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Study of defecation places and feces distribution in North Buton Regency

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Abstract

Background: Poor sanitation can likely contaminate drinking water, leading to the development of cholera and other deadly diseases. The number of people who defecate in the open worldwide has fallen by more than two-thirds over the past two decades. Data from the Community Health Development Division of the Southeast Sulawesi Health Office reports that the ODF level in Southeast Sulawesi as of today shows that it is already 59 percent of the total target of 60 percent. So efforts are needed in North Buton Regency to achieve the target of stopping open defecation that has been launched by the Indonesian government.

Objective: The aim of this research is to examine defecation habits and places where feces are distributed in North Buton Regency.

Methods: This type of research is quantitative descriptive, with a survey approach. The sample in this study was 3,640 houses. Each village/kelurahan is represented by 40 households taken using a simple random sampling technique.

Results: The majority of respondents disposed of feces in private latrines, namely 2,769 (76.1%), while the least was defecation in ditches and ditches around people's houses, namely 2 (0.1%), and the majority of houses collected/distributed feces in dug holes, namely 2,369 (65.08%), while the least is accommodated/distributed directly in the river/lake/beach/sea, are 15 (0.41%).

Conclusion: Most people in North Buton Regency defecate in private latrines, and the resulting feces are channeled/discarded into dug holes in the ground.

Keywords: Study; Defecation; Faecal Channels; Latrines

1. Introduction

Half of the world's population is at risk of dying from diseases caused by a lack of proper toilets, according to the United Nations (UN). Poor sanitation can likely contaminate drinking water, leading to the development of cholera and other deadly diseases. The number of people who defecate in the open worldwide has fallen by more than two-thirds over the past two decades. However, according to a WHO/Unicef report, open defecation is still the only option available for around 419 million people in the world(1). 673 million people practice open defecation, and an estimated 3 billion people do not have access to basic hand washing facilities(2), to pay attention to personal hygiene(3).

Careless behavior when defecating can cause fatal health problems. One disease that can be caused by bad behavior is diarrhea. Some people practice the habit of defecating for economic reasons, there are no toilets at home and it is not possible to build household toilets. This means that people usually defecate in the open, especially on riverbanks around residential areas. Diarrhea disease increases with poor clean water supplies and unavailability of latrines (4). A small

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number of residents still defecate in the open because the village/sub-district has difficult environmental/natural conditions of the house (for example, living right on a river bank) and the habitual factor of the household is that they do not want to use/have a latrine. This is of particular concern to the Indonesian government, especially the Ministry of Health.

Indonesia continues to work hard to achieve the Sustainable Development Goals (SDGs), namely "By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and children, women and those in vulnerable situations." The Indonesian government itself is targeting 0% open defecation (BABS) and 15% access to safe sanitation by 2024(5). Therefore, local governments, both provincial and district, must do the same thing so that this target can be achieved.

The Southeast Sulawesi Provincial Health Service is trying to create a community with healthy lifestyles with the Community-Based Total Sanitation program commonly called STBM. STBM itself is an approach to changing hygienic and sanitary behavior through community empowerment by triggering. Data obtained from the Community Health Development Division of the Southeast Sulawesi Health Office reported that the ODF level in Southeast Sulawesi as of today shows that it is already 59 percent of the total target of 60 percent (6). This activity was developed by the Provincial Health Service to the regions through the District/City Health Service, one of which is North Buton Regency.

To find out the extent of the efforts made by North Buton Regency in achieving the target of stopping open defecation that has been announced by the Indonesian government, it is necessary to conduct an assessment of the community's defecation practices by knowing the places for defecation used by the community and the distribution places for the feces produced. . Therefore, researchers are interested in studying defecation practices by the community in North Buton Regency.

2. Material and methods

This type of research is quantitative descriptive, with a survey approach. The survey was carried out using a questionnaire and observation sheet. The questionnaire was used to determine the state of defecation practices known to the community, while the observation sheet was used to directly observe and see the conditions that occurred in the community regarding defecation. The sample in this study was 3,640 houses. Each village/kelurahan is represented by 40 households taken using a simple random sampling technique. This research was conducted in North Buton Regency in 2022. Furthermore, the data obtained was processed using the SPSS version 20.0 application, and presented using tables and graphs.

3. Results and discussion

Defecation (defecation) is an action or process by living creatures to get rid of solid or semi-solid feces or feces originating from the digestive system of living creatures. This research focuses on the disposal of human feces which is a habit of the community at the research location. There are two parameters studied in this research, namely the place of defecation and the place of final distribution of feces in the people of North Buton Regency.

3.1. Place of Defecation

Defecation (abbreviated as defecation), is the action or process of an organism releasing solid or semi-solid feces, or feces originating from the organism's digestive system. The distribution of respondents' defecation places is presented in the following table:

Table 1 Distribution of defecation places for respondents and families

Place of Defecation	n	%
Private latrine	2,769	76.1
Neighbor/relative's latrine	159	4.4
Public toilet	124	3.4
Toilet in the pond/pool	6	0.2
River/beach/sea	25	0.7

Garden/yard of the house	73	2.0
Gutter/trench	2	0.1
Digging hole	15	0.4
Don't know	467	12.8
Total	3,640	100

Source: Primary Data 2022

Based on the table above, of the 3,640 respondents, the majority disposed of feces in private latrines, namely 2,769 (76.1%), while the least was defecation in ditches and ditches around people's houses, namely 2 (0.1%). The proportion of respondents' defecation places is presented in more detail in the following graph:

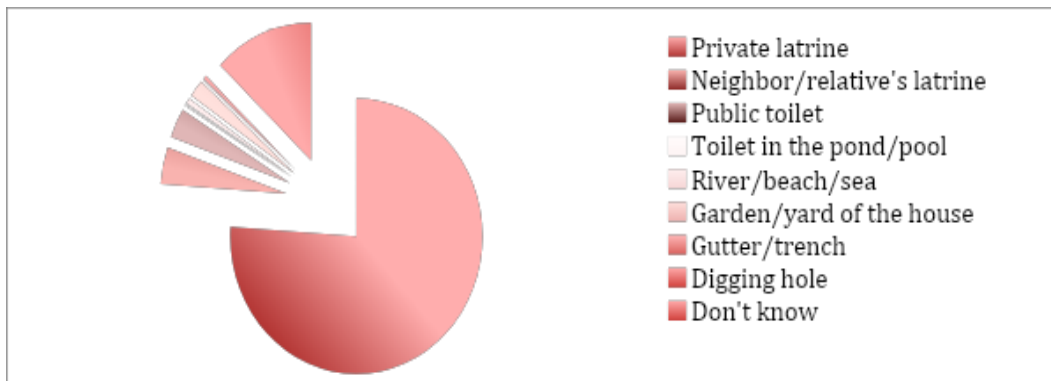


Figure 1 Distribution graph of defecation places

3.2. Place for final disposal/distribution of feces

Feces disposal is the collection of human waste in one place to prevent diseases that may be caused by human waste. Therefore, toilets help prevent the development of diseases. The distribution of respondents' feces storage/distribution locations is presented in the following table:

Table 2 Distribution of respondents' feces storage/distribution locations

Types of Fecal Storage	n	%
Fabricated septic tank according to SNI	82	2.25
Self-constructed septic tank (tight side and base)	582	15.99
Waste Water Disposal Installation communal	38	1.04
Centralized WWDI/city waste pipe	436	11.98
Ground hole	2,369	65.08
Directly into the drainage	68	1.87
River/lake/beach/sea	15	0.41
Pond/rice field	31	0.85
Garden/field	19	0.52
Total	3,640	100

Source : Primary Data 2022

Based on the table above, of the 3,640 respondents, most of the houses accommodated feces in dug holes (in Indonesia it is called cubluk), namely 2,369 (65.08%), while the least was collected/distributed directly in the river/lake/beach/sea, namely 15 (0.41%). The proportion of respondents' feces storage/disposal places is presented in more detail in the following graph:

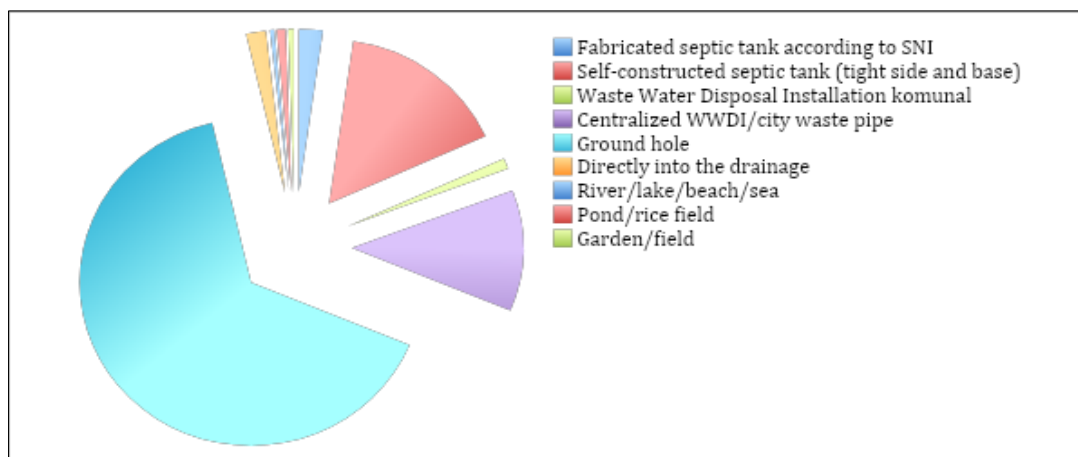


Figure 2 Distribution graph of feces storage/distribution areas

Various types of defecation places are used by the community. Especially in North Buton Regency, these include private latrine, neighbor/relative's latrine, public toilet, toilet in the pond/pool, river/beach/sea, garden/yard of the house, gutter/trench, and digging hole. Throwing feces in a private latrine is of course better, but it must be ensured that the private latrine used meets health requirements, so that it does not cause disease for the people living in the house. The next thing that needs to be considered is the place for storing/distributing feces used by the community. In North Buton Regency, the places used to store and distribute feces include fabricated septic tanks according to SNI, self-constructed septic tanks (tight side and base), communal Waste Water Disposal Installation (WWDI), centralized WWDI/city waste pipe, ground holes, directly into the drainage, river/lake/beach/sea, pond/rice field, and garden/field.

It is dangerous if people throw feces in the open, such as defecating in rivers/streams, or in their yards. Open defecation can be done voluntarily or forced. These decisions are closely related to personal preferences, cultural and traditional norms, and specific concerns regarding the privacy of women and girls from various communities. Ongoing campaigns to promote the construction and use of latrines should carefully consider these factors to reduce open defecation and increase the use of healthy latrines(7).

Most people have poor knowledge and attitudes regarding the health impacts of open defecation (8). Therefore, appropriate action is needed to overcome this problem, where local government support is highly expected. Apart from cultural aspects, the high rate of poverty also influences toilet use and open defecation habits. Future sanitation interventions to combat open defecation need to explore and consider cultural aspects within society in order to adopt appropriate eradication measures, which are difficult to address with existing poverty alleviation and sanitation campaigns(9). Other factors that are significantly related to latrine use are the number of household members of one to three people, the presence of elementary or middle school students at home, the time the household has built a latrine for two years or more, and the frequency of daily latrine cleaning (10).

There is a worse possibility now, the possible route of transmission of COVID-19 and other fecal pathogens through human waste in people who defecate in the open. Here, poor hand hygiene, contaminated shoes and objects, mechanical devices, and outdoor human activities can be sources of transmission of COVID-19 through feces(11). Another infectious disease that has been proven to be caused by throwing feces anywhere is diarrhea. Open defecation is one of the bad PHBS.

The occurrence of diarrhea is closely related to clean and healthy living behavior (PHBS). One of the PHBS is related to the maintenance of toilets owned by the community. The use of unhealthy toilets by the community allows the transmission of infectious diseases, especially diarrhea. The occurrence of diarrhea is related to hand washing habits, such as washing hands after defecating. Sometimes this is not done because there is no soap in the toilet. People who do not wash their hands are at risk of contracting coliform bacteria which can cause infections such as diarrhea. This situation is further exacerbated by the condition of toilets which are rarely cleaned. The habit of leaving the toilet without cleaning it after defecating is one of the causes of the environment around the toilet becoming unclean. 9 million people die every year due to environmental pollution (12).

Unsanitary latrine conditions pose a risk to people suffering from diarrheal diseases, especially children. Children in households with unsafe defecation and defecation had a higher prevalence of diarrhea. Unsafe management of children's

stools can be a source of fecal exposure for young children (13). Latrine conditions that can affect public health need to be analyzed further to determine priority areas for intervention, especially with limited regional conditions so that priority areas must be selected for intervention as a preventive measure (12). Further analysis can be carried out by knowing the priority areas using the risk index value to obtain the risk level with the help of a geographic information system so that it can be determined which areas are priority, so that it can help the government in the decision making process (14). Intervention activities for prevention require further collaboration between government and non-government organizations to identify factors of diarrhea transmission (15).

People should set aside time to clean toilets, not only closed ones, but also the walls and floors around them. Transformational changes in the societal environment may be necessary before significant impacts of fecal pollution occur (16). Interventions on latrine use behavior are low cost, can significantly improve the safe disposal of feces and have a noticeable impact in the short term although are unlikely to reduce exposure to fecal pathogens to the levels necessary to achieve improved health (17).

4. Conclusion

The majority of people in North Buton Regency defecate in private latrines, and the resulting feces are channeled/discarded into holes dug in the ground. This situation needs to be improved further because there are still people who throw feces in open places, including into ditches and rivers. Therefore, there needs to be attention from the community as well as the government to work together in preventing the occurrence and transmission of infectious diseases.

Compliance with ethical standards

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Disclosure of conflict of interest

All authors in the making of this scientific article have no conflict of interest.

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