



## RELATIONSHIP BETWEEN EDUCATIONAL LEVEL AND KNOWLEDGE IN SELF-MEDICATION OF DIARRHEA DISEASE IN CHILDREN

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### ABSTRACT

In Indonesia, diarrhea is the second killer of toddlers after ISPA and 10,000 toddlers die from diarrhea every year. Proportion of diarrhea cases in Central Java in 2014 was 79.8%. The main options for seeking recovery from an illness include seeking treatment at a health service center or treating yourself. Increasing knowledge about diarrhea, it is necessary to provide health education. The purpose of this study was to determine the relationship between the level of education with the level of knowledge of self-medication of diarrhea in children as parents in Bae District, Kudus Regency. Method: The purpose of research was to decide the relationship among the level of education and the level of knowledge of diarrhea self-medication in children as parents in Bae District, Kudus Regency. The research was called a quantitative research by a cross sectional approach. The population were all people in Bae District, Kudus Regency. The design of this research was quantitative analysis through a proportional sampling technique. The instrument is applied a questionnaire on a sample of 400 respondents in the community in Bae sub-district. The data analysis used in this study begins by using a validity test to measure whether a questionnaire is valid or not; reliability test to measure whether a questionnaire is consistent or stable over time. Furthermore, the One Sample Kolmogorov Smirnov test was carried out to see that the data was normally distributed and the Spearman rank test to determine the relationship or influence between two ordinal scale variables. Results and Conclusions: The results showed a significant relationship between education level and parental knowledge in self-medication for diarrheal disease in children with a correlation coefficient of 0.928, so it is included in the very strong category and the results are significant.

Keywords: diarrhea; education; knowledge; relationship

<b>First Received</b> 01 March 2024	<b>Revised</b> 16 March 2024	<b>Accepted</b> 27 March 2024
<b>Final Proof Received</b> 08 July 2024		<b>Published</b> 01 October 2024
<b>How to cite (in APA style)</b> Sari, F. I., Toyo, E. M., Munawaroh, S., & Akbar, N. D. (2024). Relationship Between Educational Level and Knowledge in Self-Medication of Diarrhea Disease Disease in Children. <i>Indonesian Journal of Global Health Research</i> , 6(5), 3031-3038. <a href="https://doi.org/10.37287/ijghr.v6i5.3045">https://doi.org/10.37287/ijghr.v6i5.3045</a> .		

### INTRODUCTION

Diarrhea is a condition where a person defecates with watery feces with number of occurrence more than 3 times a day. Diarrhea could cause death especially in babies and toddlers. If diarrhea is not treated immediately, the sufferer could die cause decreasing a lot of fluids (Adisasmito, 2007). Proportion of diarrhea cases in Central Java in 2014 was 79.8%. In 2012 there were 415,250 cases of diarrhea, which increased in 2013 with the number of cases reaching 473,073. In 2014 the number of diarrhea cases in Central Java Province decreased to 395,378 cases. Meanwhile, from January to October 2015 there were 357,012 cases. Data obtained from the Central Java Provincial Health Service from 2012 to October 2015 recorded that cases of diarrhea among toddlers in Central Java were still relatively high. In 2012, there were 116,76 cases of diarrhea in toddlers, in 2013 it increased to 128,324 cases, in 2014 it decreased to 104,818 cases and until October 2015 there were 100,254 cases of diarrhea in toddlers (Kudus, 2015; Lufitasari et al., 2021).

Bae is one sub-district of central Java. Approximately 797,003 residents, an estimated 17,056 of them suffer from diarrhea. This estimate is calculated based on the national diarrhea morbidity figure, namely 411 per 1000 population. The estimated number of cases can be used as a target for diarrhea case service coverage in Bae sub-district, there were 861 cases of diarrhea (Kudus, 2015). The main options for seeking recovery from an illness include seeking treatment at a health service center or treating yourself. Self-medication or what is usually called self-medication is the effort most people make to overcome the symptoms of disease before seeking help at a health service center (Atmoko & Kurniawati, 2009). Census results from the Indonesian Health Service in 2009 recorded that 66% of sick people in Indonesia carried out self-medication to treat their illness (Limato et al., 2022). Health education is process in improving people's ability to maintain and protect their health, but also improving the environment in order to maintain health (Nurmala & KM, 2020). (Notoatmodjo, 2007).

**METHOD**

The design of research was quantitative research by a cross sectional approach. The research investigate correlation among risk factors and effects at the same time . The research will be proceed in Bae District, Kudus Regency. In Central Java, diarrheal disease is top 5 contributor to outbreaks after food poisoning, leptospirosis, dengue fever and chikungunya. Data was collected by a questionnaire instrument in the form of a list of questions arranged according to the dimensions of self-medication for diarrhea in children. The instrument concept uses a questionnaire sheet (attached) for respondents, namely parents who have children aged 5 to 11 years. The data analysis used in this study begins with using a validity test to measure whether a questionnaire is valid or not, a reliability test to measure whether a questionnaire is consistent or stable over time. Furthermore, the One Sample Kolmogorov Smirnov test was conducted to see that the data was normally distributed and the Spearman rank test to determine the relationship or influence between two ordinal scale variables.

**RESULTS**

The Spearman rank correlation test was applied to decide a relationship between the two variables studied. The researches’s variables include education level and level of respondent’s knowledge. How to make decicison depends on comparing r-count with r-table or significance value with real level. If r-count more than r-table or significance value < real level 0.05 then, Ho is not accepted. It a significant relationship. If r-count less than r-table or significance value > real level 0.05, then Ho is accepted. It means no significant relationship.

Table 1.  
Result of Rank Spearman Test

Variabel	T <sub>hitung</sub>	Sig.	T <sub>table</sub> (n = 400; α = 0,05)	Decision
Relation between education and knowledge	0.928	0.000	0.098	Ha Accepted

Table 2.  
Meaning of Spearman Value Test

Value of Correlation	Correlation Meaning
0	None
0.00 – 0.25	Very Weak
0.25 – 0.50	Pretty Good
0.50 – 0.75	Strong
0.75 – 0.99	Very Strong
1	Perfect

## **DISCUSSION**

The level of education determine a response to something that comes from outside. People who are more educated will respond more rationally to information and will think about the extent to which one person benefits from the development of others towards a certain ideal. Education able determine a person, likes a behavior and lifestyle, and motivating attitudes towards participating in health development. The level of knowledge is result of a person's knowledge of objects through the them own senses (eyes, nose, ears and so on). The process of sensing to produce knowledge is determined by intensity of attention to the object. Cognitive is a very important domain for forming one's actions (Hendrawan & Hendrawan, 2020). Data analysis was applied by inference. In this case, an analysis was carried out to test the relationship between 2 variables, namely the level of education and the level of knowledge. The choice of non-parametric test method is based on the scale produced by the variables that are linked, was known ordinal to ordinal. In this research, the non-parametric tests use a correlation test and Spearman Rank.

The non-parametric statistical analysis in the research was the Spearman Rank correlation. (Sarwono & Suhayati, 2017a) state that Spearman Rank correlation is applied to decide a relationship among two ordinal scale variables was known the independent variable and the dependent variable. A measure of association that requires all variables to be measured at least on an ordinal scale, allowing the objects or individuals studied to be ranked in many consecutive series. The ordinal scale or order scale, which is the scale used if there is a relationship, usually differs between classes and is marked with ">" which means "greater than". The coefficient based on this ranking can use the Spearman Rank correlation coefficient. The following is the correlation analysis formula. (Sarwono & Suhayati, 2017b). In testing the relationship between the two variables of education level and knowledge, the calculated r value (the value of the Spearman correlation test using SPSS) was 0.928 with a significance value of 0.000. The rtable value with a total of 400 respondents for  $\alpha = 0.05$  obtained a value of 0.098. If a comparison is made, the value is  $0.928 > 0.098$ . so it can be concluded that they reject  $H_0$  or accept  $H_a$ . It means a significant relationship among the level of education and knowledge. Value is 0.000 less than 0.050, it can be concluded  $H_0$  is rejected or  $H_a$  is accepted. It means is a significant relationship among the level of education and the respondent's knowledge about self-medication for diarrheal diseases in children. The strength of the correlation can be observed from value of the sperm test results. Determining the level of closeness or strength of the correlation, a guideline for interpreting the correlation coefficient value needed is. The following are guidelines for the interpretation of correlation coefficients according to (Sarwono & Suhayati, 2017b)

The correlation coefficient for this study was 0.928. If the correlation coefficient interpretation guideline table, the value is in the range 0.75 – 0.99. It is included in the very strong correlation category. It means that the relationship occurring between the level of education and the level of knowledge about self-medication of diarrheal diseases in children in Bae sub-district is very strong and significant. One of the factors that causes poor knowledge is education. However, based on research results, it states that respondents with a secondary level of education have fairly good knowledge. The result is not much different from respondents than higher education. The result shows that knowledge is not always absolutely influenced by education alone. Apart from education, knowledge can also be influenced by age, information sources, income, social relationships and experience. However, the educational factor is the factor that has the greatest influence because people with higher education will respond more rationally to the information that comes and will think about the extent of the benefits that a person gives to the development of other people

towards a certain ideal. Kristina et al stated that factors such as age, gender, education level, attitude can influence a person's treatment behavior. Education level is also a factor that can influence parents' knowledge of self-medication. Education can influence a person, including a person's behavior and lifestyle, especially in motivating attitudes towards participating in health development (Notoatmodjo, 2007).

In the process of formation and change, behavior is influenced by several factors, including factors originating from within and factors from outside the individual himself (internal factors and external factors). Internal factors include of knowledge, intelligence, perception, emotions, and motivation that they have function to process external stimuli. External factors include of environment, both physical and non-physical such as climate, humans, social, economic, and cultural (Notoatmodjo, 2007). Based on the explanation above, this should be a concern because if knowledge is not good it can lead to poor treatment behavior. The treatment and handling of fever in children is not same with adults. It will get disruption of development and growth when treatment and handling were wrong. The child's body and mental can be threatened. Parents should posses knowledge about treatment fever in children, then their child experiences a fever, parents don't not get panic. Right treatment or first aid that is immediately carried out to prevent worse consequences (Rustam, 2012).

Diarrhoeal diseases are a common health problem among children in many parts of the world, including in developing countries. Diarrhea is a bowel movement whose consistency is liquid, soft, or watery and is more frequent than usual (Aprilia et al., 2022). The most common cause of diarrhea at all ages is acute gastroenteritis of viral origin, namely rotavirus. Bacteria from contaminated food and drinks are also the cause of diarrhea (Hidayati, 2022). Self-medication, or self-treatment without the help of medical personnel, is often the first choice in the management of mild diarrhoea in children (Fonna, 2022). However, the success of self-medication in managing diarrhoea largely depends on parents' or caregivers' knowledge of the disease, as well as their ability to choose and use medication appropriately (Widayati, 2020). Parents' and caregivers' attitudes toward managing the disease depend on how they assess the severity of the disease, especially in young children, and on how primary caregivers of children < 5 years access health care (Shewangizaw et al., 2023).

The level of education has the potential to influence the level of knowledge of parents or caregivers when it comes to the self-medication of diarrhoeal diseases in children. Individuals with higher levels of education tend to have better access to health information, including appropriate treatment methods. Therefore, it can be assumed that parents or caregivers with higher education will have better knowledge in managing diarrhoea in children independently (Astika, 2023). The research of (Mekuria et al., 2021) revealed that. Being from an urban area, having access to a private pharmacy, higher year of study, parents' education level, and having peer/family pressure are significant factors for self-medication. Self-medication is the act by which a person, on their own account or as a result of recommendation from a third party, chooses to administer medicine to themselves in order to prevent, treat or cure a condition whose identity and severity is generally unknown (Alves et al., 2021). The use of medicines by individuals to treat selfrecognized illnesses or symptoms is defined as selfmedication. Self-medication includes several forms through which individuals themselves or the caregivers (for minors) decide, without medical evaluation, which medication they will use for symptom relief and treatment; it involves sharing drugs with other members of the family and social group, using leftovers from previous prescriptions or disrespecting the medical prescription either by prolonging or interrupting the dosage and the administration period prescribed. Children are often given medicines by their primary caregivers.

Selfmedicated medicines in children included antibiotics, cough and cold medicines (CCMs), vitamins, supplements, and so on (Ge et al., 2021). A number of studies have been conducted to explore the relationship between education level and knowledge in self-medication of diarrhoeal diseases in children finding that parents with higher education tend to have better knowledge on how to treat diarrhoea in children independently compared to those with low education. Similar findings were also reported by Jones and colleagues (year) in their study involving a wider population sample (Rimadhiani, 2020). (Kusumawati & Nugraheni, 2023) states that that there was a correlation between the level of knowledge, attitudes, and behavior toward self-medication for diarrhea among parents of toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia in 2021. It was proved The results of the correlation test of knowledge on the attitudes of parents of toddlers towards self-medication for diarrhea yielded 0.596 with the significance level was 0.000, with a moderate correlation. Meanwhile, the results of the knowledge test on the behavior among parents of toddlers toward self-medication for diarrhea was 0.245, with a significance level of 0.020, which had low correlation (Kusumawati & Nugraheni, 2023).

Understanding the relationship between education level and knowledge in self-medication of diarrhoeal diseases in children has important clinical implications. On the contrary, lack of awareness of doses, treatment schemes and other medication characteristics increases the risk of adverse effects (Cruz et al., 2022). Medical personnel, such as doctors and nurses, need to provide easy-to-understand information to parents or caregivers, especially those with low education levels, to improve their knowledge about the treatment of diarrhoea in children (Sholiha et al., 2019). In addition, public health policies should also focus on approaches that target improving health literacy among parents or caregivers with low education (Annah, 2023). Both are aware to some extent of self-medication, with medical students showing more excellent knowledge regarding the safety of OTC drugs. However, high negative attitudes towards selfmedication were noted, indicating the need for educational health programs to spread awareness about the harmful effects of the risky practice (Malli et al., 2023).

## **CONCLUSION**

Based on the results of data analysis and discussion regarding the relationship between the level of education and the level of knowledge in self-medicating diarrheal diseases in children in Bae sub-district, Kudus Regency, there is a significant relationship between the level of education and parental knowledge in self-medicating diarrheal diseases in children with a correlation coefficient value of 0.928 in the correlation test. sperman rank so it is included in the very strong category and the results was significant.

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