
Connecting Factors for the Application of Community-Based Total Sanitation in the Work Area of the Blang Bintang Health Center, Aceh Besar

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Abstract. Open defecation behavior occurs due to hereditary habits and habits since childhood. At this time, the government launched a program that is to stop open defecation with the community-based total sanitation program (CBTS). This program is an entry point towards total sanitation and is an effort to break the chain of pollution from human excrement to drinking, eating and other standard water. This study aims to determine the factors related to the implementation the program in the work area of the Blang Bintang Health Center, Aceh Besar, Aceh Province. This research is descriptive analytic in nature, carried out using a cross-sectional design method with a quantitative approach. The population in this study is the community in the working area of the Blang Bintang Health Center with a population of 1,990 people. The populations of samples were 97 respondents and data analysis used the chi-square test. The results of the study gave respondents the first pillar of good CBT implementation of 63.9%, respondents with less knowledge of 58.8%. In general, respondents with high school education were 69.1%, respondents' behavior towards the program was known 67% to have a positive attitude, 58.8% respondents stated that the role of health workers played a role, 69.1 the role of community leaders was more dominated respondents stated that they lacked participation of 64.9% that respondents had facilities.

Keywords: Community-based total sanitation, open defecation behavior, application of sanitation, attitude, role of officers

Introduction

The sustainable development goals (SDGs) are a global action plan agreed by world leaders, including Indonesia, to end poverty, reduce inequality and protect the environment. The SDGs contain 17 goals and 169 targets that are expected to be achieved by 2030 (Indah et al., 2022). According to the centers for disease control and prevention (CDC), 780 million people still lack access to clean air, and 2.5 billion people, half of whom live in developing nations, lack access to sufficient sanitation. The causes of 88 percent of diarrhea deaths worldwide are unsafe air, insufficient sanitation, and poor hygiene (Rany et al, 2021). Sanitation one of the SDGs that related to theme number

6. Sanitation that is managed safely for all communities will have a good impact. Around 4.5 billion people do not have access to sanitation that is managed with safety globally, then 29% of them live in urban areas (WHO, 2017). Communities in rural areas who do not have adequate sanitation have health problems, as well as suburban communities (Kurniawati, 2020).

Indonesian government adopted a policy to reduce sanitation problems and clean and healthy living behavior through the CBTS program. The national target for sanitation access is 85% in 2019 and the SDGs goal 6.2 is to achieve access to adequate and equitable sanitation and hygiene for all and to stop open defecation by 2030 (Bria et al., 2020). This program is expected to reduce morbidity and mortality due to poor sanitation. In addition, this program can help create healthy citizens (Marwanto, 2019). The transformation of attitudes into community-based total sanitation is carried out by encouraging changes in people's behavior as a whole and being able to increase sanitation facilities as long as they are independent according to their abilities (Ministry of Health RI, 2014)(Aulia et al., 2021). Therefore, healthy and clean living behavior as defined in the 5 pillars of community-based total sanitation program has considerable implications for diarrhea outbreaks. Based on basic health research in 2018, diarrhea is an environment-based disease that triggers infant mortality in Indonesia, which is 42% of the total infant mortality rate aged 0-11 months (RI Ministry of Health, 2014).

Research from Samosir et al (2020) and explained that the incidence of diarrhea in children from homes that use open wells for drinking water has a 34% greater risk than use tap water. Not only that, diarrhea was 66% greater in children from families who defecated in rivers or ditches than those who had private latrine facilities and septic tanks. Sources of pollution from open defecation. Faeces, garbage or excrement such as baby diapers that contain bacterial cells and then through transmission media such as hands, water, flies or other types of insects, soil, food and drinks that can enter the human body, this causes inflammation of the E. coli bacteria cause diarrhea disease.

Progress in this regard cannot be separated from development cooperation from the central, district/city and regional levels. The 2018 central statistics agency shows that access to proper drinking water is currently at 88%, access to proper sanitation is at 75%. Even though it continues to increase every year, in fact there is still a difference of 32 million people who do not receive access to proper drinking water and 67 million people who do not have access to proper sanitation. This achievement explains the need for efforts to increase access 2 to 3 times each year in order to achieve the SDGs in 2030 (BPS, 2018).

Indonesia has committed to eliminating the habit of open defecation and ensuring that 90% of households have access to better sanitation by 2024, of which 15% will be managed comfortably. In order to achieve the government's goals, the national sanitation program outlines 5 main areas of intervention to support community-based wash, namely use of toilets; washing hands with soap; storage and handling of clean drinking water; and efficient solid and liquid waste management (Odagiri et al., 2020).

According to the 2019 Aceh Besar District Health Profile data, diarrhea disease is still a public health problem, although in general the morbidity rate is still fluctuating. Diarrhea in toddlers is very dangerous because it can cause death. As a result of the discovery of diarrhea patients handled 4,370 problems (39%) of the estimated number of cases of 11,314 cases. Diarrhea is one of 10 environmental diseases in Aceh Besar District. Meanwhile, 119 cases of Dengue Fever were reported and positive malaria cases in Aceh Besar District in 2018 totaled 5 cases out of a total number of 1,104 suspects and 214,004 people at risk.

Poor sanitation accounts for 88% of child deaths caused by diarrhea in all countries. For children with diarrhea who survive, in the future it becomes a problem of diarrhea that extends to nutritional problems. Finally, the impact of poor nutrition makes children unable to be as active as other children to reach their maximum potential, and ultimately there is

a decline in the quality of human resources in the future. Of course the biggest impact is the decline in the productivity of a nation.

Access to National Sanitation in 2020 is 81.7% and the percentage of villages stop open opening is 49.85% (Monev STBM Kemkes, 2020). According to data from (Aceh Health Profile, 2020), the percentage of families using access to proper sanitation (healthy latrines) in Aceh Province is 80% and the percentage of villages that stop open defecation is only 14%. Aceh Besar District has the percentage of families with access to proper sanitation (healthy latrines), which is 86%, while the percentage of villages that stop open defecation is 7% of a total of 604 villages.

Basic healthy sanitation facilities from data collection in 2017 in Blang Bintang District there were 1991 latrines while only 1940 healthy latrines came from all latrines examined, as well as in 2018 there were no changes (Aceh Besar District Health Office, 2020). The main point is decentralization because it makes it difficult for remote districts to recruit experts. Meanwhile, qualified human resources from the district prefer to live and work in urban areas rather than developing their own areas. Then the Government of Aceh continued the community-based rural drinking water program which aims to bring access to drinking water and proper sanitation closer to the people of Aceh who live in rural and urban areas.

Efforts to increase access to sanitation and improve the quality of clean water have been carried out by the government in stages through partnerships, namely through the development of facilities and infrastructure for access to clean water and sanitation in districts/cities. Including in Aceh Besar district, especially in Blang Bintang District. Based on the condition of Blang Bintang Village where many people still do not have latrines in their respective homes, this research aims to evaluate the extent to which the CBTS program is implemented in this design and how the understanding of the community and health workers in supporting government programs.

Methods

This research is descriptive analytic conducted using a cross-sectional design using a quantitative approach that is data collected in a certain time. A cross-sectional research design is a type of observational research design in which the researcher measures the corresponding effects and exposures simultaneously. The research was conducted in Aceh Besar District, Blang Bintang District in May 2022 with 97 peoples as correspondence who were randomly selected using Slovin formula (Notoadmodjo, 2012).

$$n = \frac{N}{1+N(d)^2} \quad (1)$$

Where is: n = total samples
N = populations
d = standard errors

Primary data were obtained through in-depth interviews, focus group discussions and direct observations of the implementation of the first pillar of community-based total sanitation programs. This study uses 2 data analysis, uni-variate analysis and bevariate analysis. Uni-variate analysis is an analysis carried out on each variable and what will happen in the research and analysis to find out the distribution and percentage of each variable (Notoatmodjo, 2010; Ossumanu et al., 2019). Bivariate analysis uses cross tables to analyze differences or relationships between two variables with a significance level of

chi square analysis which is produced using a real level of 95%, to show the hypothesis that is using the provisions if P value < 0.05 (H_0 is rejected) so that it is concluded that H_a is accepted which means there is a significant relationship. Meanwhile, if the P value > 0.05 , it means that there is no significant correlation between the statistical calculations (Sabri, 2011). To find out if there is an E value less than 5, we can look at the footnote b under the Chi-square Test box, and the value is written as 0 cell (0%). This means that in the cross table there is no value $E < 5$ (Sabri, 2011).

Results and Discussion

The uni-variate results for the CBTS program can be seen in Table 1. From uni-variate analysis, using a CBTS program using the first pillar, as many as 63.9% of respondents understand this program, but 36.1% of respondents do not understand. From the results of the questionnaire, respondents with less knowledge were 58.8% and 41.2% of respondents had good knowledge. In terms of education, the majority of respondents had high school education (69.1%), lower middle school (25.8%) and elementary school (5.2%). It is known that (67%) of respondents have a positive attitude towards community-based total sanitation and (33%) have a negative attitude. Respondents stated that health workers played a role (58.8%) but for the role of community leaders the majority of respondents stated that they did not play a role (69.1%) and (64.9%) had facilities and only (35.1%) had no facilities. From the result show that in this region is need to increase the knowledge for the healthy education for the people (Ganing, et al., 2018).

Table 1. The uni-variate the CBTS program

Variables	Frequency	Aspect CBTS, knowledge, education, attitude, officer role and the role of community leaders and facility (%)
Community-based total sanitation		
Good	62	63.9
Not good	35	36.1
Knowledge		
Good	40	41.2
Not good	57	58.8
Education		
Senior High School	67	69.1
Junior Hihg School	25	25.8
Primary School	5	5.2
Attitude		
Positive	65	67.0
Negative	32	33.0
Officer Role		
Role	58	58.8
Lack of role	39	40.2
The role of community leaders		
Role	30	30.9
Lack of role	67	69.1
Facility		
There is	63	64.9
There is not any	34	35.1

The results of the analysis in Table 2, show that the proportion of poor CBTS implementation (49.1%) is found in respondents with poor knowledge, higher when compared to respondents with good knowledge (17.2%) and the proportion of good STBM application (82.5%) is obtained in respondents with good knowledge. higher when compared to respondents with less knowledge (50.9%). The results of the statistical test obtained $p = 0.001$ ($p < 0.05$) which indicated that there was a relationship between knowledge and the implementation of CBTS in the Work Area of the Blang Bintang Health Center.

Table 2. The Relationship between knowledge and the application of CBTS

Knowledge	Community-based total sanitation				Total		<i>P Value</i>
	Good		Not good				
	n	%	N	%	n	%	
Good	33	82.5	7	17.2	40	100	0.001
Not good	29	50.9	28	49.1	57	100	
Total	62	63.9	35	36.1	97	100	

The results of the analysis revealed that the proportion of respondents with elementary school education had less CBTS (80.0%) was higher than respondents with knowledge of junior high school education (48%) and high school education (28.4%) and the proportion of respondents with good CBTS education (71.6%) obtained from respondents with high school education, which is higher when compared to respondents with junior high school education (52%) and elementary school education (20%). The statistical test results obtained $p = 0.024$ ($p < 0.05$) which indicated that there was a relationship between education and the application of regional community-based total sanitation at the Blang Bintang Health Center. The results of the analysis can be seen in Table 3.

Table 3. The Relationship between Education and the Application of CBTS

Education	Community-based total sanitation				Total		<i>P Value</i>
	Good		Not good		n	%	
	n	%	N	%			
Senior high school	48	71.6	19	28.4	67	100	0,024
Junior high school	13	52.0	12	48.0	25	100	
Primary school	1	20.0	4	80.0	5	100	
Total	62	63.9	35	36.1	97	100	

The results of the analysis show that the proportion of CBTS implementation is less (58.1%) in respondents who have a negative attitude, it is higher when compared to respondents with positive attitudes (27.7%) and the proportion of CBTS implementation is good (72.3%) is obtained in respondents with a positive attitude. positive attitude is higher when compared to negative attitude respondents (46.9%). The statistical test results obtained $p = 0.014$ ($p < 0.05$) which indicated that there was a relationship between attitudes and the implementation of CBTS in the Blang Bintang Health Center Work Area. The results of the analysis can be seen in Table 4.

Table 4. The Relationship between attitudes and the application of CBTS

Atitute	Community-based total sanitation				Total		P Value
	Good		Not good				
	n	%	n	%	n	%	
Positive	47	72.3	18	27.7	65	100	0.014
Negative	15	46.9	17	58.1	32	100	
Total	62	63.9	35	36.1	97	100	

The proportion of CBTS implementation that was lacking (58.8%) was found in respondents who stated that the role of officers in CBTS implementation was less, higher when compared to respondents who stated that the role of officers in CBTS implementation played a role (24.1%) and the proportion of CBTS implementation was good (75.9%) were found in respondents who stated that the role of officers in implementing CBTS played a higher role when compared to respondents who stated that the role of officers in implementing CBTS played a lesser role. The statistical test results obtained $p = 0.003$ ($p < 0.05$) which indicated that there was a relationship between the role of officers and the implementation of CBTS in the Work Area of the Blang Bintang Health Center. The results of the analysis can be seen in Table 5.

Table 5. The Relationship between the Role of Officers and the Application of CBTS

Officer role	Community-Based Total Sanitation				Total		P Value
	Good		Not good				
	n	%	n	%	n	%	
Role	44	75.9	14	24.1	58	100	0.003
Lack of role	18	46.1	21	58.8	39	100	
Total	62	63.9	35	36.1	97	100	

The results of the analysis show that the role of community leaders in implementing CBTS is 76.7% who play a good role, only 23.3% play a less role. The role of community leaders in the implementation of STBM, which is still lacking, is 58.2% but they still care about the implementation of STMB, but 41.8% of community leaders do not care about the implementation of STMB.

The statistical test results obtained $p = 0.080$ ($p > 0.05$) which indicated that there was a relationship between the role of community leaders and the implementation of CBTS in the Blang Bintang Health Center Work Area. The results of the analysis can be seen in Table 6.

Table 6. The relationship between the role of community leaders and the application of CBTS

The role of community	CBST				Total		P Value
	Good		Not good				
	n	%	n	%	n	%	
Role	23	76.7	7	23.3	30	100	0,080
Lack of role	39	58.2	28	41.8	67	100	
Total	62	63.9	35	36.1	97	100	

The results of the analysis show that the proportion of poor CBTS implementation (91.2%) is for respondents who do not have facilities, higher when compared to respondents who have facilities (6.4%) and the proportion for implementing good CBTS (93.6%) is for respondents who having higher facilities when compared to respondents who do not have facilities (8.8%). The statistical test results obtained P value = 0.0001 ($p < 0.05$) which indicated that there was a relationship between facilities and the implementation of CBTS in the Blang Bintang Health Center Work Area. The results of the analysis can be seen in Table 7.

Table 7. Facility Relations with CBTS Implementation

Facility	Community-Based Total Sanitation				Total		P Value
	Good		Not good		n	%	
	n	%	n	%			
There is	59	93.6	4	6.4	63	100	0.0001
There is not any	3	8.8	31	91.2	34	100	
Total	63	63.9	35	36.1	97	100	

The relationship between the level of knowledge and the implementation of CBTS. From the results of data analysis it is known that of the 35 respondents who applied less CBTS, 49.1% of them had less knowledge, and only 17.2% of respondents had good knowledge and lacked CBTS implementation. Bivariate analysis yielded $p = 0.001$ using the Chi-square statistical test ($p < 0.05$), which is the level of knowledge related to the application of CBTS.

The relationship between education level and the implementation of CBTS. From the results of data analysis it is known that of the 35 respondents who applied less CBTS, 80% of them had elementary school education, 48% had junior high school education, and only 28.4% of respondents had high school education and lacked CBTS implementation. Bivariate analysis yielded $p = 0.024$ using the Chi-square statistical test ($p < 0.05$), meaning that education is related to CBTS implementation.

The relationship between attitude and STBM implementation. From the results of data analysis it is known that of the 35 respondents who applied less CBTS, 58.1% of them had negative behavior, and only 27.7% of respondents had negative behavior and lacked STBM implementation. Bivariate analysis made $p = 0.014$ using the Chi-square statistical test ($p < 0.05$), namely the attitude of cooperation using the STBM application.

The relationship between the role of officers and the implementation of STBM. From the results of data analysis it was found that of the 35 respondents who applied STBM was lacking, 58.8% of them stated that the role of officers was lacking, and only 24.1% of respondents stated that the role of officers played a role and the implementation of STBM was lacking. Bivariate analysis yielded $p = 0.003$ using the Chi-square statistical test ($p < 0.05$), meaning that the role of officers is related to the implementation of STBM.

The relationship between the role of community leaders and the implementation of STBM. From the results of data analysis it was found that of the 35 respondents who applied STBM was lacking, 41.8% of them stated that the role of community leaders was lacking, and only 23.3% of respondents stated that the role of community leaders played a role and the implementation of STBM was lacking. Bivariate analysis yielded $p = 0.080$ using the Chi-square statistical test ($p > 0.05$), meaning that the role of community leaders is not related to the implementation of STBM. Others, community leaders only play a role in mutual cooperation, while the invitation not to open defecation is still lacking.

Facility relationship with STBM implementation. From the results of data analysis it is known that of the 35 respondents who applied less STBM, 91.2% of them did not have facilities, and only 6.4% of respondents had facilities and lacked STBM implementation.

Bivariate analysis yielded $p = 0.0001$ using the Chi-square statistical test ($p < 0.05$), which is the work of affiliated facilities using the STBM implementation.

Ownership of latrines in the working area of the Blang Bintang Health Center itself covers 64.9% of the people who have exclusive latrines and the remaining 35.1% of the people do not yet have latrines. Residents who do not have latrines generally defecate in irrigation. According to researchers, ownership of latrines in the Blang Bintang Health Center is due to economic factors. Some families have not been able to build a latrine because their income is only enough to meet their daily needs. Families who already have an exclusive latrine but still have open defecation occur because a family member defecates while farming because there is no latrine in the rice fields.

The result show that all aspect, CBST, knowledge, education, attitude, officer rule, the rule of community leaders and facility must be increase for public awareness about the importance of maintaining personal health both individuals and groups and through this program means that Indonesia is participating in realizing a healthy this region so free from disease. The STBM national strategy in each of the 5 STBM pillars per district or city is said to have been verified if it meets the achievement standards of 100% every five pillars at once or runs one particular pillar and reaches 100% (Rany, et al., 2021).

Conclusion

There is a relationship between knowledge and the application of CBTS in the work area of the Blang Bintang Health Center, Aceh Besar District (p value = 0.01). There is a relationship between education and the application of Community-Based Total Sanitation in the working area of the Blang Bintang health center, Aceh Besar District ($p = 0.024$). There is a relationship between the attitude of using CBTS implementation in the working area of the Blang Bintang Health Center, Aceh Besar District ($p = 0.014$). There is a relationship between the role of officers and the application of CBTS in the working area of the Blang Bintang Health Center, Aceh Besar District ($p = 0.03$). There is no correlation between the role of community leaders using the implementation of CBTS in the working area of the Blang Bintang health center, Aceh Besar District ($p = 0.080$). There is a relationship between facilities using the implementation of CBTS in the working area of the Blang Bintang Health Center, Aceh Besar District ($p = 0.0001$).

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