Determinants of Face Mask Waste Management as a Health Behavior to Protect the Environment

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ABSTRACT

Preventing Covid-19 by wearing a face mask is a mandatory policy. The implementation of this policy is now reaping very complex problems. Where the waste generation of face masks is very large, reaching 1,662.75 tons in September 2020. Disposable face mask waste with polypropylene as the main ingredient encourages the formation of microplastics in the environment. The community managing face masks often have technical problems where, where, and when this face mask waste can be managed properly so that it does not pollute the environment. The purpose of the study was to determine the determinants of facial mask waste management as a health behavior to protect the environment. The research method is quantitative research through a descriptive online survey approach. The population in this study were all parents of Public Health Study Program students. A total research sample of 88 respondents filled out a questionnaire via Google form. Univariate data were analyzed by percentage distribution. Based on the results of the research that has been done, it is found that most parents are the general public, meaning that they are not community leaders / religious leaders, have a higher education, are female, are not health workers, have jobs that are not government employees, earn below the Regional Minimum Wage (UMR), have sufficient knowledge, have a supportive attitude, but do not have access to the unit Waste Bank and special face mask bins in the neighborhood, do not have experience in participating in face mask waste management counseling activities, have never played a role in face mask waste management counseling, and do not carry out face mask waste management.

KEYWORDS: Face Mask Waste, Waste Bank, Special Waste Bins, Attitude, Knowledge

INTRODUCTION

Preventing the spread of the Covid-19 virus is a shared responsibility. The government has established a large-scale social restriction policy or PSBB through a study, worship, and work-from-home policy. Then there are the 3M rules, namely wearing masks, maintaining distance, and washing hands. Masks are an obligation that cannot be rejected by anyone during a pandemic when doing activities outside the home. The development of the government imposes restrictions on community activities (PPKM) with masks still required to be worn when doing activities outside the home where the use of face shields without the use of masks is prohibited. The World Health Organization (WHO) revoked the Public Health Emergency of International Concern (PHEIC) status for COVID-19 on an international scale on May 5, 2023. The Indonesian government on June 21, 2023, officially decided to lift the pandemic status, meaning that Indonesia began to enter the endemic era. Endemic means a disease that affects a group of people in an area. This means that the disease exists in a certain geographical area in a population. For example, malaria, leptospirosis, dengue fever, filariasis, leprosy, hepatitis, and tuberculosis.

Face masks used by the community are special solid waste other than tissues/fabrics containing nasal and oral fluids/droplets or used gloves. Following the Circular Letter (SE) of the Minister of Environment and Forestry (LHK) Number SE.02/PSLB3/PLB.3/3/2020, the management of face mask waste generated from households is through disinfection using chlorine, bleach disinfectant. Then the mask is deformed by cutting or cutting or tearing[1].

But in reality, mask waste is a problem in the environment. Mask waste generation based on data from the Indonesian Institute of Sciences (LIPI) during the pandemic in the form of masks and personal protective equipment (PPE) reached 1,662.75 tons from March to September 2020. Medical masks or disposable face masks weighing around 0.008 kg per unit are made of polypropylene, a type of plastic. This mask can pass air better and can filter bacteria. Plastic as the main

ingredient in each of the three layers of masks is an environmental health problem where plastic can be decomposed but takes hundreds of years. Mask waste circulating in the environment has also caused water pollution, and can even cause animal deaths with several cases that have occurred, namely the death of aquatic animals due to entanglement and or eating mask waste that was thought to be food monkeys chewing on used mask straps, seagull legs caught in mask straps and dead crabs trapped in masks. And when the plastic breaks down into small particles known as microplastics.

Several studies have been conducted on the journey of face mask waste in the environment. A survey of 30 ponds in Muktagacha upazila found that 76.7% contained plastic, meaning that within 1m of the pond, there were an average of 63 pieces of macroplastics per 5m2. Of course, this microplastic is a description of the face masks that are discarded in the environment.[2]. The results showed that there is plastic waste both in the land and marine environment in the form of mask waste. This face mask waste will later break down into micro-plastics [3].

The journey of microplastics in the environment is the beginning of becoming particles with more size, namely nano plastics. In the process of breaking down plastic into microplastics, there is the absorption of toxins and organic pollutants. This means that microplastics containing toxins and organic contaminants will be very dangerous if they enter the food chain. Both fauna and humans can be threatened by the presence of microplastics. Research results from Ecological Observation and Wetland Conservation (ECOTON) even state that microplastics can be a vector for bacteria. Microplastics can also bind to pollutants that become a place to grow and breed these bacteria. Face masks can potentially serve as a medium for disease outbreaks, considering that plastic particles can spread microbes such as invasive pathogens[4].

Given the dangers of microplastics in the environment, it is necessary to manage them as a more operational form of prevention. The public needs to know the dangers of microplastics so that they can participate in efforts to manage from the source, namely the household. However, management efforts also require support from various parties so that they can be successful. Because some obstacles such as the unavailability of infrastructure that supports health behavior tend to be an obstacle. Lidiawati stated that the criteria for handling waste are still inadequate where the availability of facilities for sorting masks, collecting and transporting them[5]. Waste management still encounters many obstacles and barriers in the community. The community is willing to make efforts to sort waste, but what happens is that access to the next process does not support the efforts that the community has made[6]. Based on this, the researcher is interested in the "How is the Determinant of face mask waste management as a health behavior to protect the environment?"

MATERIAL'S AND METHODS
The research method in this research is quantitative research through a descriptive online survey approach. This research aims to find out the current situation through the description of objects or events. The population in this study were all parents of Public Health Study Program students. And the research sample was a total sampling of 88 respondents who filled out a questionnaire via Google form. The online survey conducted contains data on the characteristics of respondents and efforts to manage facial mask waste during the pandemic. The research was conducted in December 2022. Univariate data was analyzed to determine the frequency distribution.

RESULTS AND DISCUSSION
Based on the results of the research that has been carried out, the following data is obtained:

Table 1: Frequency Distribution of Parents' Characteristics

	Frequency	Percent
Gender		
Male	25	28.4
Female	63	71.6
Education		
High School / Equivalent	37	42.0
Higher Education	51	58.0
Occupation		
Civil Servants/Army/Police	29	33.0
Non civil servants/ Army/Police	59	67.0
Income		
Regional Minimum Wage	41	46.6
Below is the minimum wage	47	53.4
Role in Society		
General Public	77	87.5
Community Leaders/Religious Leaders	11	12.5

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Status in the Community		
Health Worker	32	36.4
Non-Health Workers	56	63.6

Most parents are members of the general public, not community or religious leaders, are female, are not health workers, have a higher education, have a job that is not a government employee, and have an income below the Regional Minimum Wage (UMR).

In this study, most of them were carried out by female parents, meaning that in the family the mother tends to take care of all household affairs including waste management. Where the tendency in the family is for the mother to play a role in face mask waste management. Education directly does not guarantee a person good behavior, but education will make an individual better understand something including the importance of waste management of facial masks. An individual's job will be the experience or background of an individual deciding something. Working in a government environment will require high obedience and discipline in everything so that any rules in the family or community environment will be easier to obey. Income or income obtained to fulfill daily life is another factor that encourages an individual to prioritize needs according to their abilities. If the needs that are considered important or primary needs have been met, the person concerned will move on to meet the next needs with consideration because they feel able to fulfill them. This is reinforced by the results of Kurniawati's research showing the relationship between income and employment with waste management behavior[7]. The social status of an individual in society is one of the factors that can encourage individuals to do good behavior. As a figure who is seen in society, the person concerned will maintain every decision, word, and good behavior in the hope that whatever is done or done consciously will be followed by others. The person concerned feels that a figure who is seen then must behave well. Likewise, with the status as a health worker, the speech, behavior as an individual will be trusted by the community. This is because the community feels that as a health worker, the knowledge and experience regarding health is certainly more than the general public. Health workers are very close to the community, especially in the implementation of various health programs. The community will often interact with health workers so that there is a transfer of health information and knowledge. This is what encourages people to trust the ability, knowledge, and skills of health workers. So that health programs will run well if health workers succeed in gaining public trust. Following Kurniawati's research, there is a significant relationship between knowledge, attitudes, and the role of health workers with community participation in Stop BABS triggering activities in Ciaro Village, Nagreg Health Center working area[8].

As with community and religious leaders, all decisions, attitudes, words, and behavior will be trusted, followed, and become guidelines for the community in their environment. Religious and community leaders play a role in the prevention and transmission of COVID-19 related to education, occupation, knowledge, attitudes, age, gender, and efforts to prevent transmission of COVID-19. This means that as figures or figures who are seen, religious leaders and community leaders can influence community behavior, including health behavior[9].

Table 2: Frequency Distribution of Facial Mask Waste Management

	Frequency	Percent
Face Mask Waste Management		
Implementing Mask Waste Management Practices	34	38.6
Not Implementing Mask Waste Management Practices	54	61.4
Existence of Waste Bank Units in the Neighborhood		
There is a Waste of Bank	40	45.5
No Waste Bank	48	54.5
Existence of Special Waste Bins for Face Masks in the Living Environment		
Special Waste Bins for Face Masks are Available	26	29.5
There is no special waste bin for face masks	62	70.5
Experience Participating in Waste Management Counseling on Face Masks		
Never participated in counseling activities	15	17.0
Never Participated in Extension Activities	73	83.0
Role in Mask Management Counseling		
Participant	15	17.0
None	73	83.0
Knowledge		
Good	43	48.9
Fair	45	51.1

Attitude		
Supportive	52	59.1
Not Supportive	36	40.9

Most parents have never participated in face mask waste management counseling activities, have never played a role in face mask waste management counseling, are moderately knowledgeable, have a supportive attitude, do not carry out face mask waste management, do not have access to Waste Bank units and special face mask bins in the living environment.

Most parents are knowledgeable and supportive of face mask waste management. Health behavior is the result of stimulus on predisposing factors, enabling factors, and reinforcing factors. Good knowledge can be obtained directly or indirectly, both of which are stimuli that can change behavior, especially a person's behavior. Good knowledge will encourage an individual to get a good understanding as well. With a good understanding, it will be a stimulus for good behavior change. For example, providing information on the utilization of the principles of waste management principles of Reduce, Reuse, and Recycle (3R) in eradicating mosquito nests to prevent Dengue Fever. Reusing used mineral water bottles to make ovitraps has a good impact on the environment and public health. The above is a stimulus to knowledge that can trigger behavior change[10]. So that there will be a relationship between knowledge and motivation with the implementation of 3M Plus Mosquito Nest Eradication (PSN 3M Plus)[11].

Likewise, attitudes, attitudes are still not visible in the real behavior of an individual. Given that attitudes are still in the form of internal responses or responses that are still closed. Someone supportive will not necessarily practice good behavior. Kurniawati's research states that there is a significant relationship between the perception and motivation of the community to implement the 3M Plus PSN as an effort to prevent dengue fever[12]. Perception here is also the same as attitude which is a response that is still not visible but can encourage behavior change. The results of Kurniawati's research show that there is a relationship between knowledge and attitudes with waste management behavior[7].

CONCLUSIONS

Based on the results of the research that has been carried out, the following determinants of facial mask waste management characteristics are obtained, namely, most parents are the general public, meaning that they are not community leaders / religious leaders, have high education, are female, are not health workers, have jobs that are not government employees, and earn below the Regional Minimum Wage (UMR). While the determinants of facial mask waste management based on management efforts are that most parents have sufficient knowledge, have a supportive attitude, but do not have access to the unit Waste Bank and special facial mask bins in the living environment, do not have experience in participating in facial mask waste management counseling activities, have never played a role in facial mask waste management counseling, and do not carry out facial mask waste management.

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