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Diarrhea In Children Aged 0-5 Years at the Gleno Ermera Inpatient Health Center: Health Promotion a Factual Meddling Measure in Municipality of Ermera, During July 2025 Until February, 2026.

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Abstract

Introduction: In Timor-Leste, diarrhea is the second place with 11.5% of incidence of the 10 major diseases counted and as a cause of hospitalization of children, of all hospitalized children. Diarrhea is one of the 4 most frequent cases of admission of children aged 0-5 years to the Gleno Ermera Inpatient Health Centre. The Municipality of Ermera have 768 km direct border between North Municipality of Liquica, South Municipality of Ainaro, Municipality of Aileu and West Municipality of Bobonaro.

Objective: To research the relevance of health promotion as preventive dimensions in diarrhea in children aged 0-5 years at the Gleno Inpatient Health Centre, Ermera Administrative Post the Municipality of Ermera, Timor-Leste.

Research Methodology: Evocative study with a quantitative approach, using a purposeful non-probabilistic sample. The questionnaire contains closed questions of the bifurcated or dichotomous type of Likert scale, as used in this research methodology carried out by the researcher in the field of study in Municipality of Ermera.

Results: Parents mention having one of the best practices of personal hygiene and in the composition, preparation and storage of food. Parents also consider that health promotion is different from the importance of preventing and controlling diarrhea. However, we have found that some parents still use soap and water as a form of disinfection, do not wash vegetables and fruits properly, nor do they wash their hands when they move them in the garbage, when they go to the bathroom. Parents allude that they do not always know the etiology of diarrhea, do not know how to clarify the forms of transmission and control through health education and hygiene measurements, which are clearer in the implementation practice.

Conclusion: We need to develop initiatives for the prevention of childhood diarrhea and despite the scarce number of interferences sustained by health promotion and education, it is recognized that health professionals should be promoting the improvement of the quality of life of these children to thank the profession of health professionals in Timor

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Leste, namely in the Administrative Post of Ermera of the Municipality of Gleno Ermera cited by (Tilman CB., et al, 2026).

Keywords: Diarrhea, Meddling in Health Promotion, Children.

I. INTRODUCTION

Childhood diarrhea is a major child health problem worldwide, particularly in underdeveloped countries. According to the World Health Organization (WHO, 2024), it is estimated that each year 2.5 billion cases of diarrhea occur in children under five years of age, and is therefore one of the main public health problems worldwide cited by (Tilman CB., et al, 2026)[1]. The World Health Organization (WHO, 2023) and the United Nations Children's Fund (UNICEF) also stated in 2022 that 3,500 children under five years of age die daily in the world due to the difficulty of access to drinking water and the absence of basic sanitation. 2025)[2].

Especially with data from the World Health Organization in the Southeast Asia Region (SEARO, 2023), in the report presented for the year 2021 it is revealed that diarrhea is in second place, as a cause of mortality of children under 5 years of age, that is, equal to 23% of total mortality of children under 5 years of age, in the Asia region, namely the SEARO cited by (Tilman CB., et al, 2026)[3]. The statistical document of the Ministry of Health, which was published by the Office of Health Information Systems and Epidemiology Surveillance, in the year 2025, shows that in Timor-Leste, diarrhea has the second place of incidence of the 7 major diseases narrated by health centers. Also, according to this document, the cause of hospitalization of children due to diarrhea in hospitals in Timor-Leste is also in second place (15.4%) of all hospitalized children. The incidence rate of simple diarrhea in babies under 1 year is 323 per 1000 and in children aged 1-4 years is 166 per 1000 children. Diarrhea also contributes to 11% of infant mortality among children admitted to hospitals in Timor-Leste. According to the demographic health data in Timor-Leste, it shows that infant mortality between 0-5 years is 56 per 1,000 live births.

The prevalence of diarrhea in children under 5 years of age according to one study shows that it is important to have carefully taken into practice implementing the daily rate of each family with the percentage of 7.4% cited (Tilman CB., et al, 2026)[5]. According to statistical data from IMCI (Integrated Management Childhood Illness) of the Gleno Ermera Inpatient Health Centre, it shows that in 2022 it registers 418 cases of diarrhea (24.4%), in 2021 it registers 506 cases (22.8%) and in 2022 it registers 674 cases or (22.4%) of the total of the various cases of children aged 0-5 years registered in the health information system cited by (Tilman CB., et al, 2026)[6].

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To solve the problem of diarrhea in children in Timor-Leste, it is necessary to strengthen health promotion and education as one of the important elements in health care, specifically in medical and nursing care, to ensure the basic human needs of the pediatric patient as an individual who not only faces a disease problem, but also a problem of illness. but also, as a human and social being. Health promotion and education consists of a well-planned and organized training action, having the ability to teach and evaluate a health training and education action at the municipal and national level. Education is the act or process of educating oneself, applying one's own methods to ensure formation and physical, intellectual development, or a set of these methods: pedagogy, didactics, training teaching, and more certain instruction. One of the functions of health professionals in the area of education and training to sustain and continue the work of nursing and medical care is fundamental in current science cited by (Tilman CB., et al, 2026)[7].

In the care of children with diarrhea, it is important that care is integrated and systematized. Currently, one of the references is the IMCI (Integrated Care for Childhood Diseases), which aims to reduce childhood mortality and contribute in a better or significant way, considering the current health problems, especially for those living in less developed countries8. For this reason, we conducted a research study on: Diarrhea in children aged 0-5 years at the Gleno Inpatient Health Centre of the Ermera Administrative Post of the Municipality of Ermera is 768 km. Direct border between North Municipality of Liquica, South Municipality of Ainaro, East Municipality of Aileu and West Municipality of Bobonaro, Timor-Leste: in health promotion as a measure of rapid and certain intervention in implementation practice cited by (Tilman CB., et al, 2026).

Research Objectives

General objective: To analyze the relevance of health promotion as preventive measures in diarrhea in children aged 0-5 years at the Gleno Inpatient Health Center, of Ermera Administrative Post in Municipality of Ermera Timor-Leste, 2026.
Specific objectives:

1. To narrate the incidence of diarrhea in children aged 0-5 years.
2. To define the factors associated with diarrhea in children aged 0-5 years.
3. Introduce yourself to the health promotion measures of medicine with diarrhea.

II. THEORETICAL FRAMEWORK

Diarrhea is defined by an increase in the frequency of stool or decrease in the consistency of stool and by a fecal face > 200g/day in children aged 0-5 years, it is very dangerous to

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have carefully in the practice of health care cited by (Tilman CB., et al, 2026)[9]. Diarrhea is defined as an increase in the frequency of bowel movements or a decrease in the consistency of stools in relation to the child's normal habits. When appreciating these changes, it is necessary to take into account the normal habits of the child, because there is an enormous variability of fecal excretion patterns from child to child, which may vary with age and type of diet, which should be taken into account in health care practice at national and international level (Tilman CB., et al, 2026)[10]. Classification of diarrhea based on a chronology of event and duration of the same manner or thing as accident:

- Acute diarrhea: <14 days. It is caused by infectious enteritis. Acute-prolonged or persistent diarrhea: >14 to 20 days. It is a consequence of severe infectious enteritis in malnourished or inadequately treated children.
- Chronic diarrhea: >20 up to days. It originates from complications of enteritis and protein allergies in the human body11.

We can also classify diarrhea according to pathogenesis and etiology in the research study carried out in the research field cited by (Tilman CB., et al, 2026)[12]:

a) Pathogenesis:

1. Osmotic: by adhesion to the mucosa, it causes lesion of the surface enteritis's, with reduced production of disaccharides (lactase) and detention of fluids within the intestinal lumen due to the presence of dissolved (sugars) not osmotically active, which absorb water into the intestinal loop and are metabolized by the anaerobic pathway resulting in the production of acid radicals (e.g., rotavirus should be prevented from rotavirus vaccines in current).
2. Secretory: the release of enterotoxin blocks the active transport of water and electrolytes from the enterolith, increasing its intestinal secretion, mainly chloride and bicarbonate ions (e.g., enterotoxigenic E. coli).
3. Conqueror: Injury to the epithelial cell of the intestine prevents the absorption of nutrients. In this situation there may also be a secretory component, since the invaded mucosa produces substances (bradykinin and histamine) that stimulate the excretion of electrolytes into the intestinal lumen. Mucosal incursion may occur causing diarrhea with mucus, pus and blood with hematogenic spread in sediments (e.g., Salmonella, Acronym) or attack of the lamina propria and systemic symptoms (e.g., invasive E. coli, Salmonella).

b) An etiology:

1. Viral: Rotavirus, Adenovirus, Astrovirus, Calicivirus, Nowak virus, Enteric adenovirus serotypes and Picornavirus, all of them in the category of virus group and have carefully.
2. Bacterial: E. coli, mainly classic enteropathogenic (EPEC), Salmonella sp, Sigela sp, Yersinia sp, Clostridium difficult, Stewardess, Viborg cholera, Campylobacter jejuna.

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3. Proto zoa: Giardia lambia, entaloe histolytic, Cryptosporidium; Cyclospora.

According to the updated World Health Organization (WHO, 2025), reinvigorating health education, in terms of health promotion, can be understood as an effort to change behavior. Health promotion is not only about changing behavior, but also includes environmental changes that facilitate the change of procedure of each person, namely the health sector, health promotion and school education have an important role in this process (Tilman CB., et al, 2026) 14. Health promotion upholds the principle of equality (equity), transparency, and benefits (mutual benefit). Health Promotion also places more emphasis on the process or effort of the results of a global public health survey and application in the field of research cited by (Tilman CB., et al, 2026)[15]. The concept of medicine and community public health nursing emerge in the text, intimately related to the interferences and strategies that health professionals must reconcile for the health promotion procedure, and one of the main roles of health professionals is to stimulate self-care in their professional service day is very important in practice cited by (Tilman CB., et al, 2026)[16].

Among the preventive care to combat diarrhea, some measures stand out, such as: a) encouraging mothers to maintain breastfeeding, as it increases children's resistance against diarrhea, thus avoiding early weaning; b) administer rotavirus vaccine (HRV) to children younger than six months; c) assess the socioeconomic conditions and hygiene of children; d) collaborate in educational programs for people involved in community health care; e) guide and supervise in the practice of measures on basic sanitation and water supply; f) to know the beliefs, taboos and habits in force in the population in which the health professionals provide care and to provide guidance according to the needs of the population; (g) knowing, guiding and combating the sources of contagion and preventing the transmission of pathogens; h) direct and accompany the mother in the general care of the child; (i) participate in spreading the word about the problems caused by diarrhoea and how to treat it; j) direct the mother to immediately seek the health service for treatment of diarrhea; k) always wash your hands before and after using the toilet, change diapers; preparing food, breastfeeding, handling dirty materials/objects, touching animals; l) wash and disinfect surfaces, utensils and equipment used in food preparation; m) protect food and kitchen areas from insects, pets, and other animals (store food in closed containers); n) treat the drinking water (by boiling or putting two drops of 2.5% sodium hypochlorite for each liter of water, let it rest for 30 minutes before use); store treated water in clean containers that can be closed to avoid decontamination; o) not to use water from contaminated streams, rivers or wells; p) place the garbage in a closed bag and keep the garbage lid closed at all times; when there is no garbage collection, it should be buried; q) always use the toilet, but if this is not possible, always bury the faces away

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from watercourses; r) be careful not to contaminate water sources with feces and garbage used cited by (Tilman CB., et al, 2026)[10,17.]

III. RESEARCH OF METHODOLOGY

Using the quantitative descriptive method, quantitative and qualitative research methods are most often associated or mixed with deductive and inductive approaches, respectively. Thus, the study aimed to narrate and analyze the factors associated with diarrhea in children under 5. Thus, the sample of this investigation consisted of 60 respondents, from the parents of children aged 0-5 years with diarrhea. The sampling technique that was applied in this investigation was the purposeful non-probabilistic sampling technique. The inclusion criteria were: Parents or representatives of children aged 0-5 years with diarrhea and parents of children with acute diarrhea and without other diseases associated with the same diarrhea. The data collection instrument used was a paper questionnaire with questions. The questionnaire contains closed-ended bifurcated or dichotomous questions and Likert scale questions. In this case, careful attention had to be paid to its preparation and organization. Before the questionnaire is drawn up, there are five practical elements that should be given importance to in the use of data collection. The questionnaire must contain essential elements to make it credible to the person being inspected. For data analysis, we will investigate or use descriptive statistics in the computer program SPSS (*Statistical Package for the Social Sciences 26 version*)[19], most used in this research method in the confidence of analyzing and interpreting cited by (Tilman CB., et al, 2026).

IV. RESULTS.

We will present the results, initially with the description of the parents' knowledge about diarrhea, family hygiene, and finally the health promotion measures transmitted by the nurses indicated in the research carried out.

Table 1. Distribution of subjects by sex.

Sex	Frequency	Percentage
Male	10	14,67
Female	50	83,33
Total	60	100

Regarding gender, the data in the table above allow us to state that the majority 50 (83.33%) are female and only 10 (14.67%) are male, according to research results (Tilman CB., et al, 2026).

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Table 2. Distribution of subjects by type of water supply.

Water supply	Frequency	Percentage
Channeled	48	80
Well	8	14
Other	4	6
Total	60	100

Regarding water supplies, they show that the majority 48 (80%) of the dominated have piped water supplies, 8 (14%) have a well and 4 (6%) other sources of drinking water according to research (2026).

Table 3. Distribution of subjects by type of sanitation.

Type of sanitation	Frequency	Percentage
Septic Cesspool	49	82,33
Latrines	11	17,67
Other	0	0
Total	60	100

Regarding the disposal of excrement, this category was shown that the majority, 49 (82.33%) belong to the group of subjects who use a septic tank, and only 11 (17.67%) use latrines. According to the research result of the implementation (Tilman CB., et al, 2026).

Table 4. Age distribution of current children.

Child's age (years/months)	Frequency	Percentage
0-1	32	53,33
1-2	12	20
2-3	7	11,67
3-4	5	8,33
4-5	4	6,67
TOTAL	60	100

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Regarding the age of the subjects' current child, the data show that the majority: 32 (53.33%) have children between the age group 0-1 year, 12 (20%) in the group of 1-2 years, 7 (11.67%) have children between 2-3 years, 5 (8.33%) belong to the age group between 3-4 years and only 4 (6.67%) have children between the ages of 4-5 years. In the related research results of respondents in the research field (Tilman CB., et al, 2026).

Table 5. Distribution of subjects by episode of diarrhea.

Episode of diarrhea	Frequency	Percentage
No	1	1,67
Yes	59	98,33
1-2	48	80
3-4	8	13,33
>4	2	3,33
TOTAL	60	100

Regarding the episodes of diarrhea of the subjects' children, the data allow us to conclude that the majority of 59 (98.33%) belong to the group that had an episode of diarrhea. OF THE CHILDREN WHO HAD THE MAJORITY, 48 (80%) had between 1 and 2 episodes, 8 (13.33%) had 3 to 4 episodes and only 2 (3.33%) had children who had more than 4 episodes of diarrhea. According to the research result (Tilman CB., et al, 2026).

Table 6. Distribution of subjects by decision to treat their children.

Treatment of the child	Frequency	Percentage
I go to the hospital or health center	53	88,33
I give tea	3	5
Rice and carrot water	2	3,33
Use something else	2	3,33
TOTAL	60	100

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Regarding the treatment decision of the subjects' child, the data show that the majority 53 (88.33%) go to the hospital or health center, only 3 (5%) provide tea and 2 (3.33%) subjects rice and carrot water.

Table 7. Distribution of parents' knowledge about their child's diarrhea.

Statements	Yes		No		I don't know	
	N	%	N	%	N	%
Diarrhea is a communicable disease	30	50	22	36,67	8	13,33
It is transmitted through water, food, person to person	41	68,33	15	25	4	6,67
A child with diarrhea can transmit it to the adult	10	16,67	46	76,67	4	6,67
A child with diarrhea may have watery, sometimes greenish stools and stools at least 4 times during the day.	53	88,33	6	10	1	1,67
When the child has diarrhea, it is necessary to go to the hospital	59	98,33	1	1,67	0	0
I treat diarrhea with homemade recipes	10	16,67	47	78,33	3	5
I stop feeding and only give liquids	35	58,33	22	36,67	3	5
I stop maternal feeding	24	40	34	56,67	2	3,33
My child may become dehydrated and therefore I have to offer more fluids	51	85	6	10	3	5
With diarrhea I let my son play with other children	18	30	41	68,33	1	1,67

Taking into account the data regarding parents' knowledge about their child's diarrhea, we can point out that some results are very similar in terms of positive and negative opinion. Thus, regarding the fact that diarrhea is a communicable disease, 30 (50%) parents are aware of this, although there are still 22 parents in our sample who are unaware of how it is transmitted. The same applies to the suspension of feeding and breastfeeding. In both cases, 36.67% and 56.67% of parents do not know

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the advantages of maintaining adequate nutrition and hydration. As for the knowledge that parents have more about diarrhea, the following stand out: it is transmitted through water, food, person to person 41 (68.33%); A child with diarrhea has liquid, sometimes greenish stools and stools at least 4 times during the day 53 (88.33%); When the child has diarrhea, it is necessary to go to the hospital 59 (98.33%); My child may become dehydrated and therefore I have to offer more fluids 51 (85%); I do not treat diarrhea with homemade recipes 47 (78.33%); With diarrhea, I don't let my child play with other children 41 (68.33%). Regarding the parents' lack of knowledge about their child's diarrhea, we highlight the most evident ones: A child with diarrhea can transmit it to adults 46% (76.67%); and 15 (25%) parents still consider that diarrhea is not transmitted through water, food, or person-to-person. According to the research result (Tilman CB., et al, 2026).

Table 8. Distribution of parental sciences on the importance of health promotion in the prevention of diarrhea.

STATEMENTS	STRONGLY DISAGREE		DISAGREE		AGREE		STRONGLY AGREE	
	N	%	N	%	N	%	N	%
The nurse explained to me what diarrhea was and how it is transmitted	3	5	16	26,67	36	60	5	8,33
The nurse encouraged breastfeeding	1	1,67	4	6,67	44	73,33	11	18,33
The nurse explained to me how I should do about washing the food	2	3,33	8	13,33	42	70	8	13,33
The nurse explained to me how I should do about my son's hygiene	3	5	9	15	38	63,33	10	16,67
The nurse explained to me how I should do about my hygiene	2	3,33	6	10	45	75	7	11,67
The nurse taught me about the importance of giving my son water	2	3,33	3	5	44	73,33	11	18,33
The nurse taught me how to disinfect pacifiers, bottles, toys, among other utensils	1	1,67	2	3,33	44	73,33	13	21,67

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The nurse observed my son's general condition (fontanelle, weight, skin fold, pallor, stools...) and explained its importance	3	5	12	20	33	55	12	20
The nurse taught me some homemade recipes	6	10	24	40	26	43,33	4	6,67
The nurse has found the reason for the diarrhea and will try to solve it	3	5	16	26,67	36	60	5	8,33

FOR A BETTER INTERPRETATION OF THE RESULTS, WE WILL CONSIDER AGREE AND STRONGLY AGREE AS A POSITIVE ANSWER AND DISAGREE AND STRONGLY DISAGREE AS A NEGATIVE ANSWER. THAT IS WHY WE WILL ADD IT UP. THUS, THE FOLLOWING PARENTAL SCIENCES ARE EVIDENCED ABOUT parents' knowledge about the importance of health promotion in the prevention of diarrhea: Health professionals encouraged breastfeeding (55; 91.66%); The health professionals explained to me how I should do it in relation to washing food (50; 83.33%);

The health professionals explained to me how I should do in relation to my hygiene (52; 86.67%); Health professionals taught me about the importance of giving water to my child (55; 91.66%); Health professionals taught me how to disinfect pacifiers, bottles, toys, and other utensils (57; 95%). We also found that there was some lack of knowledge about the parents' knowledge about the importance of health promotion in the prevention of diarrhea: Health professionals did not explain what diarrhea was and how it is transmitted (19; 31.67%); The health professionals did not explain how I should do regarding my child's hygiene (12; 20%); The health professionals did not observe my son's general condition (fontanelle, weight, skin fold, pallor, feces) and did not explain its importance (15; 25%); Health professionals did not teach some homemade recipes (30; 50%); Health professionals did not find the reason for the diarrhea (19; 31.67%), according to the research result (Tilman CB., et al, 2026).

V. DISCUSSION

Diarrhea is one of the 5 most frequent cases in children aged 0-5 years at the Gleno Ermera Inpatient Health Centre include: Respiratory tract infection, Pneumonia, Dengue fever and Malnutrition. According to statistical data from IMCI *(Integrated Management Childhood Illness*) of the Gleno Ermera Inpatient Health Center, dated 30 to 26 November 2024, show that in 2023 there were 516 cases of diarrhea (27.4%), in 2022 there were 803 cases (32.8%) and in 2021 there were 774 cases, (36.4%) out of the total number of cases

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of children aged 0-5 years registered. Regarding the water supply, most of the subjects have piped water supply and septic tank use, but there is still a significant number of people without piped water and with latrines. According to the literature consulted in relation to the type of housing, area where they live, access to drinking water and elimination of dirt, these aspects are related to socioeconomic conditions and human behaviors, and the occurrence of the diarrhea episode can only be understood within a multicausal model in which several factors that are directly related to water are intersected cited by (Tilman CB., et al, 2026)[20].

The result of a study by Florentino (2023) on the relationship between parental knowledge and diarrhea shows that there is a significant relationship between parental sciences and children having diarrhea 21. However, on the contrary, the result of the study by Sousa (2018), on the relationship between parents' knowledge and the incidence of diarrhea in children under 5 years of age in the Dom Aleixo Dili Administrative Post, does not show a significant relationship between parents' knowledge and diarrhea in children, but is related to the attitude of waste from garbage treatment still not well the awareness of the population in Dili and other Municipalities of Timor-Leste in practice cited by (Tilman CB., et al, 2026). We also found that there was some ignorance about the relevance of family hygiene in the prevention of diarrhea, since parents: wash their child's bottle/pacifier/cup with soap and water after each use; They do not wash their hands with soap and water after handling the trash can, after going to the toilet and after cleaning their child when he does his physiological needs. The result of a study by Sousa, (2018) on the relationship between parental handwashing and prevention of diarrhea in children shows that handwashing practices when carried out with drinking water are associated with a decrease in cases of diarrhea in children cited by (Tilman CB., et al, 2026).

Regarding the parents' knowledge about the importance of health promotion in the prevention of diarrhea, we evidenced that: Health professionals encouraged breastfeeding; The health professionals explained to me how I should do in relation to washing the food; The health professionals explained to me how I should do regarding my hygiene; The health professionals taught me about the importance of giving water to my son; The health professionals teach how to disinfect pacifiers, bottles, toys, among other utensils. We also found that parents were not aware of the importance of health promotion in the prevention of diarrhea: The health professionals did not explain what diarrhea was and how it is transmitted; with the parents they should do in relation to the child's hygiene; The health professionals did not observe the child's general condition (fontanelle, weight, skin fold, pallor, feces); Health professionals have not found the reason for diarrhea and therefore cannot solve it through a good understanding of the family cited by (Tilman CB., et al, 2026).

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According to the World Health Organization (WHO, 2025), reinvigorating health education, in terms of health promotion, health education, can be understood as an effort to transform behavior. Health promotion is not only about changing behavior, but it also includes the environmental changes that facilitate behavior change. The main idea of health promotion is that health promotion is any combination of health education and interferences related to family economics, politics, and organization, which are designed to facilitate the behavioral and environmental changes favorable to health very important in the lives of people is very important cited by (Tilman CB., et al, 2026).

VI. CONCLUSION

There are several factors associated with diarrhea in children aged 0-5 years, at the Gleno Ermera Inpatient Health Centre, Timor-Leste, we reveal that:

1. Parents' knowledge about their child's diarrhea and the fact that diarrhea is a communicable disease, half of the parents are aware of this, although there are still parents in our sample who are unaware of how it is transmitted. The same is true of the suspension of feeding and breastfeeding.
2. Most of them have knowledge and good practices of family hygiene in prevention. We have also noticed that there is some lack of knowledge. Namely on how to disinfect, not always washing your hands when you go to the garbage, when you go to the bathroom, or after taking care of your children when they go to the bathroom.
3. Most parents are aware of the importance of feeding practices in preventing diarrhea. We also found that some parents still do not wash vegetables and fruits with water and sodium hypochlorite, do not observe expiration dates and use leftover meals to give to their children, which are not always properly stored.
4. Most parents are aware of the importance of health promotion in the prevention of diarrhea. However, there are opinions that argue that health professionals do not always explain what diarrhea is, nor the ways to prevent it, not knowing at the same time the cause of it, nor the ways to solve this health problem in public health, with patience and encourage in the take implementation is very fundamental in health sector cited by (Tilman CB., et al, 2026).

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