

## Affecting Factors Of Stop Open Defecation Free In The Working Area Of West Simeulue Public Health Centre Simeulue Regency

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### Abstract

**Background:** The community has healthy latrines in the work area of the West Simeulue Community Health Center as many as 1,024 families (64.8%) of the total 1,581 households have not reached the target of 100% so that there are people defecating in the garden, rice fields, house yards, the beach and river. The purpose of this study was to determine the factors that influence open defecation free in the working area of the Health Centre. **Method:** This type of research is analytic survey with cross sectional study approach. The population was 1,581 families and the sampling technique was purposive sampling. Quantitative data were analyzed univariately, bivariately and multivariately. **Results:** The results showed knowledge (0.021), attitude (0.017), ownership of healthy latrines (0.036), the role of the head of the family (0.010), and the role of health workers (0.023) influencing the implementation of open defecation. **Conclusion:** Knowledge, attitude, ownership of healthy latrines, the role of the head of the family, and the role of health workers influence the open defecation.

**Keywords:** Stop, Open Defecation Free, Society

### Background

Environmental problems are global problems that must be faced and are very disturbing to human health. Based on the World Health Organization (WHO), environmental sanitation is an effort to control all factors of the human physical environment that will cause things that are detrimental to physical development, health, and endurance. Extensive environmental sanitation efforts have been carried out for decades, especially in aspects of the use of clean water and disposal of feces. Examples of waterborne diseases include cholera, typhoid, hepatitis A and many diarrheal diseases (1).

In accordance with the Decree of the Minister of Health Number 852/Menkes/SK/IX/2008 concerning

the National Strategy for Community-Based Total Sanitation that the outcome indicator of the STBM program is a decrease in the incidence of diarrheal disease and other environmental-based diseases related to sanitation and behavior, the first pillar is more emphasizing on reducing diarrheal disease, because diarrheal disease is a common disease that not only affects toddlers and adults (2).

According to the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) in 2013 reported diarrhea as the second leading cause of death in three-year-old infants in the world, third in infants, and fifth at all ages. The incidence of diarrhea in Indonesia is around 31,200 children

under five die every year due to diarrheal infections (3).

Data from the World Health Organization (WHO) in 2013 is estimated at 1.1 billion people or 17% of the world's population still defecating in open areas, from this data, 81% of the population who defecate indiscriminately (BABS) are in 10 countries and Indonesia as the second largest country found 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%) (4).

Based on the 2013 Riskesdas in Indonesia, the prevalence of diarrhea was 3.5% smaller than the 2007 Riskesdas, which was 9%. This prevalence reduction is assumed in 2007 when data collection was not carried out simultaneously, while in 2013 data collection was carried out simultaneously. The prevalence of diarrhea in Indonesia at the age of >15 years is 30.1%, while the prevalence of diarrhea at the age of <15 years is 21.9% (5).

Data from the Aceh Provincial Office shows that the number of diarrhea cases in 2016 reached 256,386 patients with an Incidence Rate (IR) of 31.35%. Meanwhile, diarrhea cases were higher in children under five with an annual average of 13%. This shows that diarrhea cases are quite high in Aceh Province. Meanwhile, data from the Simeulue Regency Office in 2016 from 90,291 people, the total population found cases of diarrhea, namely 2,438 people, it is suspected that one of the causes is open defecation (6).

Based on data from the Health Office of Simeulue Regency, it is a Regency that has defecation facilities or is not in accordance with the recommended healthy latrines (100%) in 2017, namely 65.9% of households. The number of sub-districts in Simeulue Regency that has verified Open Defecation Free (ODF) is 10 sub-districts and 10 puskesmas that have carried out triggering activities. Triggering activities that were continuously carried out from 2016 to 2017 had an influence in reducing diarrhea cases in Simeulue Regency (7).

The results of monitoring and evaluation of the Stop open defecation program in the work area of the Simeulue District Health Office in 2017 with indicators of healthy latrine ownership showed that there were 2 puskesmas units that had low achievement of the recommended healthy latrine access target (100%), namely the West Simeulue Health Center which was 53.6 % and Alafan Public Health Center 18.9%. The non-achievement of the Stop open defecation target indicates that the performance of health center sanitation officers and community participation in the implementation of the Stop open defecation program is still not optimal. There is a need for an evaluation step of the Stop open defecation program to find out what are the causes and factors that hinder the process of implementing Stop open defecation at the West Simeulue Health Center (7).

Davik's research said that the results of the evaluation of the STBM program implementation process for the Stop open defecation pillar at the Probolinggo District Health Center

were still classified as bad because the STBM program planning factors were not carried out by the Puskesmas sanitation officers, including situation analysis and problem identification, formation of village level STBM facilitators,, the establishment of forums/institutions for community sanitation discussions as well as mentoring and advocacy activities are still in the bad category because it is not entirely the puskesmas sanitation workers who carry out the activities (8).

The results of Fatonah's research (2015) show that community participation in implementing the STBM program in Purwosari Village is still low, the reason being environmental conditions often occur, and community behavior. Internal factors that affect community participation are livelihoods, income, and knowledge of the community. While the influencing external factors are the stakeholders involved (9).

The West Simeulue Health Center is located in Malasin Village, the capital of West Simeulue District, better known as Sibigo, precisely on Jalan Tengku Ismail Km 114, which is an island area surrounded by the ocean. The working area of the West Simeulue Health Center consists of 8 (eight) villages with a population of 7,112 people and 1,581 families with 1,581 latrines. The number of health workers as many as 51

people and health environmental officers as many as 2 people and cadres 19 cadres and assisted by 4 units of Pambantu Health Center and 4 units of Poskesdes. Residents with access to proper sanitation facilities, namely healthy latrines in September 2018, namely 1,024 families (64.8%) of the total 1,581 families have not reached the 100% target. Residents who do not have healthy latrines can cause health problems such as diarrheal diseases and other environmental-based diseases. The number of cases of diarrhea in the working area of the West Simeulue Health Center is included in the top 10, namely the diarrhea morbidity rate per 1,000 population is 411 (10).

Based on the results of interviews with 2 people who have the habit of open defecation, they said that they work as farmers/fields and are used to defecating in any place such as gardens, rice fields and rivers/beaches. In general, they work as farmers and fishermen with low educational background and income. The condition of the existing typological background can also allow local people to still practice open defecation, especially because the area is in the form of agriculture and fishing, so many residents stop defecating in gardens, rice fields or rivers. People also do not understand that

stopping open defecation can lead to poor sanitation and can cause disease. The head of the family does not set a good example so that his family members get used to stopping defecation in the latrine, of course with the criteria of a healthy latrine. The role of health workers/cadres in conveying information about stopping open defecation is not routinely done because there is no technical guideline set by the head of the puskesmas so that they have not prioritized counseling about stopping open defecation. Likewise with the role of community leaders who are less concerned about people's habits to stop defecating anywhere.

Based on the description above, the researcher is interested in examining one of the five pillars of Community-Based Total Sanitation regarding the Factors Affecting the Stopping of Open Defecation in the Work Area of the Simeulue Barat Health Center, Simeulue Regency in 2019.

### Method

The type of research is an analytical survey with a cross sectional study approach with the aim of analyzing the factors that influence the stop open defecation in the working area of the Simeulue Barat Health Center, Simeulue Regency. as many as 94 heads of families were taken by purposive

sampling technique. Analysis of quantitative data was analyzed by univariate, bivariate and multivariate.

### Results

Univariate analysis showed that the head of the family is known to have more education in high school or undergraduate education or classified as secondary/higher education, namely 52 people (55.3%) and the rest graduated from elementary school and junior high school or classified as basic education, namely 42 people (44.7%). The average household income per month based on the Aceh UMP in 2019 is Rp. 2.7 million more than the UMP or classified as high, namely 51 people (54.3%) and the rest are classified as low (< Aceh UMP) which is 43 people (45.7%).

Knowledge of family heads about stopping open defecation was mostly categorized as good knowledge, namely 49 people (52.1%), the rest 45 people (47.9%) categorized as having poor knowledge. The attitude of the head of the family about stopping open defecation which can cause health problems is mostly categorized as negative, namely 52 people (55.3%), the

rest 42 people (44.7%) are categorized as positive.

Ownership of healthy latrines in the family is categorized as supportive, namely 51 people (54.3%), the remaining 43 people (45.7%) are categorized as less supportive. support, namely 54 people (57.4%), the remaining 40 people (42.6%) are categorized as supportive. Categorization of support from health workers to the community to stop open defecation is more categorized as less supportive, namely 60 people (63.8%), the remaining 34 people (36.2%) are categorized as supportive. The categorization of the role of cadres so that the community does not open

defecation is more categorized as less supportive, namely 55 people (58.5%), the remaining 39 people (41.5%) are categorized as supportive.

The support of community/religious leaders so that people do not open defecation is more categorized as less supportive, namely 64 people (68.1%), the remaining 38 people (31.9%) are categorized as supportive. The categorization of the implementation of stopping open defecation for families was mostly categorized as less good, namely 50 people (53.2%), the remaining 44 people (46.8%) were categorized as good. In detail, it can be described in the table below:

Table 1: Univariate Analysis of Research Variables

No.	Variable	n	%
<b>Education</b>			
1	Elementary	42	44,7
2	Middle/High	52	55,3
<b>Earning</b>			
1.	Low	43	45,7
2.	High	51	54,3
<b>Knowledge</b>			
1.	Bad	45	47,9
2.	Good	49	52,1
<b>Attitude</b>			
1.	Negative	52	55,3
2.	Positive	42	44,7
<b>Bathroom</b>			
1	Not Adequate	43	45,7
2	Adequate	51	54,3
<b>Head Family Role</b>			
1	Not Supported	54	57,4
2	Supported	40	42,6
<b>Health Staff Role</b>			

1	Not Supported	60	63,8
2	Supported	34	36,2
<b>Volunteer Role</b>			
1	Not Supported	55	58,5
2	Supported	39	41,5
<b>Stakeholder Role</b>			
1	Not Supported	64	68,1
2	Supported	30	31,9
Stop Defecation Campaign			
1	Bad	50	53,2
2	Good	44	46,8
<b>Total</b>		94	100,0

Based on bivariate analysis, it shows that there is a relationship between knowledge (0.000), attitude (0.000), ownership of healthy latrines (0.000), the role of the head of the family (0.000), the role of health workers (0.001) and the role of cadres (0.001) with the implementation of stopping open defecation in the community. the working area of the Simeulue

Barat Health Center, Simeulue Regency. The variables of education (0.369), income (0.499) and the role of community/religious leaders (0.125) were not related to the implementation of stopping open defecation in the working area of the Simeulue Barat Health Center, Simeulue Regency. In detail, it can be described in the table below:

Table 2. Univariate Analysis of Research Variables

No.	Variable	p-value
1.	Education	0,369
2.	Earning	0,499
3.	Knowledge	0,000
4.	Attitude	0,000
5.	Bathroom	0,000
6.	Head Family Role	0,000
7.	Helath Staff Role	0,001
8.	Volunteer Role	0,001
9.	Stakeholder Role	0,125

Based on the multivariate analysis, there was an effect of knowledge (0.000), attitudes (0.000), ownership of healthy latrines (0.000), the role of the head of the family (0.000), the role of health workers (0.001) and the role of cadres (0.001) on the implementation of stopping open

defecation in the work area of the Simeulue Health Center. West Simeulue Regency.

The knowledge variable obtained an Exp (B) value of 4.037, meaning that the head of a family with good knowledge tends to stop defecating indiscriminately than those with poor

knowledge. The attitude variable obtained an Exp (B) value of 4.286, meaning that people who have a positive attitude tend to stop defecating indiscriminately rather than having a negative attitude. The variable of ownership of healthy latrines obtained an Exp (B) value of 3.970, meaning that people who have healthy latrines tend to stop defecating openly than those who do not have healthy latrines. The variable of the role of the head of the family

obtained the value of Exp (B) of 4.813, meaning that people who received it from the head of the family tended to stop defecating openly 4.813 times than not getting support. The variable of the role of health workers obtained an Exp (B) value of 4.318, meaning that people who received support from health workers tended to stop open defecation 4.318 times than did not receive support. In detail, it can be described in the table below:

Table 3. Multivariate Analysis

<b>Independent Variable</b>	<b><math>\beta</math></b>	<b>p</b>	<b>Exp(B)</b>
Knowledge	1,396	0,021	4,037
Attitude	1,455	0,017	4,286
Bathroom	1,379	0,036	3,970
Head Family Role	1,571	0,010	4,813
Health Staff Role	1,463	0,023	4,318
<i>Constant</i>	-3,679	0,000	0,025

Based on the multiple logistic regression equation, if the good knowledge variable is coded 1, positive attitude is coded 1, healthy latrine ownership supports is coded 1, the role of the supportive family head is coded 1, the role of supportive health workers is coded 1, then the estimation of the implementation of stopping open defecation the community in the working area of the Simeulue Barat Health Center is 98.9% if the factors of knowledge of the head of the family are good, positive attitude, the role of the family head is supportive, the role of health workers is supportive.

If the variable of poor knowledge is coded 0, negative attitudes are coded 0, ownership of healthy latrines that are less supportive is coded 0, the role of the less supportive family head is coded 0, the role of unsupportive health workers is coded 0 then the estimation of the implementation of stopping open defecation in the area West Simeulue Health Center work is 9.8% if the knowledge factor of the head of the family is not good, the attitude is negative, the role of the head of the family is not supportive, the role of the health worker is less supportive.

## Discussion

### The Influence of Education on the Implementation of Stop Open Defecation

In general, the education of the head of the family is high, namely high school graduates and bachelors (53.3%). The results of the multivariate analysis showed that there was no influence of education on the implementation of stopping open defecation ( $p = 0.473$ ). This means that the educational background of the head of the family cannot guarantee that family members do not open defecation. The results of this study are in line with Karta's research (2015) which states that the education level factor ( $X_2$ ) does not have a significant influence and does not have a positive direction on the implementation of the STOPS program in Penggaron Village, Mojowarno District, Jombang Regency (11). The absence of a relationship between education and the implementation of stopping open defecation may be due to the fact that the proportion of household heads who are categorized as high (high school/bachelor high school graduates) and low (elementary/junior high school graduates) are not much different, so that cases of stopping open defecation occur in families with both high and low education.

### The Effect of Income on the Implementation of Arbitrary

The income of the head of the family is generally below the Simeulue UMP, which is Rp. 2.7 million (54.3%). The results of the

multivariate analysis showed that there was no influence of income on the implementation of open defecation, where the open defecation was not caused by family income factors above or below the Simeulue UMK. interview heads of families who do not have latrines and open defecation earn Rp. 2.5 also know below the UMK Simeulue. With this amount of income, it is possible for the head of the family to only be able to properly finance the needs of family members, so they have not been able to build healthy latrines. In contrast to Widowati's research (2015) which explains that monthly family income is associated with open defecation (BABS) behavior with  $p = 0.000$  in the work area of the Connectamacan II Public Health Center, Sragen Regency (12).

### The Effect of Knowledge on the Implementation of Arbitrary Stopping

The knowledge of the head of the family about Stop open defecation is good (52.1%). The results of the multivariate analysis showed that there was an influence of knowledge on the implementation of indiscriminate defecation. Statistical test results obtained a value of  $p = 0.000$  where the stop defecation indiscriminately is caused by the knowledge factor. The results of the analysis obtained an Exp (B) value of 4.037, meaning that heads of families with good knowledge tended to stop defecating indiscriminately than those with poor knowledge. coastal areas in South Buton district with a p-value of 0.0117; PR 0.635(13). A similar study by Horhoruw (2014) explains that knowledge about the use of latrines is related to the behavior of using

latrines in Tawiri Village, Teluk Ambon District, Ambon City (14).

### The Influence of Attitudes on the Implementation of Arbitrary Stop defecation

The attitude of the head of the family about stopping open defecation tends to be negative (55.3%). The results of the multivariate analysis showed that there was an effect of attitude on the implementation of indiscriminate defecation. The results of the statistical test obtained a value of  $p = 0.017$ , where the stop open defecation was caused by the negative attitude of the head of the family towards open defecation. The results of the analysis obtained an Exp (B) value of 4.286, meaning that people who have a positive attitude tend to stop defecating indiscriminately rather than having a negative attitude. Connectionamacan II, Sragen Regency with  $p$  value = 0,000; OR = 2.646 (12). A similar study by Saliani (2016) found that the attitude factor had a significant relationship with community defecation practices in Garuga Village, Mantoh District, Banggai Regency, Central Sulawesi Province (15). In this study, it was found that the attitude of the head of the family towards stopping open defecation tends to be negative. This can be due to family members often defecating in the open because of the habits of their parents, and the community has the habit of defecating with supportive environmental conditions such as in the garden (rice field) or near the father/mother's house.

### The Effect of Healthy Latrine Ownership on the Implementation of Stop Opening Open Defecation

Ownership of a healthy family latrine is well supported (54.3%). The results of multivariate analysis showed that there was an effect of healthy latrine ownership on the implementation of indiscriminate defecation. Statistical test results obtained  $p$  value =  $0.000 < 0.05$ , where the habit of open defecation is caused by not having a latrine or an unhealthy latrine. The analysis results obtained an Exp (B) value of 3.970, meaning that people who have healthy latrines tend to stop at 3.970 times Open defecation rather than not having a healthy latrine. The results of this study are in line with Horhoruw's (2014) research which states that the behavior of using latrines is 72.0%, while respondents who do not use latrines are 28.0% (14). Reinforced by Surya (2017) ) said that latrine ownership was related to the ability to build and maintain toilets due to poverty (16).

### The Influence of the Role of the Head of the Family on the Implementation of Stop Open Defecation

The role of the head of the family in supporting the stop open defecation is less supportive (57.4%). Multivariate analysis found that there was an influence of the role of the family head on the implementation of indiscriminate defecation. Statistical test results obtained  $p$  value =  $0.010 < 0.05$ , where the habit of open defecation is caused by a lack of support from the head of the family. The results of the analysis obtained an Exp (B) value of 4.813, meaning that people who received from the head of the family tended to stop open defecation 4.813 times than did not receive support. In accordance with the informant's expression that

families rarely tell other family members about the impact of open defecation and other information about healthy latrine. According to Horhoruw's (2014) research, based on bivariate analysis, the behavior of using latrines is due to the low role of the family (14).

### **The Influence of the Role of Health Workers on the Implementation of Stop Open Defecation**

The role of health workers in supporting the stop open defecation is still lacking (63.8%). The results of the multivariate analysis showed that there was an effect of the role of health workers on the implementation of indiscriminate defecation. Statistical test results obtained p value = 0.023 <0.05, where the habit of open defecation is caused by a lack of support from health workers. The results of the analysis showed that the Exp (B) value was 4.318, meaning that people who received support from health workers tended to stop open defecation 4.318 times than did not receive support. In line with the research, Horhoruw (2014) said that the support of health workers was related to the behavior of using latrines in Tawiri Village, Teluk Ambon District, Ambon City (14). The support of health workers in providing motivation to the community so that people have healthy latrines has not been maximized due to the ineffective cooperation between health workers and village heads, community/religious leaders, Muspika, NGOs in facilitating the manufacture of healthy latrines for families and jointly providing counseling in various social activities to the community. community to

change the behavior of open defecation.

### **The Influence of the Role of Cadres on the Implementation of Stop Open Defecation**

The role of cadres in supporting open defecation is still lacking (58.5%). The results of the multivariate analysis showed that there was no effect of the role of cadres on the implementation of indiscriminate defecation. The results of the statistical test obtained p value = 0.768 > 0.05, where the habit of open defecation was not caused by a lack of support from health workers. According to Horhoruw (2014), the role of health workers and health cadres is very important because they can change the behavior of people using latrines in Tawiri Village, Teluk Ambon District, Ambon City (14). Support from cadres in implementing the community's arbitrary stop defecation has not been effective due to the absence of operational funds for cadres in conducting socialization or counseling and also policies, especially in providing sanctions in the form of warnings to people who have not issued open defecation to strengthen cadres in carrying out their responsibilities. In addition, the village head has not set a decree on the appointment of environmental health cadres specifically assigned to the STBM program.

### **The Influence of the Role of Community/Religious Leaders on the Implementation of Stop Open Defecation**

The role of community/religious leaders in supporting the stop open defecation is still lacking (68.1%). The results of the multivariate

analysis showed that there was no influence of the role of community/religious leaders on the implementation of indiscriminate defecation. Statistical test results obtained  $p$  value =  $0.794 > 0.05$ , where the habit of open defecation is not caused by a lack of support from community leaders. In contrast to Horhoruw's (2014) research, the support of religious leaders is related to the behavior of the head of the family in using latrines in Tawiri Village, Teluk Ambon District, Ambon City (14). The support of community/religious leaders has not been optimal in preventing people from opening open defecation, this can be due to the absence of feedback provided by the village head such as awards for community leaders who are actively involved in assisting the STBM program. In addition, cadres also rarely coordinate the STBM program schedule so that they cannot adjust it to other activities and there is no allocation of funds for each activity to support community/religious leaders to participate in implementing the STBM program in their respective regions.

### Conclusion

The results showed that knowledge factors (0.021), attitudes (0.017), ownership of healthy latrines (0.036), the role of the head of the family (0.010), and the role of health workers (0.023) had an effect on the implementation of stopping open defecation, the role of the family was the most dominant. , attitudes, ownership of healthy latrines, the role of the head of the family, and the role

of health workers have an effect on stopping open defecation.

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