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ANALYSIS OF THE LEVEL OF KNOWLEDGE AND AVAILABILITY OF MASK WASTE DISPOSAL FACILITIES IN THE SANUR BEACH AREA

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ABSTRACT

The COVID-19 pandemic has created new problems for the environment as evidenced by the large number of masks, both medical masks (single-use) and non-medical masks, found in public places. The discovery of masks that are discarded in any place, especially in beach tourism areas, is something we usually encounter these days. This has a negative impact on the coastal environment, in the long run, it will be one of the causes of climate change, damage to coastal ecosystems, and ecotoxicity. Sanur Tourism Area is one of the most attractive tourist attractions for tourists both domestic and foreign tourists. The aim of this research is to contribute and provide feedback to the local government especially the Sanitation and Environmental Services Department, to be more concerned about the management of mask waste and the providing of its facilities. The design of this study is descriptive to describe the level of knowledge of Sanur Beach visitors regarding the availability of mask waste disposal facilities at Sanur Beach, it is found that beach visitors have a fairly good level of knowledge (45%) in understanding the impact of mask waste disposal on tourism at Sanur Beach. The majority of respondents stated that the mask waste disposal facilities at Sanur Beach are adequate but the correct procedure for disposing of mask waste has not been found. As many as 68% of respondents stated that there is a closed landfill at Sanur Beach for mask waste disposal. The availability of facilities to manage disposable mask waste is another important factor that influences community action in implementing good waste management. For this reason, it is necessary to coordinate with relevant agencies and Sanur village officials and community cadres to negotiate to provide shared bins at several locations on Sanur Beach specifically to accommodate mask waste only to make it easier for visitors to sort their waste and not mix their mask waste again with other domestic waste.

Keywords: facilities; knowledge; masks; rubbish bins; sanur beach

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INTRODUCTION

The COVID-19 pandemic has created new problems for the environment, as evidenced by the discovery of many masks, both medical masks (single use) and non-medical masks in public places. The discovery of masks thrown away in any place, especially in coastal tourist areas, is something we commonly encounter these days. This has a negative impact on the coastal environment, in the long term it will be one of the causes of climate change, damage to coastal ecosystems and ecotoxicity. Bali has several areas that are tourist attractions, such as the Nusa Dua area, Tanah Lot, Uluwatu, Sanur and there are still many tourist attractions in Bali. The Sanur Tourism Area is one of the most popular tourist attractions for both domestic and foreign tourists. Sanur Beach is located in Sanur Village, part of the South Denpasar sub-district. From the center of Denpasar City it is only about 3 km or from Ngurah Rai International Airport it is approximately 18 km.

This beach is to the east and south of Sanur Village, which is the edge of the Indonesian Ocean which is south of the island of Bali. Judging from the development of tourism in Sanur, which is visited by many tourists, it will certainly have a bad impact, as well as having a good impact on every business that earns income by selling on the coast of Sanur Beach. The problem at Sanur Beach currently is cleanliness. As we can see now, the coast is no longer clean, currently the beach sand and sea water are polluted with plastic waste and tree branches that are washed away by coastal currents. Cleanliness seems to be an important problem that must be addressed at Sanur Beach, apart from polluting the beach environment for the comfort of tourists. it would be so bad that it would reduce tourists' interest in coming back to Sanur Beach. Garbage pollution on Sanur Beach is considered serious because it is not difficult to find rubbish on every sand or beach area. The habit of throwing rubbish carelessly is mostly carried out by people, both those with low education and those with high education. Kartiadi, 2009 (Mulasari and Sulistyawati, 2014) stated that the behavior of littering is getting worse because of the lack of waste disposal facilities that are easily accessible to the public in public places. So that, the result of this research is to contribute and provide feedback to the local government especially the Sanitation and Environmental Services Department, to be more concerned about the management of mask waste and the providing of its facilities

METHOD

This type of research is descriptive observational with a cross-sectional approach, namely research to study the dynamics of the correlation between risk factors and effects, using an observational approach or collecting data at one time. This means that each research object is only observed once and measurements are made of the subject's character status or variables during a field survey. The research will be carried out in the Sanur Beach Area, South Denpasar District, Denpasar City. This research uses primary data where primary data is obtained from surveys and observations of visitors to the Sanur Beach tourist area, South Denpasar District, Denpasar City. The population in this study were all visitors to the Sanur Beach tourist area. Through a preliminary study, it was found that the average number of visitors to the Sanur Beach area per day was 365 visitors. The sample in research is data from a portion of the population to be studied, calculated using the Slovin formula, the total number of samples was 78 respondents. All respondents were given a questionnaire containing the characteristics or identity of the respondents, level of knowledge and mask waste disposal facilities on Sanur Beach. The collected data is then coded, calculated and tabulated. data analysis using univariate analysis. Univariate analysis is intended to see a picture of the frequency distribution of each variable.

RESULTS

Table 1.
Respondent Characteristics

Variable	Category	f	%
Gender	Man	42	54
	Woman	36	46
Age	17-25 years old	43	55
	26-35 years old	12	15
	36-45 years old	8	10
	46-55 years old	9	12
	>56 years	6	8
Education	No school	2	3
	elementary school	3	4
	Junior High School	10	13
	Senior High School	43	55
	College	20	26

Table 1, the majority of respondents are dominated by male visitors with a percentage of 54% with the teenage age group being 17-25 years old at 55%. The educational background of most respondents was at high school level, namely 43 people or 55%, followed by university level at 36%. In Table 2 it can be seen that the majority of respondents who are beach visitors at Sanur Beach have a level of knowledge in the sufficient category, namely 45.0%, and 43.3% of respondents have a good level of knowledge.

Table 2.
Frequency distribution of beach visitors according to level of knowledge

Category	f	%
Not enough	47	11.8
Enough	180	45.0
Good	173	43.3

The assessment of respondents' level of knowledge was based on beach visitors' understanding of mask waste, procedures for disposing of masks, mask composition, and the impact of mask waste on beach tourism. Researchers asked about the availability of facilities for disposing of mask waste at Sanur Beach. The data obtained is presented in Tables 3 – 6. Based on the results of the questionnaire in table 2, 67% of respondents stated that the facilities for disposing of mask waste at Sanur Beach were adequate.

Table 3.
Availability of mask waste disposal facilities at Sanur Beach

Means	f	%
Inadequate	29	37
Adequate	49	63

As many as 68% of respondents stated that there was a closed rubbish dump at Sanur Beach as a place to dispose of mask rubbish as shown in Table 3.

Table 4.
Availability of rubbish dumps with covers at Sanur Beach

Means	f	%
No	25	32
Yes	53	68

From the results of the research data, the majority of respondents, namely 77%, stated that there were no notice boards containing an appeal to throw away masks in the trash bins provided.

Table 5.
Availability of a notice board containing an appeal to dispose of masks in the rubbish bins provided

Means	f	%
No	60	77
Yes	18	23

Table 6 shows that of all respondents, 64% did not know that there was a notice board containing the correct procedures for disposing of mask waste at Sanur Beach.

Table 6.
Availability of a notice board containing the correct procedures for disposing of mask waste

Means	f	%
No	49	63
Yes	29	37

According to the Indonesian Ministry of Health (2009), age categories are divided into: toddlerhood, namely 0-5 years, childhood, 5-11 years, early adolescence 12-16 years, late adolescence 17-25 years, early adulthood 26- 35 years, late adulthood 36-45 years, early elderly 46-55 years, late elderly 56-55 years, seniors above 65 years. Table 5 shows that the age group that visits Sanur Beach the most is the late youth group, namely 17-25 years, namely 55%.

DISCUSSION

Knowledge has several levels, starting from knowing, understanding, applying, analyzing, synthesizing and evaluating so that the desired knowledge is formed. Knowledge is a very important domain for shaping a person's actions (Permatasari, 2019). The level of knowledge has an important influence on behavior in managing disposable mask waste. People with low knowledge regarding the management of disposable mask waste tend to consider waste masks as a trivial problem and do not need special treatment in disposing of them Based on observations, it was found that the majority of respondents did not have good knowledge regarding the impact of mask waste on beach tourism. Knowledge about procedures for disposing of waste masks that are not good is influenced, among other things, by the lack of information and outreach activities to visitors. This is thought to be caused by the fact that no socialization or education activities have been held regarding procedures for disposing of mask waste in tourist areas, especially in coastal areas, as well as its impact on the sustainability of the coastal ecosystem.

The use of medical masks is one of the mandatory health protocols to reduce the level of transmission of Covid-19 (Wu et al., 2020). According to WHO estimates, nearly 89 million procedural masks are needed to control COVID-19 every month (WHO, 2020). This has resulted in a drastic increase in the production of medical masks from polymeric nanofiber materials throughout the world. Medical masks can be made from different polymer materials. Such as polypropylene, polyurethane, polyacrylonitrile, polystyrene, polycarbonate, polyethylene, or polyester depending on the customer's order. These polymer materials, to be precise, have been used as raw materials for the production of various plastic products. Disposable masks consist of three layers; an inner layer which is a fibrous material, a middle layer (the melted part of the filter), and an outer layer (nonwoven, which is waterproof and colored). The main filtering layer of the mask is produced by conventionally fabricated fibers, which can be nanofibers and/or microfibers depending on the target particle size by electrospinning technology (Dutton, 2009). Although disposable medical masks are primarily made for preventive measures in the transmission of COVID-19, they must also be accompanied by skills in how to use and dispose of them, to prevent occupational hazards, and reduce negative impacts on the environment (Elacola et al., 2020; Yang et al, 2011).

Irresponsible use of medical masks will cause serious problems in the environment such as solid waste problems and microplastic pollution in marine and freshwater ecosystems (Sigala, 2020). The presence of microplastics in aquatic ecosystems, both marine and freshwater ecosystems, has a negative impact on biota, both directly and indirectly (Thevenon and Carroll, 2015; Wilcox et al., 2016). The presence of microplastics in waters is likely to increase due to increased use of masks. Researchers recently discovered that microscopic pieces of plastic in the ocean are carried aloft in sea spray, where they are transported far and wide. More than 136,000 tons of microplastics are blown ashore by sea breezes every year (Dybas, 2021). Chowdhury et al., (2021) linked a data set of face mask usage behavior and a solid waste management data set to obtain estimates of annual face mask use and plastic pollution from face masks in coastal areas in 46 countries. It is estimated that around 0.15

million tons to 0.39 million tons of plastic waste can end up in the global ocean in a year. With lower waste management facilities, the amount of plastic waste entering the sea will increase. Researchers asked about the availability of facilities for disposing of mask waste at Sanur Beach. The data obtained is presented in Tables 3–6. Table 2, 67% of respondents stated that the facilities for disposing of mask waste at Sanur Beach were adequate. As many as 68% of respondents stated that there was a closed rubbish dump at Sanur Beach as a place to dispose of mask rubbish as shown in table 3.

The majority of respondents, namely 77%, stated that there was no notice board containing an appeal to throw away masks in the rubbish bin provided. Table 6 shows that of all respondents, 64% did not know that there was a notice board containing the correct procedures for disposing of mask waste at Sanur Beach. Research conducted by Rachman and Setiawan (2019) of 91 respondents who had poor facilities were 69 respondents (75.8%) and 22 respondents (24.2%) had good facilities. In line with research conducted by Elyse (2017), the distribution of respondents who had inadequate facilities was 71 people (73.2%) and adequate facilities were 26 people (26.8%). Trash cans are one of the supporting facilities and infrastructure as well as a tool in waste management (Jumarianta, 2017). Sorting in the form of grouping and separating waste according to the type, quantity and/or nature of waste. The availability of facilities influences the behavior of a person or group of people, having adequate waste management facilities will certainly influence behavior in managing waste, which can be better or worse (Huda et al., 2020).

Successful waste management efforts are also influenced by adequate facilities (Kristian, 2019). Facilities have an important influence on behavior in managing disposable mask waste. Communities who have inadequate facilities will certainly influence their behavior in managing their waste. The same thing was also stated by WHO, namely that practice is determined by the existence of supporting sources or facilities, so that it will produce good behavior, it is necessary to have adequate facilities. The results of the questionnaire showed that 61 people (58%) of the community did not have closed and watertight trash bins to separate household waste and disposable mask waste. The availability of facilities to manage disposable mask waste is another important factor that influences community actions in implementing good waste management. If supporting facilities for implementing waste management are not available in their respective home environments, people will be unable to implement waste management even though they have the will to do so. For this reason, there is a need to coordinate with related agencies and Sanur village officials as well as community cadres to negotiate to provide shared trash bins at several locations on Sanur Beach specifically to accommodate mask waste to make it easier for visitors to sort their waste and not mix their mask waste again with domestic waste. other.

CONCLUSION

The Knowledge Analysis of Sanur Beach Visitors and the availability of facilities for disposing of mask waste at Sanur Beach, it was found that beach visitors have a fairly good level of knowledge (45%) in understanding the impact of mask waste disposal on tourism at Sanur Beach. The majority of respondents stated that the facilities for disposing of mask waste at Sanur Beach were adequate but that the correct procedures for disposing of mask waste had not been found.

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