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The Relationship Between *Smartphone* Use and Sleep Quality In Adolescents At Sma Negeri 1 Seram Bagian Barat Kec. Kairatu, West Part of Seram District

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ABSTRACT

A smartphone is a telephone that is equipped with an internet connection and provides Personal Digital Assistant (PDA) functions such as a calendar, agenda book, calculator, notes, and various sophisticated applications to assist with daily activities. The sophistication and convenience provided by *smartphones* today causes many people to be trapped in always using *smartphones.* Excessive *smartphone* use can have unwanted *negative impacts,* especially on the health of its users. One of the negative impacts of *smartphone use* is the disruption of sleep quality. *Smartphone* use at bedtime can affect sleep quality to be poor, sleep efficiency decreases, and the onset of sleep becomes longer. *Smartphones* can be habit-forming, in the form of checking habits, repeated checks and the speed of accessing various content using *smartphones* can affect the increase in *smartphone use* or addiction. Objective The research was to identify the relationship between *smartphone use* and sleep quality in adolescents at SMA Negeri 1 Seram Barat. This research method uses quantitative research with descriptive analytic with *Cross Sectional approach.* A sample of 213 respondents, using the technique *simple random sampling.* Analysis data by using the *chi square* test. The results of the study were based on the *chi-square* statistical test which refers to the *Fisher's Exact Test value,* which obtained *a p.value of* 0.000 where <0.05 indicated that H0 was rejected and Ha was accepted, which means that there is a relationship between *smartphone* use and sleep quality in adolescents at SMA Negeri 1

Keywords: *Adolescents, Sleep Quality , Smartphone*

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INTRODUCTION

Gadget (*smartphone*) is a term that comes from English which means a small electronic device that has a special function used for communication tools, searching for information, or *browsing* , social media, YouTube, playing games and others. Indonesia is a country that has had an impact on developmental technological advances which are characterized by the world's largest (Ahmed dkk., 2020; Banskota dkk., 2020; Hablaini dkk., 2020)

According to We are social (Social, 2020), the total global population is 7.75 billion people and 5.19 billion people of them are smartphone users , with the number of users increasing by 124 million over the past year. This illustrates that there are levels of the number of users smartphones in 2020 with a 2.4% increase from the previous year. According to (Arsandi, 2020), The total population of Indonesia at in 2020 there were 272.1 million people with internet users reaching 175.4 million people. Interestingly, the number of connected smartphones reached 338.2 million units. This matter illustrates that the number of connected smartphones is almost double the number Indonesian people themselves. In 2019 to 2020 the total population Indonesia experienced an increase with a percentage of 1.1% and the number of smartphone users also experienced an increase from 2019 to 2020 with a total percentage reaching 4.6% (Mutiara Karlina, 2021).In the current era of globalization, smartphones are very popular among all groups of people, especially teenagers, because they can increase the intensity of social communication and increase their chances of starting social relationships (Dayour dkk., 2019; Freeman dkk., 2020; Tarlemba dkk., 2018).

A smartphone is a telephone that is equipped with an internet connection and provides Personal Digital Assistant (PDA) functions such as a calendar, agenda book, calculator, notes, and various sophisticated applications to assist with daily activities. The sophistication and convenience provided by smartphones today causes many people to be trapped in always using smartphones (Lakshono, 2018a; Laranjo dkk., 2021; Leung dkk., 2020).According to the Association of Indonesian Internet Service Providers (2018), most internet users are occupied by people with an age range of 15-25 years, as much as 88.5% - 91% (Gavrilayanti, 2021; Linardon dkk., 2019). This data shows that most of them are students, this happens because of academic demands, other activities that force students to search for additional information via the internet, as well as other activities that cause students to frequently use the internet with the help of smartphones (Daeng et al . , 2017) .Excessive use of smartphones can have a negative impact undesirable, especially to the health of its users. One of the negative impacts of smartphone use is the disruption of sleep quality.

Smartphone use at bedtime can affect sleep quality for the worse, sleep efficiency decreases, and the onset of sleep becomes longer. Smartphones can be habit-forming, in the form of checking habits, repeated checks and the speed of accessing various content using smartphones can affect increased smartphone use or addiction (Elhai dkk., 2020; Hariani dkk., 2019; Narayanan dkk., 2020). Sleep quality is a measure of how easy it is

for a person to fall asleep and to maintain sleep. The quality of a person's sleep can be described by the length of time they sleep, and the complaints they feel while sleeping or after waking up. Good quality sleep will result in freshness and fitness when awakened, whereas inadequate and poor-quality sleep can result in various physiological balance disorders that affect health due to insufficient sleep time. the activities he has to do when he wakes up (Nelis dkk., 2020; Woran dkk., 2021).

The need for adequate sleep is not only determined by the hours of sleep (sleep quantity), but also by the depth of sleep (sleep quality). Sleep quality includes quantitative and qualitative aspects of sleep, such as sleep duration, time it takes to fall asleep, frequency of awakenings and subjective aspects such as sleep depth and satisfaction (Ogudo dkk., 2019; Putri, 2018; Sousa Lima dkk., 2019). Adolescence is a period in which individuals experience changes from childhood to adulthood, between the ages of 10-24 years. According to the World Health Organization (WHO) adolescents are aged 10-19 years, while the United Nations (UN) defines youth as ages 15 to 24 years. This definition is then put together in the terminology of young people (young people) which includes ages 10-24 years (Kusmiran, Eny, 2014: 4 (Voicu dkk., 2019; Wasil dkk., 2019; Xu dkk., 2023)). Adolescence shows the development of the process of becoming an adult both physically and individually psychologically (Nur & Agustang, 2017; Sha dkk., 2019; Torous dkk., 2019).

RESEARCH METHODOLOGY

The purpose of this study is to analyze the relationship between smartphone use and sleep quality in adolescents at State Senior High School 1 West Seram, Kairatu District, West Seram Regence. The research design used is descriptive analytic, using a cross sectional approach . Where the data concerning the independent variable and the dependent variable are collected at the same time. Each research subject was only observed once, and measurements were made of the subject's character or variable status at the time of examination.

Location

This research was carried out in SMA Negeri 1 West Seram, Kairatu district, Kab. West Seram. The population in this study were all students of SMA Negeri 1 Seram Barat (Class X and Class X1) totaling 460 people. The sample in this study was 213 people using the Simple Random Sampling Technique .

Data collection technique

The steps of data collection carried out are as follows:

Taking samples/respondents with a total of 213 people by means of Simple Random Sampling.

Explaining the research, objectives, benefits, and research steps as well as signing the attendance list.

Doing the distribution of questionnaire sheets.

Univariate analysis

Univariate analysis was carried out to determine the frequency distribution of the variables studied (Arikunto, 2013), namely sleep quality and smartphone use. After the percentage values of each group of questionnaires (material) are then combined into the results of the overall respondent's answers. Categorical data results in the form of frequency and percentage values.

Bivariate Analysis

Bivariate analysis was conducted to examine the relationship between the independent variables and the dependent variable, namely analyzing the relationship between sleep quality and smartphone use . To test the relationship, using the chi square test with a significance limit of 5% (p = 0.05), the test results say there is no significant relationship with the value of p > 0.05. The test results are said to have a significant relationship if the p value <0.05.

RESULT AND DISCUSSION

Type of research uses an analytic descriptive design , using a cross sectional approach . This chapter will present the results of research on the relationship between smartphone use and sleep quality in adolescents at SMA Negeri 1 Seram West Part, Kairatu District, West Seram Regency, Province Maluku in 2021 which was carried out from 03 to 18 August 2021. There were 213 respondents in this study.

Univariate analysis

Table 1. Characteristics of Respondents by Age and Gender

Characteristics	N	%
Age		
15	30	14.1
16	120	56.3
17	46	21.6
18	15	7.0
19	2	0.9
Sex		
Man	92	43.2
Woman	121	56.8
Total	213	100

Source: Primary Data

The distribution of the frequency of respondents in the table above is in the age category, showing the highest at the age of 16, 120 respondents (56.3%) and the lowest at the age of 19, namely 2 respondents (0.9%). Meanwhile, the gender category was dominated by female sex, 121 respondents or 56.8% and male sex, 92 respondents (43.2%).

Table 2 Frequency Distribution Based on Respondents' Smartphone Use

Smartphone use	n	%
Tall	114	53.5
Currently	99	46.5
Low	0	0.0

Total	213	100

Source: Primary Data

Table 2 shows that the majority of respondents use smartphones in the high category of 114 respondents (53.5%). While the use of smartphones in the medium category, 99 respondents (46.5%).

Table 3 Frequency Distribution Based on Respondents' Sleep Quality

Sleep Quality	n	%
Good	80	37.6
Bad	133	62.4
Total	213	100

Source: Primary Data

Table 3 it shows that many respondents with poor sleep quality were 133 respondents (62.4%), and 80 respondents with good sleep quality (37.6%).

Analyst Bivariate

Table 4 Smartphone Usage Relations with Sleep Quality

Smartphone use	Sleep Quality				Total	p-value
	Good		Bad		n %	
Tall		2.4	109	51.1	114 53.5	
Currently	75	35.2	24	11.3	99 46.5	0.000
Amount	80	=37.6	133	62.4	213 100	

The results of the study in table 4 show that many respondents use smartphones in the high category, 114 respondents (53.5%), which are divided into good sleep quality, 5 respondents (2.4%) and poor sleep quality, 109 respondents (51.1%). While 99 respondents (46.5%) moderate smartphone use, with 75 respondents (35.2%) good sleep quality and 24 respondents (11.3%) with poor sleep quality . The statistical test results with the chi square test which refers to the Fisher's Exact Test value obtained p .value 0.000 where <0.05 indicates H0 is rejected and Ha is accepted, which means that there is a relationship between smartphone use and sleep quality in adolescent students of SMA Negeri 1 West Seram.

Smartphone use

The results of the study showed that most of the respondents used smartphones in the high category of 114 respondents (53.5%). While the use of smartphones in the medium category, 99 respondents (46.5%). This high use of smartphones can be seen in 142 students (66.7%) who use smartphones > 2 hours/day consisting of always using > 2 hours/day 51 respondents (23.9%) and very often 91 respondents (42.7%). In addition, when using a smartphone , > 15 minutes at a time, 157 respondents (73.7%) were found, consisting of always using a smartphone , > 15 minutes at a time using several 80 respondents (37.6%) and very often several 77 respondents (36.2 %). These results are in line with (Wijaya, 2021), as many as 48 respondents (48%) had a low level of smartphone addiction and as many as 52 respondents (52%) had a high level of smartphone addiction. (Pebriani & Marleni, 2020), proved that out of 150 total respondents, high smartphone usage was 80 respondents (53.3%), moderate 68

respondents (45.3%) and low 2 respondents (1.3%). Impact the use of smartphones in adolescents includes using social media in their gadgets , causing more time to be used to play gadgets (Wijaya, 2021). Using smartphones for a long time causes them to need about 60 minutes longer to fall asleep than usual. Thus, these teenagers will tend to sleep later than usual.

The sophistication and convenience provided by smartphones today causes many people to be trapped in always using smartphones (Mawitjere dkk., 2017). In the opinion of the researcher, most of the respondents had high smartphone use because smartphones had influenced every aspect of the respondents where at the age of their teens, they began to be trusted to have their own smartphone and most of them already had a dependency on smartphones . Smartphone dependence continues to increase in adolescents so that it interferes with planning work that should be done because they are too engrossed in using smartphones , so that they lose concentration in class, when doing assignments, or at work because of their addiction to smartphones.

Teenagers make smartphones a necessity so that they often forget the time and carry out activities using smartphones late at night, for example they constantly check their smartphones, so they don't miss conversations between other people on Twitter or Facebook.

Adolescent Sleep Quality

Often the quality of sleep is not fulfilled in adolescents because adolescents have a different pattern compared to other ages. This is since at the end of puberty, adolescents experience a few changes that often reduce sleep time. Teenagers sleep more often at night and wake up faster because of school demands, so teenagers are often excessively sleepy during the day (Syamsoedin dkk., 2015) The impact of poor sleep quality, among others, will experience various negative things including being prone to accidents, physical health problems, impaired memory and learning, high risk of obesity and mental health problems (Keswara dkk., 2019).The results showed that the majority of respondents with poor sleep quality were 133 respondents (62.4%). 80 respondents (37.6%) with good sleep quality. This result is in line with the findings on the sleep quality of students at SMA Negeri 2 Kota Bangun, based on research it was found that 59 respondents (47.2%) got good sleep quality and 66 respondents (52.8%) experienced poor sleep quality %) (Lakshono, 2018b). (Hotijah dkk., 2021)with findings from 103 total respondents who experienced poor sleep quality 91 respondents (88.3%) and good sleep quality 12 respondents (11.7%).

Disorders of the need for sleep can occur in everyone, including students and students. (Sastrawan & Griadhi, 2017), revealed that adolescents and young adults are in the age range that is at risk of having sleep disorders or poor sleep quality. This is reinforced by (Syamsoedin dkk., 2015), which explains that poor sleep quality in young adults can be caused by factors of social activity and electronic activities such as internet access, gadgets and computers. In line with Lemola et al in (Pebriani & Marleni, 2020)who reported that smartphones are electronic media that teenagers often

use in bed before they go to sleep, especially calling, sending messages, and spending time online.

CONCLUSION

The following conclusions can be drawn :

Most of the use of smartphones *by* students of SMA Negeri 1 Seram Barat is in the high category. The sleep quality of the students of SMA Negeri 1 Seram Barat, mostly, is of poor quality. There is a relationship between the use of *smartphones* and the sleep quality of students at SMA Negeri 1 Seram Barat

Suggestion

Especially for teenagers using *smartphones* wiser and able to control themselves so that they only use *smartphones* for important things such as sharing time for study and entertainment as needed so as not to cause health problems and *smartphone addiction.*

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