Research

Motivation, Supervision, and Adherence to Medical Waste Policy in South Labuhanbatu, North Sumatera

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ABSTRACT

Background: Medical waste is unwanted biological products that are highly infectious in nature. It is broadly classified as infectious waste and biohazardous waste, and can easily spread any disease virally and can even pose a danger to life. Medical waste is found in hospitals, laboratories, research centres, tattoo parlours, and others. It has to be disposed properly otherwise it poses a health and environmental danger. This study aimed to examine the effects of motivation and supervision on adherence to medical waste policy in South Labuhanbatu, North Sumatera.

Subjects and Method: This was a cross-sectional study carried out in South Labuhanbatu, North Sumatera. A sample of 34 health care workers were selected for this study, consisting of health center doctors, private doctors, and health clinic owner. The dependent variable was adherence to medical waste policy. The independent variables were motivation and supervision. The data were collected by questionnaire and analyzed by multiple logistic regression.

Results: Adherence to medical waste policy was affected by strong motivation (OR= 6.31; 95%CI= 2.74 to 9.33; p= 0.048) and regular supervision (OR= 5.56; 95%CI= 3.42 to 8.09; p= 0.039).

Conclusion: Adherence to medical waste policy is affected by motivation and supervision.

Keywords: waste policy, adherence, motivation, supervision.

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BACKGROUND

Health clinics which produce medical waste every day has not been effective in its management such as used gauze, plastic, syringes and infusion bottles. Nowadays, many private health clinics have opened inpatient and outpatient services, of course the medical waste generated is also increasing. Even though medical waste is very dangerous because it contains various types of diseases and poisons. If it is not managed properly and correctly, it can lead to contracting infectious diseases, especially to health workers and the community in general (Pratiwi, 2013).

Globally, more than 35 million health care workers face the risk of percutaneous injury due to exposure to contaminated sharps. The incidence of exposure to microorganisms observed among all health workers most highly exposed was nurses (Efstathiou et al., 2011). This is because nurses are health workers who most often contact with patients both directly and indirectly in an effort to provide nursing services to patients.

World Health Organization (WHO) in 2005 estimated that around 2.5% of health workers worldwide faced HIV exposure and

around 40% faced exposure to B Hepatitis and C Hepatitis viruses and 90% of infections resulting from these exposures occurred in developed countries. In the United States of America, more than 8 million health workers in health facilities are exposed to blood or other bodily fluids (Reda et al., 2010).

Research data on 114 health workers in 10 DKI Jakarta health centers showed that around 84% of them had been stabbed by used needles. The prevalence of positive HBs-Ag was found to be 12.5% in the dentist group and 13.3% in laboratory personnel. Even though other health workers with an incidence of around 4% (Basuki, 2006).

The policy on managing medical waste based on the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number: P.56/MenLHK-Setjen / 2015, explained that the Management of Hazardous and Toxic Waste (B3) arising from health service facilities includes stages namely: reduction and sorting of Waste B3, B3 waste storage, B3 waste transportation, B3 waste treatment, B3 waste burial and B3 waste landfill. Every health company and clinic has a contract with a transport and Collection Company and the B3 waste disposal (Ministry of Environment and Forestry of the Republic of Indonesia, 2015).

Hasan and Rahman (2018) stated that almost all companies which have health services that treat waste has not been effective in Khulna Bangladesh. It is necessary at all stages of medical waste management from the formulation of appropriate laws, separation and transport of waste to final disposal. The processes and methods adopted for waste management must be technically sustainable and with long-term financial support.

Compliance of health workers in implementing medical waste management regulations in health facilities reflects the performance of health workers. According to Gibson, there are three variables that can affect individual performance. Individual variables (abilities, skills, family background and demographics), organizational variables (resources, leadership, rewards, job structure and design), and psychological variables (perception, attitude, personality, learning and motivation. All three groups of variables affect working groups which ultimately affect personal performance (Gibson, 2011).

South Labuhanbatu Regency has 52 units of health facilities or health clinics consisting of 17 units of health center, 22 units of doctor's practice and 13 units of private clinics. The results of the South Labuhanbatu District Office of Environmental Report on UKL/UPL documents and temporary B3 medical waste permit storage that private health clinics have UKL/UPL and permits have 21 units of B3 Waste Temporary Storage Places consisting of 2 health center units, 11 units of doctor practice and 8 private clinic units.

The result of interviews with 5 private health clinics that have medical B3 waste storage licenses, of which 3 clinics have B3 waste transportation contracts and 2 clinics do not have B3 waste transportation contracts. Clinics that do not have contracts to dispose of waste by burning, storing it in a box (cardboard), and throwing it in the trash. The results of interviews with 5 clinic units that do not have a B3 waste permit that the clinic is not compliant to manage B3 waste. Clinics dispose of waste by burning in a rubbish bin, planted in the ground, disposed of in the trash and stored in a cupboard.

Another factor that causes non-optimal medical waste management was lack of motivational factors from the head of the health clinic to make a temporary storage permit B3 because they have to incur additional operational costs and consider that B3 management can be done like regular waste management. The purpose of this study was to analyze the effect of motivation and super-

vision on the level of compliance with medical waste policies in South Labuhanbatu Regency.

SUBJECTS AND METHOD

1. Study Design
Survey study with cross sectional approach was conducted in South Labuhanbatu District conducted in August 2019.

2. Population and Sample
The population is 34 people (8 head of health center, 15 practice doctors and 11 health clinic owners). The entire population became the samples (total sampling).

3. Study Variables
The independent variables are motivation and supervision. The dependent variable is compliance with medical waste policies..

4. Operational Definition of Variables
Motivation is the urge or desire of health clinics to be obedient in managing medical waste based on intrinsic and extrinsic motives.

Supervision is all the actions of the leadership in providing the aim to monitor and supervise the compliance of health clinics in managing medical waste based on direct supervision such as inspection, direct observation, reporting and indirect supervision in the form of reports.

Medical waste policy compliance is all respondent's actions in carrying out their duties and responsibilities including managing medical waste permits and management based on Minister of Health Regulation No. 9

of 2014 and Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number: P.56/MenLHK-Setjen/2015 concerning Procedures and Requirements Technical Management of Hazardous and Toxic Material Waste from Health Service Facilities, namely reduction and sorting of B3 Waste, B3 Waste storage, B3 waste transportation, B3 waste treatment, B3 waste burial and B3 waste landfill.

5. Study Instruments
Data collected by questionnaire. Validity and reliability tests were carried out on 10 health center or clinics in North Labuhanbatu Regency. Test reliability was done by calculating item total correlations and Cronbach alpha.

6. Data Analysis
Univariate analysis to explain all study variables. Bivariate analysis used product moment correlation test. Multivariate analysis was using multiple logistic regression.

7. Research Ethics
Researchers expressed the willingness to be informants by submitting informed consent to be signed. Researchers also keep the identity and answers of informants confidential, it was used only for the study.

RESULTS

1. Univariate analysis
Table 1 showed that most of them have low motivation (58.8%), poor supervision (67.6%) and lack of compliance with medical waste policies (70.6%).

Table 1. Frequency Distribution

Variable		n	%
Motivation	High	14	41.2
	Low	20	58.8
Supervision	Good	11	32.4
	Poor	23	67.6
Compliance	Yes	10	29.4
	No	24	70.6

2. The result of bivariate analysis

Table 2 showed the results of the bivariate analysis. Good motivation (r= 0.62; p< 0.001) and supervision (r= 0.52; p< 0.001) increased compliance with medical waste management policies.

Table 2. The result of bivariate analysis

Variable	r	p
Motivation	0.62	<0.001
Supervision	0.52	<0.001

3. The result of multivariate analysis

Table 3 showed the results of multivariate analysis. Table 3 explained that the motivational variable has a positive effect on the level of compliance with waste management policies. Subjects with high motivation have an odds value of 6.31 times more likely to comply waste policy than study subjects with low motivation and it was statistically significant (OR = 6.31; 95% CI = 2.74-9.33; p = 0.048). The supervision variable has a positive effect on the level of compliance with waste management policies. Study subjects with good supervision have an odds value of 5.56 times to be more compliant with waste policies than subjects with poor supervision and it is statistically significant (OR= 5.56; 95% CI= 3.42-8.09; p=0.039.

Table 3. Multiple Logistic Regression Analysis

Independent Variable	OR	95% CI		p
		Lower limit	Upper limit	
Motivation	6.31	2.74	9.33	0.048
Supervision	5.56	3.42	8.09	0.039

DISCUSSION

1. The effect of motivation on compliance with medical waste policy

The results showed that there was a positive influence of motivation on the level of compliance with waste management policies. Highly motivated study subjects have an odds value of 6.31 times to be more compliant with waste policy than study subjects with low motivation and it was statistically significant (OR= 6.31; 95% CI=2.74-9.33; p=0.048).

The level of compliance with medical waste management has not been in accordance with the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number: P.56/MenLHK-Setjen/-2015. In line with Al-Momani et al., (2019), which stated that the management of medical waste in health facilities is poor and the lack of regulations governing medical waste procedures in Jordan. According to Al-Momani et al. (2019), the management of medical waste derived from 35 articles in South Africa, where official landfills determined by the government cannot overcome the amount of medical waste generated so that the management of medical waste in health facilities is not optimal.

A study by Baaki et al. (2017) at Nigerita health facilities found that training factors, awareness in themselves (motives) as the most dominant factor, followed by environmental laws and socialization of regulations. The need to provide motivation to increase staff awareness in health facilities.

According to Kartono (2011), motivation is the driving force that results in an organization member to use his/her abilities in the form of expertise or skills, energy and time to carry out various activities that are his/ her responsibility and fulfill his/her obligations, in order to achieve goals and various predetermined organizational goals.

2. The effect of supervision on compliance with medical waste policy

The results showed that there was a positive influence between supervision on the level of compliance with waste management policies. Study subjects with good supervision have an odds value of 5.56 times to be more compliant with waste policies than subjects with poor supervision and it was statistically significant (OR= 5.56; 95% CI=3.42 to 8.09; p= 0.039).

The low level of supervision from the related officers causes the level of compliance of waste management to be not maximal. A similar study by Caniato at al. (2016) showed that the management of hazardous and non-hazardous waste was partially separated, medical treatment of waste was rarely carried out, 75% of hazardous waste was not treated in Gaza health facilities.

According to Awodele et al. (2016) all health facilities have the same process in managing medical waste that is the separation, collection, storage and transportation to outside the specified location. Officers responsible for collecting medical waste must use gloves.

Pasaribu (2019) said that there was a relationship between the supervision of IPCN nurses and compliance with disposing of medical and non-medical waste in Padang Lawas Hospital. The important thing is that supervision is carried out continuously to improve compliance in disposing of medical and non-medical waste.

Supervision techniques according to Siagian (2008) namely direct supervision and indirect supervision. In this case, internal supervision is when the leader of the health center, doctor's practice and the health clinic conducts its own direct supervision of the activities being carried out by the health workers. Indirect control (indirect control) is supervision that is not directly carried out by the leadership but through intermediaries such as reports. The report can be in oral or written form.

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