



Determinants of the Risk Factors for Diarrhea in Toddlers at the Limboto Health Center, Gorontalo Regency

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ABSTRACT: Parenting is one of the factors that are closely related to the growth and development of children, including several things, namely food, which is a source of nutrition, vaccination, exclusive breastfeeding, treatment when sick, and environmental cleanliness and clothing. This study aims to determine the effect of maternal care patterns for stunting in children aged 0-23 months in the Gorontalo District. This type of descriptive-analytical research has a population of 1614 mothers under two and a sample of 188 mothers under two. The research results were the effect of parenting style on the incidence of stunting in children aged 0-23 months (p -value=0.022), parenting health, and sanitation parenting patterns on the incidence of stunting in children aged 0-23 months (p -value = 0.000). The most influential factor is the factor of healthy parenting (p -value = 0.001). This study concludes that the mother's parenting style influences the incidence of stunting in children aged 0-23 months in Gorontalo Regency, with the most dominant influencing factor, namely health parenting factors. Future researchers are expected to be able to conduct further research on stunting outside of other variables besides maternal parenting.

KEYWORDS: Diarrhea, Education, Latrines, Toddlers, Trash Cans.

INTRODUCTION

In Indonesia, diarrhea is a public health problem with a high prevalence and is an endemic disease that has the potential to cause extraordinary events and cause death (Iryanto et al., 2021). Diarrheal condition is not new but has been around for a long time and is still there even though it is so easy to find information in the digital world. Diarrhea in toddlers can be caused by infection by bacteria, viruses, or parasites, impaired absorption of nutrients, allergies, poisoning caused by several chemicals, and decreased immune system or immunodeficiency. Other factors are agents, hosts, environmental conditions, health services, and behavior (Prawati, 2019).

METHODOLOGY

Place and time of research

Research locations

The location of the research was carried out in the working area of the Puskesmas Limboto, Gorontalo District. This research was carried out over two months.

Population and Sample

The population used in this study is diarrheal cases in toddlers. Based on data from Puskesmas Limboto, in 2021, there will be 7,338 toddlers. The sample is part of the population; the example in this research is mothers who have toddlers in the Limboto Puskesmas work area. Sampling was carried out using proportional random sampling. The piece is selected by simple random sampling by dividing the number of samples proportionally based on the number of children under five in each village. The sample range was calculated using Ruimuis Slovin and obtained a sample size of 363 toddlers.

Data analysis

The Chi-Square test analysis technique uses a 95% confidence level with α 5% so that if the P value (p -value) < 0.05 , it means that the results of statistical calculations are significant (significant) or it shows that there is a correlation between the independent variables and the dependent variables.

Multivariate analysis was carried out to intuitively select the independent variables considered dominant in the occurrence of diarrhea. The research used was the logistic regression test, with the parameter value of significance being $p < 0.05$. The variables included in the multivariate analysis are all independent variables with a p -value < 0.05 .



RESULTS AND DISCUSSION

Bivariate Analysis

The results of the analysis of the relationship between education and response to the incidence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:

Table 1. Analysis of the Relationship between Respondents' Education and Cases of Diarrhea in Toddlers in the Work Area of the Limboto Health Center

Education Respondents	Incident Diarrhea On Toddler				Total		P-values
	Yes	%	No	%	N	%	
low	29	8	13	3,6	42	11,6	0.000
medium	112	30,9	63	17,4	175	48,2	
high	62	17,1	84	23,1	146	40,2	
Total	203	55,9	160	44,1	363	100	

Based on Table 1 it was obtained data as many as 112 respondents (30.9%) with a middle education level or SMP-SMA had toddlers who suffered diarrhea, as many as 62 respondents (17.1%) with high education levels or Diploma and Bachelor had toddlers who suffered diarrhea, along with 29 respondents (8%) with a good level of education such as Elementary School or no school have toddlers who suffer from diarrhea. Meanwhile, 84 respondents (23.1%) with a higher education level did not have toddlers suffering from diarrhea, as many as 63 respondents (17.4%) with a medium level of education did not have toddlers suffering from diarrhea, as many as 13 respondents (3.6 %)) do not have toddlers who have diarrhea. The results show that most of the respondents who have toddlers with diarrhea are respondents at the same level of education.

The Chi- Square Test value obtained P-value = 0.000 (<0.05), meaning there is a significant correlation between response to education and the incidence of diarrhea in toddlers in the Puskesmas Limboto area.

The results of the analysis of the relationship between response behavior and the incidence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:

Table 2. Analysis of the Relationship between Respondents' Behavior and Cases of Diarrhea in Toddlers in the Work Area of the Limboto Health Center

Behavior Respondents	Incident Diarrhea On Toddler				Total		P-values
	Yes	%	No	%	N	%	
Good	178	49	151	41.6	329	90.6	0.030
sufficient	25	6,9	9	2,5	34	9,4	
Total	203	55,9	160	44,1	363	100	

The Chi- Square Test value obtained P-value = 0.030 (<0.05), meaning there is a significant correlation between response behavior and the incidence of diarrhea in toddlers in the Puskesmas Limboto area. Relationship of Respondent Information with Head of Diarrhea for Toddlers at Puskesmas Limboto

The results of the analysis of the knowledge of responses to the incidence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:

Table 3. Analysis of the Relationship between Respondents' Knowledge and Cases of Diarrhea in Toddlers in the Work Area of the Limboto Health Center

Knowledge Respondents	Incident Diarrhea On Toddler				Total		P-values
	Yes	%	No	%	N	%	
Good	64	17,6	30	8,3	94	25,9	0.018
sufficient	131	36,1	120	33,1	251	69,1	
less	8	2,2	10	2,8	18	5	
Total	203	55,9	160	44,1	363	100	



The Chi-Square Test value obtained a P-value = 0.018 (<0.05), meaning there is a significant and significant correlation between the knowledge of responders and the incidence of diarrhea in toddlers in the Puskesmas Limboto area. a. Linkage of Latrine Ownership with Kasuis Diary for Toddlers in Puskesmas Limboto. The results of the analysis of the relationship between latrine ownership and the incidence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:

Table 4. Analysis of the Relationship between Respondents' Latrine Ownership and Cases of Diarrhea in Toddlers in the Work Area of the Limboto Health Center

Ownership Toilet	Incident Diarrhea On Toddler				Total		P-values
	Yes	%	No	%	N	%	
eligible	91	25,1	123	33,9	214	59	0.000
Not eligible	112	30,9	37	10,2	149	41	
Total	203	55,9	160	44,1	363	100	

The Chi-Square Test value obtained a P-value = 0.000 (<0.05), meaning there is a significant correlation between latrine ownership and the incidence of diarrhea in toddlers in the Puskesmas Limboto area. a. Sharing SPAL Ownership with the Head of the Diarei Section for Toddlers at Puskesmas Limboto The results of the analysis of the relationship between SPAL ownership and the incidence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:

Table 5. Analysis of the Relationship between Respondents' SPAL Ownership and Cases of Diarrhea in Toddlers in the Work Area of the Limboto Health Center

SPAL ownership	Incident Diarrhea On Toddler				Total		P-values
	Yes	%	No	%	N	%	
eligible	86	23,7	150	41,3	236	65	0.000
Not eligible	82	22,6	9	2,5	91	25,1	
None	35	9,6	1	0,3	36	9,9	
Total	203	55,9	160	44,1	363	100	

The Chi-Square Test value obtained P-value = 0.000 (<0.05), meaning there is a significant correlation between SPAL ownership and the incidence of diarrhea in toddlers in the Puskesmas Limboto area. A. Limboto Ownership of Garbage Places with Head of Diarei for Toddlers at Puskesmas Limboto The results of the analysis of the relationship between landfill ownership and the incidence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:

Table 6. Analysis of the Relationship between Respondents' Trash Can Ownership and Cases of Diarrhea in Toddlers in the Work Area of the Limboto Health Center

Ownership Place Rubbish	Incident Diarrhea On Toddler				Total		P-values
	Yes	%	No	%	N	%	
eligible	75	20,7	118	32,5	193	53,2	0.000
Not eligible	86	23,7	31	8,5	117	32,2	
None	42	11,6	11	3	53	14,6	
Total	203	55,9	160	44,1	363	100	

The value of the Chi-Square Test obtained P-value = 0.000 (<0.05), meaning that there is a significant and significant correlation between the ownership of a trash can and the incidence of diarrhea in toddlers in the Puskesmas Limboto area.

Multivariate Analysis

The results of the multivariate analysis of the risk factors for the occurrence of diarrhea in toddlers at Puskesmas Limboto are presented in the following table:



Table 7. Analysis of Risk Factors for Diarrhea in Toddlers in the Work Area of the Limboto Health Center

No	Variable Study	P-values	Odds Ratio	95% CI for EXP (B)	
				Lower	Upper
1	Education _	0.000	0.492	0.273	0.888
2	behavior	0.030	0.560	0.197	1,590
3	Knowledge	0.018	0.913	0.519	1,609
4	have a latrine	0.000	0.556	0.271	1.142
5	have SPAL	0.000	0.091	0.045	0.186
6	have a landfill	0.000	0.451	0.289	0.705

Table 7 shows the results of the Multivariate test; it was found that all seven tested variables had a P-value = <0.05. This means all of these variables have a significant relationship with the incidence of diarrhea in toddlers. The OR value of education is 0.492, which means that respondents with a medium or low level of instruction have a risk of 0.492 times having toddlers who suffer from diarrhea. The OR behavior value is 0.560, meaning that respondents with moderate behavior have 0.560 times the risk of having toddlers who suffer from diarrhea. The OR knowledge value is 0.913, which means that respondents with a sufficient level of knowledge and less have a risk of having toddlers who suffer from diarrhea 0.913 times. The OR value of owning a latrine is 0.556, meaning respondents with a toilet that does not meet the requirements have a risk of 0.556 times that of having a toddler suffering from diarrhea. The OR value of having SPAL is 0.091, meaning those responding to SPAL who do not meet the requirements or do not have SPAL are more at risk than 0.091 times of having toddlers suffering from diarrhea. The OR value of owning a trash can is 0.451, which means that respondents who own a trash can that does not meet the requirements or do not have a trash can risk 0.451 times having toddlers suffer from diarrhea.

The multivariate test results found that of the seven variables tested, all variables had a P-value = <0.05. This means all of these variables have a significant relationship with the incidence of diarrhea in toddlers. The OR value of education is 0.492, which means that respondents with a medium or low level of instruction have a risk of 0.492 times having toddlers who suffer from diarrhea. The OR behavior value is 0.560, meaning that respondents with moderate behavior have 0.560 times the risk of having toddlers who suffer from diarrhea. The OR knowledge value is 0.913, which means that respondents with a sufficient level of knowledge and less have a risk of having toddlers who suffer from diarrhea 0.913 times. The OR value of owning a latrine is 0.556, which means that respondents with a lavatory that does not meet the requirements have a risk of 0.556 times that of having a toddler suffering from diarrhea. The OR value of having SPAL is 0.091, meaning those responding to SPAL who do not meet the requirements or do not have SPAL are more at risk than 0.091 times of having toddlers suffering from diarrhea. The OR value of owning a trash can is 0.451, which means that respondents who have a trash can that does not meet the requirements or do not have a trash can risk 0.451 times having toddlers suffer from diarrhea

The maternal factor of diarrhea is significant in the occurrence of diarrhea in toddlers. Mother is the figure closest to toddlers. If a toddler has diarrhea, the mother's actions will determine the course of the disease. These actions are influenced by various things, including the level of education, knowledge, behavior, and preventive measures against diarrhea (Yiniarti & Vinnata, 2020). In addition, the provision of basic sanitation facilities and infrastructure, such as healthy latrines, provision of SPAL, and trash receptacles, significantly affects the incidence of diarrhea.

The low ownership of healthy women will impact the incidence of infectious diseases such as diarrhea. In addition, a healthy SPAL must meet the technical requirements, namely not polluting clean water reservoirs, not causing stagnant water, which can become nests for insects or mosquitoes, not causing odors, and not causing chills, humidity, and an unsightly appearance. In addition to the two indicators above, many waste disposal facilities do not meet the requirements and cause diarrhea. The existing waste needs to be managed correctly. Garbage that must be adequately collected can prevent the environment from becoming dirty. Existing debris can cause a reminiscent odor that can disturb comfort and cause vector-borne diseases (Birawida et al., 2020).



CONCLUSION

The variable most at risk of diarrhea in toddlers is the knowledge variable (P-Value = 0.018; OR: 0.913; CI = 0.519-1.609).

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