Research Paper

Factors That Influence People Behaviors in Waste Management in the Village of Tong Marimbun Pematang Siantar in 2018

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ABSTRACT

Waste is something which is disposed; therefore, it is necessary to manage it so that home environment is always clean and free form it. The objective of this research was to analyze some factors which were correlated with people's behavior in managing waste. The research used cross sectional design. It was conducted at Neighborhoods of Tong Marimbun, Siantar Marimbun Subdistrict, Pematang Siantar, in 2018. The population was 491 families, and 100 of them were used as the samples. The data were gathered by distributing questionnaires, processed by editing, coding, entry, cleaning, and tabulating, and analyzed by using univariate analysis, bivariate analysis with chi square test, and multivariate analysis with logistic regression test. The result of the research showed that there was no correlation of education ($p=0.272$) and knowledge ($p=0.363$) with people's behavior in managing waste. There was the correlation of attitude ($p=<0.001$) and the availability of facility and infrastructure ($p=<0.001$) with people's behavior in managing waste. The variable which had the most dominant correlation was the variable of attitude ($p=<0.001$; $Exp(\beta)=8.7$ 95%CI 3.167-99.318) which indicated that families that had negative attitude had the possibility of 8.7 times to have bad behavior in managing waste compared with those who had positive attitude. It is recommended that Clinic management increase health socialization and promotion about waste management so that people can play their active role in managing waste.

Keywords: Behavior, Behavior Society in Waste Management

INTRODUCTION

Waste is a remnant of everyday human activities and or a solid natural process (Law No. 18 of Waste Management in 2008). The problem of waste in Indonesia is a complicated problem because of the lack of understanding of the people about the effects that can be caused by waste, the lack of government costs to seek waste disposal that is not good and meets the requirements. Another factor that can cause waste problems in Indonesia to become more complicated is the increasing standard of living of the community which is not accompanied by harmony of knowledge about solid waste and also community participation which is not accompanied by harmony of knowledge about community participation that is lacking to maintain cleanliness and dispose of waste in its place (Slamet, 2002).

The issue that develops related to the waste management system at this time is the capacity of waste management, institutional capacity, financial capacity, the participation of the community and the business / private sector, legislation and weak law enforcement (Ministry of Public Works, 2013). In addition, Indonesia's large population with high growth rates has resulted in increased volume of waste. The consumption pattern of the community contributes to the generation of increasingly diverse types of waste including packaging waste that is dangerous and difficult to

decompose by natural processes (Ministry of Environment, 2012).

In general, most of the waste produced in Indonesia is wet waste, which covers 60-70% of the total volume of waste, which is 65.8 million tons. Therefore, decentralized waste management is very helpful in minimizing waste that must be disposed of at the final disposal site. In principle, waste management must be carried out as close as possible to the source. So far, solid waste management, especially in urban areas, is not running efficiently and effectively because waste management is centralized.

The landfill continues to increase along with population growth, not only in terms of quantity, but the quality or composition of waste is also increasingly complex, due to changes in people's lifestyles, and economic growth. The volume of waste generation will also cause many problems on various aspects of life both in terms of environmental, social and economic. Environmental problems that often arise are the accumulation of rubbish in waste collection locations (TPS or TPA (Maulina, A, 2012)

According to (Riyanto, 2012) human behavior that is not responsible for waste can cause problems and environmental damage. If human behavior is more directed to his personal interests, and less or does not consider the public interest, then it can be predicted that the carrying capacity of the natural environment is increasingly depleted and consequently environmental losses and damage cannot be avoided anymore.

Many factors influence housewives in managing waste generated. One of these factors is the level of knowledge of housewives in waste management. Differences in the level of knowledge of a person can be influenced by the level of education, age, environment, information, experience which subsequently affects the attitudes and actions of a person in decision making, especially in terms of household waste management so that differences in levels of knowledge result in differences in

household waste management (Riyanto, 2012).

The results of the study (Setyowati, 2012) showed that around 56.8% of respondents had poor knowledge and about 60.8% of respondents behaved badly. There was a very significant relationship between the level of knowledge of housewives and the behavior of managing plastic waste (p = 0.012) in Kedesen Hamlet, Kradenan Village, Kaliwungu District, Semarang Regency in 2012.

The results of the study (Mulasari, 2012) showed that there was no relationship between the level of knowledge (p = 0.106) and attitude (p = 0.110) on people's behavior in processing waste in Padukuhan Hamlet, Sidokarto Village, Godean District, Sleman Regency, Yogyakarta in 2012.

Research (Saputra, 2017) shows that there is a relationship between knowledge with waste management behavior in employees on campus X Yogyakarta (p = 0.020 <0.05, RP = 0.367 (CI) 0.172-0.778). There was no relationship between attitudes with waste management behavior in Yogyakarta X campus employees (p = 0.547> 0.05, RP = 0.778 (CI) 0.346-1.748)

Settlements in the Neighborhoods of of Tong Marimbun Pematang Siantar also have problems with the availability of clean water infrastructure, the availability of proper sanitation systems and facilities for solid waste. Focusing more on the problem of waste, this settlement or village has experienced problems that can be categorized seriously enough to be addressed immediately; it can be seen by the number of solid waste generation in almost all residential areas. Domestic waste produced by the community is disposed of carelessly around the housing unit environment and is seen piling up under the house. This was worsened by the difficulty of cleaning up piles of rubbish under houses due to land on the banks of large muddy trenches. Large trench tides also have an impact on solid waste generation in this residential area, river water that carries waste from other places is often caught on

the poles under the house unit and at low tide the congenital waste builds up mixed with puddles which causes a not tasty.

Based on the results of the preliminary survey conducted by the author in the Neighborhoods of of Tong Marimbun Pematang Siantar, shows that out of 8 heads of household interviewed by the author there were 6 heads of households who had littering behavior, because they did not know how to do waste management so that the reaction or their response to waste management is still negative, meaning that many people do not care about waste management. From the observations of the researchers in the field, it was also seen that Neighborhoods of Tong Marimbun Pematang Siantar did not have a trash bin in every house, so many people dumped waste littered the place. In Neighborhoods of Tong Marimbun, Pematang Siantar also has a temporary waste dump, but it is very far from the houses of the residents, so many people do not dispose of waste in the trash bin on their grounds because they are far away. According to the observations of researchers that less attention to waste can function as a breeding ground for agents such as insects or other disturbing animals known as disease vectors, where they can cause various infectious diseases such as diarrhea, cholera, typhus can spread rapidly due to bacteria originating from waste with improper management can mix with drinking water.

Based on the above background, it is necessary to conduct research on factors related to community behavior in waste management in Tong Marimbun Pematang Siantar Village in 2018.

METHODS

This study is an observational analytic study with a cross sectional study design that is used to study the relationship between risk factors and the effects of certain diseases or health status (Siagian, A, 2010). In this cross sectional design variables including risk factors and variables including effects are observed at the same time (Practices, W, 2013). The research was conducted from May to August 2018. The population in this study were 491 households in the village of Tong Marimbun Pematang Siantar. While the sample is 100 people. Data analysis used chi square test and logistic regression (Dahlan, 2013).

Table 1. Cross Tabulation Effect of Education, Knowledge, Attitude, Culture and Availability of Facilities and Infrastructure in Tong Marimbun Pematang Village in 2018

Variable	P value
Education	
Low (Elementary, Middle School)	0,272
Middle (high school)	
High (college)	
Knowledge	
Not good	0,363
Good	
Attitude	
Negative	
Positive	<0,001
Culture	
Negative	0,000
Positive	
Availability of facilities and infrastructure	
Not available	<0,001
Available	

Table 1 above shows that there is no educational relationship with community behavior in waste management (p = 0.272), there is no correlation between knowledge and community behavior in waste management (p = 0.363), there is a relationship between attitudes and community behavior in waste management (p = < 0.001), there is a cultural relationship with people's behavior in waste management (p = <0.001), there is a relationship between the availability of facilities and infrastructure and the behavior of the community in waste management (p = <0.001).

Table 2. The First Phase Logistic Regression Model on the Behavior of Communities in Waste Management

Variable	B	Sig.	OR	95% C.I	
				Lower	Upper
Attitude	3.079	0.001	7.735	3.834	53.224
Culture	0.200	0.808	1.221	0.243	6.134
Availability of facilities and infrastructure	2.926	0.000	6.649	4.493	77.410
Constant	-2.645	0.000	0.071		

Table 2 shows that the variables of attitude and availability of facilities and infrastructure have been significant with a value of p <0.05. While the culture variable is not significant with p> 0.05 so that the variable is excluded from the following second stage modeling.

Table 3. The Second Phase Logistic Regression Model on the Behavior of Communities in Waste Management

Variable			B	p value	OR	95% C.I	
						Lower	Upper
Attitude			3.209	<0.001	8.749	3.167	99.318
Availability of facilities and infrastructure			2.970	<0.001	7.484	2.902	77.446
Constant			-2.647	<0.001	0.071		

Table 3 shows that the most dominant variables related to community behavior in waste management are attitude variables (p = <0.001; OR = 8.7 95% CI 3.167-99.318) which means that the head of the family who has a negative attitude has a 8.7 times chance greater behavior is not good in waste management compared to family heads who have a positive attitude.

RESULT AND DISCUSSION
Relationship of Education with Community Behavior in Waste Management

The results showed that there was no educational relationship with people's behavior in waste management (p = 0.272). This is supported by research (Clara, 2015) which shows that there is no educational relationship with housewife behavior in waste management (p = 0.107; PR = 0.220 95% CI 0.330-4.010).

The results of this study also showed that out of 7 people with low education (Elementary, Middle School) there were 5 people (71.4%) who behaved poorly in waste management and 2 people (28.6%) who behaved well in waste management . Of the 83 households with secondary education (high school) there were 55 people (66.3%) who behaved poorly in waste management and 28 people (33.7%) who behaved well in waste management. Of the 10 heads of households who are highly educated (college) there are 3 people (30%) who behave poorly in waste management and 7 people (70%) who behave well in waste management. This means that with the education of the middle-class majority (high school) family heads influencing their behavior in the majority of waste management. This can be seen from the results of this study where the average head of a family with secondary education behaves well in waste management, although some of them still have poor behavior in waste management. However, many of those with secondary education behave well in waste management.

Knowledge Relationship with Community Behavior in Waste Management

The results showed that there was no correlation between knowledge and community behavior in waste management (p = 0.0,363). This is in line with the research (Mulasari, 2012) showing that there is no relationship between the level of knowledge (p = 0.106) on community behavior in processing waste in Padukuhan Hamlet, Sidokarto Village, Godean District, Sleman Regency, Yogyakarta in 2012. This is also different from research (Setyowati , 2012) which showed that around 56.8% of respondents had poor knowledge and about 60.8% of respondents behaved badly.

The results of this study also showed that out of 24 families with poor knowledge there were 24 people (70.6%) who behaved poorly in waste management and 10 people (29.4%) who behaved well in waste management. While of the 66 family heads who were well-informed there were 39 people (59.1%) who behaved poorly in waste management and 27 people (40.9%) who behaved well in waste management. this means that with good knowledge of the head of the family does not affect their behavior poorly in waste management. this happens because the head of the majority family has good knowledge. The head of the

family is aware of the effects of littering which can lead to diseases such as diarrhea and can cause flooding during rain.

This good knowledge of the head of the family can be seen from the results of their answers to the questionnaires that have been provided where many respondents who already know and understand statements like the stages of good waste management are by sorting, collecting, storing, transporting and destroying. Waste is an item that is considered to be unused and disposed of by the previous owner / user, but for some people it can still be used if managed with the right procedure. Waste management is all activities carried out to deal with waste from the beginning to the final disposal. Poor waste management can cause the development of flies or mice as disease vectors. Disposal of trash into the sewer will disrupt the flow of water is disrupted and the drains become shallow. The accumulation of waste on the side of the road causes traffic jams that can hamper the transportation of goods and services. Based on this statement, it can be seen that many respondents who already have good knowledge about waste management.

Relationship between Attitudes and Community Behavior in Waste Management

The results showed that there was a relationship between attitudes and community behavior in waste management (p value = <0.001). This is supported by research (Mulasari, 2012) which shows that there is a relationship between attitudes (p = 0.110) on community behavior in processing waste in Padukuhan Hamlet, Sidokarto Village, Godean District, Sleman Regency, Yogyakarta in 2012.

Based on the results of multivariate analysis using logistic regression test, the most dominant variables related to community behavior in waste management are attitude variables (p = <0.001; OR = 8.7 95% CI 3.167-99.318) which means that the head of the family has a negative attitude has an 8.7 times greater chance of behaving

poorly in waste management compared to family heads who have a positive attitude. However, in contrast to research (Saputra, 2017) shows that there is no relationship between attitudes with waste management behavior in Yogyakarta X campus employees (p = 0.547> 0.05, RP = 0.778 (CI) 0.346-1.748).

The results also showed that out of 58 family heads who had a negative attitude there were 52 people (89.7%) who behaved poorly in waste management and 6 people (10.3%) who behaved well in waste management. Whereas from 42 families who had a positive attitude there were 11 people (26.2%) who behaved poorly in waste management and 31 people (73.8%) who behaved well in waste management. This means that the attitude of the head of the family that negatively affects them behave poorly in waste management.

Respondents' attitude that is still negative is seen from the results of their answers to the questionnaires that have been provided where many respondents who answered by disagreeing with the statement which includes better use of waste so that it is positive for certain things, the trash can easily rot and does not rot separated. We recommend that people use items that can be reused to reduce waste production. In addition, some respondents also agreed with the question in the questionnaire which included every household that did not need a temporary landfill, each household did not need to do waste separation, preferably waste that could still be used was not disposed of but reused. Based on their answers to these statements it appears that the reaction or response of respondents to household waste management is still classified as negative.

The Relationship of Culture with the Behavior of the Community in Waste Management

The results showed that there was a cultural relationship with community behavior in waste management (p = <0.001). This is supported by research

(Clara, 2015) which shows that there is a cultural relationship with the behavior of housewives in waste management (p = 0.017; PR = 2.302 95% CI 1.430-10.112).

The results of this study also show that out of 54 people who have negative culture there are 48 people (88.9%) who behave poorly in waste management and 6 people (11.1%) who behave well in waste management. While from 46 people who have positive culture, there are 15 people (32.6%) who behave poorly in waste management and 31 people (67.4%) who behave well in waste management. This means that a culture that can negatively affect their behavior in waste management is not good. This can also be seen from the results of their answers to the questionnaires that have been provided in which many respondents answered such as having the habit of littering like a river, behind a house and some people also answered throwing waste carelessly. In addition, some of them also answered that they did not sort the decomposed waste and did not easily rot at home.

The Relationship between the Availability of Facilities and Infrastructure and the Behavior of Communities in Waste Management

The results showed that there was a correlation between the availability of facilities and infrastructure and the behavior of the community in waste management (p = <0.001). This is supported by research (Mirna, 2013) which shows that there is a correlation between the availability of facilities and infrastructure with community behavior in waste management (p = <0.001; PR = 2.59 95% CI 1,911-13,820).

The results also showed that out of 61 families who had the availability of facilities and infrastructure there were 53 people (86.9%) who behaved poorly in waste management and 8 people (13.1%) who behaved well in waste management. Whereas out of 39 families who did not have the availability of facilities and infrastructure there were 10 people (25.6%)

who behaved poorly in waste management and 29 people (74.4%) who behaved well in waste management. This means that the unavailability of facilities and infrastructure for waste management can affect the behavior of the people behaving poorly. Because if the community environment is not available facilities and infrastructure such as temporary waste shelters, then many people always throw waste at the place, both the river and the back of the house. Besides that, there is no availability of waste banks around the residents' houses so that this is what makes them sometimes litter.

CONCLUSION
1. There is no educational relationship, knowledge of people's behavior in waste management in Tong Marimbun Pematang Siantar Village in 2018.
2. There is a relationship between attitudes, culture and availability of facilities and infrastructure with community behavior in waste management in Tong Marimbun Pematang Siantar Village in 2018
3. The most dominant variables related to community behavior in waste management are attitude variables (p = <0.001; OR = 8.7 95% CI 3.167-99.318) which means that family heads who have negative attitudes have 8.7 times greater chance of behaving less good in waste management compared to family heads who have a positive attitude.

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