ANALYSIS OF SOLID MEDICAL WASTE MANAGEMENT BY MIDWIVES IN COMMUNITY HEALTH CENTER OF IV JURAI, PESISIR SELATAN DISTRICT IN 2018

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ABSTRACT

The increasing rate of solid medical waste is generated by the Community Health Center. It must be balanced with a good waste management system. By doing that, the environment is not polluted and nosocomial infections occurred. The Minister of Health Number 27 of 2017 concerns about the Prevention of Infection Control is obliged to manage the waste. Based on the preliminary survey that conducted on March 2018 in Lumpo Community Health Center sanitation officer, it was known that the trash bin had been classified based on the type of waste which then solid medical waste was sent to the Lumpo Community Health Center according to the Standard Operational Procedure (SOP) for solid medical waste management. Paramedics such as midwives bury solid medical waste in the form of drug syringes and glass. Whereas, in the form of plastic, gauze or others are destroyed by burning it an open field. It is deviant behavior in the management of solid medical waste. To avoid aberrant behavior, it is necessary to conduct research about factors that influence the management of solid medical waste by Midwives in the Community Health Center of IV Jurai in Pesisir Selatan District. The type of this research was quantitative with a Cross-Sectional approach with chi-square test analysis. The population was all midwives in the Community Health Center of IV Jurai, Pesisir Selatan district in 2018. By using the total sampling technique, 42 people had been chosen as the samples of this research. The independent variables were knowledge, attitude, compliance, education and the dependent variable was the management of solid medical waste. The results of this research showed that 24 respondents had a lack of knowledge(57.1%). Then, 32 of them (76.32%) had a negative attitude. Next, 61.9% of the respondents were disobedient (26 people). After that, 28 of them (66.7%) had bad management of solid medical waste. Last, 32 of them (76.2%) were graduated from Diploma III. From statistical test results described that there was relationship between knowledge (p = 0.047 OR = 3.985), attitude (p = 0.008 OR = 8), compliance (p = 0.000 OR = 16 ) and education (p= 0.008 OR = 8)
with solid medical waste management. In short, it can be concluded that knowledge, attitudes, compliance and education have a significant relationship with the management of solid medical waste. Therefore, it is suggested to the Health Agencies to socialize this solid medical waste management to paramedics to keep the environment and avoid nosocomial infections.

**Keywords:** Solid Medical Waste Management, Knowledge, Attitude, Compliance, Education, Midwives

**INTRODUCTION**

The increase in the rate of generation of solid medical waste generated by the puskesmas must be balanced with a good solid medical waste management system so as not to pollute the environment. Decree of the Minister of Health No. 27 of 2017 concerning Prevention of Infection Control is obliged to manage the waste (Permenkes No 27). Medical waste management of the Health Center has complex problems. This waste needs to be managed in accordance with existing rules so that environmental management must be carried out systematically and continuously planning, implementing, and continuously improving the management of the puskesmas must be carried out consistently. In addition, human resources who understand environmental problems and management are very important to achieve good environmental performance (Wiku Adisamito, 2008).

Based on the preliminary survey conducted on March 2, 2018, with the Lumpo Health Center sanitation officer, it was known that the trash bin had been prepared separately. Paramedics do not always dispose of medical waste in the trash that has been provided, so it is still mixed between medical and non-medical waste. Medical waste is collected in a plastic bag and disposed of in a temporary shelter (TPS) located behind the Health Center, then burned/buried behind the Health Center. Followed by an interview with the Lumpo Health Center sanitarian officer, 11 Health Centers under the auspices of the Lumpo Health Center, did not send medical waste to the Lumpo Health Center, midwives who managed the Health Center buried solid medical waste in the form of syringes, used glass medicine. Whereas those that are plastic, used gauze, or others can be burned.

The second survey was on 12-14 March 2018 on 13 Auxiliary Health Centers in the IV Jurai District. Based on the questionnaire, the midwife's knowledge, attitudes, and adherence were still poor in managing solid medical waste in the Health Center, as well as education. Midwives with the last degree of midwifery DIV better knowledge, attitudes and behavior in medical waste management compared to the last educated midwife Diploma III.

Midwives in the IV Jurai Health Center were not in accordance with Kepmenkes standard No. 1428/MENKES/SK/XII/2006 in the management of solid medical waste. Characteristics and magnitude of solid medical waste generation in 13 Health Center District IV jurai, infectious waste totaling 3000 gr/day, sharp waste 811gr/day and pharmaceutical waste 1140gr/day. This waste will be a large amount to cause environmental pollution if the final disposal is not through
proper processing. Based on the description above, the authors are interested in conducting research with the title Factors that influence Solid Medical Waste Management in the Working Area of Health Center Kec. IV Jurai, Pesisir Selatan Regency in 2018.

THEORETICAL FRAMEWORKS

Health Minister Regulation No 1204 of 2004 on the terms of Environmental Health Hospital is a waste generated from activities in the form of solid, liquid, and gas. Waste is the result of activities in the form of solid, liquid and gas. Waste is the result of waste from activities which are also forms of material that have meaning and benefits for humans and their environment. (Permenkes RI, 2004).

The proper management of medical waste in addition to joining the administration and organization also requires policies and adequate funding at the same time the active participation of the staff are trained and educated. The policies that apply in the management of medical waste cannot be effective if they are not implemented carefully, consistently and thoroughly. The complex activities of hospitals and puskesmas/pustu not only have a positive impact on the surrounding community, but also the possibility of negative impacts. The negative impact is in the form of contamination due to the activation process or waste that is disposed of without proper management. Management of hospital or health center/hospital waste that is not goodwill triggers the risk of workplace accidents and disease transmission from patient to worker, from patient to patient, from worker to patient, and from patient to visitor community (Ariyanto, 2008). Exposure to hazardous medical waste can lead to infection or injury. Medical waste that is not managed properly will have an impact on health.

RESEARCH METHODS

This type of research is quantitative with analytical descriptive research with a Cross-Sectional Study research design. The method used in this study is a questionnaire and observation sheet. The population in this study were all midwives in Puskesmas District IV Jurai, South Coastal District, amounting to 42 midwives. The sample used was total sampling, namely as many as 42 midwives in the Working Area of Puskesmas Kec. IV Jurai, Kab Pesisir Selatan. In this study, the independent variables in this study were knowledge, attitude, compliance and level of education of midwives. The dependent variable in this study is the medical waste management system. The collected data were analyzed by chi-square, with a 95% confidence level ($\alpha = 0.05$).
RESULTS

1. Characteristics of Solid Medical Waste

Characteristics of solid medical waste management in the working area of Health Center in Kec IV Jurai, Pesisir Selatan District can be seen in Table 1 below:

Table 1 The frequency distribution characteristics of Solid Medical Waste in Health Center of Kec. IV Jurai, Pesisir Selatan District 2018

<table>
<thead>
<tr>
<th>Medical Waste</th>
<th>f(kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection Waste</td>
<td>7,639</td>
</tr>
<tr>
<td>Sharp Waste</td>
<td>2,436</td>
</tr>
<tr>
<td>Pharmaceutical Waste</td>
<td>2,470</td>
</tr>
<tr>
<td>Pathology Waste</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>12,545</td>
</tr>
</tbody>
</table>

Solid medical waste consisting of infectious waste 7,639 kg/day, sharp waste 2,436 kg/day, and pharmaceutical waste 2,470 kg/day has not been managed in accordance with Minister of Health Regulation No. 27 of 2014, this will cause various diseases to haunt humans, both those who contact directly or by air. Such as hepatitis, diarrhea due to salmonella germs, anthrax, skin infections. Property damage can also occur if pharmaceutical waste is not managed properly, corrosive solutions mixed in the mud reduce the quality of buildings around health services. Management of large quantities of solid medical units in health service units that will cause environmental pollution if not handled properly (Mustika, 2014).

1. Univariate Analysis

Univariate analysis on independent variables, namely knowledge of midwives, attitudes of midwives, compliance of midwives and midwife education, and the dependent variable is the management of solid medical waste. The solid medical waste frequency produced by the Health Center Kec IV Jurai in Pesisir Selatan District is 12,545 kg/day. From 42 midwives, in Table 2 it can be seen that as many as 24 (57.1%) midwives have low knowledge in managing solid medical waste, the lack of understanding of midwives on solid medical waste and the low education of respondents resulted in not segregating waste because they did not know the impact happens later (Ariska, 2017). Many as 32 (76.2%) midwives have a negative attitude in the management of solid medical waste. Furthermore, as many as 26 (61.9%) midwives were not obedient in the management of solid medical waste, and as many as 32 (76.2%) midwives were still educated D3, and as many as 28 (66.7%) midwives did waste management poorly.
2. Bivariate Analysis

Knowledge of midwives has a significant relationship to the management of solid medical waste where the Chi-Square Test in table 2 obtained p-value = 0.047 (p < 0.05). From the analysis obtained an OR 3 value, meaning that respondents who are low knowledgeable have 3 times the chance to manage medical waste less well than those with high knowledge.

The results of this study are in line with Ariska's (2017) study stating that the p-value of 0.048 is related to the knowledge of solid medical waste management in the Solok City Hospital. Low knowledge of respondents because respondents did not want to learn and explore the management of solid medical waste, respondents did not want to add insight. It is better for the health office to conduct counseling on the management of medical waste for health workers especially in the Community Health Center of IV Jurai in Pesisir Selatan District, given the danger of solid medical waste if it is not managed properly. It can be seen that the respondents who did poorer waste management were more commonly found in respondents who had negative attitudes as many as 25 (78.1%) respondents. The Chi-Square Test in table 2 obtained p-value = 0.008 (p < 0.05) which means that there is a relationship between midwives' attitudes and Solid Medical Waste Management in the Community Health Center of IV Jurai in Pesisir Selatan District in 2018. From the analysis obtained OR 8, meaning that respondents who have a negative attitude have 8 times the chance to manage medical waste is less good compared to respondents who have a positive nature. Respondents' attitudes related to medical waste management because respondents did the management of solid medical waste not according to the procedures that have been done, respondents in conducting solid medical waste management want to be quick and practical without worrying and thinking about the dangers. The attitude greatly influences the success of solid medical waste management in order to achieve the right and appropriate procedures.

Poor waste management is found more in respondents who do not comply with 23 (88.5%) compared to respondents who obey 5 (31.3%). The Chi-Square test in Table 2 shows that p-value = 0.000 (p < 0.05) means that there is a relationship between midwife's compliance with Solid Medical Waste Management. From the analysis obtained an OR value of 16, meaning that the respondents who did not comply had 16 times the chance to manage medical waste less than the obedient respondents. The results of this study are in line with the Maironah study (2011) obtained p-value 0.008 there is an attitude relationship with the management of medical waste in Ulin Banjarmasin Hospital. Respondents have not been obedient in managing medical waste according to standards, because respondents still do old habits that are considered still practical.

Respondents' compliance relates to the management of medical waste because respondents are not motivated to take actual action against the management of solid medical waste, which greatly triggers respondents to make mistakes repeatedly and do things that are not right. If the respondent has good compliance, all procedures for managing medical waste will be maximally achieved.

Furthermore, respondents who did poorer waste management were more commonly found in respondents who had Diploma III education, namely 25 (78.1%) respondents. The Chi-
Square test in Table 2 obtained p-value = 0.008 (p < 0.05) meaning that there was a relationship between the level of education of midwives and Solid Medical Waste Management. From the analysis obtained an OR value of 8, meaning that respondents who are educated Diploma III have the opportunity 8 times to manage medical waste is less good compared to respondents who have Diploma IV education.

The results of this study are in line with Mustika’s research (2014), the education level of respondents has an influence on medical waste management, p-value 0.002 and from exponent value, it can be seen the influence of respondents’ education level on medical waste management is 11.266 or in other words, Diploma III educated respondents risk of managing medical waste is less than 11.268 times greater than respondents who have Diploma IV education. Respondents who have Diploma III education are not good at managing solid medical waste compared to respondents who are Diploma IV educated, this is because the level of education will affect the knowledge, attitudes and behavior of respondents.
Table 2. Univariate and Bivariate Analysis of Solid Medical Waste Management by Midwives in Community Health Center of IV Jurai, Pesisir Selatan District in 2018

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Univariate Analysis</th>
<th>Solid medical waste management</th>
<th>Bivariate Analysis</th>
<th>OR (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Good management</td>
<td>Poor management</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>A. Independent Variable:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Midwife Knowledge</td>
<td>High</td>
<td>18</td>
<td>42,9</td>
<td>9</td>
<td>50,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>24</td>
<td>57,1</td>
<td>5</td>
<td>20,8</td>
</tr>
<tr>
<td>2</td>
<td>Midwife Attitude</td>
<td>Positive</td>
<td>10</td>
<td>23,8</td>
<td>7</td>
<td>70,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>32</td>
<td>76,2</td>
<td>7</td>
<td>21,9</td>
</tr>
<tr>
<td>3</td>
<td>Midwife compliance</td>
<td>Obedient</td>
<td>16</td>
<td>38,1</td>
<td>11</td>
<td>68,8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disobedient</td>
<td>26</td>
<td>61,9</td>
<td>3</td>
<td>11,5</td>
</tr>
<tr>
<td>4</td>
<td>Midwife Education</td>
<td>Diploma IV</td>
<td>10</td>
<td>23,8</td>
<td>7</td>
<td>70,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diploma III</td>
<td>32</td>
<td>76,2</td>
<td>7</td>
<td>21,9</td>
</tr>
<tr>
<td>B. Dependent Variable:</td>
<td></td>
<td>Good management</td>
<td>14</td>
<td>33,3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor management</td>
<td>28</td>
<td>66,7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

The results of the study on the analysis of the management of solid medical waste in the Community Health Center of IV Jurai in Pesisir Selatan District 2018, it can be concluded that there is an infectious solid medical waste of 7,639 kg/day, a sharp waste of 2,436 kg/day, waste. Knowledge, Attitudes, Attitudes and Education Levels of Midwives have a significant relationship with solid medical waste management, with each \( p = 0.047 \) and \( OR = 3 \) on knowledge, \( p = 0.008 \) and \( OR = 8 \) on attitudes, \( p = 0.000 \) and \( OR = 16 \) for the level of compliance and \( p = 0.008 \) and \( OR = 8 \) at the level of education in Diploma IV.

Acknowledgment

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References


