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The Relationship Between Knowledge and Attitudes of Waste Transport Workers and the Behavior of Using Personal Protective Equipment in Langsa City

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ABSTRACT

Garbage workers are generally susceptible to skin diseases due to contamination from the garbage, so there is a need for occupational health safety for waste transport officers. Efforts that can be made to avoid the occurrence of occupational diseases and work accidents are with Personal Protective Equipment (PPE). This study aims to determine the relationship between the knowledge and attitudes of waste transport workers towards the use of personal protective equipment in Langsa City. This research was carried out on 25 - 29 Juli 2023, at the Langsa City Environmental Service using analytical types. The population in this study were all waste transport workers who worked at the Langsa City Environmental Service, amounting to 71 people. Proportional stratified random sampling was used, which resulted in 42 people obtained using the Slovin formula. The results showed majority of respondents used personal protective equipment (52.4%), had good knowledge (62%), and had a negative attitude (57.1%). The Chi-Square test showed that knowledge (p value = 0.012) and attitude of waste officers (p value = 0.000) were significantly related to the behavior of using personal protective equipment. It is suggested that the Langsa City Environmental Service is expected to continue to improve socialization efforts and provide counseling to waste transport workers on the importance of using personal protective equipment, the benefits of using personal protective equipment, and knowing what actually work accidents. It is better to prepare personal protective equipment for workers in the form of masks, gloves, helmets/hats, boots, and work clothes that are suitable for the workplace.

Keywords: Knowledge, Attitude, Behavior, Personal Protective Equipment.

1. INTRODUCTION

Waste is closely related to public health because from these wastes live various microorganisms that cause disease. Poor waste management can have a negative impact on health. Diseases that are closely related to waste are broad, including infectious and non-communicable diseases and others. The cause can be bacteria, fungi, worms, and chemicals. One of the infectious diseases caused by waste can be contracted through the skin. Bacteria, viruses, and fungi that infect the skin are common and can damage it (Wijayanti, 2015).

Waste transportation workers are generally vulnerable to skin diseases due to contamination from garbage, so that the need for occupational health safety in waste transportation officers (Samion, 2019). Based on Law Number 1 of 1970 concerning occupational safety, work accidents are events that are unexpected and unwanted events. Therefore, worker safety is very important because it is a level of success in the field of Occupational Accidents, Safety, and Health (K3).

Law No. 13/2003 in Article 86, paragraph 1,states that every worker/laborer has the right to obtain protection for occupational safety and health. This is in accordance with Article 86, paragraph 2, which aims to

protect the safety of workers/laborers to realize work productivity. Household waste collectors are vulnerable to occupational diseases or accidents. Efforts that can be made to avoid occupational diseases and work accidents are with Personal Protective Equipment (PPE) (Yane et al, 2014 in Rusidian, 2018).

Personal protective equipment is a set of safety equipment used by workers to protect all or part of their body from the possibility of exposure to potential hazards in the work environment, including accidents and occupational diseases. When permanent control cannot be implemented or has not effectively reduced the potential for harm, personal protective equipment must still remain and must be used (Tarwaka, 2008 in Naiheli, 2019).

The use of Personal Protective Equipment (PPE) is particularly important part of preventing waste handlers to prevent diseases caused by waste. This is because waste haulers hold or experience direct contact with various kinds of garbage that have accumulated. Officers who do not use Personal Protective Equipment (PPE) in full make it easier for various diseases to enter the body through the hands, feet, and head (Etianopa et al, 2017 in Rusidian, 2018).

The International Labor Organization (ILO) reported that in 2019 as many as 2.78 million people died from work accidents, and 1.95 million were caused by accidents that occurred in the work environment. Of these cases, 35-50% of the workforce in the world experienced accidents that occurred as a result of exposure to physical, chemical, and biological hazards (Marlina, 2020). The Centers for Disease Control and Prevention (CDC, 2019 in Marlina, 2020) noted that 385,000 cases of occupational accidents occurred in the United States due to sharps contaminated with blood in health workers in the United States State Hospital.

Based on data from the Indonesian Ministry of Manpower (2021, in CNN Indonesia, 2021),174 cases of work accidents that occurred in Indonesia in the second quarter of 2020 were recorded at around 3,174 cases with 2,164 victims. BPJS Ketenagakerjaan revealed that cases of work accidents reached 153,044 throughout 2020. This figure dropped slightly by 1.46 percent compared to 2019, which 155,327 cases.

The Indonesian Ministry of Manpower and Transmigration,in the writing of Farsida & Zulyanda, 2019) through the Regulation of the Minister of Manpower and Transmigration concerning Personal Protective Equipment (PPE) in article 2, has stated that employers are required to provide PPE for workers or laborers in the workplace in accordance with Indonesian National Standards (SNI) and provide it free of charge.

Similarly, Qanun Kota Langsa No. 3 of 2014 Article 30 point 1 (e) also states that in waste management everyone has the right to get protection due to the negative impact of waste final processing activities (Qanun Kota Langsa, 2014).

The results of related research conducted by Samion (2019) found that there was a significant relationship between respondents' knowledge of occupational health safety aspects with a p value of 0.04 <0.05; there is a significant relationship between attitudes towards occupational health safety aspects with a p value of 0.026 <0.05; and there is a significant relationship between behavior towards occupational health safety aspects with a p value of 0.034 <0.05.

The results of related research conducted by Febryani (2019), it is known that the classification of work accidents based on the mode of injury is as follows: (100%) who are scratched or punctured by sharp and rough objects, (59.5%) in contact with hazardous materials, (35.4%) falling, and (34.2%) being hit by objects. Based on the causative agent of unsafe acts, (98.7%) lack of personal protective equipment used, (83.5%) non-compliance with safety procedures, lack of training (58.2%), and the urge to work fast (40.5%). The most common unsafe

conditions were (83.5%) lifting too heavy, (73.4%) improper disposal of waste by residents, and rainy weather (60.8%). All car fleet waste haulers experienced the following types of injuries during work: cuts (100%), muscle/strain (51.9%), and sprains (36.7%).

The research conducted by Paletean, Hamsir, & Rostina (2020), obtained results based on the results of the chi-square test, which showed a p-valuevalue of 0.908 (p-value> 0.05), indicating no relationship between knowledge and the use of personal protective equipment. The attitude obtained a p-valuevalue of 0.166 (p-value> 0.05), indicating that there is no relationship between attitude and the use of personal protective equipment.

The Rusidian's research (2018) found that 35 waste transporters used three types of PPE, accounting many as 35 respondents. The a percentage of 71%. On knowledge in the good category with a percentage of 100%, training in the bad category with a percentage of 0%, motivation in the good category with a percentage of 77%, communication in the bad category with a percentage of 91%, availability of PPE in the good category with a percentage of 100%, supervision in the good category with a percentage of 85%, punishment in the bad category with a percentage of 100%, and awards in the bad category with a percentage of 100%.

Based on preliminary data obtained by the author from the Langsa City Environmental Service in August 2023, it is known that the number of waste transportation workers is 71 people, they are divided into three shifts: morning shift with 42 workers, day shift with 10 workers, and night shift with 19 workers, with fixed and unchanged work shifts.

Based on the results of an initial survey conducted by the author on waste transportation workers by conducting observations and interviews, it was found that many waste transportation workers in Langsa City ignored the use of PPE. Generally, workers only use boots, gloves, and some only use masks or cloth tied to cover the mouth and nose.

The author's interviews conducted by the author with waste transport officers revealed that they did not comply with wearing PPE. This the leadership never gave a warning or appeal to the officer concerned because they were considered to have sufficient knowledge about the risks of work accidents. The non-compliance has led to n attitude of indifference among most officers at the Environmental Service towards implementing rocedures for wearing personal protective equipment. This from their understanding that ases of work accidents can be easily cured. Another reason cited by waste haulers is that it is impractical and tends to interfere with heir work movements less free.

In fact, the Environmental Service Standard Operating Procedure (SOP) for cleaning field officers states in point 3 that the guard must check the completeness of PPE and attributes before working (SOP of the Langsa City Environmental Service, 2021). Starting from these existing problems, the authors are interested in knowing how the relationship between the knowledge and attitudes of waste transport workers affects the behavior of using personal protective equipment in Langsa City.

2. METHODS

This study aims to determine the relationship between the knowledge and attitudes of waste transport workers towards the use of personal protective equipment in Langsa City. A cross-sectional design was adopted in this study. The researcher utilized a quantitative approach and employed the analytical descriptive method to address research objectives and inquiries. The population in this study consisted of all waste transport workers at

the Langsa City Environmental Service, amounting to 71 people. The samples in this study were 42 respondents, which were obtained using the Slovin formula. The sampling technique used proportional stratified random sampling, where each sample taken was grouped based on the work shift included in the Langsa City Environmental Service.

3. RESULTS

Table 1. Frequency Distribution of respondents' behavior regarding the use of Personal Protective Equipment

Behavior	Frequency	%
Yes	22	52.4
No	20	47.6
Total	**42**	**100**

Based on the table above, it can be seen that the majority of respondents used personal protective equipment, namely 22 (52.4%) respondents. And the minority of respondents did not use personal protective equipment, namely 20 (47.6%) respondents.

Table 2. Frequency Distribution of Respondents' Knowledge

Knowledge	Frequency	%
Good	26	62
Fair	8	19
Poor	8	19
Total	**42**	**100**

In the table above, it can be seen that the majority of respondents have good knowledge, namely 26 (62%) respondents. Respondents who have sufficient knowledge are 8 (19%) respondents, while respondents who have less knowledge are 8 (19%) respondents.

Table 3. Frequency Distribution of Respondents' Attitudes

Attitude	Frequency	%
Positive	18	42.9
Negative	24	57.1
Total	**42**	**100**

Based on the table above, it can be seen that the majority of respondents have a negative attitude, namely 24 (57.1%) respondents. And the minority of respondents had a positive attitude, namely 18 (42.9%) respondents.

Table 4. Relationship between Knowledge of Waste Transport Workers and Behavior of Using Personal Protective Equipment in Langsa City

Knowledge	Behavior Use Of Protective Equipment						p *value*
	Yes		No		Total		
	N	%	N	%	N	%	
Good	18	43	8	19	26	62	
Enough	3	7,1	5	11,9	8	19	0,012
Poor	1	2,4	7	16,7	8	19	
Total	22		20		42	100	

The table above shows that out of 42 respondents, 26 respondents (62%) had good knowledge, 8 respondents (19%) had sufficient knowledge, and 8 respondents (19%) had poor knowledge. Of the 26 respondents who had good knowledge, it turned out that 18 respondents (43%) of them used personal protective equipment and 8 respondents (19%) did not use personal protective equipment. Of the 8 respondents who had sufficient knowledge, 5 respondents (11.9%) of them did not use personal protective equipment and 3 respondents (7.1%) used personal protective equipment. Of the 8 respondents who had insufficient knowledge, 7 respondents (16.7%) did not use personal protective equipment and 1 respondent (2.4%) used personal protective equipment.

The results of the Chi Square statistical test obtained the results, chi-square count> chi-square table (8.771> 5.991), and p value < α value (p = 0.012 < a = 0.05), then H_0 is rejected which means that there is a relationship between the Knowledge of Waste Transport Officers and the Behavior of Using Personal Protective Equipment.

Table 5. Relationship between the Attitude of Waste Transport Workers and the Behavior of Using Personal Protective Equipment in Langsa City

Attitude	Behavior Use Of Personal Protective Equipmentt						p *value*
	Yes		No		Total		
	N	%	N	%	N	%	
Positive	17	40,5	1	2,4	18	42,9	0,000
Negative	5	11,9	19	45,2	24	57,1	
Total	22		20		42	100	

Table 5.8 shows that out of 42 respondents, 24 respondents (57.1%) had a negative attitude, and 18 respondents (42.9%) had a positive attitude. Among the 24 respondents who had a negative attitude, it turned out that 19 respondents (45.2%) did not use personal protective equipment, and 5 respondents (11.9%) used personal protective equipment. Among the 18 respondents who had a positive attitude, 17 respondents (40.5%) used personal protective equipment, and 1 respondent (2.4%) did not use personal protective equipment.

The results of the Chi Square statistical test obtained the results, chi-square count> chi-square table (22.344> 3.841) and p value < α value (p = 0.000 < a = 0.05), then H_0 is rejected which means there is a relationship between the Knowledge of Waste Transport Officers and the Behavior of Using Personal Protective Equipment.

4. DISCUSSION

1. Relationship between Knowledge of Waste Transport Workers with Behavior of Using Personal Protective Equipment

The results concluded that out of 42 respondents, 26 respondents (62%) had good knowledge, 8 respondents (19%) had sufficient knowledge, and 8 respondents (19%) had insufficient knowledge. Of the 26 respondents who had good knowledge, it turned out that 18 respondents (43%) of them used personal protective equipment and 8 respondents (19%) did not use personal protective equipment. Of the 8 respondents who had sufficient knowledge, 5 respondents (11.9%) of them did not use personal protective equipment and 3 respondents (7.1%) used personal protective equipment. Of the 8 respondents who had insufficient knowledge, 7 respondents (16.7%) did not use personal protective equipment, and 1 respondent (2.4%) used personal protective equipment.

The results of the Chi Square statistical test showed that the chi-square count> chi-square table (8.771> 5.991) and the p-value < a-value (p = 0.012 < a = 0.05). Therefore, H0 is rejected, which means there is a relationship between the knowledge of Waste Haulers with the Behavior of Using Personal Protective Equipment. These results of this study are consistent with research conducted by (Arif, 2021) entitled "The Relationship Between Knowledge and Attitudes of Health Workers with the Behavior of Using Personal Protective Equipment During the Covid 19 Pandemic at Balung Regional Hospital." The results of that the knowledge of health workers with the behavior of using personal protective equipment, and 91 respondents (71.7%) had moderate knowledge was 17 respondents (13. Statistical tests using the Spearman Rho method obtained the results of p-valuevalue of 0.03.

With research conducted by Saputro (2015) entitled "The Relationship Between Knowledge And Attitude With The Use Of Personal Protective Equipment (PPE) In Workers In The Metal Casting Production Work Unit." The results of statistical tests show that there is a relationship between knowledge (p = 0.002) and the use of personal protective equipment among workers in the metal casting production work unit.

This is in accordance with the theory of Notoatmodjo (2012) Knowledge arises when a person uses their senses or intellect to recognize certain objects or events that they have never seen or felt before. For example, when someone tastes a newly familiar dish, they gain knowledge about the shape, taste, and aroma of the dish.

This is in line with the theory expressed by Ramdhani, Mulyati, & Putri (2019) that a person's level of knowledge can be influenced by several factors, including education, sources of information or mass media, social, cultural, economic, environmental experience, and age.

According to Notoatmodjo (2010 in Saputro 2015), knowledge is the result of observing and occurs after people make observations and senses of a particular object. Knowledge is a very important thing in shaping a person's behavioral actions. Knowledge about the use of PPE is one important aspect, as an understanding of the importance of the role of supervisors and company owners in implementing the use of PPE on their workers.

Work safety efforts that need to be carried out include periodic counseling activities tailored to the needs of the company, which are carried out by the company owner, assisted by field supervisors and other parties competent in the field of K3 to be given to workers, namely providing information about the use of PPE, technological developments about PPE, the conditions of how good PPE can be used by workers and the importance of using PPE when working in metal casting. This will provide a sense of security, so as to reduce

the incidence of work accidents and occupational diseases. Counseling itself has the meaning of a non-formal education that aims to change the behavior of workers in terms of knowledge of the use of PPE to prevent potential hazards in the workplace (Rejeki, 1998 in Saputro, 2015).

Researchers assume that the knowledge of waste transporters does not play an important role in their behavior of using personal protective equipment. This is because a broader insight and higher understanding of waste transporters does not affect their behavior of using personal protective equipment, because waste transporters do not all know and understand the importance of using personal protective equipment to protect themselves from work accidents, as well as diseases that may arise later. This is due to habits that have been passed down for generations.

2. The relationship between the attitude of Waste Transport Workers with the Behavior of Using Personal Protective Equipment

The results showed that out of 42 respondents, 24 (57.1%) had a negative attitude, and 18 (42.9%) had a positive attitude. Of the 24 respondents with a negative attitude, it turned out that 19 (45.2%) did not use personal protective equipment, while 5 (11.9%) used personal protective equipment. Of the 18 respondents with a positive attitude, 17 (40.5%) used personal protective equipment, while 1 (2.4%) did not use personal protective equipment.

The results of the Chi Square statistical test obtained the results, chi-square count> chi-square table (22.344> 3.841, and p value < a p-value of 0.000, which a-value of 0.05. Therefore, H0 was rejected, indicating means there is a relationship between the Attitude of Waste Transport Officers and the Behavior of Using Personal Protective Equipment.

The results of this study are consistent with research conducted by Jamaluddin & Fauzan (2021) entitled The Relationship between Knowledge and Attitudes of Domestic Waste Collection Officers with Work Accident Prevention Behavior at the Banjar Regency Environmental Service. The results showed that there was an attitude relationship (p-value 0.006) with work accident prevention behavior in domestic waste collection officers at the Banjar Regency Environmental Service in 2020.

The results of this study are in line with research conducted by Saputro (2015) entitled The Relationship Between Knowledge And Attitude With The Use Of Personal Protective Equipment (PPE) In Workers In The Metal Casting Production Work Unit. The results of statistical tests show that there is a relationship between skap (p = 0.005) and the use of personal protective equipment among workers in the metal casting production work unit.

The results of this study are not in line with the research conducted by Rachman, et al (2020) entitled "The Relationship between Knowledge and Attitudes towards the Behavior of Using Personal Protective Equipment at PT Sarandi Karya Nugraha Sukabumi. There is no relationship between attitude (p = 0.84) and the behavior of using personal protective equipment at PT Sarandi Karya Nugraha Sukabumi.

This is in accordance with the theory of Notoatmodjo (2012) that attitude is a person's closed response to a stimulus or object, both internal and external, so its manifestations cannot be seen directly but can only be interpreted first from the closed knowledge. Attitude in reality shows the suitability of responses to certain stimuli (Suma'mur, 2015). Attitude can also be interpreted as a readiness to react to a stimulus in a certain way

when faced with a stimulus that requires a response. A pattern of behavior, tendency, or anticipatory readiness to adjust to conditioned social situations (Waluyo, 2009 in Saputro, 2015).

The results of this study are in accordance with the theory put forward by Notoatmodjo (2012), which explains that attitude is a tendency to take action towards an object in a way that states the presence of signs to like or dislike the object. Attitude is only part of human behavior. Attitude is not yet an action or activity but is a predisposition to behavior. Attitude is still a closed reaction, not an open reaction, and is a readiness to act on objects in a certain environment as an appreciation of the object.

Researchers assume that the attitude of waste haulers has an important role in the behavior of using personal protective equipment. This can be understood because attitude is the most important concept in social psychology. Respondents in this study mostly had a negative attitude, thus leading them not to wear PPE. This was influenced by the officers' discomfort in wearing personal protective equipment. For the realization of attitude into action, supporting factors or possible conditions are needed, including facilities.

5. CONCLUSION

From the research conducted by Langsa City Environmental Service on 42 respondents, it was found that the Chi Square test results showed that the value of $p = 0.012 < a = 0.05$, so there is a relationship between the Knowledge of Waste Transport Officers and the Behavior of Using Personal Protective Equipment. In the attitude variable, the Chi Square test results also obtained a value of $p = 0.000 < a = 0.05$, so there is a relationship between the attitude of waste transport officers and the behavior of using personal protective equipment. Therefore, it can be concluded that there is a significant relationship between the knowledge and attitudes of Garbage Transport Officers and the Behavior of Using Personal Protective Equipment in Langsa city.

6. ACKNOWLEDGEMENT

1. For Environmental Service of Langsa City

It is expected to continue increasing socialization efforts and efforts to provide counseling to waste transport workers on the importance of using personal protective equipment, the benefits of using personal protective equipment, knowing what work accidents actually are, and preparing personal protective equipment should be prepared for these waste transport workers in the form of masks, gloves, helmets / hats, boots, and work clothes in accordance with the workplace.

2. For Waste Transport Workers:

Waste transportation workers are expected to always be disciplined in using personal protective equipment (PPE), especially when transporting waste.

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