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Hygiene and Environmental Sanitation Practices Againts The Incident of Tuberculosis In The Working Area of Kesamben Health Center Blitar District

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ABSTRACT

Tuberculosis is an infectious disease caused by Mycobacterium Tuberculosis. Indonesia ranks third in the world's tuberculosis burden (8%) after India (27%) and China (9%). The increase in the number of incidents in Indonesia continues to increase every year. Even though there are many prevention and management efforts, the spread of tuberculosis bacteria is very easy. This research aims to determine the relationship between practical hygiene. And environmental sanitation against the incidence of TB in the Kesamben Community Health Center Working Area, Blitar Regency. This research is a quantitative research with a survey and analytical observational design with a retrospective approach (case control). The population of this study was the community in the Kesamben Community Health Center working area using purposive sampling technique and found as many as 40 respondents. Data were collected using questionnaires and observation sheets, analyzed using SPSS with Logistic Regression Test with $\alpha = 0.05$. The statistical test results show that there is a relationship between hygiene practices and the incidence of TB with a sig value. 0.005 and there is no relationship between environmental sanitation and the incidence of TB with a sig value. 0.121. This is because the habit of practicing cleanliness is not being used, especially the use of masks which are considered to interfere with breathing when carrying out activities such as work and other activities. It is hoped that future research can develop research related to the incidence of TB using other variables, for example health services, knowledge, PMO and more variables.

Keywords: Hygiene Practice, Environmental sanitation, Incident of Tuberculosis

INTRODUCE

Tuberculosis is a cause of death, especially in developing countries throughout the world. This disease is spread throughout the world, and Indonesia is known as one of the largest countries with tuberculosis sufferers in the world. This disease attacks the lungs (Ahmadi, 2011)

In 2019, Indonesia was in second place as the highest number of tuberculosis sufferers. In 2019, the incidence of tuberculosis in Indonesia was 543,874 cases. The highest case reporting provinces with large populations include West Java, East Java and Central Java, which together account for 45% of the total number of tuberculosis cases in Indonesia (Ministry of Health, 2020)

East Java is in 2nd place based on the achievement of indicators for finding BTA+ TB sufferers in Indonesia in 2018. The number of BTA+ case findings in East Java was 27,193 sufferers or a case detection rate (CDR) of 50% (Dinkes, 2019). According to East Java Riskesdas (2018), Blitar is in 21st place with 0.15%.

Data found at the Kesamben Community Health Center, Bitar Regency through a preliminary study from 21 to 25 October 2019 showed that 11 new cases were found in 2017, 16 new cases in 2018, and in the third quarter of 2019 15 new cases were found BTA Positive.

The cause of pulmonary tuberculosis is the bacterium Mycobacterium Tuberculosis, which is rod-shaped and has special properties, namely resistance to acid in staining. Therefore it is also called acid-fast bacilli (BTA). Mycobacterium tuberculosis will die quickly in direct sunlight, but can survive for several hours in dark and damp places. Therefore, in the body's tissues, these germs can be dormant (sleeping), sleeping for a long time for several years (Ministry of Health, 2015).

The results of the study showed that the physical environment of the house, namely house ventilation (p=0.018), lighting (p=0.044), humidity (p=0.044), residential density (p=0.007), had a significant relationship with the incidence of pulmonary TB in the Puskesmas work area. Medan Tembung District Mandala in 2017 (Simamarta, 2017).

A person's knowledge of pulmonary TB will have an impact on that person's attitude regarding how to protect themselves from contracting pulmonary TB. This attitude will influence a person's behavior in order to avoid pulmonary TB (Notoatmodjo, Health Promotion and Behavioral Sciences, 2007). Hygiene practices are needed to protect oneself to prevent transmission of disease caused by tuberculosis microbacteria which spreads through phlegm splashes and spreads in the air.

From the description above, researchers are interested in carrying out a research proposal in formulating the title "Environmental Hygiene and Sanitation Practices on the Incidence of TB in the Working Area of the Kesamben Community Health Center, Blitar Regency".

METHODS

This research is a quantitative research with a survey and analytical observational design with a retrospective approach (case control). The population in this study was all residents in the working area of the Kesamben Community Health Center, Blitar Regency. The total sample for this research was 40 respondents, 20 respondents as cases and 20 respondents as controls. Sampling used Purposive Sampling technique. Data collection uses questionnaires and observation sheets. Before the questionnaire was given to respondents, it was first submitted to 32 TB sufferers and non-TB sufferers to test validity and reliability. Analysis using SPSS with Logistic Regression Test with $\alpha = 0.005$..

RESULT

Characteristic of respondents

Table 1. General Characteristic

Characteristic	F	%
Sex		
Male	24	60%
Female	16	10%
Age		
<26	3	7%
26-45	14	35%
>45	23	58%

Based on the table above, it is found that the gender characteristics of the majority of respondents are male, 24 respondents (60%) and a small portion are female, 16 respondents (10%). Age of Respondents Some 23 respondents (58%) were >45 years old, 14 respondents

aged 26-45 years (35%), and 3 respondents aged >26 (7%).

Characteristic Of Variables

Table 2. Variable of Hygiene Practices

Hygiene Practices	F	%
Poor	4	10%
Less	20	50%
Descent	14	35%
Good	2	5%
Total	**40**	**100%**

Based on the Hygiene Practice Variable Characteristics table, most of them practice hygiene Less than 20 respondents (20%), 14 respondents (20%) practice descent hygiene, 4 respondents (10%) practice poor hygiene, and 2 respondents practice good hygiene.

Table 3 Environmental Sanitation

Environmental Sanitation	F	%
Poor	2	5%
Less	24	60%
Descent	9	22,50%
Good	5	12,50%
Total	**40**	**100%**

From table 3 Environmental Sanitation, it is found that the majority of respondents have poor environmental sanitation, 24 respondents (60%), 9 respondents (22.5%) environmental sanitation is descent, 5 respondents (12.5) environmental sanitation is good, 2 respondents (5%) Poor environmental sanitation.

Cross Tabulation of Variables

Table 4 Cross Tabulation Incident of TBC with Age.

Age	Incident of TBC				Total	
	Negatif		Positif			
	F	%	F	%	F	%
<26	0	0%	3	7,5%	3	7,5%
26 - 45	7	17,5%	7	17,5%	14	35%
>45	13	32,5%	10	25%	23	57,5%
Total	**20**	**50%**	**20**	**50%**	**40**	**100%**

From table 4, it can be seen that the most frequent TB incidents were found in the negative category, 13 respondents (32.5%) were >45 years old and the least were 7 respondents (17.5%) aged 26 - 45 years. The TB incidents were in the most positive category. Most were found to be aged >45 years as many as 10 respondents (25%), and at least aged <26 as many as 3 respondents (7.5%).

Tabel 5. Cross Tabulation of Hygiene Practices with Age.

Age	Praktik Hygiene								Total	
	Poor		Less		Descent		Good			
	F	%	F	%	F	%	F	%	F	%
<26	0	0%	1	2,5%	2	5%	0	0%	3	7%
26 - 45	1	2,50%	7	17,5%	6	15%	0	0%	14	35%
>45	3	7,50%	12	30%	6	15%	2	5%	23	57,50%
Total	4	10%	20	50%	14	35%	2	5%	40	100%

In the table above, it is found that the cross-tabulation of hygiene practices and age is at age >45 years with 12 respondents (30%) having poor hygiene practices, while the least cross-tabulation of hygiene practices and age is at age <26 and with insufficient hygiene practices and age. 26 – 45 years old with Bad Hygiene Practices as many as 1 respondent (2.5%)

Table 6. Cross Tabulation of Sex and Age

Age	Sanitasi Lingkungan								Total	
	Poor		Less		Descent		Good			
	F	%	F	%	F	%	F	%	F	%
<26	0	0%	2	5%	0	0%	1	2,5%	3	7,5%
26 - 45	0	0%	7	17,5%	5	12,5%	2	5%	14	35%
>45	2	5%	15	37,5%	4	10	2	5%	23	57,5%
Total	2	5%	24	60%	9	22,5%	5	12,5%	40	100%

From table 6, it can be seen that the most cross-tabulations of environmental sanitation with age were at >45 years old, 37 respondents (37.5%) with poor environmental sanitation, while the least cross-tabulations of environmental sanitation with age were 1 for <26 years old. respondents (2.5%) with good environmental sanitation.

Table 7 Cross Tabulation of Incident TB with Sex.

Sex	TB Incident				Total	
	Negatif		Positif			
	F	%	F	%	F	%
Male	11	27,5%	13	32,5%	24	60%
Female	9	22,5%	7	17,5%	16	40%
Total	20	50%	20	50%	40	100%

From the table above, it can be seen that the highest incidence of TB in the negative category was male, 11 respondents (27.5%) and the least female, 9 respondents (22.5%). The highest incidence of TB in the positive category was found to be male, 13 respondents (32.5%) and the fewest to be female, 7 respondents (17.5%).

Table 8 Cross Tabulation Of Hygiene Practices and Sex.

Sex	Hygiene Practices								Total	
	Poor		Less		Descent		Good			
	F	%	F	%	F	%	F	%	F	%
Male	4	10%	14	35%	6	15%	0	0%	24	6%
Female	0	0%	6	15%	8	20%	2	5%	16	40%
Total	4	10%	20	50%	14	35%	2	5%	40	100%

In the table above, it is found that male gender is most often found with poor hygiene practices, 14 respondents (35%) and the least number of poor hygiene practices, 4 respondents (10%). Gender: Female, at most 8 respondents (20%) with adequate hygiene practices, and at least 2 respondents (5%) with good hygiene practices.

Table 9 Cross Tabulation Environmental Sanitation and Sex.

Age	Environmental Sanitation								Total	
	Poor		Less		Descent		Good			
	F	%	F	%	F	%	F	%	F	%
Male	2	5%	13	32,5%	7	17,5%	2	5%	24	60%
Female	0	0%	11	27,5%	2	5%	3	7,5%	16	40%
Total	2	5%	24	60%	9	22,5%	5	12,5%	40	100%

From the table above, it is found that the male gender is most often found with poor environmental sanitation with 13 respondents (32.5%) and at least 2 respondents (5%) with poor or lacking environmental sanitation. The female gender was most often found in poor environmental sanitation with 11 respondents (27.5%), and the least with poor environmental sanitation was 2 respondents (27.5%).

Tabel 10 Cross Tabulation of TB Incident and Hygiene Practices.

Incident TBC	Hygiene Practices								Total	
	Poor		Less		Descent		Good			
	F	%	F	%	F	%	F	%	F	%
negative	0	0.	8	20.	10	25.	2	5.	20	50.
positive	4	10.	12	30.	4	10.	0	0.	20	50.
total	4	10.	20	50.	14	35.	2	5.	40	100

From the table above, it was found that the incidence of TB in the Negative category was most often found to be practicing adequate hygiene, 10 respondents (25%) and the least was practicing good hygiene, 2 respondents (5%). The incidence of TB in the Positive category was most often found practicing poor hygiene, 12 respondents (30%) and the least practicing descent hygiene, 4 respondents (10%).

Table 11 Incident of Tuberculosis and Environmental Sanitation

Incidenct of TBC	Environmental Sanitation								total	
	poor		less		descent		good			
	F	%	F	%	F	%	F	%	F	%
negative	1	2,5	13	32,5	4	10	2	5	20	50
positive	1	2,5	11	27,5	5	12,5	3	8	20	50
total	2	5	24	60	9	22,5	5	12,5	40	100

From the table above, it is found that the incidence of TB in the negative category was most often found with poor environmental sanitation, 13 respondents (32%), and the least with poor environmental sanitation, 1 respondent (2.5%). The highest incidence of TB in the positive category was found with poor environmental sanitation, 11 respondents (27.5%), and the least with poor environmental sanitation, 1 respondent (2.5%).

Table 12 Cross Tabulation of Hygiene Practices with Environmental Sanitation

Hygiene Practices	Environmental Sanitation								Total	
	poor		less		descent		good			
	F	%	F	%	F	%	F	%	F	%
poor	1	2,5%	3	7,5%	0	0%	0	0%	4	10%
less	1	2,5%	12	30%	5	12%	2	5%	20	50%
descent	0	0,%	7	17%	4	10%	3	7,5%	14	35%
good	0	0,%	2	5%	0	0%	0	0%	2	5%
total	2	5,%	24	60%	9	22,5%	5	12,5%	40	100%

In the table above, it is found that most of the hygiene practices in the environmental sanitation are lacking for 24 respondents (60%). Most often it was found from the cross tabulation results that hygiene practices and environmental sanitation were lacking by 12 respondents (30%).

Table 13 Result of Statistic Data Analysis of Variables

Variable	simultan	R2	sig	Exp (B)
Hygiene Practices	0,819	0,374	0,05	0,122
Environmental Sanitation			0,121	2,286
Hosmer sig		**0,819**		

In the table above, it is found that the research model is acceptable and hypothesis testing can be carried out, because there is a significant difference between the model and the questionnaire or observation values, where the sig value on the Hosmer test is 0.819 > 0.05, this shows that the data used is fit. The ability of the independent variable to explain the dependent variable is 37%, this shows that there are 63% other factors outside the research that explain the dependent variable.

Environmental hygiene and sanitation practices do not have a significant relationship with the incidence of TB where the sig value is 0.082 > 0.05, so H0 is accepted. Based on the results of each variable, the only relationship between Hygiene Practices is sig. 0.005, Meanwhile for Environmental Sanitation there is no relationship. The magnitude of the

relationship is shown by the OR value. The Hygiene Practices variable with an OR of 0.122 means that respondents with poor hygiene practices are more closely related to the incidence of TB by 0.122 times than respondents with good hygiene practices.

DISCUSSION

A. Hygiene Practices of Society in the working area of Kesamben Health Center

A person's behavior or habits in carrying out daily life related to personal hygiene can also affect health. Personal Hygiene is a person's effort to maintain cleanliness and health to obtain physical and psychological well-being (Wartonah, 2010).

Based on the results of this research, it was found that the majority of hygiene practices were mostly less than 20 respondents (20%), 14 respondents (20%) practiced hygiene, only 4 respondents (10%) practiced poor hygiene, and 2 respondents practiced good hygiene. Based on these results, it can be explained that the majority of respondents practice poor hygiene.

Cleanliness is the first effort to maintain individual cleanliness. A person's or community's behavior regarding health is determined by the level of education, knowledge, attitudes, and culture of the person or community concerned. Apart from that, the availability of facilities and the behavior of health workers will also support and strengthen the formation of behavior (Notoatmodjo, 2011).

Age > 45 years with less hygiene practices was found to be more than 12 respondents (30%). Age > 45 is the age of entering old age, as the elderly begin to decline in interest in personal hygiene, on the other hand, a decline in physical condition and the habits adopted by the family can influence the practice of hygiene.

Male gender with deficient hygiene practices in this research was found to be 14 respondents (35%). Too many activities outside the home and hygiene practices were often ignored, because it hampered the activities they would carry out. This makes the hygiene practices applied to the male gender less.

B. Community Environmental Sanitation in the Kesamben Public Health Center Working Area

Environmental sanitation is the health status of an environment which includes housing, disposal of rubbish and waste, provision of clean water and so on" (Mundiatun, 2015). This research found that of the 40 respondents, most of the Environmental Sanitation was lacking with 24 respondents (60%).

(Mundiatun, 2015) "Poor sanitation allows various infectious diseases to continue to spread and has a negative impact on the health of living creatures in the environment." The results of cross tabulation in this study showed that there was more Environmental Sanitation with Age >45 years, 37 respondents (37.5%) were in the Poor category, while the least Environmental Sanitation found with Age <26 years was 1 respondent (2.5%) in the Good category.

Sanitation is a health effort by maintaining and protecting the cleanliness of the environment in housing, offices and public places. Environmental cleanliness is the main factor that influences the transmission or spread of a disease. The better the sanitation at home, the smaller the spread of disease and vice versa (Ministry of Health of the Republic of Indonesia, 2008).

C. Incidence of TB in the Kesamben Public Health Center Working Area

The incidence of TB is the amount of direct transmission caused by the TB germ, namely Mycobacterium tuberculosis. The results of research conducted on 40 respondents with TB (positive) were 20 respondents (50%) as cases and 20 respondents (50%) who were not TB sufferers (negative) were controls.

The majority of TB incidents aged >45 years, 35.5%, were in the positive category

and the most negative TB incidents were those aged >45 years, 25%. In this case it can be seen that the incidence of negative TB is still more numerous and there is a risk of contracting TB disease. In research (Nadhiroh, 2013) it was found that people aged 52 - 60 years were more likely because at that age the desire for better change will start to decline accompanied by immunity at that age also starting to decline.

The incidence of TB in the Kesamben Health Center work area was mostly male, 13 respondents (35.5%) in the positive category and the least female, 7 respondents (17.5%) in the negative category. Tuberculosis does not attack sufferers of a certain gender, but many studies show that males are more common than females. This was also found in % research. Environmental sanitation hygiene practices with the incidence of tuberculosis, it was found that 56.7% of TB cases occurred in men, and 43.3% of TB cases occurred in women (Pertiwi, 2012).

D. The relationship between hygiene practices and environmental sanitation on the incidence of TB

In this research it was found that the sig. 0.05. These results show that there is a relationship between hygiene practices and the incidence of TB in the Kesamben Community Health Center working area, Blitar Regency with a risk of transmission of 0.122. Tuberculosis is transmitted through the air when a sufferer coughs, sneezes or talks without covering their mouth so that TB bacteria can spread through the air and be inhaled by other humans.

The practice of hygiene is actually known to TB sufferers, but many people do not practice it. Rarely wear a mask because they can't fit and breathing is disturbed when wearing a mask. Throwing phlegm out of place. Most respondents threw their phlegm onto the ground without covering it and some threw their phlegm into the river. This condition can worsen the transmission of TB bacteria, where TB bacteria can escape through splashes of phlegm released by the sufferer.

In research (Pertiwi, 2012), the habit of not covering the mouth when coughing (56.7%), and the habit of expelling inappropriate phlegm (86.7%). In this study, the incidence of positive TB with poor hygiene practices was 30% and the lowest number of hygiene practices was the incidence of negative TB in the good category at 5%.

The results of statistical tests carried out to determine the relationship between environmental sanitation and the incidence of TB showed that the sig value was 0.121 > 0.05, which means there is no relationship between the incidence of TB and environmental sanitation.

In this case, there is still a lot of lack of environmental sanitation in TB incidents in the work area of the Community Health Center. TB incidents in the negative category were mostly found with poor environmental sanitation, 13 respondents (32%) and TB incidents in the positive category were mostly found with poor environmental sanitation, 11 respondents (27.5%).

Transmission of TB can be exacerbated by humid environmental conditions, the sun does not shine, air circulation is not smooth, and residential density. However, in this study, the environmental sanitation of positive TB sufferers was found to be less likely to be in the Poor category compared to negative TB sufferers.

The relationship between hygiene practices and environmental sanitation on the incidence of TB in the Kesamben Community Health Center work area can be seen from the statistical test results which show that the Hosmer value is sig. 0.819 < 0.05. These results can be concluded that there is no relationship between hygiene practices and environmental sanitation on the incidence of TB in the Kesamben Community Health Center working area, Blitar Regency or accept H0.

CONCLUSION

Based on the results of the Logistic Regression test, it was found that Hygiene Practices on the incidence of TB were sig. 0.05 and Environmental Sanitation on TB Incidence sig. 0.121. The results obtained can be interpreted to mean that there is an influence between Hygiene Practices and the incidence of TB, while Environmental Sanitation has no effect on the incidence of TB in the Kesamben Public Health Center Working Area, Blitar Regency. Hygiene practices are influential because implementing personal hygiene is very important to maintain the health of the environment and oneself.

Environmental sanitation does not affect the incidence of TB because for some respondents the floor of the house is watertight so the room is not damp, the air ventilation is sufficient, there are windows to maximize sunlight entering and they are opened every morning which can kill or prevent the proliferation of TB bacteria from entering the house. . The window, which provides access to sunlight, is always opened in the morning. Air exchange must be circulating at all times so that bacteria that breed in the house can come out of the house's air vents.

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