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**Original Article**

**THE RELATIONSHIP OF KNOWLEDGE LEVEL ABOUT CLEAN AND HEALTHY LIVING BEHAVIOR WITH THE INCIDENCE OF DIARRHEA IN CHILDREN**

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**ABSTRACT**

**Background:** Diarrhea disease is included in the Extraordinary Events category in various parts of Indonesia that needs attention. Globally, data on the incidence of diarrhea in the world are still very high, namely 1.7 billion cases every year or the second cause of death that attacks children (WHO, 2017). The study revealed that approximately 8 out of every 10 sixth-grade students at Lenteng Timur 1 Public Elementary School had encountered instances of diarrhea.

**Objective:** The aim of this research was to establish a correlation between the degree of understanding regarding knowledge about clean and healthy living behavior and the occurrence of diarrhea among children.

**Method:** The chosen research methodology is analytical correlation employing a cross-sectional approach design. This research was carried out in Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura on Wednesday 24 May 2023. This investigation selected a sample of 42 students, gathering data through a comprehensive sampling technique. The research instrument used in this study was Medi Arjoni's (2021) knowledge level questionnaire. The statistical analysis employed for this study was *SPSS version 20 for Windows 11*.

**Results:** The results showed that the level of knowledge about clean and healthy living behavior was less than 18 students (42.9%), the incidence of diarrhea during the last 3 months was 25 students (59.5%). Analysis of the extent of understanding in relation to the occurrence of diarrhea  $p\text{-value} < \alpha$ , namely  $0.001 < 0.05$ . The conclusion of this study is that there is a relationship between the lack of knowledge about clean and healthy living behavior and the incidence of diarrhea in class VI children of Lenteng Timur 1 Public Elementary School.

**Conclusion:** The suggestion from the researchers aims to enhance comprehension regarding clean and healthy living behavior to support the productivity of a healthy body and a clean environment in everyday life so that they are not easily exposed to disease and reduce the incidence of diarrhea in children.

**Keywords:** Knowledge, Clean and Healthy Living Behavior, Diarrhea.

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## INTRODUCTION

Diarrhea is a public health problem that is considered serious due to the high rates of illness and death it causes, making it a major factor in fatal cases in children under 5 years of age. Diarrhea can occur in all age groups, including children, because at this stage there is no understanding of how to prevent it and the immune system is not yet fully developed, making it susceptible to diseases such as diarrhea (Ministry of Health of the Republic of Indonesia, 2018).

According to (WHO, 2017) data on the global incidence of diarrhea reaches 1.7 billion cases every year and is the second cause of death that attacks children. Data on the incidence of diarrhea in Indonesia is still high, reaching 7 million cases per year, but only 3.2 million cases or around 44.4% are treated (Ministry of Health of the Republic of Indonesia, 2020). East Java Province is in 2nd position with the most diarrhea cases, namely 1 million cases, and treatment is still low, namely 51.2% of people (East Java Health Office, 2020). Handling of diarrhea incidents in Sumenep district is still low from an incidence of 29 thousand cases, only 17 thousand cases or around 59.3% were handled and the Lenteng Community Health Center noted that the highest incidence of diarrhea in Lenteng District was 479 cases but only 156 cases were handled (Sumenep Health Office, 2018). Based on the collection of data on the incidence of diarrhea during the last 3 months in class VI students at Lenteng Timur 1 Public Elementary School, there were 10 students and it was found that 8 students had experienced diarrhea incidents according to the classification (5 female students and 3 male students) 2 female students did not experience diarrhea.

Diarrhea is the process of eliminating feces accompanied by increased thinning and thickening of the feces at least 3 times a day or 1 x 24 hours (WHO, 2017). The most common cause of severe diarrhea due to irritation is a viral or bacterial infection of the intestine, which affects the muscle layer and increases motility. As a result of diarrhea, there is a lot of fluid and electrolyte loss (dehydration), which is wasted because the time for absorption of these substances in the large intestine is reduced, nutritional disorders (malnutrition, overnutrition), hypoglycemia and blood circulation disorders occur (Ayu Putri, 2016).

The implementation of clean and healthy living behavior in Indonesian society still faces challenges, one of which is knowledge. The level of knowledge is closely related to efforts to improve behavior, because knowledge is the basis of an attitude so that it can influence behavior. The level of knowledge regarding clean and healthy living behavior will become self-awareness, especially for elementary school age children who do more activities at school in order to maintain health and reduce the incidence of diarrhea (Anwar, 2021).

Indicators of Clean and Healthy Living Behavior in schools include providing clean water, washing hands with soap, consuming food in the school canteen, using clean toilets, managing waste, participating in eradicating mosquito larvae, regular and measured exercise, monitoring body weight and TB, and not smoking (Katiangdagho, 2019). The advantage of implementing clean and healthy living behavior in schools is that it creates a hygienic and healthy environment, so that students, teachers and the entire academic community can be free from disturbances and the risk of disease, such as diarrhea (Hasan, 2020). The implementation of clean and healthy living behavior in the school environment must be continued, especially

by raising self-awareness among school residents, as well as the availability of facilities. This self-awareness comes from information obtained through school health promotion in the form of the school health unit.

Introduction and counseling regarding clean and healthy living behavior including solutions to prevent diarrhea. The knowledge gained regarding clean and healthy living behavior becomes the foundation for self-awareness in caring for health and efforts to reduce the incidence of diarrhea. Health is the right of every individual to be able to carry out all daily activities well. To maintain health, it is necessary to adopt Clean and Healthy Behavior. Based on this situation, the researcher was interested in carrying out research to determine the "Relationship between the Level of Knowledge about clean and healthy living behavior and the Occurrence of Diarrhea in Class VI Children at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura". The aim of this research is to determine the relationship between the level of knowledge about clean and healthy living behavior and the incidence of diarrhea in sixth grade children at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura.

## **METHODS**

### ***Study Design***

The research method used is correlation analysis, intended to determine the relationship between independent variables and related variables, namely "the relationship between the level of knowledge about clean and healthy living behavior and the incidence of diarrhea in children". This type of research adopts a cross-sectional approach, namely an approach that emphasizes time by measuring and observing data on independent variables and dependent variables one by one until they are all completed simultaneously (Nursalam, 2017).

### ***Settings***

The research location was carried out at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura on Wednesday 24 May 2023.

### ***Research Subject***

The collection method applied in this study is non-probability sampling, namely a sampling technique that does not provide an equal opportunity for each element or individual in the population to become part of the sample. The total sampling technique is used as a type of sampling, namely determining where the same sample as the general population is selected (Nursalam, 2016). The sample used was 42 students in class VI A and B at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency.

### ***Instrument***

The instrument used is about knowledge of clean and healthy living behavior which was adopted from Medi Arjoni's (2021) research which has been tested for validity and reliability using ordinal and nominal data scales and a total of 32 questions.

### ***Data Collection***

Data collection was carried out by researchers at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura on Wednesday 24 May 2023.

### Data Analysis

The statistical test used is the Spearman Rank, which is a statistical analysis carried out to identify the existence of a correlation between two variables, using SPSS (Statistical Product and Service Solutions) software version 20 for the Windows 11 operating system.

### Ethical Consideration

This research has received ethical test certification with the main researcher: Shilvyana Nur Choles, number: 0810-KEPKSHJ, title: "The relationship between the level of knowledge about CLEAN AND HEALTHY LIVING BEHAVIOR and the incidence of diarrhea in class VI A and B children at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura".

## RESULTS

**Table 1.** Frequency Distribution of Respondent Characteristics Based on Gender, Age, Acquisition of Information and Sources of Information about Clean and Healthy Living Behavior at Lenteng Timur 1 Public Elementary School Lenteng District Sumenep Madura (n = 42).

Characteristics	Frequency (F)	Percentage (%)
Gender		
Male	23	54.8
Female	19	45.2
Age		
11-12 years	32	76.2
13-14 years	8	19.0
>15 years	2	4.8
Acquisition of information		
Ever	12	28.6
Never	30	71.4
Source of information		
Google	4	33.3
Teacher	7	58.3
Book	1	8.4

From the data listed in table 1 above, it can be seen that the majority of respondents were male, 23 respondents (54.8%). Respondents aged between 11-12 years were 32 respondents (76.2%). The level of knowledge of respondents was that they had never known about clean and healthy living behavior as many as 30 respondents (71.4%) and most of the sources of information that respondents got about clean and healthy living behavior were from schools/teachers as many as 7 respondents (58.3%).

From the data listed in table 2 below, it can be seen that almost half of the respondents have a poor level of knowledge about clean and healthy living behavior, namely 18 respondents or (42.9%).

**Table 2.** Level of Knowledge about Clean and Healthy Living Behavior at Lenteng Timur 1 Public Elementary School Lenteng District Sumenep Madura (n = 42).

Level of Knowledge	Frequency (F)	Percentage (%)
Good	10	23.8
Enough	14	33.3
Less	18	42.9
Total	42	100.0

**Table 3.** Occurrence of diarrhea at Lenteng Timur 1 Public Elementary School Lenteng District Sumenep Madura (n = 42).

Diarrhea	Frequency (F)	Percentage (%)
Diarrhea	25	59.5
Diarrhea	17	40.5
Total	42	100.0

From the data listed in table 3 above, it can be seen that the majority of respondents who experienced diarrhea in the last 3 months (from February, March to April 2023) were 25 respondents (59.5%).

**Table 4.** The relationship between the level of knowledge about clean and healthy living behavior and the incidence of diarrhea at Lenteng Timur 1 Public Elementary School, Lenteng District Sumenep Madura (n = 42).

No	Level of Knowledge	Diarrhea				Total	
		Diarrhea		Diarrhea			
		F	%	F	%	F	%
1	Good	2	4.0	8	23.5	10	27.5
2	Enough	9	18.0	5	14.7	14	32.7
3	Less	14	28.0	4	11.8	18	39.8
Total		25	50.0	17	50.0	42	100.0
<i>p</i> -value = .0001; <i>r</i> = 0.429							

From the data listed in table 4 above, it can be seen that almost half of the respondents had poor knowledge about clean and healthy living behavior, 18 respondents (39.8%), of which 14 respondents (28%) had experienced diarrhea and 4 respondents (11.8%) did not experience diarrhea. The level of sufficient knowledge about clean and healthy living behavior was 14 respondents (32.7%), of which 9 respondents (18%) had experienced diarrhea and 5 respondents (14.7%) had not experienced diarrhea. And a good level of knowledge about clean and healthy living behavior was 10 respondents (27%), of which 2 respondents (4%) had experienced diarrhea and 8 respondents (23.5%) had not experienced diarrhea.

## DISCUSSION

### **Description based on the level of knowledge about clean and healthy living behavior in class VI students at Lenteng Timur 1 Public Elementary School**

From the findings obtained in this research, it can be concluded that almost half of the respondents had a level of knowledge about clean and healthy living behavior that was less than 18 respondents (42.9%), 14 respondents (33.3%) had a fair level and 10 respondents (23.8%) had a good level of knowledge. %). This shows that many classes VI students at Lenteng Timur 1 Public Elementary School still know about clean and healthy living behavior.

According to Notoatmodjo (2015) knowledge influences human behavior, including human responses to disease, understanding of disease, understanding of the symptoms and manifestations of a disease condition, as well as therapy to treat the disease. Knowledge is influenced by causal factors, namely: parents' level of knowledge, education, environment, age, experience, culture and socio-economics (Notoatmodjo, 2016). It is possible that this factor occurs because the older a person gets, the more mature they become in their thinking patterns and work activities.

This theory is also in line with the results of research by Yakin (2021) explaining that a lack of knowledge causes the clean and healthy living behavior program to not function optimally, causing health problems such as diarrhea. The clean and healthy living behavior program in schools has a great influence on student behavior in applying clean and healthy lifestyle patterns. If students do not understand clean and healthy living behavior adequately then the incidence of these diseases can be reduced. Therefore, knowledge about clean and healthy living behavior needs to be increased in schools by deepening material about implementing a clean and healthy lifestyle.

This is also in line with the results of Fitriani's (2015) research that students' knowledge can be influenced by a number of factors that influence understanding, and is better than less experienced children who do not pay attention and use it. If people know how to implement a clean and healthy lifestyle, they can avoid exposure to dangerous, polluting substances. One way to find out is to educate the public about the importance of knowing and implementing a clean and healthy lifestyle to protect themselves and their families.

Researchers hope for strong involvement in ensuring understanding of clean and healthy living behavior among students because knowledge has a very important role in disease prevention efforts. This understanding does not only depend on the school environment, but is also influenced by the role of parents and the community in providing information that can complement students' knowledge. Having adequate understanding creates encouragement to establish a positive relationship with the practice of implementing a clean and healthy life, so that it becomes a habit in daily activities.

From the description above, it states that the level of understanding plays a significant role in shaping behavior, with the level of understanding being able to be a measure for responding to something. An adequate level of understanding will form a tendency to adopt a positive attitude towards it. For example, having a solid understanding of clean and healthy living behavior will encourage someone to maintain clean and healthy living behavior in daily activities.



**Description based on the incidence of diarrhea in the last 3 months in class VI students at Lenteng Timur 1 Public Elementary School**

From the findings obtained in this research, it can be concluded that the majority of respondents who have experienced diarrhea since the last 3 months (from February, March to April 2023), namely 25 respondents (59.5%) and 17 respondents (40.5%) did not experience diarrhea.

According to Cahyani (2022), several factors can influence the incidence of diarrhea in school children, such as inadequate access to clean water, unhealthy food, inadequate bathroom hygiene products, unhygienic waste disposal facilities, environmental cleanliness and carelessness. wash your hands before and after training. Diarrhea can last for several days and cause dehydration. Diarrhea can cause decreased appetite, stomach pain, fatigue, and weight loss.

This theory is supported by the results of research by Novanto (2020) which states that in this study the factor that weakened the respondents' knowledge was the lack of knowledge obtained, such as not understanding the definition of diarrhea, triggers for diarrhea, conditions for diarrhea, and strategies for preventing and treating diarrhea. According to Novanto (2020), individuals who have a level of knowledge regarding clean and healthy living behavior will tend to have a positive lifestyle, which will result in a reduction in diarrhea. On the other hand, if someone has unhealthy habits, the possibility of diarrhea will increase. Therefore, individuals who implement clean and healthy living habits correctly will automatically reduce the incidence of diarrhea.

According to Ibrahim (2021), the factor that causes variations between genders is that men have a higher tendency to experience diarrhea, which can be explained by their more frequent exposure to the external environment such as soil and outdoor activities. This theory also explains that boys are given more freedom to do activities outside the home compared to girls. Boys are also more indifferent even when playing dirty, for example playing football on a field when it rains.

According to researchers, there is a relationship between the age of the child and the incidence of diarrhea, where the older the child, the wider the understanding and knowledge which is the foundation for changing attitudes and behavior. Children who are older will be more responsive to their environment with their mindset, while children who are younger will not care and think more maturely about responding to something.

Based on the description above, it shows that the incidence of diarrhea is caused by a lifestyle that pays little attention to environmental health. Because diarrhea occurs due to the presence of bacteria that unknowingly contaminate the environment we live in or the food we consume, therefore, the importance of implementing Clean and Healthy Living Behavior practices in our daily routine is crucial to ensure we are protected from possible exposure to viruses. Or bacteria that can threaten the body's health. And also, the source of information about clean and healthy living behavior and the incidence of diarrhea has a very strong relationship. If people have an understanding of how to implement clean and healthy living habits, this will function as a form of self-defense against the possibility of being contaminated by dangerous substances. One way to find out is through health promotion or education to the

public about the importance of maintaining a clean and healthy lifestyle as knowledge to protect yourself and your family.

### **The relationship between the level of knowledge about clean and healthy living behavior and the incidence of diarrhea in sixth grade children at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep, Madura**

From the findings obtained in this study, it can be concluded that almost half of the respondents had a poor level of knowledge about clean and healthy living behavior, 18 respondents (39.8%), of which 14 respondents (28%) had experienced diarrhea and 4 respondents (11.8%) had not. experiencing diarrhea. The level of sufficient knowledge about clean and healthy living behavior was 14 respondents (32.7%), of which 9 respondents (18%) had experienced diarrhea and 5 respondents (14.7%) had never experienced diarrhea. And a good level of knowledge about clean and healthy living behavior was 10 respondents (27%), of which 2 respondents (4%) had experienced diarrhea and 8 respondents (23.5%) had not experienced diarrhea.

According to research results, Cahyani (2022) found that good knowledge about clean and healthy living behavior in elementary school students can prevent and reduce the risk of children getting sick. Another finding in a study by Resiyanthi, Maepiani, and Sari (2021), where awareness of clean and healthy living behavior among elementary school students also has the potential to become a role model for teachers in the school environment.

The findings from this research are in line with the concept outlined by (Notoatmodjo, 2018), where a person's well-being forms one of the predictive factors that influence individual actions. Therefore, if children do not have adequate information or advice regarding diarrhea, their understanding of the condition will be affected. The level of discipline in living a clean and healthy lifestyle that is still not optimal, along with the tendency to consume food and drinks without proper consideration, have been identified as the main driving factors for the occurrence of diarrheal diseases.

Based on the description above, according to researchers, the level of clean and healthy living behavior knowledge and the incidence of diarrhea has a very strong relationship. Health information is one of the provisions that influences behavior. Good knowledge about clean and healthy living behavior is a means of responding to factors that trigger the transmission of various diseases. The level of knowledge supported by health education can provide effective results in improving knowledge and attitudes. Information or knowledge can be obtained from various accesses, for example social media such as Google, from school organizations such as UKS (School Health Unit) and also from books. It can be seen from the results of this study that there is evidence to show that 8 respondents (23.5%) who have a strong understanding of clean and healthy living behavior have never experienced diarrhea incidents.

From the analysis of data that has been processed using the Rank Spearman statistical test version 20, the significance value of the results is  $p < \alpha$  ( $\alpha = 0.05$ ), namely 0.001 and  $p < 0.05$  means that  $H_1$  is accepted, so it can be concluded that there is a significant relationship between the level of knowledge about clean and healthy living behavior and the incidence of diarrhea. Based on the results of SPSS version 20, the correlation coefficient was obtained at



0.429, which means it is between 0.400 and 0.599, which means the interpretation of the relationship is moderate. The correlation coefficient from the results above is negative, so the relationship between the two variables is not in the same direction, so it can be interpreted that the higher the quality of a child's level of knowledge, the more likely it is to prevent diarrheal disease. from an early age and the incidence of diarrhea decreases.

From this it can be concluded that the occurrence of diarrhea in class VI A and B students at Lenteng Timur 1 Public Elementary School is influenced by limited understanding of clean and healthy living behavior, causing the risk of exposure to viruses and bacteria which elementary school age children have an immune system. the body is not optimal and is susceptible to various diseases, including diarrhea.

## CONCLUSION

Based on the findings and results of research analysis, it can be concluded that almost half of the respondents, namely around 18 respondents (42.9%), have insufficient knowledge about clean and healthy living behavior. Apart from that, there were 25 respondents (59.5%) who reported experiencing diarrhea in the last three months (from February to April 2023). The statistical test results show a p-value of 0.001, which is smaller than the  $\alpha$  value (0.05), and a correlation coefficient of around 0.429 in a negative direction. This indicates a relationship between the level of knowledge regarding clean and healthy living behavior and the incidence of diarrhea in class VI A and B students at Lenteng Timur 1 Public Elementary School, Lenteng District, Sumenep Regency, Madura.

## SUGGESTION

It is hoped that this research will become a useful data reference for future researchers who wish to investigate in more depth the level of awareness and motivation of individuals in adopting clean and healthy living behavior as a preventive measure against diseases such as diarrhea.

## LIMITATION

This research was conducted in a small scope and education was not provided regarding the importance of clean and healthy living behavior using media that is attractive to children.

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