

Description of the Behavior of using Personal Protective Equipment and Personal Hygiene on Workers who Transport Waste

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Abstract. The use of personal protective equipment and personal hygiene is an important thing that needs to be applied by garbage collectors to minimize the risk of accidents and occupational diseases. This study aimed to determine knowledge, use of PPE, supervision, and personal hygiene in waste transport works at the Manggarai Regency Environmental service. The sampling technique used total sampling with a sample of 53 subjects. The results showed that the level of knowledge was categorized as good 27 (50.09%) respondents, moderate, 20 (37.8%) respondents, and low 6 (11.3%) respondents, and the level of use of PPE was 53 (100%) respondent using in complete PPE, the level of supervision 29 (54.71%) respondents said there was no supervision, and 24 (45.28 %) respondents said there was supervision and the level of personal hygiene 47 (88.7%) respondents were categorized as good and 6 (11.3%) respondents are categorized as bad. The Regional Environmental Service of Manggarai Regency should conduct socialization related to personal protective equipment and personal hygiene and supervise PPE use.

Keywords: PPE, Personal Hygiene, Garbage Workers

Abstrak. Penggunaan alat pelindung diri dan personal hygiene merupakan hal penting yang perlu diterapkan oleh petugas pengangkut sampah untuk meminimalisir resiko kecelakaan dan penyakit akibat kerja. Tujuan penelitian yaitu mengetahui tingkat pengetahuan, penggunaan APD, pengawasan dan personal hygiene pekerja pengangkut sampah Dinas Lingkungan Hidup Daerah Kabupaten Manggarai. Teknik pengambilan sampel menggunakan total sampling dengan jumlah sampel sebanyak 53 subyek. Hasil penelitian menunjukkan bahwa tingkat pengetahuan yang dikategorikan baik 27 (50,09 %) responden, sedang 20 (37,8 %) responden dan rendah 6 (11,3 %) responden, tingkat penggunaan APD, 53 (100 %) responden menggunakan APD tidak lengkap, tingkat pengawasan 29 (54,71%) responden menyatakan tidak ada pengawasan dan 24 (45,28%) responden menyatakan ada pengawasan dan tingkat personal hygiene 47 (88,7 %) responden dikategorikan baik dan 6 (11,3 %) responden dikategori buruk. Dinas Lingkungan Hidup Daerah Kabupaten Manggarai hendaknya melakukan sosialisasi terkait penggunaan APD dan personal hygiene serta melakukan pengawasan terhadap penggunaan APD

Kata kunci: Alat Pelindung Diri, Kebersihan pribadi, Pengumpul Sampah.

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Introduction

Personal protective equipment is a tool used to protect oneself or the body against the dangers of work accidents, which can technically reduce the severity of work accidents. Personal Protective Equipment (PPE) isolated parts of all of the body from potential hazards in the workplace. Personal protective equipment does not eliminate or reduce the hazard but only reduces the amount of contact with the hazard. The behavior of using PPE is an act or a way of wearing, wearing protective equipment to protect oneself against all kinds of dangers that may occur at any time unexpectedly (Agustin et al., 2020).

One type of work that causes accidents and health problems is work related to waste. Garbage is not used, not used, not liked, or something is thrown away from human activities. Garbage is considered a source of pollution that will interfere with aesthetics if it is not managed according to proper procedures. Waste that is not handled correctly will have a significant impact on health. The influence can be in the form of diseases caused by waste, including infectious and non-communicable diseases such as skin diseases, diarrhea, cholera, typhus, and others. The cause can be bacteria, fungi, worms, and chemicals.

According to the Regulation of the Minister of Manpower and Transmigration of the Republic of Indonesia Number PER.08/MEN/VII/2010 concerning Personal Protective Equipment Article 6 paragraph 1, it is stipulated that "Workers/laborers and other people who enter the workplace are required to wear or use Personal Protective Equipment by their potential dangers and risks (Kemennakertrans, 2010). Personal Protective Equipment is an essential part for workers or laborers, one of which is the garbage collector. Garbage collectors are casual daily workers in charge of handling waste. Officers who handle waste are

susceptible to disease due to waste and work accidents because garbage collectors directly contact various kinds of garbage piled up at work. Officers who do not use Personal Protective Equipment while working can pose a reasonably high risk considering the dangers that will arise when in direct contact with waste that poses the risk of work accidents. Etianopa et al. (2017) officers a household garbage collectors are vulnerable groups who get sick or have an accident due to work. Officers who do not use complete Personal Protective Equipment (protective hat, mask, protective clothing, gloves, and boots) are vulnerable to work accidents and make it easier for various kinds of diseases to enter the body either through the hands, feet, or head (Etianopa in Rusidian, 2018). International Organization estimates that 80-85% of workers do not use PPE at work, so this can cause work accidents. Indonesia includes the behavior of using PPE, which is low at 90% compared to other Asian countries. Work accidents in Indonesia are still relatively serious (Annisa et al., 2020).

Personal hygiene is one of the things that must be applied in humans to avoid various kinds of health problems. Personal hygiene is the first step in realizing personal health because a clean body minimizes a person's risk of contracting a disease. Personal hygiene is an action taken to maintain a person's cleanliness and health for physical and psychological well-being (Tarwoto and Wartonah in Lolowang et al., 2020). Garbage collected and not handled properly will cause odors, attract flies, and produce viruses and bacteria that can carry various diseases to humans, especially workers transporting waste. Personal hygiene of garbage collectors includes skin hygiene, hair hygiene, scalp hygiene, nail hygiene, and the use of work clothes. Officers should be able to pay attention to personal hygiene, especially after finishing work, to reduce the risk of being disturbed by the work being done. This is useful to minimize the risk of skin health problems for waste transport officers because the work carried out is in direct contact with waste. To maintain skin cleanliness, healthy habits must always be considered by maintaining personal hygiene (Narajanti and Sudiasnyana, 2020).

Data from the International Labor Organization (ILO) (2018) states that 2.78 million workers die every year due to work accidents and occupational diseases. About 2.4 million of these deaths are due to occupational diseases. Meanwhile, more than 380,000 cases were caused by work accidents. There are almost a thousand times more non-fatal work accidents than fatal accidents every year. Non-fatal work accidents are estimated to affect 374 million workers annually, and many of these accidents have severe consequences on the earning capacity of workers. In addition, based on data from the Indonesian Employment Social Security Administration, the number of work accident cases in 2017 was 80,392 cases. In 2018, there were 114,148 cases, and in 2019, there were 77,295 cases. In the Province of NTT, the number of work accident cases in 2017 was 76 cases, and in 2018, there were 71 cases.

The working area of the region environmental service of Manggarai Regency (Ruteng City) is one of the areas with a tropical climate. Ruteng city tends to be included in wet areas with high rainfall and humidity levels based on the wet and dry months criteria. Rain and high humidity can cause a slippery work environment and increase the proliferation of various disease factors. It can cause accidents and work-related diseases if you don't use PPE. According to Mangkunegara in Nuraini (2020), factors affecting occupational safety and health in the work environment include temperature, lighting, work equipment, and physical conditions.

Based on the Adipura Program, Ruteng City is one of the dirtiest small cities in Indonesia due to the high volume of waste. The level of waste volume in Ruteng City Based on data from the Manggarai Regency Environmental Service (2019), the importance of waste generated in 2019 was 314,031 m³, with details per day of 824.31 m³. The transported waste is 108 m³. In 2017 it was 318,600 m³, and in 2018 it was 323,280 m³. The process of transporting waste from households and temporary waste dumps into garbage trucks is done manually by 53 freelance daily workers. The number of trucks (dump trucks) transporting garbage is as much as eight pieces, three-wheeled vehicles, five pieces, and seven pieces containers. Workers carry transportation once a day, starting from residents' houses' temporary waste

storage points and gathering points to the final disposal site. The number of waste storage (containers) is seven pieces (Regional Environmental Service of Manggarai Regency 2019). The high volume of waste can indirectly have a negative impact. The balance of the environment, health, safety, and pollution, the ion can cause various disturbances.

Based on preliminary observations made by researchers on workers who transport waste from the environmental service of the Manggarai District (Ruteng City), there were still officers who did not use personal protective equipment while working. Officers still use manual activities when transferring the waste from temporary landfills to garbage trucks. Types of garbage such as wire, iron, broken glass, and other garbage still pile up in the garbage storage area. If the garbage is difficult to collect with a broom, the workers will use their hands to move it; this has the potential to make it easier to attack diseases harm workers because they do not use personal protective equipment (protective head masks, gloves, protective clothing, and boots) when working. This study aims to describe the behavior of using personal protective equipment and personal hygiene in workers who transport waste at the environmental service office of the Manggarai Regency.

Method

Respondent

Respondents in this study were workers who transported the garbage from the Manggarai Regency Environmental Service, precisely in Ruteng City. The population in this study were all waste transport workers, totaling 53 people. The sampling technique in this study is total sampling, where the number of samples is the same as the total population.

This type of research is descriptive research, which objectively describes or provides an overview of a situation (Notoadmodjo, 2012). The method used is a survey method. The sampling is carried out in large or small groups through observation, interviews, and questionnaires, to obtain information about using

personal protective equipment (PPE) and personal hygiene in waste transport workers at the Manggarai Regency Environmental Service. In this study, the researcher describes the behavior (knowledge, use of PPE, supervision of PPE) and personal hygiene (skin hygiene, hand hygiene, and clothing hygiene) of waste transport workers at the Manggarai Regency Environmental Service in 2021.

This study uses a measuring instrument as a scale in data collection. The measuring instrument is designed in the form of a questionnaire, an observation form, and a checklist sheet. Measuring instruments were distributed to all waste transport workers at the Manggarai Regency Environmental Service to obtain data. The collected data will then be processed and analyzed descriptively. Analytical activities include scoring and tabulating.

For the knowledge variable, the correct answer is given (1), and the wrong answer is given a weight of (0). The score results from each respondent's answers to questions were then analyzed descriptively with the criteria that it was high if the number of correct answers was 76-100%, moderate if the number of correct answers was 56-75%, and low if the number of correct answers was 40-55%.

For the variable, the use of personal protective equipment, when using specific personal protective equipment for the type of work, was given a weight of (1), and if not using PPE, it was given a weight of (0). The score results were then analyzed descriptively with the criteria: good when using complete PPE (protective hats, masks, long sleeves or protective clothing, gloves, and boots) and bad if not using complete personal protective equipment.

For the supervision variable, if there is supervision on the use of personal protective equipment, it is given a weight of (1); if there is no supervision of the use of PPE is given a weight of (0). The score result was then analyzed descriptively with good criteria if the number of answers was 50% and bad if the number of responses was <50%.

Personal hygiene was measured using a questionnaire consisting of 21 questions. To obtain data on the level of personal hygiene, a score is given to the

questionnaire that has been given weight. The number of questions is 21, with a total score of 63 with the following criteria, namely for answers that are always weighted (3), sometimes weighted (2), and never weighted (1). The personal hygiene level score results are then categorized into 2, namely, the data is then analyzed descriptively with the criteria: good if the number of answers is 70% and bad if the number of answers is <70%.

Results

1. Respondent's Knowledge Level

Knowledge is the result of knowing, and this occurs after someone senses a particular object. According to positive knowledge about something, it is expected that someone will do good according to what he knows.

Table 1. *Distribution of respondents based on the level of knowledge of waste transport workers at the Manggarai Regency Environmental Service in 2021.*

Knowledge level	Number of people	Presentation (%)
hight	27	50.9%
medium	20	37.8%
Low	6	11.3%
Total	53	100%

The table above shows that the level of knowledge of the environmental service workers in the Manggarai regency area is included in the good category, where from 53 respondents, 27 respondents have a high level of knowledge with a percentage (50.9%).

2. Use of PPE

PPE is an action or activity in using a set of tools used by officers to protect all or part of their body against the possibility of accidents and occupational diseases.

Table 2. *Distribution of respondents based on the use of PPE for waste transport workers at the Manggarai Regency Environmental Service in 2021*

Use of PPE	Amount	Percentage (%)
Complete	0	0%
Incomplete	53	100 %
Total	53	100 %

The table above shows that all workers transporting waste from the Manggarai Regency Environmental Service do not use complete PPE with a percentage (100%).

3. Supervisory

The supervisory system includes all efforts to enforce regulations that must be complied with, which is one way to improve workplace safety. Supervision is carried out so that the implementation of the work is obtained efficiently (effectively) by a predetermined plan.

Table 3

Distribution of respondents based on the supervision of waste transport workers at the Manggarai Regency Environmental Service in 2021.

Supervision	Amount	Percentage
Good	24	45.28%
not enough	29	54.71%
Amount	53	100%

The table above shows that the level of supervision over PPE use for waste transporting workers at the Manggarai Regency Environmental Service is in a bad category. Of 53 respondents, 29 (54.71%) stated that there was no supervision.

4. Personal Hygiene

Personal hygiene is an action to maintain the cleanliness and health of a person for physical and psychological well-being. Hygiene of the garbage collector is very necessary. This is because the garbage collector is always in contact with the garbage. Direct contact with litter results in susceptibility to several infectious diseases from litter.

Table 4

Distribution of respondents based on personal hygiene variables for waste transport workers at the Manggarai Regency Environmental Service in 2021.

Personal Hygiene	Frequency	Percentage (%)
Good	47	88.6%
Bad	6	11.3%
Amount	53	100%

The table above shows that personal hygiene in waste transport workers at the regional Environmental Service of Manggarai Regency is categorized as good. Of 53 respondents, 47 (88.6%) included good personal hygiene.

Discussion

1. Level of knowledge on the use of PPE

According to Notoadmodjo (2010), knowledge results from “knowing,” Which occurs after people have sensed a particular object. Knowledge should be able to give the confidence to behave appropriately, but sometimes knowledge does not change proper behavior. The measure that someone knows is that he can mention, describe, define, and state.

Based on the results of the study on the level of knowledge of the waste transport workers at the Manggarai Regency Environmental Service on the use of PPE, it was found that from 53 respondents, there were 27 respondents with a presentation (50.9%) with good knowledge where officers understood the reasons for using PPE when PPE is suitable for use. Officers understand the reasons for wearing protective clothes (long sleeves). The level of knowledge categorized as moderate has 20 respondents with a percentage (of 37.8%) where workers who transport waste at the Manggarai Regency Environmental Service do not know about PPE, which functions to prevent workers from injury due to sharp objects, as well as the types of PPE that are suitable for use when working. While the level of knowledge is categorized as low, there are 6 0 people with a presentation (11.3%). The common knowledge of the respondents is due to their low education of the respondents, of which the 53 respondents, 42 (79.25%) of the respondents have the highest education level.

Knowledge is very closely related to education, where it is hoped that the person will have more comprehensive knowledge with higher education. High knowledge will influence someone to behave positively. This research is in line with a study conducted by Widiastuty & Hidayat (2019) regarding the Behavioral Description of Garbage Transport Officers in the Application of Occupational Health and Safety in Tallo District, Makassar City, which states that there are still many garbage collectors who do not know about occupational health and safety

either from terms of understanding, types, functions, and benefits. This is influenced by the low level of education and the lack of socialization and good information about PPE use.

2. PPE Use

Personal Protective Equipment (PPE) must meet the requirements, including comfortable wear, not interfering with work implementation, and providing adequate protection against various hazards encountered (Suma'mur, 2009). Personal Protective Equipment (PPE) is also a piece of equipment that must be used when working as needed to maintain the safety of the workers themselves and those around them. The best way to reduce the risk of accidents is to control the source as tightly as possible; it is necessary to provide PPE for workers.

The results showed that based on observations about the use of PPE on waste transport workers at the Manggarai Regency Environmental Service, as many as 53 respondents with a percentage (100%) all using incomplete PPE. This can be seen from observations or observations of waste transport workers who show that not all workers use protective hats, masks, protective clothing, gloves, and boots. The low awareness of workers in the use of PPE is caused by the inconvenience of workers in using PPE and the lack of availability of PPE, where workers with a long working period tend to use personal protective equipment more than workers with a short working period. The active period tends to be less distributed or get personal protective equipment from the relevant agencies.

These results indicate that the level of concern for the health and safety of workers while working is still shallow. Many hazards in the workplace can endanger the safety and health of workers, such as wet waste, broken glass, nails, iron, or other sharp objects. If workers are not aware of these conditions and do not prevent them from using PPE, accidents and occupational diseases will be a risk. The purpose of the use of PPE itself is gloves to protect hands from sharp and dirty objects at work, the use of masks to cover the nose and mouth to avoid odors and dust, and the use of protective clothing or long sleeves to prevent the heat of the

sun, smoke, bacteria and chemical substance, the use of boots to protect the feet from sharps objects as well as the use of a protective hat to protect the head from the sun and being hit by objects when carrying out the process of transferring waste to the dump truck.

This research is in line with Purba's study (2016) concerning Personal Hygiene Relationships, Use of Personal Protective Equipment, and Characteristics of Garbage Transport Officer Workers with Complaints of Skin Disorders in the Central Petisah Village in 2019, which found that the use of PPE was mainly in the bad category, as many as 25 (78.1%) because respondents do not use clothing that covers the whole body, do not use closed foot protection, do not wear gloves and do not use head protection every time they work. In addition, some officers do not use PPE according to standardization, such as boots, masks, and gloves when sorting/moving piles of garbage.

3. Supervision

According to Notoadmodjo (1991), supervision is a process of determining work measures and taking actions that can support the achievement of the expected results by the applied performance. With the supervision, it is expected to prevent as early as possible the occurrence of irregularities, obstacles, and failures and whether the regulations that have been set have been appropriately implemented to create safety and comfort in doing a job.

The study results on the level of supervision of the use of PPE in waste transport workers at the Manggarai Regency Environmental Service, totaling 53 respondents, 29 (54.71%) respondents stated that there was no supervision was categorized as lacking. Workers who work a short working period tend to say that there has never been supervision of PPE use. This is because they rarely and never even get supervision on PPE use during their work. Supervisors come when they are doing work, but the supervisor only controls the process of transporting waste and does not control PPE use. While 24 (45.28%) respondents stated that there was supervision and included in the good category. This is supported by respondents

who said there is supervision when doing work, and supervision always reminds workers to use PPE.

Based on the results of observations and interviews with several respondents on the level of supervision of PPE, it was found that there were rarely supervisors who supervised the use of PPE. Supervisors only control officers who are not serious about doing their jobs. There are no special officers at each depot or transportation route to supervise PPE use. Supervision is only carried out by the secretary of the Regional Environment Agency and the head of the waste management sector. Based on an interview with one of the cleaners, it was found that the supervisor of the use of PPE is not carried out every day or during working hours. Sometimes supervision use of personal protective equipment is carried out once a month, and sometimes, even during the month, there is no supervision of PPE use. The charge itself aims to control the workforce to improve worker discipline using PPE during work so that work behavior becomes better.

The results of this study are in line with research conducted by Nasrulzaman & Abdurrozzaq (2018) regarding Behavior Analysis, Availability, and Supervision of the Use of Personal Protective Equipment (PPE) in Furniture Company X which states that the level of supervision of the use of PPE is categorized as less (59.4%) which This is due to the lack of good leadership carried out and rarely by officers supervising the use of PPE.

According to Kurniawan in Cita Chusnul Chotimah and Roestijawaty (2019), supervision is an activity carried out by someone authorized to observe, inspect and monitor the activities carried out by the workforce while working. The low level of supervision and the absence of regulations on PPE use have resulted in many workers not using PPE, thereby facilitating the risk of harm to these workers. Supervision carried out correctly will indirectly affect the behavior of using suitable PPE and vice versa.

4. Hygiene Personal

Personal hygiene is an action to maintain one's cleanliness and health for physical and psychological well-being (Isro'in, 2012). Personal hygiene is critical because paying attention to personal hygiene can improve the health status of waste transport workers. The level of personal hygiene of a person is generally seen from a clean and tidy appearance and the efforts made by a person to maintain the cleanliness and tidiness of his body every day (Saputra in Aisyatul Widaad, 2017). In this case, in connection with the work carried out by garbage collectors who are always in contact with garbage, it is very important to implement personal hygiene maintenance.

The results of the study on personal hygiene of workers carrying waste at the Regional Environmental Service of Manggarai Regency, which amounted to 53 respondents with good categories amounted to 47 (88.6%) respondents, where respondents carried out almost all aspects of personal hygiene to maintain skin cleanliness by bathing using their towels, scrubbing the body when washing, bathing using soap, take a shower after work they have applied. In addition, to keep clothes clean, most of the respondents always change clothes every day, wash work clothes with detergent, and dry clothes in the hot sun. To keep hands and nails clean, respondents washed their hands after finishing work and washed their hands with soap. Meanwhile, the respondents in the bad category were six respondents with a percentage (of 11.3%). This is because the respondents did not cut their nails once a week, their fingers and toenails were not always clean, and the respondents did not wear clothes that absorb light while working.

Based on the results of observations or direct observations in the field about personal hygiene, a habit that waste transport workers often carry out after the process of transporting waste into the dump truck is that there are still officers who their hands do not use soap and running water, they only use storage water. After washing, the hands can dry independently without directly wiping wet hands. In addition, there are fingernails and toenails of officers who are not always clean

because there are still black marks on the nails. The clothes they use are still dirty or damaged.

This study is in line with Sulistyowati's research (2017) on the profile of personal hygiene. Using personal protective equipment (PPE) against skin disorders in waste transports workers in Mojorejo, Sukoharjo Regency, stated that of the 92 respondents, most of them 82 (91%) belonged to good personal hygiene. This is because officers carry most aspects of personal hygiene, such as cleaning the skin using soap, cutting fingernails and toenails to keep them short, and changing clothes.

Working as a household waste taker has a significant risk because of various diseases due to activities related to waste, so good personal hygiene is needed to prevent this risk from getting more significant. Illnesses that arise from these activities are caused by poor personal hygiene, including infection with parasites, bacteria, viruses, and skin diseases, so individual hygiene in the household waste collection is critical in preventing disease (Irianto in Heryanto, 2019).

Conclusion

Based on the results of the research conducted, it can be concluded that the level of knowledge of waste transport workers at the Manggarai Regency Environmental Service who has good knowledge is (50.9%), moderate is 37.8%, and low is 11.3%, the level of use of protective equipment 0 (100%) did not use complete PPE, 29 (54.71%) respondents stated that there was no supervision, and personal hygiene level was included in the good category as many as 47 (88.7%) respondents and poor category 6 (11.3%) respondents.

Suggestion

Suggestions proposed from this research are for the Manggarai Regency Environmental Service, waste transport workers at the Manggarai Regency Environmental Service, and other researchers. For the Manggarai Regency Environmental Agency Instant. It is hoped that they can provide PPE according to the number of workers and carry out periodic supervision or monitoring of workers, as well as provide counseling or information to waste transport officers about the importance of using PPE and the hazards in the workplace as well as personal hygiene of the workers themselves. For waste transport workers, the Manggarai Regency Environmental Service is expected to complete personal protective equipment and make the best use of PPE, pay more attention to personal hygiene by cutting nails once a week, cleaning fingernails, and toenails, and wearing clothes that absorb dryness while working. For other researchers, it is a learning reference with other variables regarding attitudes, actions of workers in using PPE, motivation, and factors that cause non-compliance of waste transport workers in using complete PPE.

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