

Conference Paper

Behavior Factors in Waste Management in Mangunreja Village

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Abstract

Background: Waste is any substance of products which is discarded after primary use or no longer used. Mangunreja village is one of the villages in Kab. Serang with a population of 3,018 people and the resulting volume of waste generated is 6,036 liters/person/day. **Objectives:** This study aims to determine the factors associated with the behavior of waste management in the Mangunreja Village, Pulo Ampel Public Health Center in 2019. **Methods:** The design of this research is cross sectional where the sample was taken with a *simple random sampling method*. The population of this study is all housewives living in the Mangunreja Village, with a total sample of 194 people. Primary data collection uses a questionnaire, while secondary data is obtained from the Pulo Ampel Public Health Center, and the Mangunreja Village Profile. **Results:** The frequency distribution results showed that 25.3% of respondents behaved unfavorably, 55.5% had poor knowledge, 48.5% had negative attitudes, 47.4% of respondents were informal workers, 71.1% had low incomes, and 61, 9% of respondents stated that there were no TPS facilities available. Correlation test results that there is a correlation between knowledge, attitudes with waste management behavior ($p = 0,000$), and there is a correlation between the availability of Temporary Disposal facilities ($p = 0.005$) with waste management behavior. There is no relationship between work and income with waste management behavior. **Conclusions:** Knowledge, attitudes, and availability of Temporary Disposal facilities are factors related to waste management behavior.

Keywords: Attitudes, Behavior, Knowledge, Waste Management

1. Introduction

The rapid development of technology brings people to a time where a lot of goods can be obtained practically and easily to fulfill their welfare. In addition to easily obtaining or producing goods, from every human activity also produces waste. Increasing waste every day will become a national problem, because waste management so far has not been by following with the stage of environmentally waste management, causing negative impacts on the environment and public health [1]. Waste is a solid material produced from household activities, markets, offices, houses, lodging, restaurants, industries, debris from building materials and scrap metal from motorized vehicles. Waste is also a by-product of unused human activity [2].

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Along with the national population increase, the amount of waste generated has also increased. The total population in Indonesia is currently reach 328,103,403 if each person produces 2-2.5 liters of garbage/person/day, then as many as 56,650,000 liters of garbage will be produced by the Indonesian population every day. If the waste is not managed properly it will not only harm the natural environment but also on the quality of human health. Waste that is not collected and managed properly will contribute to flooding, air pollution, and will become a hotbed of infectious diseases such as respiratory diseases, diarrhea, and dengue which will affect people's health [3]. Based on the 2018 Regional Health Research, it shows that the management of wet domestic waste is mostly done by burning (49.5%), transported by officers as much as 34.9%, discharged to the river or ditches as much as 7.8%, composted as much as 5.9%, planted as much as 1.5%, and dumped into any place as much as 0.4% [4]. Data from the Banten Province of Regional Health Research in 2013 stated that from 8 regencies/cities in Banten Province it was found that the highest proportion of good domestic waste management in Tangerang City reached 68.2%, South Tangerang City 62.9%, Serang City 40.9%, Cilegon City 39.5%, Tangerang Regency 30.4%, Pandeglang Regency 5.9%, Lebak Regency 5.8% and Serang District 5.7%. Serang Regency is the lowest in the proportion of domestic waste management [5]. This is because the community in managing waste is dominant by burning (44.3%) while transporting officers is 34.4%. Households in rural areas manage their waste well only at 1.8%, this shows that there are far fewer rural people who manage their waste properly compared to people in urban areas. Besides, the lack of availability of temporary garbage collection facilities in Serang Regency, which is 45 trash bins is one of the factors causing the low level of waste management [5].

The low behavior of waste management in the community is caused by many factors, including factors of knowledge, attitude, work, and income. Knowledge is the result of knowing and this happens after people have sensed a certain object so that the knowledge can influence the community in improving waste management behavior well [6]. Research conducted by Saputra and Mulasari said there was a significant relationship between knowledge and waste management behavior [7]. In general, the level of knowledge will affect attitudes and behavior, because the level of knowledge that is lacking will increase unhealthy attitudes, and behaviors, so that high knowledge is expected to increase waste management which will change positive attitudes and behaviors towards waste management [7]. Previous study mentioned a significant relationship between attitude and domestic waste management [8].

The condition of waste management in Serang Regency is still low. This can be seen in the policies and programs of the 2016-2020 BLH Strategic Plan which in detail states that there is still a need to improve the performance of waste management, indicators of waste handling service coverage (proportion of the volume of waste handled, ratio of the amount of waste handled to the amount of waste production) with a target of 10.00%. But for 2018 only 6.50% [9]. Mangunreja Village is one of the villages located in the Pulo Ampel Community Health Center in Serang Regency which has poor waste management behavior. Mangunreja Village residents are known to be 3,018 people. According to ISO 3242-2008, ie waste generation unit of 2-2.5 liters/person/day, so the volume of waste that is generated by the Village Mangunreja as much as 6,036 liters/person/day.

Based on data from the Pulo Ampel Public Health Center known that ownership bins in the village Mangunreja with family checked as many as 100, with 74 who had trash from 1,236 households. If seen from the data, most of the Mangunreja Village family heads already have a trash container at home. However, the results of an initial survey conducted in Mangunreja showed that as many as 90% of respondents surveyed disposed of trash into rivers. This illustrates that awareness of waste management is still low. Whereas referring to the Waste Management Act No. 18 of 2008 mandates that every person is obliged to carry out household waste management by reducing and handling waste in an environmentally healthy manner. The fact that waste management in Mangunreja Village is not yet in following with environmentally friendly methods and techniques of waste management. Waste that is not managed properly can become a hole of disease vectors that can transmit environmental-based diseases. Piles of garbage left alone will also cause flies to multiply. Flies are germ carriers that cause diarrheal diseases when they land on food or food utensils. Diarrhea in the Pulo Ampel Health Center is one of the biggest diseases, based on data in 2018 diarrhoea is a disease that is included in the 8 major diseases with a total of 432 cases. This study aims to determine the factors associated with the behavior of waste management in the community Mangunreja Village Work Area Pulo Ampel Public Health Centre in 2019.

2. Methods

2.1. Study design

This study uses analytic survey method with *cross sectional* design, with independent variables consisting of knowledge, attitudes, occupation of the head of the family,

income/availability, and availability of TPS facilities, while the dependent variable of the study is the behavior of waste management.

2.2. Population and sample

Research carried out in the village Mangunreja Work Area Health Center Pulo Ampel in March to May 2019. Population in this study were all housewives residing in the village Mangunreja some 3,018 people and the sample was taken using the *method of probability sampling* by means of *simple random sampling*. The size of the study sample was 194 people, with the inclusion criteria are; Housewife who lives in the Mangunreja Village; willing to be respondent. Then exclusion criteria are migrant housewife

2.3. Instrument

Research variables using primary data were obtained directly from respondents through interviews using a questionnaire that had been tested for validity and reliability, while secondary data were sourced from the Pulo Ampel Health Center and Mangunreja Village. Research instrument used questionnaire from previous studies that had been tested for validity and reliability. Questionnaire in this research contain 6 domain, there are management waste behavior, knowledge, attitude, occupation of the head of the family, income the head of the family, and availability of Temporary Disposal facilities. All of research variables are compute to find the score and then analyzed to get the mean score. The mean score is used to determine the good and less categories of each research variables.

2.4. Data analysis

Data which has collected performed univariate and bivariate analysis. Univariate analysis was carried out to determine the proportion of each variable studied, both the independent variable (knowledge, housewife's attitude, occupation, family head's income and the availability of TPS facilities in waste management), as well as the dependent variable (waste management behavior) in tabular form. Bivariate analysis used the *chi-square* test to determine the relationship between variables and used a 95% degree of confidence, meaningful if $p \text{ value} \leq 0.05$ and not significant if $p \text{ value} > 0.05$.

3. Results

Based on the research results obtained data as follows:

TABLE 1: Frequency Distribution of Waste Management Behavior and Research Risk Factors (n=194).

Variable	n	%
Management Behavior		
less	49	25.3
good	145	74.7
Knowledge		
less	100	51.5
good	94	48.5
Attitude		
negative	94	48.5
positive	100	51.5
Work		
informal	92	47.452.6
formal	102	
Income		
Low	138	71.1
high	56	28.1
Temporary Disposal availability		
Not available	120	61.9
available	74	38.1

Based on research, it is known that as many as 100 (51.5%) of respondents may have less knowledge of good and there were 94 (48.5%) of respondents have good knowledge in waste management behavior. From these results it can be illustrated that the majority of respondents' knowledge in Mangunreja Village has poor knowledge in waste management in their environment. That is because 51.0% of respondents do not know the kinds of inorganic waste such as paper and metal fragments as much as 47.4%. As well as the waste collection process as much as 44.3% of respondents, this can be seen and assessed from the respondents' answers.

Based on the results of research conducted in Mangunreja Village, Pulo Ampel Health Center regarding the availability of TPS facilities, it is known that of 194 respondents as many as 120 (61,%) respondents who stated that there were no TPS facilities while as many as 74 (38.1%) respondents who stated that they were available TPS facilities as landfills. The results of the study also showed that the majority of respondents threw garbage in the river (59.8%), as much as 15.5% in the yard or open space, and as much as 1.5% threw garbage in the rice fields. Temporary Shelter (TPS) provided not become

TABLE 2: Factors Associated with Waste Management Behavior (n=194).

Variable	Waste Management Behavior				total		p-value	Odss Ratio (OR)
	Less		Good		n	%		
	n	%	n	%				
Knowledge								
less	37	37.0	63	63.0	100	100	0,000	4,013
Good	12	12.8	82	82.2	94	100		
Total	49	25.3	145	74.7	194	100		
Attitude								
Negative	35	37.2	59	62.8	94	100	0,000	3,644
Positive	14	14.0	86	86.0	100	100		
total	49	25.3	145	74.7	194	100		
Work								
Informal	21	22.8	71	77.2	92	100	0.565	
Formal	28	27.5	74	75.5	102	100		
total	49	25.3	145	74.7	194	100		
Income								
Low	40	29.0	98	71.0	138	100	0.090	
High	9	16.1	47	83.9	56	100		
total	49	25.3	145	74.7	194	100		
Availability of Temporary Disposal Facilities								
Not available	39	32.5	81	67.5	120	100	0.005	3,081
Available	10	13.5	64	86.5	74	100		

a means to accommodate the trash, because the distance the house to TPS far away (12%) , the distance where TPS is more than 10 meters, so that the respondent many choose to throw their garbage in nearby homes and manage waste himself in a way disposed in the yard, and burned.

Based on the results of research conducted in the Mangunreja Village regarding attitudes, it is known that from 194 respondents as many as 94 (48.5%) respondents had negative attitudes, while as many as 100 (51.5%) respondents had positive attitudes in waste management behavior in Mangunreja Village. From the results of this study it can be illustrated that the majority of respondents in Mangunreja Village have a positive attitude in waste management. Responden who have a negative attitude shows the attitude agreed to burn waste on the yard of the house (46.9%), as much as 25.3% multiplied or river, and to the criteria of a good trash majority of respondents only pay attention to the trash to be easy to clean, not easy to leak, and easy to infest with vector animals or not (flies, mice, and cockroaches), regardless of whether the trash can is closed or not as much as 53.6% of respondents, and the trash should not be made of

strong material as much as 50.0%. Based on the results of research conducted on 194 respondents there were 94 (48.5%) respondents had a negative attitude.

4. Discussion

Based on the results of the study showed that the behavior of waste management is not good as many as 49 respondents (25.3%). This study is in line with the results of previous studies conducted by Sari and Mulasari which showed that the majority of respondents in the village of Tegalrejo Yogyakarta behaved poorly (32.1%) [10]. The results of this study illustrate that some respondents who behaved unfavorably, as many as 25.3% of respondents, who did not have trash bins in the home as many as 11.9%, who had not done the sorting between perishable and non-decomposed waste as much as 52.6% of respondents in fact, 65.5% of the respondents who were in the place of house waste were not transported at the Temporary Disposal, so that the respondents did the trash by throwing it into the river as much as 35.6%. This is according to the respondent's answer 100%, there is no cleaning and transportation officer in waste management in the Mangunreja Village. Of bad behavior will give rise to many different impacts on both the environment and the health of society should tion of itself, contributing to flooding, air pollution, public health impacts such as respiratory diseases, diarrhea, and dengue fever [11].The results of the analysis test revealed that there was a significant relationship between knowledge and the behavior of waste management in Mangunreja Village. This study is in line with research conducted by Mathofani (2015) which shows that there is a significant relationship between mother's knowledge and domestic waste management in Pamengkang Kramatwatu Serang Village in 2015 [8]. This study is in contrast with research Setyowati and Mulasari which showed no significant relationship between mother's knowledge with the behavior of plastic waste management in the District Keraden Village Kedesan Kaliwungu Semarang in 2013 [12]. This can happen because respondents who have good knowledge about the understanding of waste, waste grouping, and the positive and negative impacts of waste are not applied in daily life. Whereas a good waste management behavior will be formed with a habit pattern that occurs continuously and continuously. Some respondents who did not know the distribution of various kinds of inorganic waste such as paper were 51.0%. And there are still many respondents who do not know the types of organic waste so that the process of collecting waste is immediately combined.

This study found a significant correlation between attitude and waste management. It was consistent with previous study conducted by Mathofani (2015) showed the significant relationship between housewife's attitudes and domestic waste management in Pamengkang Kramatwatu Serang Village in 2015 [8]. The research by Yulida, Sarto and Suwarni (2016) which shows that there is a significant relationship with people's behavior in disposing garbage in the Batang Bakarek-karek river flow in Padang Panjang City of West Sumatra in 2016 [13]. The results of the research in the field show that there are more respondents who have a positive attitude than those who have a negative attitude. The negative attitude of respondents is expected to be influenced by the level of knowledge. For some respondents who disagreed with the behavior of waste management, it was influenced by the facilities and infrastructure for transporting waste in Mangunreja Village, so that most of the respondents burned the yard of the house and disposed of waste on the river, and 53.6% of respondents said they did not agree with the closed garbage bin, whereas good waste management activities should have a closed trash can so that it can be free of vectors that can cause disease due to waste. Based on this, respondents in Mangunreja Village have good waste management because some people burn waste which actually can cause health problems for the respondents themselves or damage or pollute the environment.

Facilities and infrastructure in waste management related to existing facilities that are useful to help simplify the waste management process. This study is in line with research conducted by Hadi, et al, who conducted an analysis of the socioeconomic influence, facilities and infrastructure on community behavior in waste management in Ampana Subdistrict, Tojo Una-Una. The results of the study indicate that facilities and infrastructure are associated with waste management behavior [14]. The availability of facilities and infrastructure is an enabling factor that influences behavior [15]. Examples are landfills that separate organic and inorganic waste, Temporary Disposal and Final Disposal.

The results of the research in the field show that respondents who stated that there were no TPS facilities were likely to behave less well as much as 32.5% compared to respondents who stated that TPS facilities were available, this happened because the success of waste management was also influenced by the availability of facilities in waste management in the form of facilities and infrastructure which are available. In Mangunreja Village there are 2 Temporary Disposal located in RT 06 RW 03, with one of the Temporary Disposal whose conditions have been damaged and are not used anymore. Temporary Disposal that are in good condition are rarely used because if they are used, the accumulation of waste that occurs every day cannot be overcome. This

Temporary Disposal has become one of the places used to collect garbage by most of the population and unsuitable Temporary Disposal capacity. In addition, the absence of a janitor handling or transporting waste also makes people reluctant to dispose of garbage at Temporary Disposal. Piles of garbage in Temporary Disposal that are not transported and managed properly will smell, invite flies, rats and cockroaches. The community around the location of the most important Temporary Disposal will be affected, so the community feels it is better to dispose of garbage in the river which tends not to cause odor to the surrounding environment and directly under the flowing water so that the buildup and process of waste decomposition will soon take place compared to being piled up at the Temporary Disposal. This is according to data in the field as much as 59.8% of respondents chose to throw garbage in the river.

5. Conclusion

The results of the study concluded that knowledge, attitude and availability of TPS facilities were significantly related to waste management behavior. The type of work and income of the head of the family do not influence the behavior of household waste management.

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