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FAMILY KNOWLEDGE LEVEL AND CHILD DIARRHEA AT THE PEDIATRIC UNIT OF NATIONAL HOSPITAL GUIDO VALADARES

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A R T I C L E I N F O

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A B S T R A C T

Diarrhea is an infectious disease that poses a significant threat as it can affect children with weakened immunity, leading to rapid deterioration, and the failure to prevent it can increase mortality rates. The reported cases of diarrhea in Timor-Leste are around 4,965, specifically affecting children (Ajensi Tatoli, 2023). Additionally, data from the National Hospital Guido Valadares indicate 710 cases of diarrhea from January to August 2023 in the Pediatric Unit (Pediatric Unit, 2023). The objective of this research is to understand and analyze the relationship between family knowledge levels and diarrhea cases in children. The respondents in this study are families of children who have sought treatment in the pediatric unit of HNGV, totaling 50 individuals. This research adopts a quantitative approach, using a questionnaire for data collection. The data analysis techniques include correlation analysis and the chi-square test. The research results show that the Expected Count values in each table are greater than 0.5 or 100%. The statistical analysis with the chi-square test yields an exact Sig. (2-sided) value of 0.000, which is less than 0.05 ($P < 0.05$), using SPSS version 23.0, indicating acceptance of the alternative hypothesis (Ha) and rejection of the null hypothesis (Ho). Furthermore, the correlation coefficient value (rcount) between the family knowledge level (X) and diarrhea cases in children (Y) is 0.491, indicating a moderate to neutral relationship. In conclusion, there is a relationship between family knowledge levels and diarrhea cases in children at the Pediatric Unit of the National Hospital Guido Valadares.

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INTRODUCTION

Health is an essential aspect for everyone to pursue their goals and perform their duties to lead a fulfilling daily life, contributing to their well-being, community, and the overall development of the nation of Timor-Leste. In essence, individuals with good health possess physical and mental well-being and are free from illnesses. Health plays a crucial role in enhancing the quality of human resources, preventing individuals from facing adverse conditions, and making efforts to improve their way of life.

People with good health lead a liberated life, including both parents and their children. When an individual's health condition is suboptimal, human resources are affected negatively, leading to physical and psychological challenges. A healthy person is free from all kinds of ailments. Conversely, an unhealthy person, both physiologically and psychologically, is someone (parents and children) who experiences various illnesses, including children suffering from diarrhea.

Diarrhea affects children under five years old more severely due to their weakened immunity and the vulnerable phase they are in. This vulnerability arises from their exposure to contaminated food and water sources, making them more susceptible to bacteria causing diarrhea (Endang, 2015 in Rahayu, 2021).

According to the World Health Organization (2021), health is a condition that encompasses physical, mental, and social well-being and is not merely the absence of diseases but also excludes the deficiency of diarrheal diseases, which contribute significantly to the global burden of illnesses. This ailment has a high incidence worldwide, affecting millions of people annually. The disease causes the death of approximately 1.7 million individuals each year. It particularly poses a threat to children aged 1 to 12, with an annual toll of 76,000 deaths due to diarrhea (WHO, 2013).

Diarrhea is a debilitating condition characterized by frequent and loose bowel movements, often accompanied by changes in consistency and the presence of mucus. Its occurrence is generally linked to the consumption of contaminated food and beverages containing viruses, bacteria, or parasites. Diarrhea, as an infectious disease, is particularly perilous for children with weak immunity. Failure to promptly prevent and address diarrhea can significantly increase mortality rates among children.

To mitigate the impact of this disease, families need to possess active capabilities, ensuring quick access to healthcare facilities. Parents must also

undertake extensive preventive measures, emphasizing proper handwashing with soap before eating, after using the toilet, and during diaper changes. With knowledge, control, and maximum care, parents can provide a positive response to diarrhea symptoms in children (Sanusingawi, 2020).

LITERATURE REVIEW

Knowledge

Knowledge is a term used to understand what an individual knows about something. It refers to the result of an individual's understanding of a subject they have learned or studied (Surajiyo, 2008). Knowledge serves as a measure or gauge formed through each person's actions, manifested through their thoughts, ideas, and more. Knowledge is the outcome of understanding, and this occurs after a person detects an object. Detection happens when a person's senses, such as seeing, hearing, smelling, feeling, and tasting, interact with the surroundings. Much of a person's knowledge is acquired through sight and hearing (Notoadmojo, 2016).

According to Suharjo (1980), knowledge cannot shield individuals from problems. Knowledge regarding diarrhea can be obtained through formal or non-formal education, as well as through various media and communication channels like television, newspapers, radio, or health promotion campaigns related to diarrhea.

Notoadmojo (2009) (Arland, 2016) states that the level of knowledge can be divided into several aspects: (a) Understanding, the ability to recall material or things that have been learned; (b) Comprehension, the effort to convey or articulate information accurately with its intended purpose; (c) Application, the effort applied to the material learned in real-life situations; (d) Analysis, the ability to describe material or objects into components, recognizing organizational structures and relationships; (e) Synthesis, the ability to create or make connections to new parts. This includes the ability to develop new formulas from existing ones; (f) Evaluation, the ability to assess research material based on predetermined or self-established criteria.

According to Notoatmodjo (2013), a person's knowledge can be influenced by various factors such as age, level of education, environment, information sources, experience, results, social culture, and economy.

Diarrhea

Diarrhea is a condition characterized by abnormally frequent bowel movements exceeding three times a day or a change in stool consistency of 200 grams per day, often liquid or watery (Smeltzer & Barre, 2016). According to Bartlett (2020), diarrhea involves excessive and watery bowel movements, similar to gruel or porridge. Diarrhea can also affect infants, causing loose stool, stomach discomfort, and abdominal pain due to bacterial or parasitic causes (Suradi & Rita, 2020). The condition may lead to the loss of fluids and electrolytes, primarily due to the increased frequency of watery bowel movements.

Dwienda (2014) classifies diarrhea into three main types: (1) Acute Diarrhea: Characterized by watery stool and lasting less than 7-14 days; (2) Persistent or Chronic Diarrhea: Lasting more than 14 days with or without accompanying abdominal pain; (3) Chronic Diarrhea occurs over a prolonged period and may lead to dehydration.

Ngastiyah (2005) (Suardewi, 2019) states that diarrhea occurs when various substances enter the digestive tract, triggering the onset of diarrhea. The impact of diarrhea can be attributed to factors such as (a) Infections: caused by bacteria, viruses, or parasites; (b) Food: intake of contaminated or toxic substances; (c) Psychological Factors: stress, anxiety, although diarrhea in children and adults can also result from allergies and immunodeficiency (weakened immune system).

According to Kartika Sari (2013), signs and symptoms of diarrhea include increased frequency of bowel movements, loose stools, decreased appetite, and abdominal pain.

Treatment for diarrhea in children follows these guidelines:

a) Plan A: Home Treatment (advice)
    - Continue exclusive breastfeeding for infants receiving exclusive breastfeeding.
    - For exclusive breastfeeding, supplement with oral rehydration solution (ORS) and zinc.
    - If ORS is unavailable, homemade alternatives with salt and sugar can be used.
    - Administer ORS and zinc according to the child's age.

Age	Total Likidu no Zinc
< From two years	50 mL – 100 mL kuandu tee ben
Two years up to five years	100 mL – 200 mL kuandu tee ben
< from six month	Zinc tab ½ (10 mg) durante loron 10-14
> Six Month	Zinc tab ida (20 mg) durante loron 10-14

Table 1: Fó Oralit no Zinc

b) Plan - B

Provide oral rehydration according to age for three hours.

Year	Month 4	Month 4 – 12	Month 12 – 24	Year 2 – 5
Weight	< 6 kg	6 - < 10 kg	10 - < 12 kg	12 – 19 kg
mililitru (mL)	200 – 400	400 – 700	700 – 900	900 – 1400

Table 2: Give Oral Rehydration According to Age

How to give oral rehydration that is good for children with diarrhea from mothers or families is as follows: give slowly – slowly, but frequently, and if the child vomits within 10 minutes, give oral rehydration again and continue breastfeeding.

c) Plan – C: Treatment for fast severe and mild dehydration

Year	Fist Time30 mL/kg (bolus)	70 mL/kg kontinuasaun
< month12	Oras 1	Oras 5
12-month up to 5 years. Fulan 12 to tinan 5	Minutu 30	2 ½

Table 3: Give an infusion RL 100 mL/kg (every treatment)

METHOD

This research was conducted at the Pediatric Unit of the National Hospital Guido Valadares in Dili, Timor-Leste. The population involved in this study consists of families (parents, siblings, cousins, uncles, aunts, and others) whose children or family members have experienced diarrhea and received treatment or care at the Pediatric Unit of the National Hospital Guido Valadares.

The sampling technique used to identify the sample is nonprobability sampling through accidental sampling, which is a technique of selecting samples without specific criteria but can be respondents available to the researcher at the research

site. The sample in this study includes families whose children were admitted to the pediatric unit with diarrhea, totaling 50 individuals (fifty) according to inclusion and exclusion criteria.

In this research, researchers distributed a questionnaire regarding the level of family knowledge (Variable X) and diarrhea disease (Variable Y) to respondents to answer based on the statements or options provided in the questionnaire.

To test the relationship between the family knowledge variable and the diarrhea disease variable, the researchers will analyze it through Univariate and Bivariate analysis to understand the relationship between the two variables, composed of the independent variable (family knowledge) and the dependent variable (diarrhea). This analysis will use the Chi-Square statistical test. The aim is to determine if there is a significant relationship between the independent variable and the dependent variable. The statistical analysis used by the researchers is the Chi-Square statistical analysis, supported by SPSS for Windows version 23.0.

RESULT AND DISCUSSIONS

Result

Univariate analysis as a frequency analysis aimed at calculating the presumptive results of respondents regarding the variable level of family knowledge and the occurrence of diarrhea in children at the Pediatric Unit - HNGV. The results of univariate analysis for each variable are as follows: a. Family Knowledge Level Relates to the questionnaire responses regarding the family knowledge level of children in the Pediatric Unit - HNGV, as follows

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Menus	32	64,0	64,0	64,0
	Di'ak	18	36,0	36,0	100,0
	Total	50	100,0	100,0	

Table 4: Frequency Regarding Family Knowledge Level

Relating to the questionnaire responses from the families of children in the Pediatric Unit - HNGV regarding diarrhea illness, as follows:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	15	30,0	30,0	30,0
	Know	35	70,0	70,0	100,0
	Total	50	100,0	100,0	

Table 5: Frequency of Diarrheal Illness

Bivariate analysis using the chi-square test to examine the relationship between the variables of family knowledge level and diarrhea illness in children at the National Pediatric Hospital Guido Valadares, as follows:

From the results of the SPSS version 23.0 analysis, the researcher conducted bivariate analysis with the Pearson chi-square test, presented in a 2 x 2 table as shown in the following table

			Moras Diarea		
			La Hatene	*Hatene*	Total
Level of family understanding	Menus	Count	15	17	32
		Expected Count	9,6	22,4	32,0
	Di'ak	Count	0	18	18
		Expected Count	5,4	12,6	18,0
Total		Count	15	35	50
		Expected Count	15,0	35,0	50,0

Table 6: *Crosstabulation*
Level of family Understanding * Diarrhea Illness **Crosstabulation**

Crosstabulation analysis fulfills all criteria in which the Expected Count values for each larger table are greater than 0.5 or 100% of the Expected Count values are greater than 0.5 (> 0.5). Thus, the researcher utilized these data to conduct a continuous analysis for the Pearson chi-square test.

Bivariate analysis is a statistical test used to understand the relationship between two variables, composed of an independent and a dependent variable. The results of the correlation analysis in this research are as follows:

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12,054[a]	1	,001		
Continuity Correction[b]	9,925	1	,002		
Likelihood Ratio	16,850	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	11,813	1	,001		
N of Valid Cases	50				

a. 0 cells (0,0%) have an expected count less than 5. The minimum expected count is 5,40.
b. Computed only for a 2x2 table

Table 7: Chi-Square Tests

The statistical chi-square test above indicates that the significance value is 2-tailed from the exact Sig. (2-sided) = 0.000, where the value is smaller than 0.05 (P < 0.05). Therefore, we accept the alternative hypothesis (Ha) and reject the null hypothesis (H0), signifying a significant relationship between the independent variable (family knowledge) and the dependent variable (diarrheal illness). The correlation values for each variable are as follows

		Nivel Konesimentu Familia	Moras Diarea
Nivel Konesimentu Familia	Pearson Correlation	1	,491**
	Sig. (2-tailed)		,000
	N	50	50
Moras Diarea	Pearson Correlation	,491**	1
	Sig. (2-tailed)	,000	
	N	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8: Koefisiente Korelasaun
Correlations

Based on the data in the table above, it shows that the correlation coefficient value (r-count) between the variable family knowledge level (X) and diarrheal illness (Y) in children is 0.491. This means that there is a significant or neutral relationship between the family knowledge level (X) and diarrheal illness (Y) with a significance level of 0.000, which is

smaller than 0.05.

Discussion

Based on the research results and data analysis, the researcher will explain the relationship with the research variables, composed of variable X (family knowledge level) and variable Y (diarrheal illness) in children admitted to the National Pediatric Hospital Guido Valadares. From the research results, the researcher demonstrates that the family knowledge level falls into the lower category for 32 individuals (64.0%), while the good category consists of 18 individuals (36.0%). This indicates that the family knowledge level of the children in the Pediatric Unit - HNGV, who served as respondents, is generally low.

In this context, knowledge is considered a result of various materials learned according to a level, including the capacity level that an individual possesses to appreciate and demonstrate, specifically ranging from the simple to the abstract and complex levels. Therefore, parents and families need to pay attention to their children to free them from various illnesses, including diarrhea. Parental attention is an important factor in supporting and aiding children to achieve good health.

Furthermore, the research results indicate that adequate knowledge can have an impact on influencing family understanding of diarrheal illnesses. Inadequate knowledge may hinder the ability of families to know, understand, and apply measures to ensure care, leading to increased vulnerability to diarrheal illnesses. Consequently, healthcare professionals can enhance health promotion activities to increase the knowledge level of parents, guardians, uncles, aunts, and all families regarding diarrheal illnesses.

Additionally, the research results regarding diarrheal illnesses reveal that some families are knowledgeable about diarrheal illnesses, with 15 individuals (30.0%) in the category of knowing and 35 individuals (70.0%) in the category of not knowing. The results show that families with children as respondents in the Pediatric Unit - HNGV are generally knowledgeable about diarrheal illnesses.

Moreover, the statistical chi-square test analysis results indicate an exact Sig. (2-sided) value of 0.000, which is smaller than 0.05 ($P < 0.05$), indicating a significant relationship between family knowledge and diarrheal illnesses. In this context, knowledge signifies thoughts and information that we acquire or learn about various subjects, allowing us to study, observe, read, and understand what we see or learn.

Therefore, parents and families need to pay attention to their children to free them from various illnesses, including diarrhea. Parental attention is an important factor in supporting and aiding children to achieve good health.

According to a study conducted in SSK Remexio (Baptista, Moreira, et al., 2021), the knowledge level of mothers regarding diarrhea in babies aged five and under is low, with a percentage of 38% falling into the lower category. Additionally, indicators show that the less category is 45.0%, surpassing the knowledgeable and neutral categories. Furthermore, an indicator related to the neutral category is 40.7%. The study suggests that most families have limited knowledge. When families lack knowledge, they may think that it is acceptable to prevent diarrheal illnesses by maintaining cleanliness, creating a clean and safe environment, and using safe drinking water. However, for families or mothers busy with work who are unable to visit health centers or receive information about diarrheal illnesses, this may not be enough.

From this research, it is evident that the correlation coefficient value (r-count) between the family knowledge level (X) and diarrheal illnesses (Y) in children is 0.491, signifying a significant or neutral relationship between the family knowledge level (X) and diarrheal illnesses (Y) with a significance level of 0.000, which is smaller than 0.05. This suggests a sufficient or neutral relationship between the family knowledge level (X) and diarrheal illnesses (Y) in families awaiting the treatment of their children in the Pediatric Unit, National Hospital Guido Valadares

CONCLUSIONS

Regarding the research results and the discussion above, as a researcher, I would like to conclude that there is indeed a significant relationship between the family knowledge level and diarrheal illnesses in children at the National Pediatric Hospital Guido Valadares. The statistical chi-square analysis with an exact Sig. (2-sided) = 0.000, where the value is less than 0.05 ($P < 0.05$), supports this conclusion. Additionally, the correlation coefficient value (r-count) between the family knowledge level (X) and diarrheal illnesses (Y) in children is 0.491, indicating a sufficient or neutral relationship.

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