



The Relationship between Latrine Ownership and the Incidence of Diarrhea in Toddlers in South Buton Regency, 2022

Jumakil¹, Kamrin², Rahman^{3*}, Fithria⁴, Listy Handayani⁵

^{1,2,3,4,5} Public Health Department, Public Health Faculty, Halu Oleo University, Kendari, Indonesia

ABSTRACT

Background: Diarrheal disease is the second leading cause of death in children under five years of age, and is responsible for killing around 525,000 children each year. South Buton Regency, Diarrheal Disease is still included in the order of the 10 most common diseases. The coverage of services for diarrhea sufferers for all ages in South Buton Regency was 39.77%, while the coverage of services for diarrhea sufferers in the toddler age group in South Buton Regency was 28.82%. From the results of the above achievements it can be seen that the coverage of services for diarrhea sufferers in 2021 in all age groups and the under five age group has not yet reached the target of 100%.

Purpose(s): Knowing the relationship between latrine ownership and the incidence of diarrhea in South Buton Regency in 2022.

Method: Type of research uses a quantitative descriptive with a cross sectional design. Data collection was carried out by survey method using questionnaires and observation sheets The sample in this study was 2800 houses, with housewives as respondents

Results: The results of the statistical test using the chi-square test obtained a p-value = 0.005 < 0.05 because the p-value is less than 0.05, then H₁ is accepted and H₀ is rejected, which means there is a relationship between latrine ownership and the incidence of diarrhea in toddlers in the Buton district. South in 2022.

Conclusion: There is a significant relationship between latrine ownership and the incidence of diarrhea in South Buton District in 2022.

KEYWORDS: Diarrhea, Latrines, Relationship, Toddlers

INTRODUCTION

Ownership of a latrine is included in basic sanitation, so everyone should already have a latrine, if the ownership of a latrine in the community is low, the number of people who practice open defecation (BABS) will increase, which can be detrimental to health and can cause environmental pollution. *Based on the concept and definition of the Millennium Development Goals (MDGs)*, households have access to proper sanitation if the sanitation facilities used meet health requirements, such as being equipped with a type of gooseneck or plengsengan toilet with a lid and having a septic tank or Waste Water Treatment System (SPAL), and is a defecation facility that is used alone or together [1].

Sanitation is related to public health. Poor sanitation has a negative impact on life, such as decreasing the quality of the environment, polluting drinking water sources, and increasing cases of diarrhea and other diseases in the community[2].

Ownership of a latrine is included in basic sanitation, so everyone should already have a latrine, if the ownership of a latrine in the community is low, the number of people who practice open defecation (BABS) will increase, which can be detrimental to health and can cause environmental pollution. Based on the concept and definition of the Millennium Development Goals (MDGs), households have access to proper sanitation if the sanitation facilities used meet health requirements, such as being equipped with a type of gooseneck or plengsengan toilet with a lid and having a septic tank or Waste Water Treatment System (SPAL), and is a defecation facility that is used alone or together[1]. Agents of disease in the community will spread if open defecation still occurs, for example defecating in gardens, rivers and other places that do not meet the requirements for healthy latrines.

Based on data from the World Health Organization (WHO) in 2013, it is estimated that 1.1 billion people or 17% of the world's population still have open defecation in 10 countries, Indonesia as the second country with the most people defecating in open areas. namely India (58%), Indonesia (12.9%), China (4.5%), Ethiopia (4.4%) Pakistan (4.3%), Nigeria (3%), Sudan (1.5%), Nepal (1.3%), Brazil (1.2%) and Nigeria (1.1%)[3]. National data shows that out of Indonesia's population of 287.80 million, 30.32 million still defecate openly. Of this population, 81% have access to sanitation and 30,149 villages have been declared ODF villages[2]



Diarrheal disease is the second leading cause of death in children under five years of age, and is responsible for killing around 525,000 children each year. In 2017 worldwide, 780 million people lack access to improved drinking water and 2.5 billion lack good sanitation [4].

In Indonesia, diarrhea is a potential disease for Extraordinary Events (KLB) which is often accompanied by death. Extraordinary Events (KLB) which are often accompanied by death. In 2015 there were 18 outbreaks of diarrhea spread across 11 provinces, 18 districts/cities, with 1,213 cases and 30 deaths (CFR 2.47%). In 2016 in Indonesia there were 3 outbreaks of diarrhea spread across 3 provinces and 3 districts with a total of 198 people with fatalities (CFR 3.04%). In 2017 there were 21 outbreaks of diarrhea spread across 12 provinces, 17 districts/cities. In the districts of Polewali Mandar, Pohuwatu, Central Lampung and Merauke, there were 2 outbreaks each with 1,725 sufferers and 34 deaths (CFR 1.97)[5].

In Southeast Sulawesi in 2017 the estimated number of cases of diarrhea in Southeast Sulawesi was 39,913 cases with a mortality rate of 257 children under five (CFR 0.64%). South Konawe Regency ranks 10th in the percentage of diarrhea cases out of 17 Regencies/Cities in Southeast Sulawesi Province with a percentage of diarrhea cases of 75.80%.[6] .

South Buton Regency, Diarrheal Disease is still included in the order of the 10 most common diseases. The coverage of diarrhea patients served is categorized into 2 (two) groups, namely diarrhea sufferers of all ages and diarrhea sufferers under five with a target of 100% each. Based on the profile, it can be seen that the service coverage for diarrhea sufferers for all ages in South Buton Regency is 39.77%, while the service coverage for diarrhea sufferers in the toddler age group in South Buton Regency is 28.82%. From the results of the above achievements, it can be seen that the coverage of services for diarrhea sufferers in 2021 in all age groups and under five age groups has not reached the target of 100% [7].

METHOD

Type of research uses a quantitative descriptive with a cross sectional design. This research was carried out in 2022 in South Buton Regency. Data collection was carried out by survey method using questionnaires and observation sheets. The survey method is intended to obtain data in accordance with the actual situation in the community regarding how to handle household waste. Data from interviews using a questionnaire were then compared with data obtained from observations and data validation was carried out. The sample in this study was 2800 houses, with housewives as respondents. The sampling technique uses a proportional random sampling technique based on the number of houses in each village in South Buton Regency. The data obtained were then analyzed using the SPSS application version 20.0.

RESULT AND DISCUSSION

1. Distribution of Respondents by Age

Table 1. Distribution of Respondents by Age in South Buton Regency in 2022

Age (Year)	n	%
<= 20	56	2.00
21 -25	191	6.82
26 - 30	395	14.11
31 - 35	446	15.93
36 - 40	484	17.29
41 - 45	448	16.00
> 45	780	27.86
Number	2.800	100.00

Source: Primary Data, 2022

Table 1 shows that the respondents with the highest age group distribution were 780 people (27.86%) over the age of 45 and the lowest in the age group under 20 were 56 people (2%).

2. Distribution of Respondents by Education Level

Table 2. Distribution of Respondents by Education Level in South Buton Regency in 2022



Education	n	%
No formal school	229	8.18
elementary school	982	35.07
Junior high school	692	24.71
Senior High School	620	22.14
Vocational School	29	1.04
University/Akademic	248	8.86
Number	2.800	100.00

Source: Primary Data, 2022

Based on table 2, it shows that the respondents according to the highest level of education were at the elementary school level of education with 982 people (35.07%) and the lowest in vocational education with 29 people (1.04%).

3. Relationship between Latrine Ownership and the Incidence of Diarrhea in Toddlers in South Buton Regency

Table 3. Distribution of the Relationship between Latrine Ownership and the Incidence of Diarrhea in Toddlers in South Buton Regency in 2022

Diarrhea	Latrine Ownership				p-Value
	No	%	Yes	%	
No	374	13.4	2,228	79.6	0.005
Yes	43	1.5	155	5.5	
Total	417	14.9	2,383	85.1	

Source: Primary Data, 2022

Table 3 shows that out of 2,800 respondents who did not suffer from diarrhea, 2,602 (92.9) did not have latrines, 374 respondents (13.4%) had latrines, 2228 (79.6%), while 198 respondents had diarrhea. (7.1%) who did not have a latrine as many as 43 respondents (1.5%) and had a latrine as many as 155 respondents (5.5%).

The results of the statistical test using the chi-square test obtained a p-value = 0.005 < 0.05 because the p-value is less than 0.05, then H1 is accepted and Ho is rejected, which means there is a relationship between latrine ownership and the incidence of diarrhea in toddlers in the Buton district. South in 2022.

Latrines are one of the basic sanitation facilities needed in every house to support the health of the occupants as a facility for the disposal of human waste, which consists of a squatting area or seat with or without a goose neck equipped with a unit to collect dirt and water to clean it [8][9]. The unavailability of latrines will affect people's behavior in disposing of feces anywhere, so they are at risk of diarrheal disease.

Diarrhea is an infectious disease with a relatively high morbidity and mortality rate [10]. The results of this study indicate that most of the 2800 respondents who did not suffer from diarrhea were 2602 (92.9%) who did not have latrines as many as 374 respondents (13.4%) and had latrines as many as 2228 (79.6%) while those who suffered from diarrhea were 198 43 respondents (1.5%) did not have a latrine and 155 respondents (5.5%) had a latrine. This is in line with research conducted by Jumakil, et al (2019) The statistical test results with the chi-square test obtained a p-value = 0.001 < 0.05 because the pvalue is smaller than a, then H1 is accepted and Ho is rejected, namely there is a relationship between availability of family latrines with the incidence of diarrhea in toddlers in the working area of the Andoolo Utama Public Health Center, Konawe Selatan Regency in 2018[11]. The absence of a family latrine will result in the community disposing of waste in an open place where flies can easily reach it, which is a vector that causes diarrheal disease. This can contaminate food and drinks directly so that the risk of developing diarrheal diseases is even greater. There is a significant relationship between latrine ownership (p-value=0.038) and latrine conditions (p-value=0.000) on the incidence of diarrhea in toddlers in Banjarmasin City [12]. There is a relationship between family latrine ownership and the incidence of diarrhea in toddlers [13]



Disposal of feces anywhere has an effect on the incidence of certain diseases that are transmitted through feces, such as diarrhea. Feces disposal sites that do not meet sanitation requirements will increase the risk of bloody diarrhea in children under five times that of families that meet sanitation requirements[14]. Not only the ownership of the latrines, but the condition of the latrines also influences the incidence of diarrhea. The condition of unsanitary latrines can certainly be a factor triggering the emergence of agents that cause diarrhea such as rotavirus and Escherichia Coli bacteria[12].

In terms of environmental health, human waste is a very important problem. Proper disposal of feces is the most prioritized health need. Disposal of feces improperly and carelessly can result in contamination of water, soil, or become a source of infection, and will pose a health hazard, because diseases classified as waterborne diseases will spread easily[15]. Waterborne Disease is a disease that is transmitted through water contaminated with pathogenic bacteria from sufferers [16].

The results of research conducted in South Buton Regency in 2022 also illustrated that most 79.6% of respondents already had latrines which had an impact on the low incidence of diarrhea. The same thing that there is a significant relationship between latrine ownership and the incidence of diarrhea (6,13-15). Respondents who do not have latrines have the potential to cause diarrheal disease, because latrines that cannot be easily flushed out and feces that are not stored and processed in a closed manner will be accessible to vectors that cause diarrheal disease which will then indirectly contaminate food or drink[17]. The results of this study found that 18.1% of the community did not use defecation latrines. This figure is the best compared to the general condition in Indonesia, which states that 44.8% of people do not use latrines to defecate[18].

The majority of the community does not use a latrine because the farmers' working fields are far from their homes and they do not have the desire to find the nearest communal latrine, so they defecate in the river, near the work fields. Several possibilities why people still defecate are not having latrines, not understanding the negative impacts of open defecation, or living habits that exist and are still developing in Indonesian society. Another study found different reasons why people don't have latrines, i.e. they don't own land (86.27%) and 67.64% don't have fees[19]. The low use of latrines is indicated by the presence of people who defecate openly outside their homes, and the low level of public awareness of using latrines. The reason why they do this is due to the lack of knowledge about negative impacts on health, and working conditions that are outside the home[20].

Germs that cause diarrhea are usually spread through the fecal-oral route, including through food/drink contaminated with feces and/or direct contact with the patient's feces. Improper defecation behavior can cause the spread of enteric germs and increase the occurrence of diarrhea. The results of this research show that having a latrine is optimally related to the occurrence of diarrhea. Feces disposal sites are also important sanitation facilities related to the incidence of diarrhea in addition to drinking water sources. Places where feces are disposed of that are not sanitary will shorten the chain of transmission of diarrheal diseases[16].

CONCLUSION

There is a significant relationship between latrine ownership and the incidence of diarrhea in South Buton District in 2022. It is hoped that health workers at both the Puskesmas and the Health Service can provide health education to the public regarding the importance of owning a latrine to prevent diarrhea. There is a need for the Government's role in overcoming the unavailability of latrines through optimizing the community-based total sanitation program.

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