction will continue to think about games that are often played, have difficulty concentrating in studying or work, doing anything to be able to play games again, being physically exposed to radiation from cellphones continuously can damage the nerves of the brain, and social relationships with family

and friends is reduced.^{18,19}

The causes of teenagers playing online games excessively are due to boring routines, lack of opportunity to relax from the hectic school schedule, the atmosphere at home that is far from comfortable, and the invitation of friends to keep playing online games. This makes it difficult for adolescents to regulate good quality sleep.^{20,21}

Table 1 shows that a small proportion (3.7%) of participants had very poor sleep quality. Poor sleep quality due to too often accessing the internet to play online games until late at night and forgetting time to rest, as well as doing school assignments and even neglecting the ideal sleep time for body health.²² Good sleep quality can be influenced by a good mood, good physical condition, and a supportive environment including calm, peace, comfort, etc., a calm mind, limited 3aps, regular exercise, and regular diet. Sleep quality can be influenced by several factors, one of which is lifestyle.²³ The lifestyle of today's teenagers who cannot be separated from smartphones causes them to play games all the time, according to a questionnaire which shows that almost all respondents say they use online games all the time. The sleep process is disrupted due to teenagers who focus on playing online games until late at night and still ignoring warnings from online games when teenagers start sleeping.

Sleep is a basic human need, so it has a physiological and psychological role. The lack of fulfillment of adolescent sleep needs is caused by the inability of adolescents to divide their time between education, socializing, and playing. In this case, teenagers will sleep late at night and wake up early because of the demands of education, this results in teenagers having difficulty concentrating and decreasing endurance.¹⁷

Table 1. Subject's Characteristics

Variables	N = 109
Age (mean ± SD)	13.48 ± 0.502
Gender (n, %)	
Male	53 (48.6)
Female	56 (51.4)
Game addiction (n, %)	
Normal gamers	46 (42.4)
Engaged gamers	27 (24.8)
Problem gamers	27 (24.8)
Addicted gamers	9 (8.3)
Sleep Quality (n, %)	
Very good	51 (46.8)
Fairly good	24 (22.0)
Fairly bad	30 (27.5)
Very bad	4 (3.7)

Table 2. Crosstabs between game addiction and sleep quality

Variables	Sleep Quality				p-value
	Very good N (%)	Fairly good N (%)	Fairly bad N (%)	Very bad N (%)	
Game addiction					
Normal gamers	46 (100)	0	0	0	0.000*
Engaged gamers	5 (18.5)	20 (74.1)	2 (7.4)	0	
Problem gamers	0	4 (14.8)	23 (85.2)	0	
Addicted gamers	0	0	5 (55.6)	4 (44.4%)	

* $p < 0,05$ Based on rank Spearman

CONCLUSION

Game addiction is one of the factors for adolescents' bad sleep quality. That game addiction has a relationship with adolescent sleep quality. In future research, researchers will provide interventions on how to minimize the incidence of game addiction.

ACKNOWLEDGMENT

We would like to thank all participants of the state junior high school 2 Beji who have welcomed researchers in the data collection and research process. Thank you to Universitas Nahdlatul Ulama Surabaya for supporting this research.

CONFLICT OF INTEREST

The authors declare no competing interests.

ETHICAL CONSIDERATION

This research was approved by the Ethics Committee of Chakra Brahmanda Lentera institution in August with the number 077/006/VIII/EC/KEP/LCBL/2022

FUNDING

Universitas Nahdlatul Ulama Surabaya supports this research.

AUTHOR CONTRIBUTION

All authors contributed equally to this study.

REFERENCES

- The ASEAN Post. The gaming explosion in Southeast Asia. 2020;
- FISIPOL UGM. Mobile Gaming in Indonesia: Relationships through New Media. 2021; Available from: <https://cfd.fisipolugm.ac.id/2021/01/14/mobile-gaming-in-indonesia-relationships-through-new-media/>
- Asosiasi Penyelenggara Jasa Internet Indonesia. <https://www.apjii.or.id/>; 2020;
- Feng J, Spence I, Pratt J. Playing an Action Video Game Reduces Gender Differences in Spatial Cognition. *Psychol Sci*. 2007;18(10):850–5. Available from: <http://dx.doi.org/10.1111/j.1757-9280.2007.01990.x>
- Subrahmanyam K, Greenfield PM. Effect of video game practice on spatial skills in girls and boys. *J Appl Dev Psychol*. 1994;15(1):13–32. Available from: [http://dx.doi.org/10.1016/0193-7394\(94\)90004-3](http://dx.doi.org/10.1016/0193-7394(94)90004-3)
- Kristensen JH, Pallesen S, King DL, Hysing M, Erevik EK. Problematic Gaming and Sleep: A Systematic Review and Meta-Analysis. *Front Psychiatry*. 2021;12:675237. Available from: <https://pubmed.ncbi.nlm.nih.gov/34163386>
- Phillips CA, Rolls S, Rouse A, Griffiths MD. Home video game playing in schoolchildren: a study of incidence and patterns of play. *J Adolesc*. 1995;18(6):687–91. Available from: <http://dx.doi.org/10.1006/jado.1995.1049>
- Fahrizal Y, Aprilia FD. Family communication experience among students who are addicted to online games. *Bali Medical Journal*. 2021;10(3Special issue):1239–43.
- Rosendo-Rios V, Trott S, Shukla P. Systematic literature review online gaming addiction among children and young adults: A framework and research agenda. *Addictive Behaviors*. 2022;129:107238. Available from: <http://dx.doi.org/10.1016/j.addbeh.2022.107238>
- Park HS, Kim SH, Bang SA, Yoon EJ, Cho SS, Kim SE. Altered Regional Cerebral Glucose Metabolism in Internet Game Overusers: Fluorodeoxyglucose Positron Emission Tomography Study. *CNS Spectr*. 2010;15(3):159–66. Available from: <http://dx.doi.org/10.1017/s1092852900027437>
- Te BC, Yeoh ZX, Jaafar RJ, Goh BS. Sinister snoring in a child: A case report. *Bali Medical Journal*. 2020;9(3):872–5.
- Sabia JJ, Wang K, Cesur R. Sleepwalking Through School: New Evidence On Sleep And Academic Achievement. *Contemp Econ Policy*. 2016;35(2):331–44. Available from: <http://doi.org/10.1111/coep.12193>
- Scott J, Kallestad H, Vedaa O, Sivertsen B, Etain B. Sleep disturbances and first onset of major mental disorders in adolescence and early adulthood: A systematic review and meta-analysis. *Sleep Med Rev*. 2021;57:101429. Available from: <http://dx.doi.org/10.1016/j.smrv.2021.101429>
- Lemmens JS, Valkenburg PM, Peter J. Development and Validation of a Game Addiction Scale for Adolescents. *Media Psychol*. 2009;12(1):77–95. Available from: <http://dx.doi.org/10.1080/15213260802669458>
- Khazaal Y, Chatton A, Rothen S, Achab S, Thorens G, Zullino D, et al. Psychometric properties of the 7-item game addiction scale among french and German speaking adults. *BMC Psychiatry*. 2016;16:132. Available from: <https://pubmed.ncbi.nlm.nih.gov/27160387>
- Essner B, Noel M, Myrvor F, Palermo T. Examination of the Factor Structure of the Adolescent Sleep-Wake Scale (ASWS). *Behavioral sleep medicine*. 2014/04/17. 2015;13(4):296–307. Available from: <https://pubmed.ncbi.nlm.nih.gov/24742264>
- Idris Handriana IH, Wati E, Amelia D. Hubungan Kebiasaan Bermain Game Online dengan Pola Tidur pada Remaja di Desa Baturuyuk Kecamatan Dawuan Kabupaten Majalengka tahun 2021. *Jurnal Kampus STIKES YPIB Majalengka*. 2021;9(2):168–79. Available from: <http://dx.doi.org/10.51997/jk.v9i2.136>
- Warburton WA, Parkes S, Sweller N. Internet Gaming Disorder: Evidence for a Risk and Resilience Approach. *Int J Environ Res Public Health*. 2022;19(9):5587. Available from: <https://pubmed.ncbi.nlm.nih.gov/35564981>
- Fahrizal Y, Aprilia FD. Family communication experience among students who are addicted to online games. *Bali Medical Journal*. 2021;10(3):1239–43. Available from: <http://dx.doi.org/10.15562/bmj.v10i3.2858>
- Ganapathy JC, Sekeon SAS, Kandou GD, Kesehatan F, Universitas M, Ratulangi S, et al. Hubungan Antara Kecanduan Bermain Game Online Dengan Kualitas Tidur Pada Gamer Online Pengguna Komputer Di Warung Internet M2G Supernova Malalayang. Vol. 8. *Jurnal KESMAS*. 2019.
- Farid M, Kamrani MA. The Relationship between Body Image Coping Strategy and Eating Disorders among Iranian Adolescent Girls. *Bali Medical Journal*. 2016;5(1):17.
- Paulus FW, Ohmann S, von Gontard A, Popow C. Internet gaming disorder in children and adolescents: a systematic review. *Developmental Medicine & Child Neurology*. 2018;60(7):645–59. Available from: <http://dx.doi.org/10.1111/dmcn.13754>
- Iqti I Al, Kinanti RG, Andiana O. Hubungan aktivitas fisik dan lingkaran perut dengan kejadian hipertensi pada perempuan di Malang Raya. *Jurnal Sport Science*. 2021;11(1):51–7.



This work is licensed under a Creative Commons Attribution

Does game addiction

ORIGINALITY REPORT

17%

SIMILARITY INDEX

%

INTERNET SOURCES

17%

PUBLICATIONS

%

STUDENT PAPERS

PRIMARY SOURCES

- 1** Xuliang Shi, Haiying Qi, Shuo Wang, Zihan Li, Zhipeng Li, Fang Fan. "Sleep Reactivity and Depressive Symptoms Among Chinese Female Student Nurses: A Longitudinal Mediation Analysis", *Frontiers in Psychiatry*, 2021
Publication 1%
 - 2** Maria Rosaria Esposito, Nicola Serra, Assunta Guillari, Silvio Simeone et al. "An Investigation into Video Game Addiction in Pre-Adolescents and Adolescents: A Cross-Sectional Study", *Medicina*, 2020
Publication 1%
 - 3** Melanie Noel, Jillian Vinall, Lianne Tomfohr-Madsen, Amy Lewandowski Holley, Anna C. Wilson, Tonya M. Palermo. "Sleep Mediates the Association between PTSD Symptoms and Chronic Pain in Youth", *The Journal of Pain*, 2017
Publication 1%
-

4

Aviv M. Weinstein. "An Update Overview on Brain Imaging Studies of Internet Gaming Disorder", *Frontiers in Psychiatry*, 2017

Publication

1 %

5

Isabelle Cisamolo, Marie Michel, Marie Rabouille, Julie Dupouy, Emile Escourrou. "Perceptions of adolescents concerning pathological video games use: a qualitative study.", *La Presse Médicale Open*, 2021

Publication

1 %

6

Rahmat Muhazir, Teuku Tahlil, Hilman Syarif. "Kecanduan Game Online dan Identitas Diri, Interaksi Sosial serta Perilaku Agresif Remaja", *Jurnal Keperawatan Silampari*, 2023

Publication

1 %

7

Alex El Sehamy, Pantea Farahmand. "Chapter 8 Internet Gaming Disorder and Addictive Behaviors Online", *Springer Science and Business Media LLC*, 2023

Publication

1 %

8

Ali Najmi, Waleed Alhalafawy, Marwa Zaki. "Developing a Sustainable Environment Based on Augmented Reality to Educate Adolescents about the Dangers of Electronic Gaming Addiction", *Sustainability*, 2023

Publication

1 %

9

Halley M. Pontes, Mark D. Griffiths.
"Assessment of internet gaming disorder in
clinical research: Past and present
perspectives", Clinical Research and
Regulatory Affairs, 2014

Publication

1 %

10

Sara Jalali-Farahani, Parisa Amiri, Fariba
Zarani, Farid Zayeri, Fereidoun Azizi.
"Development and Validation of the Iranian
Body Image Scale (IBIS)", Research Square
Platform LLC, 2021

Publication

1 %

11

"Technology and Adolescent Mental Health",
Springer Science and Business Media LLC,
2018

Publication

1 %

12

Lovin Gopali, Rolina Dhital, Rachita Koirala,
Trijya Shrestha, Sandesh Bhusal, Reshika
Rimal, Carmina Shrestha, Richa Shah. "Effect
of COVID-19 pandemic on internet gaming
disorder among general population: A
systematic review and meta-analysis", PLOS
Global Public Health, 2023

Publication

1 %

13

Haura Salwa Pherenis, Septa Katmawanti
Katmawanti, Karina Nilasari Nilasari.
"Hubungan Asupan Lemak dan Aktivitas Fisik
terhadap Kejadian Hipertensi pada Penderita

1 %

Hipertensi Usia 45 – 69 Tahun di Wilayah Kerja
Puskesmas Dinoyo Kota Malang", Jurnal
Aisyah : Jurnal Ilmu Kesehatan, 2023

Publication

14

Hötting, Kirsten, Kathrin Holzschneider, Anna Stenzel, Thomas Wolbers, and Brigitte Röder. "Effects of a cognitive training on spatial learning and associated functional brain activations", BMC Neuroscience, 2013.

Publication

1 %

15

Ahmad Mamoun Rajab, Mohamed Saddik Zaghloul, Saed Enabi, Tawfik Mamoun Rajab et al. "Gaming addiction and perceived stress among Saudi adolescents", Addictive Behaviors Reports, 2020

Publication

1 %

16

Milad Namjoo, Malihe Farid, Mahnaz Akbari Kamrani. "Risk of Eating Disorders (EDs) among Iranian Medical Students: Perceived Social Support (PSS) and COVID-19-Related Anxiety", Journal of Kermanshah University of Medical Sciences, 2023

Publication

1 %

Exclude quotes Off

Exclude matches < 1%

Exclude bibliography Off