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Environmental quality intervention for waste disposal in the community in Kalinaun Village, East Likupang District

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ABSTRACT
Waste processing in various villages has not been good and there is a accumulation of garbage so that it can spoil the scenery / aesthetics of the environment and cause the spread of disease. This service activity aims to provide knowledge and understanding to the community of Environment V and VI of Kalinaun Village, East Likupang District regarding Waste Management through counselling and making fertilizer from organic waste. The method of counselling and making organic fertilizer is a method carried out in solving the problem of waste in Kalinaun village in guard V and VI of East Likupang district. Before counselling is carried out, the community fills out the Pre-test first and post-test after counselling. There were 22 respondents in counselling, before counselling 10 respondents with good knowledge categories became 14 respondents after counselling. Continuous monitoring efforts from community leaders need to be carried out to monitor success in community-based waste management.

Keywords: community health service; counseling; fertilizers; waste management

ABSTRAK
Pengolahan sampah di berbagai desa tersebut belum baik dan terjadi penumpukkan sampah sehingga dapat merusak pemandangan/estetika lingkungan dan menyebabkan penyebaran penyakit. Kegiatan pengabdian ini bertujuan memberikan pengetahuan dan pemahaman kepada masyarakat Lingkungan V dan VI Desa Kalinaun Kecamatan Likupang timur mengenai Pengolahan Sampah melalui penyuluhan dan Pembuatan Pupuk dari sampah organik. Metode Penyuluhan dan Pembuatan Pupuk organik merupakan metode yang di lakukan dalam penyelesaian masalah sampah yang ada di Desa Kalinaun pada Jaga V dan VI Kecamatan Likupang Timur. Sebelum penyuluhan dilakukan masyarakat mengisi Pre-test terlebih dahulu dan post-test setelah penyuluhan. Terdapat 22 responden dalam penyuluhan, sebelum di lakukan penyuluhan 10 responden dengan kategori pengetahuan baik menjadi 14 responden setelah di lakukan penyuluhan. Upaya pengawasan yang berkelanjutan dari tokoh masyarakat perlu dilakukan untuk memantau keberhasilan dalam pengelolaan sampah berbasis masyarakat.

Kata Kunci: *layanan kesehatan masyarakat; penyuluhan; pupuk; pengelolaan sampah*

INTRODUCTION

The increase in population and the rapid growth rate of industry will have an impact on the amount of waste produced, including plastic waste, paper, packaging products containing B3 (Hazardous Toxic Materials) (Febianti, 2019). The amount and type of waste, very dependent on the lifestyle and type of material we consume, the more the economy increases in the household, the more varied the amount of waste produced. In addition to these conditions, there are still generation or waste disposal in the river so that it has a negative impact on the environment which ultimately disrupts human health (Dewi &; Raharjo, 2019).

The increasing value of urban people's consumption in meeting their needs is a contributor to the increasing amount of waste that must be disposed of. Household waste cannot be considered small in the capacity of contributing waste to the environment (Sari et al., 2019). Human growth, which increases every year, does not escape the largest contributor of waste in various regions. This is influenced by the environment and community character which is an important problem in understanding and implementing waste handling for an area. The increase in waste in line with increasing infrastructure development and increasing human growth needs to be balanced with patterns of waste handling and management with adequate facilities and infrastructure (Wahdatunnisa, 2019).

Waste disposal activities are activities that do not have an end point, so concrete and systematic handling and management are needed (Nisak et al., 2019). This is because the impact caused by waste is a problem that greatly affects the environment, health and social life of the community. A strategic handling of waste management is needed (Hakim, 2019). The government has taken various actions on waste handling and management, it's just that it still hasn't touched the lowest level of handling, namely household waste. One of the villages facing waste problems is in Kalinaun Village, East Likupang District.

In 2016, the world's urban waste generation was around 2,010 million tonnes (MT) per year and is expected to increase to 3,400 MT by 2050. This translates into a huge increase in urban waste production by around 70% within 34 years (Khandelwal et al., 2019). Regarding the waste situation in Indonesia, a study shows that it is estimated that each individual throws away around 0.52 kg of waste per day. A 2015 study also found that Indonesia is the second largest contributor of plastic waste dumped into the sea after China, with volumes ranging from 0.48 to 1.29 million tons per year (Sufia &; Arisona, 2021). Referring to several problems related to how to manage household waste, the researcher tried to innovate several good and correct household waste management models.

METHODS

Field Learning Practice Activities to the Community with interventions in the form of counseling and making organic waste fertilizer which is divided into 3 stages. The first stage is the distribution of pre-test questions, in this stage using print media in the form of pre-test questions. Pre-test questions on Waste Management Methods are given to the Community to measure the level of knowledge of the Community before conducting counselling on Waste Management Methods.

The second stage is to provide information to the community about how to

manage waste and make fertilizer from organic waste with the lecture method, Public health counselling has an understanding that is a process of change, growth, and development of human beings towards the harmony and balance of the physical, spiritual and social of these humans to their environment, so that they are able and responsible for overcoming their own health problems as well as the community of its environment.

This counselling aims to educate and convey health messages to the community or group in accordance with the problems faced by the group so as to increase knowledge, change behaviour and achieve healthy living. In order to conduct counselling more effectively, our goal in conducting counselling is in the form of groups, so that it can also include more people than individual targets. In counselling activities related to Waste Processing and how to make fertilizer from organic waste, we carry it out in two places, namely At the house of the Head of guard V and guard VI we use electronic and print media, namely Mobile Phone, which helps us in conducting counselling.

The last stage is the distribution of post-test questions, at this stage we also use print media for the questions we use the same questions as the previous pre-test questions. Post-test questions on how to process waste are given to the community to measure the level of knowledge of the community after counselling on how to process waste.

RESULTS AND DISCUSSION

The problem of people's behaviour that is still littering, based on the data we get, there are 65 households (80.2%) who still litter. As we all know, littering behaviour will cause unpleasant odors, eyesore, and can cause the spread of disease. The reason for people littering is the absence of Temporary Dumping Sites (TPS).

This waste extension activity (non-physical) will be carried out on Wednesday, July 26, 2023 from 16.00 – 19.30 WITA at the Head House of Jaga V and VI and for making compost / fertilizer (physical) whose implementation will be carried out on July 27-28, 2023 at Jaga V and VI. The activity began with an introduction to the community who attended the counselling, then explained the purpose of the counselling carried out and distributed pre-test questions to the community which would be filled in before the delivery of material to measure the level of public knowledge about waste (see Figure 1).

Figure 1. Filling in Pre-test Questions at Jaga V

Figure 2. Submission of Material and Filling in Post-test Questions in Jaga VI

The activity of filling in pre-test questions is continued with material delivery activities regarding waste using electronic media, namely laptops and also print media, namely posters displayed when delivering material (See Figure 2). In addition, the community was directed to see the implementation process of making compost in the backyard of the residents' houses that were used as a pilot (See Figure 3). After the delivery of the material is complete, the community then fills out post-test questions to measure the level of community knowledge after counselling about waste.

Table 1 shows the results of the pre-test and post-test then compared to determine the increase in knowledge before and after the community counselling which can be seen in the table. Based on the table above, it can be seen that before conducting counselling, there were 10 respondents in the good category (45.4%), 8 respondents in the sufficient category (36.4%), and 4 respondents in the less category (18.2%). After the counselling, 14 respondents were in the good category (63.6%), and 8 respondents were in the sufficient category (36.4%).

This is in line with the service activities carried out by Restuaji et al. (2019) who found differences in knowledge after counselling, all residents became aware of the types and realized the importance of household waste management in Krampyang Hamlet. In addition, the service activities carried out by Ristya (2020) are counselling activities and

Figure 3. Compost/Fertilizer Making Method in Jaga VI

Table 1. Comparison of Pre-Test *and* Post-Test *Results of Respondents' Knowledge*

Category	Pre-Test		Post-Test	
	n	%	n	%
Good	10	45.4	14	63.6
Enough	8	36.4	8	36.4
Less	4	18.2	-	-

and waste management training using the 3R concept. There is an increase in public knowledge about waste, people also realize and begin to get used to sorting organic and inorganic waste as the initial key to the application of the 3R concept.

Waste is material that is wasted or discarded, the result of human and natural activities that are no longer used because the main element or function has been used (Putri, 2020). All human activities inevitably produce garbage. Waste sources can come from households, agriculture, offices, businesses, hospitals, markets, etc. (Audrian &; Surya, 2022). There are various types of waste around us, ranging from medical waste, household waste, market waste, industrial waste, agricultural waste, animal waste and many others. Types of waste are divided into two based on the chemicals they contain. Organic waste comes from living things, both humans, animals and plants. Organic waste itself is divided into wet organic waste and dry organic waste. Wet organic waste refers to waste with a fairly high water content, such as fruit skins and vegetable waste (Sagitarini &; Dewi, 2023). Dry organic waste is other organic matter with low water content, such as paper, wood or dried tree branches and leaves. Inorganic waste does not come from living things. This waste comes from renewable materials as well as hazardous and toxic materials. Types in this category can be recycled, such as materials made of plastic or metal. Non-metallic dry waste (glass cups, glass bottles, cloth, wood, etc.) and soft waste such as dust and ash (Aulia et al., 2021).

Basically, activities carried out by humans can result in an increase in the amount of solid waste. Solid waste has shown a positive correlation with economic development on a world scale. This directly shows that the higher the existing economic level, the waste generation will also increase (Prajati &; Pesurnay, 2019). Several factors can cause an increase in the amount of solid waste, including population growth, urbanization, industrialization and economic development (Atthaya-Salma, 2023). The increasing purchasing power of the community towards various types of staples and technological products also contributes greatly to the quantity and quality of waste produced (Kristanti et al., 2022)

Poor waste management will become a breeding ground for disease vectors such as flies or rats so that the incidence of certain diseases will increase (Muhammad et al., 2023). The incidence of dengue haemorrhagic fever will increase because the disease vector lives and multiplies in cans or used banks filled with rainwater. Accidents arise due to careless disposal of garbage, such as injuries by sharp objects such as iron, glass, and floods (Amrina, 2021). In addition, the presence of garbage can cause disorders such as shortness of breath, insomnia, and stress (Ikhsan &; Tonra, 2021).

Active community participation in household waste management greatly determines the success of its implementation (Nurcahyo &; Ernawati, 2019). The

community needs to be empowered with all non-instructive efforts to increase community knowledge and ability to be able to identify problems, plan and solve problems by utilizing the potential of local communities without relying on outside assistance (Rabiah et al., 2022).

CONCLUSIONS

The implementation of waste counselling is carried out through physical interventions in the form of making compost and installing posters at several points in Kalinaun village, while for non-physical interventions in the form of counselling runs smoothly and effectively because of the increase in knowledge of the people who are respondents. This service activity recommends the need for the community to be equipped with waste sorting so that organic waste can be reprocessed into compost while inorganic waste can be converted into other forms so that it has economic value and can be used as waste briquettes. In addition, continuous monitoring efforts from relevant agencies need to be carried out to monitor success in community-based waste management

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