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Effectiveness of the use of budgets with quality of sleep in the children of class IV and V in the S.D. The Nation Of The Vii City Of Bekasi

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ABSTRACT

Background: Excessive use of gadgets will have a negative impact on behavior patterns in daily activities. The more often you use gadgets, the more sleep quality is not fulfilled. The more children are allowed to use these gadgets will have a bad impact on children's health. Indonesia with a population of 268.2 million people, 150 million of whom are gadget users. This number has increased by 13% from 2018. In Indonesia, school-aged children aged 10-12 years still rank 2nd in the highest age group for using gadgets for more than 3 hours per day.In the province of West Java, the use of gadgets in children increased from January to December 2020, there were 98 children who were addicted to gadgets and were undergoing outpatient care. While in 2021 from January to February there are 14 children who are undergoing outpatient care due to gadget addiction.
The Purpose of the study : Determine the effectiveness of the use of gadgets with sleep quality in grade IV and V children in warrior VII state elementary schools in Bekasi city.
Research Method: The sample for this research is a portion of school children in grades IV and V at SD Negeri Pejuang VII in May 2023. With a total sample of 60 respondents and using the Random Sampling technique.
Research Results: The results of the Chi Square test show that there is effectiveness in using gadgets with sleep quality in school children in grades IV and V at SD Negeri Pejuang VII in 2023.
Conclusion: The effectiveness of using gadgets with sleep quality in grade IV and V school children at SD Negeri Pejuang VII in 2023.

Keywords: School Age Children, Use of gadgets, Quality of sleep

1. Introduction

Smartphones (gadgets) are telephones with an internet connection and provide Personal Digital Assistant (PDA) functions such as calendars, agenda books, calculators, notes and various sophisticated applications to help day-to-day activities. The elegance and convenience that smartphones provide today causes many people to be trapped to always be active using smartphones.

The number of gadgets used globally is increasing year by year. In 2019, there were at least 3.2 billion gadgets users, up to 5.6% from the previous year. While the number of active devices used reached 3.8 billion units. By 2022, the smartphone users are projected to reach 3.9 billion. This growth will be driven by emerging

regions, including the Middle East, Africa, Latin America, and Southeast Asia. (Newzoo,2019).

The largest number of Internet users (with access to gadgets) in Indonesia is in the age group of 15-19 years, while the second largest number is in age group 20-24 years and children with age group 5-9 years also belong as Internet users. So the data obtained from 171.17 million Internet users showed that adolescents or younger generations are the ones who use the Internet the most. (APJII, 2018).Of the total of 7.6 billion, 5.1 billion of them are gadget users. Indonesia has a population of 268.2 million people, 150 million of whom are internet users. That number has increased by 13% from 2018. (Hootsuite, 2019). In west Java increased in January to February 2021 there are 14 children suffering from gadget addiction and undergoing street care. (Ayunda, 2021).

Another research from Keswara dkk. in 2019 said that the habit of using gadgets with excessive duration can interfere with the mind, concentration, work and affect day-to-day life which in the end causes the quality of sleep disrupted.

According to the National Sleep Foundation, a normal need for 8-10 hours of sleep in teenagers and a healthy need for sleep for teenagers will result in better rest. For children and adolescents, adequate sleep is expected to support growth and concentration during school, which is why everyone should meet their sleep needs that are adapted to their age. (P2PTM Kemenkes RI, 2019).

Based on the background description above, then established the formulation of the problem of investigation is "Effectiveness of the use of Gadgets with Quality of Sleep in Classes IV and V in SD State Pejuag VII City Bekasi Year 2023?

Gadget is a sophisticated product that is created with a variety of applications that can serve a wide range of social networking news media, hobbies, even entertainment. This advanced product is seen in terms of the price that can not be described as cheap not only as a mere entertainment medium but with an application that keeps the gadget compulsory for use by people – people with business interests, or doing college and office tasks, but in fact the gadget is not only used by adults or older people (22 years or older), teenagers (12-21 years), but in children (7-11 years), and more ironically the gadget is used for children (3-6 years), which should not be worthy to use the gadget. (dalam Juliadi, 2018).

According to Utomo (2018) the features underlying the Gadget are as follows: a. Operating system b. Hardware c. Data manager d. Internet access e. Applications

Some factors that can affect the use of the gadget are: a. Internal factors The internal factors consist of factors that describe individual characteristics. High sensation levels (individuals with high sensation rates are more likely to experience boredom in routine activities), low self-esteem, high extra personality, low self control, high cell phone usage habits, high expeciancy effects and high personal pleasure can be predictions of an individual's vulnerability to gadget addiction.

b. External Factors The external factors come from the outside of the individual, this factor is related to the high media exposure about handheld phones, current trends.

c. Situational factors consist of factors that lead to the user of a handheld phone as a means of making an individual feel psychologically comfortable when faced with uncomfortable situations, high levels of stress, sadness, loneliness, anxiety, learning saturation, and leisure withedom (no activity in leisure time) can be the cause of gadget addiction.

d. Social factors The social factors consist of the factors that cause gadget addiction as suggestions to interact and keep in touch with others. This factor consists of a higher mandatory behavior and a higher connected presence.

According to Pahrul (2018) the impact of the use of gadgets is: The positive impact of using gadgets a. Makes it easier to communicate with others who are far away b. Facilitates someone to access the internet c. As well as facilitates students active in social media The negative impact of gadget use According to Muflih (2017) gadgets have negative effects among others: a. Make users addicted to gadgets b. Reduces brain power c. Vision becomes disturbed d. Intercation with families is reduced

Nursing theory is a set of ideas, definitions, relationships and expectations or suggestions derived from nursing models or from other disciplines and purposive designs, systematic views of a phenomenon by designing specific relationships between concepts in order to describe, explain, predict, and or control existing phenomena. The conceptual model of nursing is to describe a condition that occurs in an environment or a stressor that causes an individual to create adaptive change using available resources.

There are three approaches in the development and formation of nursing theory, namely: 1) borrowing the theory from a discipline relevant to the purposes of nurse and integrating it into the science of Nurse. 2) Analysing a situation of practice nurses in order to find concepts related to the practice of the nurse. 3) Creating a conceptual framework that enables the developers of theory nursed.

Sleep is a very important process for humans, because in sleep there is a recovery process, it is beneficial to restore a person's condition to its original state, so that the body that was once exhausted will be refreshed again. (Ulimudiin, 2018). Sleep quality covers both quantitative and qualitative aspects of sleep, such as sleep length, time needed to fall asleep, wake-up frequency and subjective aspects such as depth and intensity of sleep. (Buysse et al, 2018).

Sleep type Every night a person experiences two different and alternating types of sleep: sleep (Rapid-Eye Movement) and non-REM (Non Rapid Eye Movement). (Rafknowledge, 2016).

a. REM sleep occurs when we dream things that are characterized by high mental, and physical activity. Characteristics include heart rate, blood pressure, and the same way we breathe as when we wake up. REM sleep time is about twenty minutes and occurs during sleeps up to five times a day.

b. Non-REM sleep has four levels. As long as the deepest levels continue (3 and 4), the person will be quite difficult to wake up, the non-REM sleep status becoming lighter. On the fourth floor. Sleep feels refreshing. During this period, the body repairs itself using a hormone called somastostatin. Scientists define that the best sleep is sleep that experiences the exact combination between experiencing REM and no-REM.

Sleep functions and purpose are not clearly known, but it is believed that sleep can be used to maintain mental, emotional, health, reduce stress on the lungs, cardiovascular, endocrine and others. In general, there are two effects of sleep physiology: first, the effect on the nervous system is expected to restore normal sensitivity and balance between the various nervous arrangements, and secondly on

the body structure by restoring freshness and function in the organs of the body because during sleep there is a decrease. (Bruno, 2019).

Factors of Sleep Difficulty According to Widiyanto (2016), factors of mild or temporary sleep difficulties: a. Stress b. Use of gadgets c. Humidity/noise d. Difference in air temperature e. Changes in the environment around f. Incorrect sleep schedule of waking up g. Side effects of treatment

The school age is a time when vulnerable children are selfish, stubborn, emotionally still lame, fighting and rebelling against the rules given by parents with the aim of gaining freedom and high curiosity. The developmental stage of the school age is a crucial time for the survival of the child's development. The support of parents, teachers, and the community is very important. The main characteristic of school age is that they show individual differences in many aspects and fields, including differences of intelligence, language ability, personality development and physical development. All children have the same number of developmental aspects but different developmental developmental abilities. Every child has its own advantages and disadvantages, some superior in academic terms but inferior in non-academic terms. This is caused by a number of factors, such as genetic factors and environmental factors. (Mthiyane & Hugo, 2019).

Development can be understood as a process of quantitative and qualitative change in the individual's lifetime, from conception, infancy, childhood, adolescence to adulthood. Development can also be interpreted as a change in an individual or organism, both physical (musical) and psychological (psychological) to the level of maturity or maturity that takes place systematically, progressively, and continuously.

Individual development is an integration of biological, cognitive, and socio-emotional processes. Thus, the object of evolutionary psychology is the process of change that occurs within the individual and encompasses several aspects as implications. (Latifa, 2017).: a. Physical and motor aspects relate to physical and motor development that includes physical structure, nervous system, muscle strength, and endocrine glands that lead to the emergence of new patterns of behavior. School-age children enjoy playing with physical powers such as running, jumping and manipulative skills such as drawing and writing. By the age of 8-11 years, children are usually able to do all kinds of sports such as running, jumping ropes, swimming and riding a bicycle.

b. Cognitive or intellectual aspects of cognitive development is a learning process that refers to the mind and the way it works. A school-age child should already have the ability to understand an object and recognize the cause and effect of a problem. With these cognitive abilities, children can be proud of their achievements and adapt themselves to the school environment. However, if there is an obstacle in this aspect, the child will encounter a barrier in socializing with his friends even in the shadows.

c. Aspects of social development The social development of the individual is characterized by the achievement of maturity in his social interaction, how he is able to socialize, adapt to his environment and adapt to the norms of the group.

d. Aspects of language development According to experts, language is the medium of communication to others to convey messages. A child aged 6-12 years the development of language occurs at the beginning tends to be permanent and affects the

attitude and behavior of the child throughout his life, so if the aspect of language has problems, the child will be at risk of developing later deviations in his life.

Emotional development is an intense feeling directed at someone or an event. Emotional patterns can consist of feeling happy about something, angry with someone, or afraid of something. Factors influencing a child's emotional development depend on maturity and learning factors, so to emotional maturity, a child must learn to gain an idea of situations that can trigger emotional reactions.

f. The personality aspect and the art of the important thing in personality development is the determination in the pattern of personality or persistence. That is, there is a tendency characteristic personality traits that are stable and relative unchanged so that coloring arises specific behavior towards one's self. So the personality of a child today will have a direct influence when he becomes an adult.

g. Aspects of moral development and religious philosophy relate to rules and conventions concerning what an individual should do in his interaction with others.

There are two factors that affect the development of a child: genetic factors and environmental factors: a. Genetic factors are internal factors that influence the growth and development of an individual. Heredity itself can be understood as the totality of the characteristics of an individual inherited by a parent. Similarly, genetic factors can be interpreted as all the potential (both physical and psychological) that an individual has since pre-birth as inheritance from the parent through genes.

Environmental factors are external factors that shape and influence the development of an individual. As explained earlier, that genetic factor is potential and the environment that will make it real. There are some very prominent environmental factors in the family environment. The reason for the importance of the role of the family is that, firstly, family is the first social group that is the centre of identification of the child. Secondly, families are the first environment that introduces the values of life to children. Thirdly, parents and family members are “significant people” for the development of the personality of children. And lastly, the family as an institution that facilitates basic human needs, both biologically fictitious and socio-psychological, and children spend a lot of time in the family environment. (Latifa, 2017).

The quality of sleep is a fresh feeling back and ready to face another life after waking up. The idea combines several attributes, for example, the time it takes to start falling asleep, the depth of rest and calm. (Adrianti, 2017).

The need for sleep can be disturbed by a variety of sleep-disturbing habits and behaviors, such as frequently watching TV while going to sleep, as well as the use of gadgets in the child before going to bed. The social interfaces and characteristics of the individual tempramen play an important role in the quality of sleep, in children whose schoolchildren need to sleep for 10 hours a day. (Mubarak, Indrawati & Susanto, 2015).

This study is in line with the theory put forward by Permadi (2017) that there is a relationship between the behavior of gadget use and the quality of sleep in children, i.e. the more often the use of the gadget, the less satisfied the sleep quality, and the less often or rarely in the gadget use, the more satisfying the sleep. It's also similar to Meirianto's study (2018), that there's a link between smartphone addiction and the quality of sleep in children. According to Puspa's research, Loebis & Nuswantoro (2018), said that a bad habit when using the gadget is the distance of sight and the screen of the gadget that is very close, which makes the eyes blurred due to exposure to full radiation rays and the lighting of the device that is too bright. This research is

also supported by Nafiah (2018) that there is a relationship between duration of social media use and sleep quality.

The use of gadgets in children without the supervision and restriction of parents, because too long use of the gadget so makes the child addicted so the quality of sleep decreases. Poor sleep quality can be attributed to electronic factors such as the use of gadgets. Excessive use of gadgets and when more and more children are allowed to use such gadgets will have a negative impact on children's health, it requires strict supervision for parents in giving children a gadget (Putri, 2018).

2. Methods

This study is an analytical study which aims to look at the existence of relationships using the "cross-sectinal" method, i.e. the type of cause variable (Independent) and the variable effect (Dependent) measured at the same time. (Notoatmodjo.2018). The study was conducted in the State Army of Fighters VII of Bekasi City, when the study was carried out in May 2023. The population in this study was the whole of the children of classes IV and V of State Armies VII of bekasi City in May 2023. The sample in this survey was part of the school children of the class IV and 5 of State armies VII in bekasi city in May of 2023. Samples to be taken using Random Sampling. The inclusion criteria are the criteria of research subjects representing a qualifying sample of research: 7-12 years old, using and possessing gadgets; mobile phones, laptops, tablets, psp, dsb (for parents and children), able to communicate well. This exclusion criterion is a research subject that cannot be represented by the sample because it is not eligible as an examination sample, the exclusions criteria in this study are: Students who are not in school, Students that are outside the classroom when the research is carried out.

3. Results

Univariat

Sleep Quality Analysis

Table 1 Distribution of frequency of quality of teeth among schoolchildren

	Fre**quency**	%
Good	29	48,3%
Bad	31	51.7%
Total	60	100.0%

Based on the table above frequency and presentation in elementary school children of the fourth and fifth classes of 60 respondents who had a good sleep quality of 29 (48.3%), while those who had poor sleep quality were 31 (51.7%).

Gadget Usage

	Fre**quency**	%
Good if < 1 hour a day	**27**	**45.0%**
Bad if > 2 hours a day	**33**	**55.0%**
Total	**60**	**100.0%**

Based on the above table can be seen from the number of respondents as many as 60 respondents in this study obtained most respondents using bad gadget time as much as 33 (55.0%) respondents.

Bivariat Analysis

Table 2 Effectiveness of the Usage of Gadgets with Sleep Quality

Gadget Usages	**Sleepy Quality**				**Total**		***P-Value***
	Good		**Bad**				
	N	**%**	**n**	**%**	**N**	**%**	
Good if <1 hour a day	26	96,3	1	3,7	27	100,0	
Bad if >2 hours a day							000
	3	9,1	30	90,9	33	100,0	
Total	29	48,3	31	51,7	60	100,0	

Based on the data contained in the table above shows that 60 respondents use the gadget most in the category of good if < 1 hour per day with poor quality of sleep i.e. by the number of 1 respondents, while the category bad if > 2 hours per night with poor sleep quality is by the amount of 30 respondents. For the statistical test results using the chi-square test obtained P-value (0.00) ≤ α (0.05) which means that there is a significant effectiveness between the use of gadgets with sleep quality in students of 4th and 5th grade in the State SD Warrior VII city of Bekasi

4. Discussion

Univariat Analysis of Gadget Usage

Based on the frequency distribution of gadget use obtained from 60 respondents in this study, the large proportion of respondents had poor gadget use as much as 33 (55.0%) respondents. According to Prasetagatansih (2017) in terms of the time children use the gadget at the time of school and after school in the evening that is in about 3 to 6 hours a day. Children use gadgets to play online games or games ofline, to browsing searching for information or tasks and it is unlikely that the child uses gadgets for social media.

This study is in line with Saifullah, (2017) that some respondents use gadgets for more than 12 hours a day, which triggers addiction in the use of gadgets. The purpose of using gadgets to follow current lifestyle trends and showing gadgets addiction characteristics to respondents such as considering the gadget the most important and

unable to control the use of gadgets is an easy occurrence in schoolchildren, because school age is a maintenance period towards adolescence so it is very important to be controlled by parents.

These researchers assume that the use of bad gadgets in children is due to itensistas time overuse of gadgets that is more than 1 hour and children use gadgets for various functions such as for browsing, playing games, even for social media on gadgets. Gadgets addiction in children is very easy to occur, because the desire is so high and schoolchildren are the maintenance period towards adolescents so children need to be controlled every child's activity by parents.

Sleep quality Based on table 1 on the frequency of sleep quality in schoolchildren obtained from 60 respondents in this study the majority of respondents had poor sleep quality as much as 31 (51.7%)and about 29 respondents (48.3%) in the good category. The researchers assumed that poor quality of sleep due to respondents can not set the time for the use of the gadget so respondents have sleep disturbances and negative impact on the quality of their sleep. This study in line with performed by Zalqi, (2018) found there was a relationship of behavior using the gadget then the less quality of the sleep, the children will experience poor quality sleep can be at risk of disturbed concentration while learning at school.

Bivarian Analysis of the Effectiveness of Using Gadgets with Sleep Quality

Based on the results of the research it is known that there is effectiveness of the use of gadgets with sleep quality in schoolchildren (classes IV and V) in the SD State Warrior VII city of Bekasi, with P-valeu < 0.05 = 0.00. This study is in line with the theory put forward by Permadi (2017) that there is a relationship between the behavioural use of gadgets and the quality of sleep in children, that is, the more often in the use of the gadget, the less satisfied the sleep quality.

It's also similar to a study conducted by Meirianto, (2018) that there's a link between smartphone addiction and the quality of sleep in children. According to Puspa, Loebis, and Nuswantoro (2018) say that a bad habit when using the gadget is the distance of sight and the screen of the gadget very close, so it makes the eye a blur due to exposure to full radiation rays and the rupture of the device too bright.

The research was also supported by Nafiah (2018) which stated that there was a relationship between duration of social media use and sleep quality. The use of gadgets in children without the supervision and restriction of parents, because too long use of the gadget so makes the child addicted so the quality of sleep decreases. According to Princess's 2018 study that there is a link between smartphone addiction and sleep quality, Smartphone addiction has 13% to sleep quality and the rest is due to other factors.

The researchers assume that there is the effectiveness of the use of gadgets with sleeping colic in schoolchildren of class IV and V in the SD State Warrior VII city of Bekasi. Respondents who have poor sleep quality are caused by electronic factors such as the use of gadgets. Excessive use of gadgets and when more and more children are allowed to use such gadgets will have a negative impact on children's health, it requires strict supervision for parents in giving children a gadget.

5. Conclusion

It is expected for the educational institutions of SDN Warrior VII eight to add insight and science in particular regarding the sleep quality gadget in schoolchildren.

It is expected that nursing students should focus not only on health and treatment, but on prevention, especially on the quality of sleep, especially in school-age children. It is expected that schools can provide information about the use of gadgets with sleep quality, as well as the school authorities also provide rules that children do not use gadgets during school hours, and if a child keeps using gadgets in school hours then the child is punished by cooperating with the parents of students.

It is hoped that future researchers will be able to conduct research using a qualitative type of research and can use more variables than previous researchers.

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