

Sleep Quality in Teenagers

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ABSTRACT

Individuals need adequate sleep to maintain their optimum health. Students are the population at risk of sleeping disturbance for many reasons. The purpose of this study was to describe the sleeping quality of students. The study used descriptive design through cross-sectional approach. The study was conducted in GIKI 2 Junior High School in Surabaya. Samples of 95 students at 7th level were taken by consecutive sampling technique. The variable was the sleeping quality of students. The data were collected using Pittsburgh Sleep Quality Index. The data were presented in the tables of frequency. The study found that 24 (25%) of the student have good sleep quality, and 71 (75%) of the students have poor sleep quality. The contributing factors to the poor sleep quality of the students are the overload of activity at school and the addiction to online games. Parents are required to monitor their children when engaging with online games while schools need to provide counselling and guidance to their students.

Keywords: Sleep quality, Students, Sleeping disturbance

BACKGROUND

Sleep is a basic human need that is included in the physiological needs. Sleep is primary needs that must be met to maintain biological homeostasis and survival in each individual. Sleep is a condition where there is a change in the status of consciousness, namely the individual's perception and reaction to the environment becomes reduced. Sleep is very important for the ability to remember, concentration in learning and social adaptation. A person's cognitive, mental, and emotional stability are determined by the duration and quality of sleep (Candra, 2016). Sleep is needed by every individual to be able to maintain health status at an optimal level, but many teenagers experience sleep disorders (Zahara, 2018).

A previous study conducted on students of Vocational High School 1 Terbanggi Besar, Central Lampung majoring in 10th and 11th class stated that most of the sleep quality is less than 63% (Romayati, 2019). In 2015, the study in Jakarta stated that the prevalence of sleep disorders in adolescents varies from 15.3% to 39.2%, depending on the type of sleep disorder experienced. There are 140 students who experience sleep disorders by 62.9%, with sleep-wake transition disorders as the most common type of disorder (Awwal, 2015).

Sleep is influenced by several factors including physical illness, drugs, environment, lifestyle, stress levels and work schedules. Taking drugs that have certain side effects can affect sleep. Diuretic drug effects on nocturia so that individuals often wake up at night. Environmental factors around noisy rooms, having bed mates who have sleep

problems and room conditions such as temperature, light, size, and bed comfort. The habit of consuming alcohol or caffeine makes it difficult for individuals to sleep. In addition, individuals who have a changing work schedule, such as changing shifts every week will affect sleep patterns. The state of stress experienced by individuals affects the individual's ability to sleep or stay asleep. Severe stress is closely related to low hours of sleep. In addition, severe stress is very influential and positively associated with nightmares and sleep complaints. Emotional stress can cause individuals to have difficulty sleeping, often wake up during sleep or sleep too much, if prolonged stress can cause poor sleep habits (Iqbal, 2018). The impact of poor sleep quality is a decrease in daily activities, fatigue, weakness, poor vital signs, difficulty concentrating, sleepiness more often, and decreased immunity. In addition, poor sleep quality can also cause negative psychological impacts such as stress, depression, anxiety, lack of concentration, and ineffective coping (Budyawati, 2019).

Poor sleep quality greatly affects a person's activity. The way to maintain good sleep quality is to pay attention to several factors that support sleep, for example paying attention to the sleeping environment, try to make the environment where we sleep is comfortable and can stimulate us to sleep soundly. In addition, reducing interaction with gadgets before bed can help a person achieve better sleep quality. If we are still focused on gadgets, our brains will continue to work and stay awake so that we cannot be stimulated to sleep (Aprinda, 2021). The purpose of this study was to describe the sleeping quality of students at GIKI 2 Junior High School in Surabaya. An overview of students' sleep quality will provide us with information on how to fulfil these basic needs. The fulfilment of adolescent sleep needs affects their quality of life today and in the future. In addition, we can immediately take preventive measures to minimize the risk of sleep disorders since adolescence.

RESEARCH METHODS

This study used a descriptive design through cross-sectional approach. The population in this study were 126 students at 7th class of GIKI 2 Junior High School in Surabaya. Sample of 95 students who were taken by consecutive sampling through Slovin formula. The variable is the sleep quality of adolescents taken using the Pittsburgh Sleep Quality Index (PSQI) (Anggraeni, 2020). There are 5 indicators assessed on the instrument including subjective sleep quality, sleep latency, sleep efficiency, use of sleeping drugs, sleep disturbances, sleep duration, and daytime sleep dysfunction. The PSQI instrument contains 20 statements including 6 positive statements and 14 negative statements. Answer options include yes and no. The choice of yes to the positive statement and the choice of no to the negative statement was given a value of 1, while the choice of no to the positive statement and yes to the negative statement was given a value of 0. The data collection was in February 2022. Sleep quality measurement was carried out only once through the google-form sent by what-app chat to respondents. Before filling out the questionnaire, it begins with filling out informed consent. Data in the form of sleep quality is classified as good if the value is <10 and bad if the value is ≥ 10 . The data were analysed descriptively using the frequency value. This research was not conducted with ethically clearance.

RESULTS AND DISCUSSION

Table 1 Demographic Characteristics of Students at 7th Class in GIKI 2 Junior High School Surabaya, February 2022 (n=95)

Data Demographic	Frequency (n)	Percentage (%)
Gender:		
1. Man	34	35
2. Women	61	65
Age:		
1. 12 years	2	2
2. 13 years	34	36
3. 14 years	37	39
4. 15 years	22	23
Total	95	100

Table 2. Sleep Quality of Students at 7th Class in GIKI 2 Junior High School Surabaya, February 2022 (n=95)

Sleep Quality	Frequency	Persentase (%)
Good	24	25
Poor	71	75
Total	95	100

The study found 71 students (75%) experienced poor sleep quality. The result is in line with previous study by Zahara (2018) that poor sleep quality was also experienced by many teenagers in State Vocational High School 2 Pekanbaru, Riau, Indonesia. The daytime sleep of teenager where the normal hours that should be used to rest, are switched by teenagers to do other activities. Most of the 7th grade students of GIKI 2 Junior High School Surabaya said that it was difficult to start sleeping before 9 pm and often felt sleepy when doing activities in the morning. While pandemic period, the activities of teenagers were often carried out school assignments through online class, so that more and more tasks must be done by them at home. Many teenagers who have poor sleep quality use their sleep time to play online games as a means to release their tiredness after doing tasks (Zahara, 2018).

Poor sleep quality is often experienced by all students. They are included in several stages of adolescence, 36 students (38%) are in the early adolescence stage (12-13 years); and 59 students (62%) entered the middle adolescence stage (14-15 years). Previous study by Putro (2017) stated while development period, adolescents have many dreams and desires to realize its in the future. Their high dreams are not in accordance with their abilities, so that adolescents are enveloped by feelings of

restlessness. This restlessness of teenager causes sleep disturbances and results in poor sleep quality.

Forty-two (44%) students who experienced poor sleep quality were mostly women. Previous research has shown the same condition that most adolescent girls experience poor sleep quality (Awwal, 2015). Adolescent girls spend more of their time participating in many activities at school and outside of school, including extracurricular activities, tutoring, as well as art and sports lessons. Poor sleep quality in adolescent girls can be influenced by their pubertal cycle. When young women experience menstruation, they often experience abdominal pain. This condition can disrupt sleep patterns, where they will find it difficult to start sleeping, and focus more on themselves to endure the pain they are experiencing. Teenage girls tend to have a competitive spirit, so they will use their time to continue learning in order to get achievements, especially high academic scores.

Most of the teenage girls in GIKI 2 Junior High School Surabaya have a habit of doing several activities before going to bed, including reading, making calls, watching television, and listening to music. This condition is also supported by the statement of the guidance and counselling teacher at GIKI 2 Junior High School Surabaya who said that there were still many students who were sleepy and some even fell asleep in class during the learning process. The habit of doing many activities before going to bed if it is continuously done can affect the quality of their sleep and activities in the morning. The negative impact of the lack of fulfilment of students' sleep needs is that they fall asleep in class or lack concentration when studying in the morning at school. This condition needs to get attention from the school, especially the classroom teacher, teacher counselling guidance, and parental supervision, especially when doing activities at home. School guidance teachers need to immediately make efforts to repair problematic students, while still involving parents.

The results of this study showed 12 (13%) students had snored while sleeping. The results of this study are in line with Handoyo's research (2012) which says that a small proportion of adolescent in Muhammadiyah Gombong College of Health Sciences snore during sleep, especially adolescents who are obese. Airway narrowing due to excessive fat accumulation can cause dysfunction of the area under the diaphragm and within the chest wall which can compress the lungs, so that it interferes with ventilation efforts during sleep. A Fatty tissue in the neck and tongue reduces the diameter of the airways which predisposes to premature closure while the muscle tissue relaxes during sleep, and finally there is respiratory distress and shortness of breath/sleep apnea. Sleep apnea will cause sufferers to often wake up without realizing it in their sleep, so they always feel sleep deprived, even though they have slept enough. This condition needs to get attention from the school, especially counselling guidance teachers and parents through monitoring the eating patterns and sleeping patterns of students. Both of these conditions can affect students' sleep quality.

The data of this study showed 3 students (3%) took medication to help them fall asleep. The same condition was mentioned in Diarti's research (2017) that a small proportion of female students at the Health Sciences Study Program of UNITRI Malang took sleeping pills because they found it difficult to start sleeping early. Several types of drugs that

affect sleep are included in the type of hypnotic drugs that must be accompanied by a doctor's prescription. The sleeping pills stimulate melatonin receptors in the area of the brain responsible for controlling sleep and wake cycles, so teens can sleep after taking these sleeping pills. Consumption of sleeping pills in the long term / continuous can cause dependence and several other diseases. The effect of the drug on asthmatics is the emergence of shortness of breath, and in general adolescents it can cause health problems such as diarrhea, dizziness, changes in appetite, and other health problems. Parents and schools should be able to monitor the health of their children/students, and consult with health workers if these habits are found to minimize the occurrence of unwanted health problems.

The research data showed that there were 8 students (8%) consuming caffeine. Caffeine consumption habits were also found in the results of a literature review by Meiranny (2022) which concluded that a small proportion of teenagers like to consume foods or drinks that contain caffeine. This condition is because nowadays teenagers have many activities that require them to stay awake and fresh. One way that is preferred by teenagers is to consume foods or drinks that contain caffeine, for example coffee. Caffeine found in coffee can help teenagers to stay awake while doing their daily activities. But on the other hand, caffeine consumption can also cause several health problems such as difficulty sleeping, headaches, nausea, vomiting, and other symptoms if consumed too much in a short period of time. Monitoring the intake of food and beverages consumed by teenagers by parents and the school, for example through a healthy canteen, and students are required to bring lunch from home, as well as a supply of drinking water that is sufficient for their needs while at school.

There are 71 (74%) students who do not exercise regularly in the results of this study. This result contrast with Sarmadani's research (2020) on Univeristas Muhammadiyah Sumatra Utara Medical Faculty students in Medan, North Sumatra, which concluded that a small proportion of adolescents who have poor sleep quality do not exercise regularly. Exercising regularly can affect the quality of sleep of adolescents. This increase in sleep quality occurs due to the body releasing the hormones adrenaline, serotonin, dopamine, and endorphins. When you exercise the hormone serotonin will increase and make the secretion of the hormone cortisol decrease and cause the production of the hormone melatonin to increase. The hormone melatonin regulates the body's circadian rhythm, light-dark cycle, and sleepiness (Hall & Guyton, 2014). This causes adolescents who exercise regularly to have better sleep quality than adolescents who do not exercise regularly. The school can facilitate this. school and home environment that triggers teenagers to keep moving and doing physical activity and regular exercise.

CONCLUSION AND RECOMMENDATION

Most teenagers who the 7th grade at SMP GIKI 2 Surabaya have poor sleep quality.

Teenagers who have poor sleep quality can improve their sleep quality through simple things, namely getting used to starting sleep before 22.00 pm, sleeping for approximately 8 hours per day, avoiding food or drinks containing caffeine, and do exercise regularly. The GIKI 2 Junior High School in Surabaya should be make

collaboration with parents and health care facilities. They should make collaborate with parents and health care facilities are able to provide education to students and parents about the importance of maintaining sleep quality in adolescents for their physical and emotional health.

REFERENCES

- Anggraeni, D. A. (2020). Case Study of the Level of Emotional Intelligence in Adolescents Who Become Victims of Bullying Behavior at SMPN 1 Pandaan. Surabaya: Health Polytechnic Ministry of Health Surabaya.
- APJ. (2017). Infographic of penetration and behavior of Indonesian internet users. <http://www.apji.or.id>
- Astuti, S. (2018). The Relationship between Online Game Addiction and Sleep Quality in Students at SMP Negeri 24 Samarinda. Samarinda: Muhammadiyah University, East Kalimantan. <https://dspace.umkt.ac.id/handle/463.2017/935>
- Awwal, H. (2015). Prevalence of Sleep Disorders in Adolescents Age 12-15 Years. Journal: Media Medika Muda Volume 4, Number 4. <https://media.neliti.com/media/publications/117255-ID-prevalensi-angguan-tidur-pada-remaja-us.pdf>
- Budiawati, N. L. (2019). Proportion and Characteristics of Poor Sleep Quality in Denpasar Senior High School Teachers. Medical Journal. <https://ojs.unud.ac.id/index.php/eum/article/view/49852>
- Diarti, E (2017). The Relationship Between Internet Use and Sleep Pattern Disorders in PSIK UNITRI Malang Students. Malang, East Java: Tribhuwana Tunggaladewi University Malang. <https://publikasi.unitri.ac.id/index.php/fikes/article/view/656/528>
- Faridatunniswah, A. (2013). The Effect of Role Ambiguity on the Performance of Librarians at Diponegoro University, Semarang. Semarang, Central Java: Diponegoro University Semarang. <http://eprints.undip.ac.id/40608/>
- Firman, (2017). The Relationship of Physical Activity with Sleep Patterns in Old Age. Jombang: Journal of Nursing. <http://repo.tikesicme-jbg.ac.id/267/>
- Hall, John E. & Arthur C. Guyton. (2014). Guyton and hall textbook of medical physiology. 12th edition. translator, Ermita Ibrahim Ilyas; editor, M. Djauhari Widjajakusumah. WB. Saunders, Philadelphia.
- Haekal, M. (2017). The Relationship between the Intensity of Playing Online Games on the Occurrence of Stress, Social Phobia Depression, Sleep Disorders and

- Aggressive Behavior. Medan: University of North Sumatra.
<https://repositori.usu.ac.id/handle/123456789/3699>
- Handoyo, (2012). Relationship between Obesity and the Risk of Obstructive Sleep Apnea (OSA) in Adolescents. Gombong: Muhammadiyah Gombong College of Health Sciences. <http://ejournal.unimugo.ac.id/JIKK/article/view/67/62>
- Hasibuan, S. M. (2019). The Relationship Between Online Game Addiction and Sleep Quality in Students at the USU Faculty of Medicine. Medan, North Sumatra: University of North Sumatra. <https://repositori.usu.ac.id/handle/123456789/25502>
- Heriyanto, B (2017). Quantitative Research Methods (Theory and Application) Matters 4th revised edition. Surabaya: CV. Archipelago Media Officer (PMN).
- Iqbal, M. (2018). The Relationship between Stress Levels and Sleep Quality in Students who are Compiling Thesis in the Mathematics Study Program STKIP PGRI Pacitan Regency. Journal of Nursing. <http://repository.stickes-bhm.ac.id/262/>
- Laila, N. A. (2020). Case Study of Sleep Quality in Obese Adolescents in Sutopo Nursing Diploma III Study Program Surabaya. Journal: DIII Nursing Sutopo Surabaya
- Meiranny, A (2022). The Effect of Caffeinated Drink Consumption on Student Sleep Patterns and Quality. Journal: Sultan Agung Islamic University, Semarang. <https://jurnal.unismuhpalu.ac.id/index.php/MPPKI/article/view/1910/1941>
- Puji, A. (2021). 6 Steps to Getting Good Quality Sleep. Journal Hello Healthy. <https://hellosehat.com/pola-sleeping/tips-sleeping/tips-for-improve-quality-sleep/>
- Ratnasari, C. D. (2016). An Overview of Sleep Quality in the Online Game Community of Diponegoro University Electrical Engineering Students. Semarang, Central Java: Diponegoro University Semarang. <http://eprints.undip.ac.id/51197/>
- Raudhatul Zahara, S. R. (2018). Overview of Insomnia in Adolescents at SMK Negeri 2 Pekanbaru. Riau: JOM FKP, Volume 5, No. 2. <https://jom.unri.ac.id/index.php/JOMPSIK/article/view/21099>
- Romayati, U. (2019). Gadget Use Behavior With Sleep Quality On Teenager. Holistic Journal of Health: University Alumni Nurses Mahalayati. <http://ejournalmalahayati.ac.id/index.php/holistik/article/view/1599>
- Sarmadani, P. (2020). The Effect of Moderate Intensity Aerobic Exercise at Home on Sleep Quality During the Covid-19 Pandemic Period for UMSU Medical Faculty

Students. Medan, North Sumatra: Muhammadiyah University of North Sumatra.
<http://repository.umsu.ac.id/handle/123456789/17232>

Sulastri, Z. (2021). The Religiosity of Teens Who Are Addicted to Online Games. Bengkulu: Faculty of Ushuluddin, Adab and Da'wah Bengkulu State Islamic Institute. <http://repository.iainbengkulu.ac.id/7531/>

Zarkasih, K. (2017). Understanding the Characteristics and Developmental Tasks of Adolescence. Depok: Journal of Applications of Religious Sciences. <http://ejournal.uin-suka.ac.id/center/application/article/view/201703>

Zetrial. (2021). The Relationship Between Online Game Addiction and Sleep Quality in Class XI Students of SMAN 1 Harau .Pekanbaru: Sultan Syarif Kaim State Islamic University, Riau. <http://repository.uin-suska.ac.id/46454/1/FILE%20LENGKAP%20KECUALI%20HASIL%20PENELITIAN%20%28BAB%20IV%29.pdf>