

NASKAH PUBLIKASI

PUBLICATION MANUSCRIPT

**IDENTIFIKASI PILAR 4 SANITASI TOTAL BERBASIS MASYARAKAT DI
WILAYAH KERJA PUSKESMAS LEMPAKE SAMARINDA**

***IDENTIFICATION SOLID WASTE MANAGEMENT, COMMUNITY LED TOTAL
SANITATION (CLTS) IN THE WORKING AREA OF PUBLIC HEALTH CENTRE
LEMPAKE SAMARINDA***



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FAKULTAS KESEHATAN MASYARAKAT
UNIVERSITAS MUHAMMADIYAH KALIMANTAN TIMUR
2023**

Naskah Publikasi
Publication Manuscript

**Identifikasi Pilar 4 Sanitasi Total Berbasis Masyarakat di Wilayah Kerja Puskesmas
Lempake Samarinda**

*Identification Solid Waste Management, Community Led Total Sanitation (Clts) in The
Working Area of Public Health Centre Lempake Samarinda*

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**IDENTIFIKASI PILAR 4 SANITASI TOTAL BERBASIS MASYARAKAT
DI WILAYAH KERJA PUSKESMAS LEMPAKE SAMARINDA**

Bersama dengan surat persetujuan ini kami lampirkan Naskah Publikasi

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IDENTIFICATION SOLID WASTE MANAGEMENT, COMMUNITY LED TOTAL SANITATION (CLTS) IN THE WORKING AREA OF PUBLIC HEALTH CENTRE LEMPAKE SAMARINDA

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ABSTRAK

Background: Community-based total sanitation is a strategy to improve sanitation quality by expanding community awareness of healthy lifestyles through triggering. Sanitation problems are still a common problem in various regions and places. The purpose of this study was to identify the achievement of Pillar 4 of Community-Based Total Sanitation in the working area of Puskesmas Lempake, Samarinda.

Materials and Methods: This research uses descriptive techniques. The information sorting strategy used is primary data such as observation, interviews, and documentation. The instrument used in this study was a questionnaire. Sampling in this study was purposive sampling with a total sample of 218, with inclusion and exclusion criteria.

Results: The results of this study showed that the achievement of STBM pillar 4 (securing household waste) was sufficient for 34 respondents (19%) and less for 144 respondents (81%).

Conclusion: It can be concluded from the achievement of STBM pillar 4 securing household waste in Lempake Village in RT 10, 12, 15, 16, 19, 20, 22, 23, 26, 28, 30, 31, 32, 33, 34, 39, 41, 42, 43, and 47 that out of 178 respondents (81%) got the category less, the community has not implemented waste security properly, such as there are still people who burn garbage, do not sort garbage bins that are not closed, causing garbage to be scattered in the yard, and the community does not apply the 3R principle. The need for education in the form of counseling to the community regarding safe household waste management and the need to conduct community-based total sanitation triggers and conduct post-triggering monitoring and evaluation activities with continuous counseling of STBM methods in order to achieve the implementation of community-based total sanitation

Keywords: Sanitation, security, and waste.

1.0 Background

Health is a healthy event, both physically, mentally, spiritual, and socially, that allows everyone to live a socially and economically productive life, as stated in Republican Law Number 36 of 2009 concerning health. One of the important factors in the development of population welfare in Indonesia is health, but health problems in Indonesia are still present and must be resolved (RI, 2009). Health is influenced by many things, both internal (from within humans) and external (from outside humans). Factors that affect the health of individuals, groups, and communities can be grouped into four categories based on their magnitude of influence, namely, the environment, including the physical, social, cultural, and economic environments. Behavior, health services, and heredity Among these four factors, environmental factors are the ones that have the greatest influence (Benga et al., 2022). The purpose of the community-based total sanitation program in accordance with the Minister of Health Regulation No. 3/2014 on Community-Based Total Sanitation (STBM) is to further develop the general welfare status and support the SDGs (Supportable Advancement Objectives) targets or manageable improvements focused on being achieved by 2030 (Kementrian Kesehatan RI, 2014).

Community-based total sanitation is one of the techniques used to improve the quality of community sanitation by expanding community awareness of sanitation through triggering methods. STBM consists of five pillars: stop open defecation, hand washing with soap, safe household drinking water and food management, liquid waste management, and proper household waste management. The five pillars are gradually being implemented in all regions of Indonesia. Sanitation problems are still a common problem in various regions and places. As one of the results of research conducted by Kusumaningtiar et al., The research was related to the STBM program that occurred in Tangerang Regency, and the results showed that there was a relationship between stopping open defecation, hand washing with soap, drinking water, and food management and securing household waste, but there was no relationship between securing household liquid waste (Kusumaningtiar, D.A. Vionalita, G. Putri, 2019). Similar to the research conducted by Octavia et al., the findings of this study showed that of the 92 respondents who successfully stopped defecation, 26.1% were successful and 73.9% were unsuccessful. Hand washing with sanitizer was excellent for 19.6 respondents and not good for 80.4%. Household food and drinking water management were 100% effective. Household waste management was not good for 100 percent of respondents, and household liquid waste management was not good for 100 percent of respondents (Octavia, Y.T. Jusniar, 2020). Furthermore, the results of research conducted by Monica et al. showed that there was a relationship between knowledge and application of the five pillars of STBM and the incidence of diarrhea (Monica, D.Z. Ahyanti, M. Prianto, 2021). Similar research by Juhanto et al. stated that waste security has not been implemented 100% because the community in Cilellang Village has not implemented good household waste security. Lack of knowledge and skills in the community on proper waste management (Juhanto et al., 2022)

According to data from the Samarinda City Health Office, in 2021, Puskesmas Lempake had 571 cases of diarrheal disease. Based on the results of the researcher's initial observations related to the implementation of community-based total sanitation in Lempake Village in RT 10, 12, 15, 16, 19, 20, 22, 23, 26, 28, 30, 31, 32, 33, 34, 39, 41, 42, 43, and 47, there is still scattered garbage and waste that is not managed properly. This is due to geographical factors

such as TPS being far from the neighborhood. So based on this description, this study aims to identify the achievement of Pillar 4 of Community-Based Total Sanitation in the working area of Puskesmas Lempake, Samarinda.

2.0 Research Method

This study uses a descriptive method that examines and describes pillar 4 of Community-Based Total Sanitation (CBTS) in RT 10, 12, 15, 16, 19, 20, 22, 23, 26, 28, 30, 31, 32, 33, 34, 39, 41, 42, 43, and 47 Kelurahan Lempake, the working area of Puskesmas Lempake, Samarinda City. This study was conducted from May to June 2023. The population in this study was the total number of neighborhoods in Lempake Village, with pillar 4 variables in the Community-Based Total Sanitation section of household waste safety.

Sampling in this study using the purposive sampling method with consideration of neighborhoods based on the results of preliminary observations, namely for waste management, is still lacking where there is visible garbage and waste generation in residential areas. The sample to be taken is 10% of the total sample; the number of samples obtained from the calculation of the total number of households is 218 households.

3.0 Research Results

Respondents in this study, based on field results in accordance with the inclusion and exclusion criteria, were only 178 out of 218 respondents due to the exclusion criteria in this study, namely 40 respondents. The results of this study are as follows:

3.1 Responden Characteristic

Table 3. 1 Frequency Distribution of Characteristics of Research Respondents

Responden Characteristic		
Gender	Frequency	Percentage
1. Laki-Laki	123	70%
2. Women	55	30%
Education	Frequency	Percentage
1. Not in School	1	0,5%
2. Primary School	34	19,10%
3. Junior High School	50	28,08%
4. Senior High School	75	42,13%
5. University	18	10,11%
Age	Frequency	Percentage
1. 20 year	2	1,12%
2. 20- 30 year	6	3,37%
3. 31- 40 year	59	33,14%
4. 41- 50 year	71	39,88%
5. 50 year	40	22,47%
Work	Frequency	Percentage
1. PNS/Polri/TNI	3	1,68%
2. Private Employee	27	15,16%
3. Self Employed	6	3,37%
4. Farmers	88	49,43%
5. Labourer/Factory employee	20	11,23%
6. Not Working	34	19,10%

Primary Data Source : 2023

3.2 Securing Household Waste

Table 3. 2 Household Waste Safety Questionnaire

No.	Household Waste Application Question	Yes		No	
		n	%	n	%
1	Put rubbish in its place	175	98	3	2
2	Segregation of organic and inorganic waste	58	33	120	67
3	Bins are enclosed, strong, and easy to clean	84	47	94	53
4	No rubbish strewn about	84	47	94	53
5	Safe treatment of waste	82	46	96	54
6	Rubbish is disposed of at the TPS	84	47	94	53
7	Waste is collected at least 1 x 24 hours	30	17	148	83
8	Waste reduction efforts (<i>Reduce</i>)	4	2	174	98
9	Waste reuse efforts (<i>Reuse</i>)	1	0,5	177	99,5
10	Efforts to recycle waste (<i>Recycle</i>)	1	0,5	177	99,5

Primary Data Source : 2023

Table 3. 3 Household Waste Security Category

Category	Frequency	Percentage
Good	0	0
Enough	34	19%
Less	144	81%
Total	178	100

Primary Data Source : 2023

4.0 Pembahasan

In the study of household waste safety in Lempake Village, which is the working area of Puskesmas Lempake, the results showed that household waste safety in Lempake Village mostly fell into the insufficient category with 144 respondents (81%). This is because the majority of people do not apply safe waste security or manage waste properly. People still throw garbage behind their houses, rivers, or garden areas. Some communities even have special places to burn trash. A lack of knowledge and appropriate tools often leads to inappropriate practices such as waste dumping and uncontrolled burning (Vinti and Vaccari, 2022). As a result, this burning of waste causes debris to scatter and is also a health hazard. Burning waste has a negative impact on the environment and health. The smoke from burning waste produces carbon monoxide gas and carbon dioxide, which can travel to the lungs and cause acute

respiratory infections. According to Setiawan, there is a relationship between knowledge and actions related to burning open waste and the incidence of acute respiratory infection (Setiawan et al., 2020). In addition to the smoke from burning garbage, acute respiratory infections can also be influenced by the sanitary conditions of the settlement, such as the lighting, temperature, and humidity of the room, and the lack of ventilation in each house (Pramaningsih et al., 2023). Uncontrolled waste disposal methods, open incinerators, and open bins will also have negative impacts such as air and water pollution, land degradation, methane emissions, harmful leachate, and climate change (Abubakar et al., 2022).

Communities face challenges due to ignorance, a lack of awareness, and a lack of willingness to fulfill existing waste management needs. It is a common assumption that waste is not important and does not require special treatment therefore, different waste management strategies are needed for urban and rural areas (Ghosh and Kelvin, 2021). Household waste management by collection and transport in rural areas faces many difficulties due to unclassified solid waste sources, inappropriate waste treatment technology, and low awareness of waste management among residents (Tran et al., 2020). Attention to waste is often focused on urban areas, while rural areas experience similar conditions. There is a lack of documentation on the operational, regulatory, institutional, financial, and community participation aspects of rural waste management systems. Understanding the current state of rural waste management systems provides insight into potential future impacts and the design of appropriate methods (Masjhoer et al., 2022). One way of processing rural waste is by building waste processing facilities by the private sector in the form of environmentally friendly incinerators and providing lessons in organic waste composting techniques, in addition to providing a sales network for sorted waste (especially non-organic waste such as plastic bottles) that has been sorted by the community (Naldi et al., 2021).

Respondents who fell into the sufficient category were only 34, or 19%. This result is in accordance with the principle of inspection, namely that household solid waste is not disposed of in the yard and there is safe processing of waste to be disposed of, for example, by disposing of waste in TPS. These results are in line with research conducted by Arfiah, which states that of the 80 respondents in Padang Timur Village, only 25 (31,2%) provided information on the fourth pillar of good waste security. There are still many people who are disadvantaged in implementing a household waste security system, as many as 55 respondents (68.8%) (Arfiah et al., 2019). All of this shows that most people do not secure waste safely or manage it properly.

In household waste management in Kelurahan Lempake, most people still dispose of waste in its place, but they do not have a closed, strong, and easy-to-clean bin. People only use plastic waste baskets, and some people even use plastic or cardboard boxes as their waste bins. There are also some people who do not have trash bins, so they see garbage scattered in their yard, which creates waste generation. The more rubbish that is scattered and creates waste generation, the more flies and rats breed in that place. This can cause environmental pollution and aesthetic disturbances. Research supporting this statement conducted by Kadir stated that the cleanliness and health of the surrounding environment will have an impact on the density of flies, and uncovered bins can also cause the arrival of disease-causing vectors such as flies. (Kadir et al., 2022). Flies are vectors of digestive tract diseases that can transfer germs and pathogens from humid and dirty places, such as garbage, and then land on food and drinks consumed by humans, eventually causing diarrheal diseases. Poor waste management behavior will invite vectors, one of which is flies, such as not having a closed trash can. The worse the waste management in the house, the higher the density of flies (Carles et al., 2017). Poor household waste management can also cause stunting in children under five years of age (Junanda et al., 2022). Similar research by Mukaramah states that there is a relationship between

poor environmental conditions and the incidence of stunting among children under five in Samarinda Seberang Mosque Village (Mukaramah and Wahyuni, 2020)

These results are in line with research conducted by Lestari, which states that based on observations made in 4 villages, namely Kessilampe Village, Mata Village, Kendiri Caddi Village, and Purirano Village, many people have special bins in each house, but they are not adequate (Lestari, 2022). Similar research by Nurmaisyah and Susilawati stated that based on the results of research in the Percut Sei Tuan coastal area, there were 10 respondents, or 33.3%, who had waste collection bins, and more than 20 respondents, or 66.6% did not have waste collection bins. This shows that household waste management in the community is still poor (Nurmaisyah and Susilawati, 2022).

Most of the people in Lempake Village have not implemented waste segregation, both organic and inorganic. The reason why they do not sort their waste is because some of them still do not know about waste segregation and assume that the waste they throw away will be sorted or separated by the waste officers, so they just throw the waste away. In addition, they think that what they are doing makes it easier for workers and does not waste time. Basically, if there is no waste segregation, there will be an accumulation of waste that can lead to environmental pollution and be at risk of triggering flooding, which will affect health and cause diseases such as cholera, skin diseases, diarrhea, and others. Based on Putra's research on the relationship between household waste management and diarrheal disease, there is a significant relationship in Bandar Lampung City (Putra et al., 2022). These results are in line with research conducted by Azizah related to household waste security in the Tangga Takat area, in the 16 Ulu area, where the community has not sorted waste, and in Sobangan Village, where housewives do not sort household waste (Azizah, N. Ardillah, Y. Sari, I.P. Windusari, 2021) (Luh et al., 2019). A similar study by Fadhullah stated that communities on the east coast of Malaysia are still low in waste segregation, even though about 95% of respondents realized that improper waste management can cause diseases such as diarrhea and malaria (Fadhullah et al., 2022).

Waste segregation is beneficial for the environment, so it is necessary to provide special bins for organic and inorganic waste. Rural waste is 50% organic waste that has the potential to be processed into compost (Patwa et al., 2020). Organic waste (vegetables, leaves, rotting fruits) can be processed into compost using the Takakura method (Linda Noviana and Sukwika, 2020). Waste treatment with composting, sorting, and recycling will provide more benefits than just using landfills (Anwar et al., 2018). In securing household waste, there is such a thing as reduce, which is an effort to reduce waste by reducing the use of goods or objects that are not really needed. This principle can reduce the generation of waste. Reuse is an effort to utilize unused items without changing their form; this principle can reduce waste generation. Waste generation can cause unpleasant odors and invite disease-causing vectors such as flies, rats, mosquitoes, cockroaches, and others. One of the diseases that are hazardous to health is the pest disease caused by rat vectors. The disease is transmitted to humans directly by the saliva, urine, and feces of rats or through the bites of their ectoparasites (fleas, pinchers, ticks, and mites). Poor waste management will bring in disease-causing vectors, one of which is rats (Arrasit, Fikri, and Wahyuni, 2021). Mosquitoes are also one of the vectors that cause DHF disease. This happens because used items that can hold stagnant water, such as bottles, cans, and old tires, can be one of the mosquito breeding places. Thus increasing the potential for transmission of dengue fever (Rosmala and Rosidah, 2019).

Based on the results of interviews in the field, respondents mostly work outside the home, so they spend more time on their work. Respondents said that they did not have free time to do waste management activities such as reduce, reuse, and recycle. In addition to not having free time, the respondents' lack of knowledge about the 3R principles is also one of the reasons

why they do not carry out waste management. The results of this study are in line with Putri's statement that there is a relationship between knowledge and community participation in waste reduction efforts. People with low knowledge do not care about the harmful effects that will occur on the surrounding environment (Putri et al., 2023). In addition to knowledge, respondents' attitudes also influence them, such as their still throwing garbage behind the house and not sorting wet and dry waste, so they do not support 3R waste processing. The results of this study are in line with Apriyani's research, which states that the community in Tenun Village has not maximized the 3R principle of waste processing due to a lack of public knowledge of 3R waste processing (Apriyani et al., 2021). Similar research by Edi, which states that there is a relationship between attitudes towards 3R waste processing in Payakumbuh City, shows the attitude of people who do not sort waste, thus supporting the implementation of 3R waste processing (Ediana et al., 2018).

5.0 Conclusions and suggestions

The achievement of the implementation of community-based total on pillar 4: securing household waste in the Lempake Puskesmas working area, in RT 10, 12, 15, 16, 19, 20, 22, 23, 26, 28, 30, 31, 32, 33, 34, 39, 41, 42, 43, and 47, can be concluded that out of 178 respondents, there are 34 respondents (19%) in the category of sufficient compliance with verification standards, namely household solid waste is not disposed of scattered in the yard, there is safe treatment of waste such as disposing of waste at the TPS, sorting household waste, and having a closed trash can. The remaining 144 respondents (81%) fell into the insufficient category, indicating that the community had not implemented waste security properly, such as people burning waste, not sorting waste, uncovered bins causing waste to be scattered in the yard, and people not applying the 3R principles.

The need for education in the form of counseling to the community regarding safe management of household waste, the need to conduct triggering of community-based total sanitation and conduct post-triggering monitoring and evaluation activities with continuous counseling of STBM methods in order to achieve the implementation of community-based total sanitation, and the need to conduct further interviews with the community to find out clearly related to household waste safety.

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SURAT KETERANGAN ARTIKEL PUBLIKASI

Assalamualaikum warahmatullahi wabarakatuh

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Menyatakan bahwa artikel ilmiah yang berjudul "Identifikasi Pilar 4 Sanitasi Total Berbasis Masyarakat di Wilayah Kerja Puskesmas Lempake Samarinda" telah di submit pada jurnal Sanitasi Lingkungan Poltekkes Palembang pada tahun 2023.

<https://chsm.page/international-journal-of-public-health-and-clinical-sciences-ijphcs/>

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Wassalamu'alaikum warahmatullahi wabarakatuh

Samarinda, 22 September 2023

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