

## Gadget Usage Connection With Sleep Patterns Of 12-15 Year Old Teenagers In Wonocolo Village, Kedewan District, Bojonegoro Regency

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### ABSTRACT

Continuous gadget usage will have a negative impact on teenager's behavior patterns in their daily lives. Of course, excessive use of gadgets can disrupt sleep patterns in children. Data analysis using Chi-Square test. The results obtained mostly with excessive gadget usage, namely 44 respondents (83%), mostly with poor sleep patterns, namely 41 respondents (77.4%) and there is a relationship between gadget usage and sleep patterns of teenagers aged 12-15 years in the village. Wonocolo, Kedewan District, Bojonegoro Regency in 2022 ( $p = 0.000$ ;  $r = 0.716$ ). In teenagers with excessive gadget usage, it can lead to poor sleep patterns, and conversely in teenagers with ideal gadget usage, the risk of disturbed sleep patterns will be minimal

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## 1. INTRODUCTION

In the current modern era, technological developments are increasing, this is indicated by the emergence of new products that aim to facilitate habits in daily activities. One of the most popular products among children and teenagers is gadgets. The definition of a gadget is an electronic device with a practical use model and has a special function. Gadgets function as media to facilitate work, communication tools or as entertainment media and so on [1, p. 3]. Gadgets themselves can be computers or laptops, tablet PCs, and also cell phones or smartphones. However, the continued use of gadgets will have a negative impact on children's behavior patterns in their daily lives, children who tend to constantly use gadgets will be very dependent and become activities that children must and routinely do in their daily activities. Of course, excessive use of gadgets can disrupt sleep patterns in children. Sleep pattern is a model, form or pattern of sleep in a relatively sedentary period of time and includes sleep and wake schedules, sleep rhythm, frequency of sleep in a day, maintaining sleep conditions and sleep satisfaction [2, p. 14]. Sleep disturbances in children are indicated by an inadequate amount of sleep time. Children with sleep disorders can experience learning and memory problems at school, irritability, mood changes, difficulty maintaining attention, and changes in behavior such as aggressiveness, hyperactivity, or impulsivity [3]. The impact of excessive use of gadgets is decreasing children's learning achievement, increasing absence rates from school and reducing body resistance so that they are susceptible to disease [4]. The phenomenon of excessive use of gadgets is often found in children aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency. The phenomenon of using gadgets has occurred among the community, especially in adolescents, especially in early adolescence (age 12-15 years). At this time, adolescents experience very rapid physical changes and very intensive intellectual development so that children's interest in the outside world is very large.

According to Newzoo, there will be around 3.6 billion smartphone users in the world in 2020. This number has increased compared to the previous year's 3.4 billion users. The number of smartphone

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users is also predicted to increase in the future. By 2023, Newzoo projects there will be 4.3 billion smartphone users globally. Meanwhile, in Indonesia in 2021 there will be 170.4 million smartphone users. Smartphone penetration in the country has reached 61.7% of the total population [5]. Based on a preliminary survey conducted on 10 children aged 12-15 years in Wonocolo Village in February 2022, it is known that all children use gadgets in the form of smartphones, where the average use is more than 2 hours a day. The use of gadgets is to access the internet, watch videos (Youtube), chat (Facebook, WhatsApp, Twitter, Instagram) and play games.

Gadget is devices or instruments that have practical purposes and functions that are specifically designed to be more sophisticated than the technology created before [6, p. 3]. For today's children, having a gadget is a necessity, almost all children abuse it, electronic media does have a positive impact on academic abilities if it is used effectively as a learning tool, but there are still many children who abuse these gadgets. Over the last few years, the use of gadgets has increased substantially and has given rise to growing concern about the effects on health. Excessive use of gadgets will certainly reduce direct interactions with friends, family and other people around because gadgets bring those who are far closer and keep those who are near away. If already play gadgets, teenagers will enjoy themselves and are lazy to do other activities so that teenagers are at high risk of developing addiction to playing gadgets. Using gadgets before bed stimulates physiological and psychological effects that can affect sleep. Using gadgets before going to bed will delay the human body's internal clock (circadian rhythm), suppress the release of the sleep-inducing hormone melatonin, and make it more difficult to fall asleep [7]. Symptoms of difficulty falling asleep are commonly known as insomnia. This situation is the most common complaint that can be temporary or persistent. With the occurrence of sleep disorders will certainly affect the quality and quantity of a person's sleep [8, p. 94].

Efforts that can be made to prevent or deal with the problem of gadget addiction in children aged 12-15 years are the first by increasing socializing time with friends, the second by turning off gadgets 30-60 minutes before bedtime, the third by deleting applications that cause addiction and the fourth is by finding out more about the effects of gadget addiction [9]. In addition, educational interventions regarding the use of appropriate gadgets from various parties, especially in the family environment, which includes providing education, guidance and assistance to adolescents, especially by parents, are needed to direct the development of the potential of these adolescents so that they develop in a positive and productive direction. Then the school environment and community environment are also needed in providing educational interventions to adolescents. Educational interventions must be consistent and balanced, both from the family/parents, school, and community. Good cooperation between these three components must be forged as well as possible so that simultaneously it can prevent youth from developing in a negative direction and encourage youth to develop in a positive and productive direction [10]. Electronic media and technology, like Gadgets, have various benefits for the development of human resources. However, the lack of supervision and control from parents/caregivers as well as the ease with which children can access these electronic media will lead to a decrease in sleep quality, both in terms of quantitative (sleep duration) and qualitative terms. In addition, time that can actually be used for other activities that are more useful, such as sports, physical activity, reading and spending time with family will decrease because children are too busy with their gadgets. This research is expected to provide information related to "The connection between the use of gadgets and the sleep patterns of adolescents aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency."

## 2. METHOD

Correlational analytic research design, cross sectional approach. The population is all adolescents aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency. In 2022, there are 112 children, a sample of 53 respondents was obtained using the simple random sampling technique. The independent variable is the use of gadgets and the dependent variable is sleep patterns. Instrument using a questionnaire. Data processing by editing, scoring, coding, tabulating and data analysis using the Chi-Square test.

### 3. RESULTS AND DISCUSSION

#### Respondent Characteristics

Tabel 1. Characteristics of the sex of the respondents

| Sex   |    |       |
|-------|----|-------|
| Boy   | 21 | 35.6% |
| Girl  | 32 | 64.4% |
| Total | 53 | 100%  |

Based on Figure 1, it can be seen that of the 53 respondents, more than half were girl, namely 32 respondents (60.4%).

Tabel 2. Characteristics of the age of the respondents

| Age      |    |       |
|----------|----|-------|
| 12 years | 7  | 13.2% |
| 13 years | 8  | 15.1% |
| 14 years | 28 | 52.8% |
| 15 years | 10 | 18.9% |
| Total    | 53 | 100%  |

Based on Figure 2, it can be seen that of the 53 respondents, more than half were 14 years old, namely 28 respondents (52.8%), and a small portion aged 12 years, namely 7 respondents (13.2%).

Tabel 3. Characteristics of the respondent's education

| Education          |    |       |
|--------------------|----|-------|
| Junior high school | 49 | 92.5% |
| Senior high school | 4  | 7.5%  |
| Total              | 53 | 100%  |

Based on Figure 3, it can be seen that of the 53 respondents, the majority were currently undergoing junior high school education, namely 49 respondents (92.5%).

Tabel 4. Characteristics of the work of the respondent's parents

| Parent's job     |    |       |
|------------------|----|-------|
| Civil worker     | 5  | 9.4%  |
| Non civil worker | 12 | 26.4% |
| Farmer           | 34 | 64.2% |

Tabel 5. Characteristics of the number of siblings in the respondents

| Siblings |    |       |
|----------|----|-------|
| 0        | 8  | 15.1% |
| 1        | 15 | 28.3% |
| 2        | 16 | 30.2% |
| >2       | 14 | 26.4% |
| Total    | 53 | 100%  |

Based on Figure 5, it can be seen that of the 53 respondents, less than half had 2 siblings, namely 16 respondents (30.2%) and a small proportion did not have siblings, namely 8 respondents (15.1%).

#### Research variable data

- 1) Use of gadgets in children aged 12-15 years

Table 1 Distribution of gadget use in children aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency

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| Use of gadget | n  | (%) |
|---------------|----|-----|
| excessive     | 44 | 83  |
| Ideal         | 9  | 17  |
| Total         | 53 | 100 |

Based on table 1, it can be seen that of the 53 respondents, most of them used excessive gadgets, namely 44 respondents (83%) and a small number used ideal gadgets, namely 9 respondents (17%).

#### 2) Sleep patterns in children aged 12-15 years

Table 2 Distribution of sleep patterns in children aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency

| Sleep pattern | n  | (%)  |
|---------------|----|------|
| Poor          | 41 | 77,4 |
| Good          | 12 | 22,6 |
| Total         | 53 | 100  |

Based on table 2, it can be seen that of the 53 respondents, most of them had poor sleep patterns, namely 41 respondents (77.4%) and a small proportion with good sleep patterns, namely 12 respondents (22.6%).

#### 3) The connection between the use of gadgets and sleep patterns of adolescents aged 12-15 years

Table 3 Cross-table of the connection between the use of gadgets and sleep patterns of adolescents aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency

| Gadget usage | Sleep pattern |      |      |      | Total |     |
|--------------|---------------|------|------|------|-------|-----|
|              | Poor          |      | Good |      | f     | %   |
|              | F             | %    | f    | %    |       |     |
| Excessive    | 40            | 90,9 | 4    | 9,1  | 44    | 100 |
| Ideal        | 1             | 11,1 | 8    | 88,9 | 9     | 100 |
| Total        | 41            | 77,4 | 12   | 22,6 | 53    | 100 |

Based on table 3, it can be seen that of the 44 respondents with excessive use of gadgets, the majority had poor sleep patterns, namely 40 respondents (90.9%). Meanwhile, of the 9 respondents who used ideal gadgets, most of them had good sleep patterns, namely 8 respondents (88.9%).

Then from the results of the Chi Square statistical test, a significant value of  $p(0.000) < \alpha(0.05)$  was obtained, which means that H1 is accepted, which means that there is a connection between the use of gadgets and the sleep pattern of adolescents aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency . With a Phi / Cramer's coefficient value of 0.716, this means that the close connection between the use of gadget and the sleep pattern of adolescents aged 12-15 years is sufficient

#### 4. CONCLUSION

Teenagers aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency , mostly with excessive usage of gadgets and most of them have poor sleep patterns. There is a connection between the use of gadgets and the sleep patterns of teenagers aged 12-15 years in Wonocolo Village, Kedewan District, Bojonegoro Regency in 2022 with a sufficiently close strong connection (Phi / Cramer's coefficient 0.716).

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