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Analysis of Factors Caused by Non-Ownership of Waste Water Drains (Spal) and Efforts to Approach Environmental Health Aspects to Increase Spal Ownership in Communities of Tigapanah District in 2023

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A B S T R A C T

This type of research is qualitative with an exploratory study approach to get an overview of the factors that cause people not to have SPALs so that efforts can be made to overcome them, in the form of education and making environmentally friendly SPALs. Based on demographic data regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, namely the most dominant age group is 41-60 years old, 175 people (49%) and the most aged 10-20 years as many as 5 people (1.4%), the most dominant occupation is farmers as many as 247 people (69.2), the most dominant education is middle school - high school as many as 232 people (65%), at least D1 education there were 31 people (8.7%), the most addresses were in Seberaya village as many as 79 (22.1%), and the fewest addresses were in Aji Julu village as many as 6 people (1.7%). The number of household residents who predominantly live in 1 house with 4 people or more is 186 people (52.1%) while 1 -3 people are 171 people (47.9).

INTRODUCTION

Household wastewater that is discharged directly into the environment has negative effects and disturbances on humans and the environment. Bad effects and problems can include health and beauty problems. Regarding beauty, waste water will leave dregs and an unpleasant odor, can cause corrosion (rust) and damage aquatic ecosystems causing the scarcity of several types of biota, both in waters and beaches.

Many people feel the negative effects of household liquid waste in the form of health problems such as diarrhea, hepatitis A, polio, cholera, abdominal typhus, amoebic dysentery, balantidiasis and giardiasis. Efforts that can be made to minimize the occurrence of environmental-based diseases include the provision of waste water disposal channels (SPAL)[1]

Public awareness of the importance of processing domestic liquid waste is still not equivalent to awareness of the importance of clean water. This is what causes the low level of public awareness to manage their own wastewater. In this case, through Minister of Health Regulation Number 3 of 2014, Community-Based Total Sanitation (STBM) was confirmed as a national strategy for sanitation development in Indonesia. STBM is an approach to changing hygienic and sanitation behavior through community empowerment with the trigger method. To be able to achieve this goal, the STBM implementation strategy focuses on creating a conducive environment (enabling environment), increasing sanitation needs (demand creation) and increasing the provision of access to sanitation (supply improvement).[2]

Likewise with SPAL ownership in the community of Tigap-anah District, Karo Regency, in 2019 data was obtained, from 21 villages with a total of 7,147 heads of families, only 3,799 families (53.16%) owned SPAL. There are 2,622 families (36.67%) in open/flooded wastewater disposal sites and 726 families (10.17%) who discharge wastewater directly to the ground. Based on this background, researchers are interested in conducting research in this sub-district to find out what factors actually cause people not to make household SPALs and design environmentally friendly SPALs consisting of grace trap tanks, phytoremediation tanks and infiltration wells in community settlements to overcome disposal problems. waste water so that it is hoped that it will increase SPAL ownership in the community.

Formulation of the problem

1. The factors causing the lack of SPAL ownership in the community are not yet known.
2. There has been no attempt to approach environmental health aspects to increase SPAL ownership in the community.
3. There are no environmentally friendly SPALs in people's homes.

METHODOLOGY

This type of research is qualitative with an exploratory study approach to get an overview of the factors that cause people not to have SPALs so that efforts can be made to overcome them, in the form of education and making environmentally friendly SPALs. The environmentally friendly SPAL planned to be built at the research location consists of three tanks, namely a grace trap (fat separating tank), a phytoremediation tank (filled with gravel and sand and planted with water plants at the top) and an absorption well (filled with sand, gravel, coconut shell charcoal, drums). plastic which is perforated with a certain distance and diameter and zeolite). The research population was all heads of families in Tigapanah District, Karo Regency who did not yet have SPAL that met health requirements, totaling 3,348 families.

Determining the sample size uses the Slovin formula, namely:

$$n = \frac{N}{1 + N e^2}$$

n : sample size

N: population number

e : margin of error is the planned error size, set at 5%.

By using the formula above, the research sample size is 357 families. The number of samples for each village is determined based on proportions. The sampling technique is as simple as random.

Primary data was obtained directly from research respondents, which were used as a source of information to obtain valid data. Secondary data was obtained from the results of literature studies and data from related agencies. Data collection techniques were obtained through field observations, documentation and in-depth interviews as well as measuring the size of the respondents' backyards.

Responsibilities of each researcher:

a. The head researcher carries out task management and research control, prepares reports and is responsible for publication.

b. Research member 1 carried out data analysis, discussed reports and wrote research report manuscripts.

Research member 2 was responsible for coordinating with informants, and documenting the results of interviews as well as the results of measuring the area of the respondent's backyard.

4.2. Univariate Analysis

The results of this research were grouped into several variables and based on observations and in-depth interviews conducted by researchers with respondents in several villages in Tigapanah sub-district, the data was created in tabular form as follows:

RESEARCH RESULT

1***. Respondent's Age***

Table 1. Distribution of Proportion of Respondents Based on Age Regarding Factors Causing Non-Ownership of Waste Water Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigapanah District Communities in 2023

No	Old (Year)	Frequency (f)	Percentage (%)
1	10-20	5	1.4
2	21-40	95	26.6
3	41-60	175	49.0
4	≥61	82	23.0
Total		357	100.0

Based on the data above, namely the work of respondents regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase ownership of SPAL in Tigapanah sub-district communities in 2023, the most dominant occupation is farmers, namely 247 people (69.2%) and the fewest were others such as drivers, etc., 12 people (3.4%).

2. Respondent's Occupation

Tabel 2. Distribution of Proportion of Respondents Based on Occupation Regarding Factors Causing Non-Ownership of Waste Water Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023

No	Occupation	Frekquency (f)	Percentage (%)
1	PNS	20	5.6
2	Farmes	247	69.2
3	Self-employed	78	21.8
4	And Others	12	3.4
Total		357	100

Based on the data above, namely the work of respondents regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase ownership of SPAL in Tigapanah sub-district communities in 2023, the most dominant occupation is farmers, namely 247 people (69.2%) and the fewest were others such as drivers, etc., 12 people (3.4%)

3. Education

Tabel 3. Distribution of Proportion of Respondents Based on Education Regarding Factors Causing Non-Ownership of Waste Water Sewerage Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023

No	Education	Frequency (f)	Percentage (%)
1	SD	94	26.3
2	SMP-SMA	232	65.0
3	D1 Keatas	31	8.7
Total		357	100

Based on the data above, namely the education of respondents regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase ownership of SPAL in the Tigapanah sub-district community in 2023, the most dominant education is education. Middle school to high school, namely 232 people (65%) and the fewest were D1 and above, namely 31 people (8.7%).

4. Address

Table 4. Distribution of Proportion of Respondents Based on Address Regarding Factors Causing Non-Ownership of Waste Water Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023.

No	Alamat	Frequency (f)	Percentage (%)
1	Singa Village	20	5.6
2	Seberaya Village	79	22.1
3	Mulawari Village	13	3.6
4	Suka Village	18	5.0
5	Bunuraya Village	20	5.6
6	Sukadame Village	20	5.6
7	Tigapanah Village	20	5.6
8	Kuta Kepar	27	7.6
9	Manuk Mulia Village	40	11.2
10	Aji Jahe Village	6	1.7
11	Aji Buhara Village	35	9.8

12	Aji Julu Village	20	5.6
13	Aji Mbelang Village	20	5.6
14	Kacinambun Village	19	5.3
	Total	357	100.0
Total		357	100

Based on the data above, namely the respondents' addresses regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, the most dominant address is residing in Seberaya Village, namely as many as 79 (22.1%) and the fewest with an address in Aji Jahe Village were 6 people (1.7%).

5. Number of residents in the house

Table 5. Distribution of the Proportion of Respondents Based on the Number of Residents of the House Regarding the Factors that Cause Not Owning a Waste Water Sewerage Channel (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023

No	Number of residents in the house	Frequency (f)	Percentage (%)
1	1-3 people	171	47.9
2	4 people above	186	52.1
	Total	357	100

Based on the data above, namely the number of occupants of the respondent's house regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase ownership of SPAL in the Tigapanah sub-district community in 2023, the most dominant number of house occupants are those who have 4 people and above, namely 186 people (52.1%) and at least 4 people and above, namely 171 people (47.9%)

6. Type of house building

Table 6. Distribution of Proportion of Respondents Based on House Building Type Regarding Factors Causing Non-Ownership of Waste Water Sewerage Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023.

No	Type of house building	Frequency (f)	Percentage (%)
1.	Permanent	178	49.9
2.	Semi Permanent	126	35.3
3.	Emergensy	53	14.8
Total		357	100

Based on the data above, namely the number of occupants of the respondent's house regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, the most dominant type of house building is Those who have permanent building types are 178 people (49.9%) and the fewest are emergency building types, namely 53 people (14.8%)

7. Home ownership status

Tabel 7. Distribution of Proportion of Respondents Based on Home Ownership Status Regarding Factors Causing Non-Ownership of Waste Water Sewerage Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase SPAL Ownership in Tigapanah District Communities in 2023

No	Home ownership status	Frequency (f)	Percentage (%)
1	My own house	257	72.0
2	Contract	77	21.6
3	Staying home	23	6.4
	Total	357	100

Based on the data above, namely the number of residents in the respondent's house, regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, the most dominant occupation is Home Ownership Status. Home Alone, namely 257 people (72%) and the least number of people were boarding, namely 23 people (6.4%).

8. Availability of Owned Yard Land

Table 8. Distribution of Proportion of Respondents Based on the Available Size of Yard Land Owned Regarding the Factors that Cause Not Owning a Waste Water Sewerage Channel (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023

No	Availability of Owned Yard Land	Frequency (f)	Percentage (%)
1	Yes	218	61.1
2	No	139	38.9
Total		357	100

Based on the data above, namely the number of residents in the respondent's house, regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, the most dominant work is the availability of home yard land. Those owned were 218 people (61.1%) and the least number of people was the lack of available yard land, namely 139 people (38.9%)

9. Knowlegde

Table 9. Distribution of Proportion of Respondents Based on Knowledge of Factors Causing Non-Ownership of Waste Water Sewerage Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigap-anah District Communities in 2023

No	Knowlegde	Frequency (f)	Percentage (%)
1	Good	298	83.5
2	No Good	59	16.5
Total		357	100

Based on the data above, namely the number of residents in the respondent's house regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, the most dominant occupation is having good knowledge, namely as many as 298 people (83.5%) and the least has poor knowledge, namely 59 people (16.5%)

10. Attitude

Tabel 10 Distribution of Proportion of Respondents Based on Attitudes Regarding Factors Causing Non-Ownership of Waste Water Sewerage Channels (SPAL) and Efforts to Approach Environmental Health Aspects to Increase Ownership of SPALs in Tigapanah District Communities in 2023

No	Attitude	Frequency (f)	Percentage (%)
1	Good	315	88.2
2	No Good	42	11.8
Total		357	100

Based on the data above, namely the number of residents in the respondent's house regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health

aspects to increase ownership of SPAL in the Tigapanah sub-district community in 2023, the most dominant job is to have a good attitude, namely as much as 315 people (88.2%) and the fewest who had unfavorable attitudes were 42 people (11.8%)

11. Reasons for Not Having a Qualifying SPAL

After conducting interviews with all respondents, the researchers summarized the reasons for not having SPAL:

1 Lack of land
2 Economic problems
3 Lack of knowledge
4 There is no government cooperation
5 The road ditch provided is not active
6 Lack of concern
7 The house is not your own
8 Just flow it behind the house and directly into the ground and there are several conditions which is flooded
9 Distributed to the ground next to the house

DISCUSSION

Based on demographic data regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, namely the most dominant age group is 41-60 years old, 175 people (49%) and the most 5 people aged 10-20 years (1.4%). There are several studies that say that age does not significantly influence the quality of basic sanitation facilities in residential homes

respondents ($p > 0.05$). This could possibly be caused by the use of sanitation facilities themselves, because these facilities are used by everyone in various ways age group. Likewise, research by Joshi and Amadi (2013) shows that a person's age is not related to the quality of basic sanitation facilities in a residence.

The most dominant occupation is farmers with 247 people (69.2). The Karo Regency area is an agricultural area so the dominant occupation in this area is farmers, including in Tigap-anah sub-district. If someone has a better job, that person will earn a higher income, with a higher income enabling the respondent to be able to build or provide better and better quality basic sanitation facilities for a residence. This is in line with research by Ningrum (2013) which examines basic sanitation in household waste management which shows that the majority of households that have proper sanitation facilities are heads of families with incomes above the average, while those with incomes that are less than the average are only moderate. just to meet the needs of daily life.

The most dominant education was SMP – SMA as many as 232 people (65%), with the least education being D1 or above as many as 31 people (8.7%).

Predisposing factors include a person's level of education regarding health behavior, the higher a person's level of education, the easier it is for a person to

receive new, constructive information such as information about the importance of basic sanitation facilities for family health, criteria for basic sanitation facilities that meet health requirements, eligible wastewater disposal options, and so on. Health education is intended to improve public awareness, so that environmental cleanliness becomes a priority.

The most addresses were in Seberaya village as many as 79 (22.1%), and the fewest were in Aji Julu village as many as 6 people (1.7%). The largest number of respondents live in Seberaya Village.

The number of household residents who predominantly live in 1 house with 4 people or more is 186 people (52.1%) while 1 -3 people are 171 people (47.9%). The number of residents is more than 4 people and above because some people live with elderly parents and the average number of their children is more than 2 people.

The most common type of house building was permanent, 178 people (49.9%) and the least emergency, 53 people (14.8%). On average, the types of house buildings are more permanent because there are more building materials to build than bricks to build a permanent house, while wood is rarely purchased to make a house.

The most dominant standard of home ownership is own home, 257 people (72%) and at least 23 people (6.4%). On average, respondents have their own house, some of which are houses left behind by their parents and there are also those who bought them with their own income.

The availability of yard land owned by 218 people (61.1%) and 139 people (38.9%) who did not have yard land. On average, there is availability to build SPALs but due to lack of income, SPALs that meet the requirements are not built. The Community-Based Sanitation Program needs to be driven by the community health center, and financial assistance to build latrines and wastewater channels can be provided in collaboration with the village government.

The most dominant level of knowledge was good knowledge as many as 298 people (83.5%) while not good as many as 59 people (16.5%). The most dominant attitude was being kind as many as 315 people (88.2%) while having a good attitude was 42 people (11.8%). Knowledge and attitude questions on average chose the correct answer and the question with the most errors was about the distance between waste water disposal channels and drinking water sources.

The reasons for not having SPAL are lack of land, economic problems, lack of knowledge, lack of government cooperation, the road ditch provided is not active, lack of concern, the house is not one's own and it is just channeled behind the house, next to the house and straight to the ground and there are several conditions that are flooded. Some domestic wastewater comes from water used for cooking, bathing, washing and all household activities. Community behavior in disposing of domestic wastewater is still not good, because wastewater should be disposed of in closed wastewater drains and meet health requirements.

Domestic wastewater is divided into two types, namely greywater and blackwater. Greywater is wastewater that comes from bathing, washing, cooking activities, etc., while blackwater comes from bathroom or toilet wastewater.

In general, water processing in Indonesia is still not good. Domestic wastewater also contains various organic and organic materials. Most have separated the disposal of greywater and blackwater wastewater, but the processing is still not appropriate (Sugiharto, 1987). Domestic wastewater that does not meet standard requirements must be treated before being channeled to water bodies. The aim of wastewater management in a place is to channel wastewater from households to the wastewater treatment location, so that it can be treated first before it flows into water bodies, so that it does not cause damage to the environment and endanger human health. carried out in a certain place in a wastewater treatment building. (Hardjosuprapto, 2000)

CONCLUSIONS AND RECOMMENDATIONS

Based on demographic data regarding the factors causing the lack of ownership of waste water disposal channels (SPAL) and efforts to approach environmental health aspects to increase SPAL ownership in the Tigapanah sub-district community in 2023, namely the most dominant age group is 41-60 years old, 175 people (49%) and the most least 10-20 years old as many as 5 people (1.4%), the most dominant occupation is farmer as many as 247 people (69.2), the most dominant education is middle school – high school as many as 232 people (65%), the least 31 people (8.7%) had D1 level education, the most addresses were in Seberaya village, 79 (22.1%), and the fewest were in Aji Julu village, 6 people (1.7%). The number of household residents who predominantly live in 1 house with 4 people or more is 186 people (52.1%) while 1 -3 people are 171 people (47.9%). The most common type of house building was permanent, 178 people (49.9%) and the least emergency, 53 people (14.8%). The most dominant standard of home ownership is own home, 257 people (72%) and the least share of ownership, 23 people (6.4%). The availability of yard land owned by 218 people (61.1%) and 139 people (38.9%) who did not have yard land. The most dominant level of knowledge was good knowledge as many as 298 people (83.5%) while not good as many as 59 people (16.5%). The most dominant attitude was a good attitude of 315 people (88.2%) while a good attitude was 42 people (11.8%). The reasons for not having SPAL are lack of land, economic problems, lack of knowledge, lack of government cooperation, the road ditch provided is not active, lack of concern, the house is not your own and it just flows behind the house, next to the house and directly to the ground and there are several flooded condition.

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