

Use of Personal Protective Equipment for Health Complaints of Waste Transportation Officers in Mamuju Regency

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ABSTRACT

Background: *Personal hygiene* is an important factor because if there is a problem with personal hygiene it will have an impact on one's health. The body will be susceptible to diseases such as skin diseases, infectious diseases, oral diseases and digestive tract diseases

Purpose: this study aims to determine the relationship between the use of protective equipment by waste collectors on health complaints in Mamuju district

Method: the research design used in this study was a cross-sectional study. The respondents in this study were garbage collectors in Mamuju Regency, totaling 124 respondents

Results: The test results show that the test of the relationship between the use of masks and the incidence of flu/cough by respondents has a p value of $0.80 > 0.05$. while the relationship test of the use of protective clothing against complaints of itching has a p value of 0.52.

Conclusion: There is no relationship between the use of masks while working on the incidence of flu/cough, as well as the use of protective clothing against the incidence of itching among garbage collectors in Mamuju district in 2022.

Keywords: Personal protective equipment, health, complaints

BACKGROUND

Indonesia produced 67.8 million tons of waste in 2020. Based on data from the Ministry of Environment and Forestry (KLHK) 37.3% of waste in Indonesia comes from household activities, then 16.4%

comes from traditional markets, as much as 15.9% originating from the area, as much as 7.29% of waste comes from commerce, then 5.25% of waste from public facilities, meanwhile, 3.22% of waste comes from offices, and 14.6% of waste comes from other sources[1].

According to data from the Mamuju Regency Spatial Planning and Sanitation Office, it is estimated that the waste generation in Mamuju Regency in 2020 is 45,159.76 tons out of a population of 278,764 people in Mamuju Regency. The volume of waste in the last 3 months of 2021 transported to the Adi-Adi TPA was 633.71 tons in September 2021, 631.16 tons in October, 637.09 tons in November (DLHK Service Data, 2021).

Garbage collectors are very susceptible to skin disorders due to direct contact with various types of waste and a hot and humid working environment. In line with Syaputra's research (2021) regarding personal hygiene, the results of observations that had been made were 34.5% of respondents who were not good and 76.6% experienced health complaints with a sample of 43 people. In addition to David's research, other research regarding the use of personal protective equipment for garbage collectors in Mamuju Regency (Reski) the results obtained were 87.8% did not meet the requirements with a sample of 66 people. Therefore, for health, safety and comfort, waste collectors can be prevented

by implementing personal hygiene maintenance, namely skin cleanliness, hair hygiene, oral hygiene and hand, foot and nail hygiene.

Garbage is closely related to public health, because various microorganisms that cause disease live from this waste. Improper waste management can have a negative impact on health, diseases that are closely related to waste are very widespread. Diseases caused by garbage caused by bacteria, fungi, worms and chemicals, bacteria, viruses and fungi that infect the skin are very common and can damage the skin. Bacteria, viruses and fungi that infect the skin are so common that they can become infectious diseases. (Samion, 2019).

The volume of waste in Mamuju Regency is increasing in line with the rate of population growth, in addition to increasing the volume of waste workers or garbage collectors will be needed. However, the safety and health of workers must also be highly considered by looking at the availability and compliance with the use of PPE or personal protective equipment used while working. One person or even all waste collectors are at risk of disease caused by waste and the conditions around it. Diseases that are closely related to waste are very broad, can be in the form of communicable diseases, non-communicable diseases can also cause fires and poisoning[3].

METHOD

The research used a cross sectional research design which was carried out in Mamuju Regency, West Sulawesi Province. The

number of samples is 124 taken using the total sampling method. This research was conducted in 2022.

RESULTS

Table 1. Distribution of Respondents' Characteristics by Age and Working period in Kab. Forward in 2022

| Characteristics | Frequency (n) =124 | Percentage (%) |
|------------------------------|--------------------|----------------|
| Age (Years) | | |
| <20 | 7 | 5.6 |
| 21-30 | 58 | 46.8 |
| 31-40 | 31 | 25.0 |
| 41-50 | 16 | 12.9 |
| 51-60 | 10 | 8.0 |
| 61-70 | 2 | 1.6 |
| Service Period (Year) | | |
| 1- 5 | 49 | 39.6 |
| 6 -10 | 37 | 29.8 |
| 11 -15 | 17 | 13.6 |
| 16 -20 | 14 | 11.2 |
| 21- 25 | 4 | 3.2 |
| 26 -30 | 1 | 0.8 |
| 31 -35 | 1 | 0.8 |
| 36 -40 | 1 | 0.8 |
| Health Complaints | | |
| Yes | 56 | 45.2 |
| Not | 68 | 54.8 |

Table 1 shows that the age group with the most respondents was the age group 21-30 years, namely 58 people (46.8%) and the age group with the least number of respondents was the age group 61-70 years, namely 2 people (1.6%). The highest number of respondents' working years were 1-5 years of service, namely 49 people (39.6%) and the fewest of respondents' working years were 26-30 years, 31-35 years and 36-40 years, respectively. each as much as 1 person (0.8%). Respondents who had complaints were 56 people (45.2%), while respondents who had no complaints were 68 people (54.8%).

Table 2. Distribution of Use of Types of Personal Protective Equipment By Respondents in Mamuju Regency in 2022

| Types of Personal Protective Equipment | Wear PPE | | | |
|--|----------|------|-----|------|
| | Yes | | Not | |
| | n | % | n | % |
| Wear protective clothing | 49 | 39.5 | 75 | 60.5 |
| Using a mask | 97 | 78.2 | 27 | 21.8 |
| Using gloves | 33 | 26.6 | 91 | 73.4 |
| Using a hat | 111 | 89.5 | 13 | 10.5 |
| Using boots | 112 | 90.3 | 12 | 9.7 |

Table 2 shows that 49 people (39.5%) used protective clothing while working, while 75 respondents (60.5%) did not use protective clothing. Respondents who used masks

while working were 97 respondents (78.2%), while those who did not use masks while working were 27 respondents (21.8%). Respondents who used gloves

while working were 33 respondents (26.6%), while those who did not use gloves were 91 respondents (73.4%). Respondents who wore hats while working were 111 respondents (89.5%), while those who did not were 13 respondents (10.5%). Respondents who used boots while working were 112 respondents (90.3%), while those who did not were 12 respondents (9.7%).

Table 3. Distribution of Types of Complaints Type by Respondents In Mamuju Regency in 2022

| Complaint Type | There are Complaints | | | |
|---------------------------------------|----------------------|------|-----|------|
| | Yes | | Not | |
| | n | % | n | % |
| Flu and cough in the last month | 21 | 16.9 | 103 | 83.1 |
| Itching in the last month | 11 | 8.9 | 113 | 91.1 |
| Fever in the last month | 18 | 14.5 | 106 | 85.5 |
| Diarrhea in the last month? | 14 | 11.3 | 110 | 88.7 |
| Shortness of breath in the past month | 3 | 2.4 | 121 | 97.6 |

Table 3 shows that 21 respondents (16.9%) had flu and cough in the past month, while 103 respondents (83.1%) did not. Respondents who complaints itching in the last month were 11 people (8.9), while respondents who did not complaints itching were 113 people (91.1%). Respondents who complaints fever in the last month were 18 people (14.5%). Meanwhile, 106 respondents (85.5%) did not have fever. Respondents who complaints diarrhea in the last month were 14 people (11.3%), while those who did not complaints diarrhea in the last month were 110 people (88.7%). Respondents who had complaints of shortness of breath in the last month were 3 people (2.4%),

Table 4. Relationship between the use of Personal Protective Equipment against Health Complaints of Respondents in Mamuju District

| Types of Personal Protective Equipment | Health Complaints | | | | P-value |
|--|-------------------|------|-----|------|---------|
| | Flu / Cough | | | | |
| Face mask | Yes | | Not | | 0.80 |
| | n | % | n | % | |
| Yes | 16 | 16.5 | 81 | 83.5 | |
| Not | 5 | 18.5 | 22 | 81.5 | |
| Shield clothing | Itch | | Not | | 0.52 |
| | n | % | n | % | |
| Yes | 7 | 14.3 | 42 | 85.7 | |
| Not | 14 | 18.7 | 61 | 81.3 | |

Table 4 shows that 16 respondents (16.5%) wore masks and complaints flu/cough, while 81 respondents (85.7%) wore masks while working but did not complaints flu/cough. Respondents who did not use masks while working and complaints flu/cough were 5 respondents (18.5%), while respondents who did not use masks while working and did not complaints flu/cough were 22 respondents (81.5%) with a p value of 0.80. Respondents who used protective clothing while working and complaints itching were 7 respondents (14.3%), while respondents who wore protective clothing while working but did not complaints itching were 42 respondents (85.7%). Respondents who did not use protective clothing while working and complaints itching were 14 respondents (18.7%),

DISCUSSION

Personal Protective Equipment (PPE) is a set of tools used by workers to protect the whole and or part of the body from possible potential hazards and work accidents. Personal protective equipment are tools or equipment that must be used to protect and maintain the safety of workers when carrying out work that has the potential for danger or risk of work accidents. The personal protective equipment (PPE) used must be in accordance with the potential hazards and risks of the work so that it effectively protects workers as their users. Research result know that the highest use of PPE for respondents is boots as much as 90.3% and the lowest is the use of gloves while working as much as 26.6%. This study is in line with the results of the study[4] Respondents with bad PPE were

most commonly found in TPA, namely 39 respondents (78%), while respondents with good PPE were at least 11 respondents (22%). In line with research[5] respondents in the good category used masks and 78% (39 people) of respondents in the bad category used masks. as many as 14% (7 people), respondents in the good category of using gloves and 86% (43 people) of respondents in the bad category of using gloves. 16% (8 people) of respondents in the good category used both shoes and 84% (42 people) of respondents in the bad category used both shoes.

Diseases caused by this waste are prone to be suffered by workers who work in contact with waste. These diseases can be categorized as occupational diseases. One of the diseases caused by waste is skin disease. Simple steps that can be taken to prevent skin diseases are using personal protective equipment such as gloves, masks, protective clothing, hats and boots. The use of this PPE must be used in full by garbage collectors because if one of the 5 PPE is not used it can pose a risk for the officers to be very susceptible to skin diseases due to contamination from the waste and therefore it is one of the groups that should use PPE to protect health and safety at work[6].

The personal protective equipment used by a person at work is useful for protecting himself from hazards at work. Thus, personal protective equipment is needed when carrying out the waste transportation process. Where the garbage collector has direct contact with the waste.[7]

Using complete PPE can protect yourself from pollutants, because PPE can prevent pollutants from entering the body. The results of this study indicate that their knowledge about PPE is good, the attitude of respondents about PPE is also good but the action in using PPE is very lacking due to a lack of understanding of the impact on health and the unavailability of PPE by the Environment and Sanitation Service causes them not to use complete PPE during work. This of course causes exposure to pollutants from motorized vehicles and dust from the

main roads, so that garbage collectors feel complaints of coughing, shortness of breath and itching after they work.

PPE is a tool provided by the company and used by workers in carrying out certain jobs to cover and minimize risks in the work area including work accidents and incidents. Compliance with the use of PPE can be influenced by individual factors of workers belonging to the characteristics of workers. The individual characteristics referred to are duration of work, level of formal education, and knowledge of PPE (Personal Protective Equipment).

Health Complaints of Garbage Transport Officers

Diseases caused by waste are very broad, which can be in the form of communicable diseases, non-communicable diseases, can also be in the form of poisoning and others. Besides that, waste can also cause an increase in vector-borne diseases, the causes of which are bacteria, fungi, worms, and chemicals (Soemirat, 2009). A garbage collector is someone who makes direct contact with garbage on a daily basis, this can cause the officer to have a high risk of diseases related to waste and the environment.

The results showed that 56 people (45.2%) had complaints. This study is in line with the results of the study[8] where the garbage collector shows complaints of skin disorders by showing the results of the appearance of itching, red spots, fungus, and contact dermatitis.

The garbage collector experienced health complaints while working as a janitor at the Mamuju District Sanitation Service. According to the results of research in the field, it was stated that health complaints were felt after they worked as garbage collectors and they had felt these complaints for more than 1 month. The more work experiences a person has, the more careful he will work against the possible negative impacts of his work. According to Achmadi (1999) work experience for a person will affect exposure to pollutant materials[9].

Skin disease is a disease of the most widespread body parts with symptoms in the form of itching and redness caused by various causes such as chemicals, sunlight, viruses, weak body immunity, microorganisms, personal hygiene factors and others (Budiono, 2011).

In line with Silalahi's research (2010) that skin cleanliness, scalp and hair hygiene, wearing of work clothing has a significant relationship with complaints of skin disorders in waste management workers. However, no significant relationship was found between nail hygiene, wearing gloves, wearing work shoes and wearing masks on complaints of skin disorders. Meanwhile, according to Perwodarminto (1990), individual characteristics are traits or characteristics that describe the actual state of the individual and distinguish it from other individuals consisting of age, history of allergies, and years of service.

If the respondent feels the need to use personal protective equipment, they must provide the PPE themselves. The actions of these respondents were influenced by knowledge and attitudes and even self-awareness, but knowledge and attitudes have not been automatically manifested in an action. In general, respondents experienced health complaints after they worked as garbage collectors, complaints that they felt when they first became garbage collectors or while they were working. The types of complaints they experience, such as coughing, diarrhea, shortness of breath and itching, are most likely caused by workers not using complete PPE while working. It is better for officers to use special equipment such as long-sleeved clothes and trousers, gloves, boots, masks and hats.[10]. Garbage collectors with more years of experience, lower and middle income levels are at higher risk[11].

CONCLUSION

There is no relationship between the use of masks while working on the incidence of flu/cough among garbage transporters in Mamuju district in 2022.

There is no relationship between the use of protective clothing when working on the incidence of itching in garbage transport workers in Mamuju district in 2022.

Declaration by Authors

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