

# The Relationship Between Knowledge and Attitudes Toward Night Time Social Media Use and Adolescent Sleep Quality at Sentosa Bhakti OKU High School

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**Abstract**—Social media is an important part of adolescent life, but excessive use of it at night can affect sleep patterns. Exposure to blue light from mobile devices can reduce the production of melatonin, a hormone that regulates sleep, resulting in difficulty sleeping and poor sleep quality. Poor sleep patterns have an impact on quality of life, including physical and mental health. This study aims to determine the relationship between the level of knowledge and attitudes about using social media at night and the quality of sleep patterns of adolescents at SMA Sentosa Bhakti Oku. This research employed a quantitative approach with a cross-sectional design. The study population was 127 respondents from grade X SMA Sentosa Bhakti Oku who were selected using the total sampling technique. The research instruments were questionnaires on knowledge, adolescent attitudes, and sleep pattern quality. Data analysis was performed univariably and bivariately utilizing the chi-square test. The results of this study showed a significant relationship between the level of adolescent knowledge about the impact of social media on their sleep patterns. Adolescent attitudes towards using social media at night also affect sleep quality, with the results of the chi-square analysis showing a significant relationship between knowledge of using social media at night and sleep pattern quality ( $p$ -value = 0.000). And the attitude of social media use at night on the quality of sleep patterns ( $p$ -value = 0.000). Knowledge and attitudes towards social media use have a significant relationship with the quality of adolescent sleep patterns. Researchers suggest that educating about the wise use of social media at night is needed to improve the quality of adolescent sleep.

**Keywords**— Knowledge and attitudes, social media, sleep pattern quality, adolescents.

## I. INTRODUCTION

Social media is a digital platform or application used by most people in the world, one of the countries that use social media is Indonesia, Indonesia is one of the most popular social media users, social media itself is an online media through internet-based applications and the most social media users are teenagers (Woran *et al.*, 2021).

Social media is also a facility provided for users, especially for adolescents, the use of social media for too long can also result in decreased sensitivity such as impacting the quality of sleep patterns, poor quality sleep patterns have an impact on decreased memory and difficulty concentrating. (Margareth, 2023).

The development of social media itself in Indonesia in 2021 reached 170 million (61.8% of the total population in Indonesia). Meanwhile, in 2022 it reached 191 million in January 2022. An increase of 21 million or 12.6% from 2021. Hootsuite (We are social (2021-2022)). Then in 2023 it has reached a total of 167 million social media usage, 153 of which is the use of social media in adolescents who make up 79.5% of the total population in Indonesia (Logica, 2023). The majority of the Indonesian population has accessed the internet, many teenagers also use the internet as many as 48.2% of teenagers aged 7-17 years have accessed social media, this data was released by the Central Statistics Agency (BPS, 2021). The use of social media worldwide is also almost five billion (59.4% of the world's population) who are

active social media users and spend more than two and a half hours on social media every day (Ahmed *et al.*, 2024).

Teenagers spend a lot of time only online social media, including at night. This can interfere with the sleep process and will cause poor sleep quality and patterns, as they should sleep without the burden of thoughts, in fact, when they are about to start sleeping they are still struggling with social media for a long time, which has an impact on their sleep quality. (Cintya Yunita Dewi *et al.*, 2023).

Good sleep quality will produce freshness and fitness when awakened, among adolescents today a lot of irregular sleep quality. This is because teenagers use a lot of their rest time for social media. (Di *et al.*, 2020).

Sleep is a fundamental human requirement that is essential for physical growth and intellectual progress. During adolescence, it is very common to experience sleep disturbances, adolescents need 8 to 10 hours of sleep every night to prevent fatigue and susceptibility to infection. (Yankes Kemenkes, 2024).

Poor sleep quality can have an impact on memory decline, difficulty concentrating, and this can cause serious health problems, good sleep quality can be seen from the time it takes to fall asleep and can also be seen from how long sleep time (Margareth, 2023).

The high use of social media among adolescents contributes to irregular sleep patterns, the majority of adolescents sleep less than 7 hours per night and this is considered unhealthy for the body (Haryati, 2020).

Rest and sleep are physiological needs that must be met in every teenager. The inability of adolescents to manage the time spent on social media use will have an impact on irregular sleep patterns and it will cause insomnia (Gede Purnawinadi and Salii, 2020). One of the impacts of prolonged use of social networks is disturbed sleep patterns (insomnia) (Renaldo Fernando and Ridha Hidayat, 2020).

Menurut Kemenkes RI. (2022). The effects of sleep deprivation can reduce cognitive abilities, including attention, concentration, and the ability to solve problems. This can lead to difficulties in learning and performing at school or work. There are also effects of lack of sleep that can cause decreased immune function such as weakened immune response, and can increase the risk of infections and diseases that attack the body.

Meanwhile, according to Permatasari, A. D., A. S., Sutrisno, & A. A., (2023), states that adequate sleep time will provide a sense of freshness and high energy when waking up and it will make our bodies fresh. According to (Hello healthy (2023) There is also the effect of adequate sleep on the health of the body, namely adequate sleep helps increase the production of cytokines, proteins that play a role in fighting infection and inflammation. With a strong immune system, the body is better able to fight infectious diseases such as flu and respiratory infections.

Thus, it can be seen from the data, issues and previous researchers that the research topic on the Relationship between the Level of Knowledge and Attitudes of Using Social Media at Night Towards the Quality of Sleep Patterns is very important to develop so that researchers wish to research related to this theme.

## II. RESEARCH METHODS

This type of Quantitative Research with a cross-sectional design produces several findings that can be achieved using several statistical procedures or other ways of quantification (measurement). The quantitative approach is more focused on symptoms or phenomena that have certain characteristics in human life, the quantitative approach is essentially the relationship between the variables analyzed using objective theory (Darussalam et al., (2019). The population in this study were male and female adolescents aged (7-17 years) at Sentosa Bhakti High School in 2024 totaling (127 students). The sampling technique used Total Sampling, the sample of this study amounted to 127 people. The data analysis used in the study was the chi square test at the 95% confidence level.

## III. RESEARCH RESULT

### 1. To Know the Frequency Distribution of Respondent Characteristics Data

#### a. Age Frequency

TABLE 1. Age Frequency

Year	Frequency	Percent
14 Year	16	12.6
15 Year	57	44.9
16 Year	48	37.8
17 Year	6	4.7
Total	127	100.0

Based on table 1. The highest frequency of age is 15 years, totaling 57 (44.9%) respondents and the least is the age of 17 years, totaling 6 (4.7%) respondents.

#### b. Frequency Gender

TABLE 2. Frequency Gender

Gender	Frequency	Percent
Male	45	35.4
Female	82	64.6
Total	127	100.0

Based on table 2. The highest frequency of gender is female, totaling 82 (64.6%) respondents and the least is male, totaling 45 (35.4%) respondents.

### 2. Frequency Distribution of Knowledge about the Use of Social Media at Night at Sentosa Bhakti OKU High School

TABLE 3. Frequency Distribution of Knowledge about the Use of Social Media at Night at Sentosa Bhakti OKU High School

Knowledge	Frequency	Percent
High (12-15)	45	35.4
Medium(8-11)	61	48.0
Low(0-7)	21	16.5
Total	127	100.0

Based on table 3. The frequency of knowledge about the use of social media at night at Sentosa Bhakti OKU High School, the most is moderate knowledge, totaling 61 (48.0%) respondents and the least is low knowledge, totaling 21 (16.5%) respondents.

### 3. Frequency Distribution of Attitudes About the Use of Social Media at Night at Sentosa Bhakti OKU High School

TABLE 4. Frequency Distribution of Attitudes About the Use of Social Media at Night at Sentosa Bhakti OKU High School.

Attitudes	Frequency	Percent
Positive (59-80)	53	41.7
Netral (38-58)	52	40.9
Negative (16-37)	22	17.3
Total	127	100.0

Based on table 4. The frequency of attitudes about the use of social media at night at Sentosa Bhakti OKU High School, the most is a positive attitude of 53 (41.7%) respondents and the least is a negative attitude of 22 (17.3%) respondents.

### 4. Frequency Distribution of Respondents' Sleep Pattern Quality at Sentosa Bhakti OKU High School

TABLE 5. Frequency Distribution of Respondents' Sleep Pattern Quality at Sentosa Bhakti OKU High School

Quality of sleep patterns	Frequency	Percent
Good (0-8)	45	35.4
Enough (9-16)	61	48.0
Less (17-26)	21	16.5
Total	127	100.0

Based on table 5. The frequency of the quality of respondents' sleep patterns at Sentosa Bhakti OKU High School, the most

is enough, totaling 61 (48.0%) respondents and the least is less, totaling 21 (16.5%) respondents.

5. *The Relationship Between the Level of Knowledge of Social Media Use at Night on the Quality of Sleep Patterns at Sentosa Bhakti OKU High School*

TABLE 6. The Relationship Between the Level of Knowledge of Social Media Use at Night on the Quality of Sleep Patterns at Sentosa Bhakti OKU High School

Knowledge	Quality Of Sleep Patterns				p-value
	Good	Enough	Less	Total	
High	44	1	0	45	,000
Medium	4	56	1	61	
Low	0	1	20	21	
<b>Total</b>	48	58	21	127	

Based on table 6. Chi-square results obtained the p-value obtained is 0.00. Interpretation: Because the p-value <0.05, it can be concluded that there is a significant relationship between the level of knowledge about the use of social media at night and the quality of adolescent sleep patterns. This means that the higher the knowledge of adolescents about the impact of using social media at night, the better the quality of their sleep patterns.

6. *The Relationship Between Attitudes Toward Social Media Use at Night and Sleep Pattern Quality at Sentosa Bhakti OKU High School*

TABLE 7. The Relationship Between Attitudes Toward Social Media Use at Night and Sleep Pattern Quality at Sentosa Bhakti OKU High School

Attitudes	Quality Of Sleep Patterns				p-value
	Good	Enough	Less	Total	
Positive	47	6	0	53	,0000
Netral	1	51	0	52	
Negative	0	1	21	22	
<b>Total</b>	48	58	21	127	

Based on table 7. Chi-square results obtained the p-value obtained is 0.000. Interpretation: Since the p-value <0.05, it can be concluded that there is a significant relationship between attitudes towards the use of social media at night and the quality of adolescent sleep patterns. This means that a positive attitude towards the use of social media at night tends to have better quality of sleep patterns.

IV. DISCUSSION

Basic human needs such as sleep quality are often underestimated so that low sleep quality in adolescents can have an impact on various health problems. One of the factors associated with sleep quality in adolescents is the use of social media (Habibah *et al.*, 2021). Social media is an online media through internet-based applications that allows everyone to interact and share various activities. Most social media users are teenagers. Excessive use of social media can have a negative impact on adolescents such as poor quality of adolescent sleep (Athiutama *et al.*, 2023).

This study involved 127 respondents with the majority aged 15 years as many as 57 (44.9%), the second most aged 16 years as many as 48 (37.8%) and 14 years totaling 16 (12.6%). While the lowest result of this study is the age of 17

years totaling 6 (4.7%). Based on the gender of social media users, the majority of teenage girls with a percentage (64.6%) and boys (35.4%). The majority of the Indonesian population has indeed accessed the internet, many teenagers also use the internet as many as 48.2% of teenagers aged 7-17 years have accessed social media. This data was released by the Central Statistics Agency (BPS,2021). Social media users have an influence on sleep duration and quality, and most social media users are adolescents, so social media use has left a profound influence on a group of adolescents (Liu, 2023). Most social media users are female as many as 37 (63.8%), and men 21 (36.2%). This is because women are more active in using social media than men (Riyadi & Udin, 2020).

Research on adolescents' knowledge about the use of social media at night is dominant 61 (48.0%), high 45 (35.4%) while low 21 (16.5%). Knowledge possessed by humans is the result of efforts made by humans in finding the truth or the problem at hand (Darsini *et al.*, 2019). Adolescents' ignorance about the habit of spending a long time using social media results in disruption of rest and sleep patterns resulting in poor sleep quality (Woran *et al.*, 2021).

Research related to adolescents' attitudes about using social media at night found that the highest adolescent attitude was positive with 53 (41.7%), Neutral 52 (40.9%) and Negative 22 (17.3%). Good time management in using social media is needed to maintain quality sleep because poor sleep quality can have a negative impact on concentration and overall health (Muhammad *et al.*, 2024). Excessive use of social media can be associated with the emergence of antisocial attitudes in adolescents (Pratama, 2019). Researchers (Fasha & Alfurqan, 2024) also said that the higher the intensity of social media use, the more severe the level of stress experienced because excessive social media use can trigger this.

Research on the quality of adolescent sleep patterns obtained a high quality of sleep patterns, namely Sufficient 61 (48.0%), Good 45 (35.4%) and less 21 (16.5%). Basic human needs, such as sleep quality, are often underestimated that low sleep quality in adolescents can affect various health problems. One of the factors associated with sleep quality in adolescents is the use of social media. The results of this study indicate a significant relationship between the intensity of social media use and sleep quality in adolescents. This suggests that adolescents should reduce the intensity of social media use to improve their sleep quality (Habibah *et al.*, 2021). The use of these gadgets is feared to cause gadget addiction and have consequences for health, one of which causes sleep quality to be hampered. There is a significant relationship between the intensity of gadget use and sleep quality in adolescents (Dyna Apriany *et al.*, 2021).

From the results of the Chi-square analysis, the p-value obtained is 0.00. Interpretation: Because the p-value <0.05, it can be concluded that there is a significant relationship between the level of knowledge about the use of social media at night and the quality of adolescent sleep patterns. This means that the higher the knowledge of adolescents about the impact of using social media at night, the better the quality of their sleep patterns. This result is also shown by Woran *et al.*, (2021) adolescents' lack of knowledge about excessive social

media use has an impact on their sleep quality, there is a relationship between social media use and sleep quality in adolescents. There is also a relationship between the intensity of excessive social media use at night and disruption of adolescent sleep quality (Cintya Yunita Dewi *et al.*, 2023). Poor sleep quality has an impact on memory decline, difficulty concentrating, causing serious health problems. Good sleep quality is seen from the depth of sleep such as the length of sleep, the time it takes to fall asleep, the frequency of awakening. Good sleep quality can be used to maintain mental balance, emotional, health, and reduce stress (Margareth, 2023).

The Chi-square analysis results show that the p-value obtained is 0.00. Interpretation: Since the p-value is  $<0.05$ , it can be concluded that there is a significant relationship between attitudes towards using social media at night and the quality of adolescent sleep patterns. This means that a positive attitude towards the use of social media at night tends to have a better quality of sleep patterns. Other results were also found by researchers Logica, (2023). The use of social media has an impact on generation Z's sleep behavior patterns which can lead to addiction to continue playing it such as a less caring attitude towards time, place and attitude towards the environment and changes in social values or behavior. They will tend to be able to endure hours of lying down and being lazy in a day. It is important to remember that the impact of social media use on sleep patterns can vary between individuals. Other researchers have also shown that prolonged social media use results in decreased sensitivity such as decreased levels of sympathy and empathy for the real world and also impacts sleep quality. The inability of adolescents to manage their time using social media well while at school and at home, will have an impact on the irregularity of rest and sleep patterns in adolescents (Margareth, 2023).

The use of social media also has advantages and disadvantages that we need to consider, the advantages of using social media are access to fast information, a wide social network, a means for self-expression learning. And there are disadvantages in using social media, namely the spread of misinformation, addiction and mental disorders (Damayanti *et al.*, 2023). It should be limited in the use of social media, use social media 30 minutes to 2 hours per day. Use social media at certain times, such as during breaks or after work. Avoiding use at critical times such as while studying or working can increase productivity (Hermila A, Ashari, R.L Bau, & Sitti, 2023). Irregular sleep patterns or the use of electronic devices before bed can affect sleep quality usually influenced by stress anxiety, and depression, Sound, light, and bed comfort also play an important role in sleep quality. Exposure to blue light from mobile devices can reduce the production of melatonin, a hormone that regulates sleep, resulting in difficulty falling asleep and poor sleep quality (Hermila A, Ashari, R.L Bau, & Sitti, 2023).

## V. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Based on the results of the research that has been done, the following conclusions can be drawn:

1. *Frequency distribution of age and gender*
  - a. The age frequency of the results of this research is the majority of 15 years old (44.9%), 16 years old (37.8%), 14 years old (12.6%) and the lowest age of 17 which is (4.7%). From the results of the research on the frequency of gender also obtained the results that the most respondents were female respondents totaling 82 students and male respondents totaling 45 students.
  - b. The results of this study show that the majority of female teenagers who use social media are 82 students with a percentage (64.6%) and 45 male students with a percentage (35.4%).
2. *Frequency distribution of knowledge about the use of social media at night at Sentosa Bhakti OKU High School.*  
The results of the frequency distribution of answers regarding adolescents' knowledge about the use of social media at night at Sentosa Bhakti OKU High School found that adolescents' knowledge about the use of social media at night was dominant at 48.0%, as many as 61 adolescents, high 35.4% with 45 respondents, while low 16.5% with 21 respondents.
3. *Frequency distribution of attitudes about the use of social media at night at Sentosa Bhakti OKU High School.*  
The frequency distribution of answers regarding adolescents' attitudes about the use of social media at night at Sentosa Bhakti OKU High School found that the highest attitude of adolescents about the use of social media at night was positive 41.7% with 53 respondents, Neutral 40.9% with 52 respondents and the least was Negative 17.3% with 22 respondents.
4. *Frequency distribution of respondents' sleep pattern quality at Sentosa Bhakti OKU High School.*  
The frequency distribution of answers regarding the use of social media at night with the quality of adolescent sleep at SMA Sentosa Bhakti OKU found that the highest quality of adolescent sleep was Fair 48.0% with 61 respondents, Good 35.4% with 45 respondents and less 16.5% with 21 respondents.
5. *The relationship between the level of knowledge of using social media at night on the quality of adolescent sleep patterns at Sentosa Bhakti OKU High School.*  
Chi-square analysis results show the p-value obtained is 0.00. Interpretation: Because the p-value  $<0.05$ , it can be concluded that there is a significant relationship between the level of knowledge about the use of social media at night and the quality of adolescent sleep patterns. This means that the higher the knowledge of adolescents about the impact of using social media at night, the better the quality of their sleep patterns.
6. *The relationship between the attitude of using social media at night to the quality of sleep patterns at Sentosa Bhakti OKU High School.*  
The Chi-square analysis results show that the p-value obtained is 0.00. Interpretation: Because the p-value  $<0.05$ , it can be concluded that there is a significant relationship between attitudes towards the use of social media at night and

the quality of adolescent sleep patterns. This means that a positive attitude towards the use of social media at night tends to have better quality of sleep patterns.

**Recommendations**

1. For the School Always hold a lecture on the importance of adequate sleep.
2. Teenager are advised to avoid using social media before bed and limit the time of using social media

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