Health Deteminants Of Home Physical Condition Factors Incidence Of Pulmonary Tb In The Nganjuk Community Helath Center Working Area 2020

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ABSTRACT

Tuberculosis is a direct infectious disease caused by TB germs (Mycobacterium tuberculosis). A house that does not meet health requirements is a risk factor for pulmonary tuberculosis. This study aims to analyze factors in the physical condition of houses on the incidence of pulmonary TB in the Nganjuk health center working area in 2020. This research is a type of analytical survey research with a case control study design. The population in this study was pulmonary TB sufferers and non-pulmonary TB sufferers, totaling 82 people. The sampling technique uses total sampling. Data analysis uses logistic regression analysis. The results of the research show that the physical condition of the house that influences the incidence of TB in the Nganjuk Community Health Center working area is ventilation with a significant value of 0.002 with an R odd = 1.424.

Keywords: Lung Tuberculosis, Physical Condition.

INTRODUCTION

Tuberculosis is an infectious disease that is directly caused by the bacterium Mycobaterium tuberculosis. Around a third of the world's population has been infected by Mycobaterium tuberculosis, there are 9 million pulmonary tuberculosis patients and 3 million deaths due to pulmonary tuberculosis throughout the world. It is estimated that 95% of pulmonary tuberculosis cases and 98% of pulmonary tuberculosis deaths in the world occur in developing countries (Ministry of Health, 2019).

Tuberculosis is an infectious disease with the highest number of people contracting this disease in India, namely 1.5 million people, then in second place is China, which reaches 2 million people (Alsagaff & Mukty, 2010). Meanwhile, Indonesia ranks 4th for morbidity rates, while as a cause of death it ranks 5th, affecting most of the productive age group from weak socio-economic groups (Djojodibroto, 2015). Tuberculosis (TB) is still the main cause of morbidity and mortality in the world, but lack of priority in its management can have negative consequences.

Currently, Indonesia is the country with the fourth highest TB burden in the world. However, TB sufferers still face challenges in getting treatment and care. New cases of TB reach 842,000 per year and this is estimated to only reach 46 percent of the total estimated cases. In 2018, East Java Province ranked second in Indonesia in terms of the number of tuberculosis sufferers discovered, namely 33.99%, in Nganjuk Regency there were 4.9% (PROFIL_KES_ PROVINSI_2018/15_Jatim_ 2018), the discovery of pulmonary TB sufferers at the Nganjuk Community Lung Health Center 2 reached 1,897 cases in 2018 (BBKPM Nganjuk data) while in the Nganjuk Community Health Center working area there were 41 people.

Risk factors that contribute to the incidence of pulmonary tuberculosis are gender, age, nutritional status, socio-economic conditions, and the environment (residential density, ventilation, humidity, temperature, type of house floor, type of house walls, and lighting) (Alsagaff & Mukty, 2010). According to research results (Fatimah, 2010), it was concluded that there was a relationship between the variables of room occupancy density, temperature, humidity, lighting, type of house floor and type of house walls and the incidence of pulmonary tuberculosis.

Based on observations of the physical condition of houses in the Nganjuk Community Health Center working area and in the homes of pulmonary tuberculosis sufferers, in general they do not meet health requirements, seen from the lack of ventilation in the houses and the ventilation being closed tightly with clear plastic resulting in a lack of air circulation entering the house, lighting. Natural conditions are lacking because the windows of the house are not large enough and are closed tightly with clear plastic so that there is not enough sunlight coming in and the situation inside the house tends to be damp and dark, the residential density exceeds the capacity of the house with bedrooms and is used by more than 2 people, the floor of the house is still impermeable to water, soil and moisture.

The walls of the house are still boards and some are permanent but not yet plastered. The physical condition of the house plays a very important role in the spread of pulmonary tuberculosis bacteria to healthy people. The source of transmission of this disease is through the patient's saliva or phlegm which contains Mycobacterium tuberculosis. When a sufferer coughs or sneezes droplets of saliva fly into the air and will live for several hours in a damp and low-light room (Alsagaff & Mukty, 2010).

Disease prevention and breaking the chain of transmission need to be done at the family level. Family members are subjects who are easily infected because they live with TB sufferers and this is an easy way of transmission, especially in crowded environments and unsuitable living conditions, especially in families with low economic conditions and poor physical conditions of the house. The spread of pulmonary tuberculosis bacteria will attack healthy people more quickly if they are in a damp, dark and low-light house (Ministry of Health, 2011).

From the description above as the basis for this research, the researcher raised the title about Health Determinants of Home Physical Condition Factors in the Incidence of Pulmonary TB in the Working Area of the Nganjuk Community Health Center in 2020 and used it as input for actions to control and eradicate pulmonary Tuberculosis in Nganjuk Regency.

METHODS

This research is a type of analytical survey research with a case control study design. The population in this study was pulmonary TB sufferers and non-pulmonary TB sufferers, totaling 82 people. The sampling technique uses total sampling. Data analysis uses logistic regression analysis.

RESULT

Description of Research Location

Nganjuk District is one of the sub-districts in Nganjuk Regency and is also the center of Nganjuk Regency government which is located in the capital of Nganjuk Regency. Nganjuk District is located in the lowlands with an altitude of ± 56 meters above sea level with an area of 2258.67 Ha.

In 2018, based on population registration results according to BPS, the population of Nganjuk sub-district was 66,470 people with a composition of 32,336 men and 34,134 women with a sex ratio of 94.73. With an area of 22,586 Ha, the average population density level in Nganjuk District is 2,942.57 people per Ha.

Luas	22,586 km²
Kepadatan	2.942,97 jiwa/km²
Desa/kelurahan	2 Desa 13 kelurahan

The territorial boundaries of Nganjuk District, the North of Rejoso and Gondang Districts, the East of Sukomoro District, the South of Loceret and Berbek Districts and the West, Berbek and Bagor Districts.

Demographic Conditions

Job Sector Table

No	Sektor Pekerjaan	Prosentase
1	Pertanian sebesar	20,98%
2	Pertambangan dan penggalian	1,54%,
3	Industri sebesar	8,14%,
4	Listrik gas dan air minum	0,07%,
5	Konstruksi	4,52%,
6	Perdagangan, rumah tangga dan jasa akomodasi sebesar	51,73%,
7	Transportasi, pergudangan dan komunikasi	2,49%,
8	Lembaga keuangan, real estate, usaha persewaan dan jasa perusahaan	0,57%,
9	Jasa kemasyarakatan, sosial dan perseorangan	9,95%.

Sumber : www.nganjuk.go.id

Based on this table, most of the people of Nganjuk district work in the fields of trade, household and accommodation services amounting to
Table of the percentage of education in the Nganjuk district community

No	Jenjang Pendidikan	Prosentase
1	Berijasah SD/SDLB,	15,4%,
2	Berijasah Madrasah Ibtidaiyah ada	1,2%,
3	Berijasah SMP/MPLB ada	32,5%
4	Berijasah Madrasah Tsanawiyah	2,8%,
5	Berijasah SMU/SMULB ada	7,2%,
6	Berijasah Aliyah	2,2%,
7	Berijasah SMK	7,4%,
8	Berijasah Perguruan Tinggi (D.1 samapai S.3)	3,4%.
9	Tidak memiliki ijasah.	27,7%

Based on education, most of the residents of Nganjuk District have junior high school education as much as 32.5%

Respondents Characters

Respondent age frequency distribution table

No	Usia Tahun	Kelompok Kontrol		Kelompok Kasus	
		Frekuensi	Persentase	Frekuensi	Persentase
1	5-11	1	2,44%	2	4,88%
2	12-16	0	0,00%	0	0,00%
3	17-25	4	9,76%	3	7,32%
4	26-35	13	31,71%	13	31,71%
5	36-45	2	4,88%	2	4,88%
6	46-55	7	17,07%	7	17,07%
7	55-65	10	24,39%	10	24,39%
8	> 65	4	9,76%	4	9,76%
	Jumlah	41	100,00%	41	100,00%

The age frequency distribution of the respondents was mostly 26-35 years old, namely 13 respondents, 31.71% in both the control group and the case group.

Frequency distribution table of respondents' education

No	Pendidian	Kelompok Kontrol		Kelompok Kasus	
		Frekuensi	Persentase	Frekuensi	Persentase
1	Belum SD	1	2,44%	2	4,88%
2	SD	15	36,59%	16	39,02%
3	SMP	15	36,59%	14	34,15%
4	SMA	10	24,39%	9	21,95%
5	Akademi	0	0,00%	0	0,00%
6	S1	0	0,00%	0	0,00%
	Jumlah	41	100,00%	41	100,00%

Frequency distribution of respondents' education in the control group had the most elementary and middle school education, 15 respondents each, 36.59%, while in the case group, the most had elementary school education, 16 respondents, 39.02%.

Frequency distribution table of respondents' occupations

No	Pekerjaan	Kelompok Kontrol		Kelompok Kasus	
		Frekuensi	Persentase	Frekuensi	Persentase
1	IRT	3	7,32%	3	7,32%
2	Karyawan Swasta	7	17,07%	6	14,63%
3	Pedagang	6	14,63%	6	14,63%
4	Pelajar	1	2,44%	2	4,88%
5	Pensiunan	1	2,44%	1	2,44%
6	Petani	11	26,83%	10	24,39%
7	Swasta	0	0,00%	2	4,88%
8	Wiraswasta	12	29,27%	11	26,83%
	Jumlah	41	100,00%	41	100,00%

Frequency distribution of respondents' work, most respondents in the control group worked as self-employed, there were 12 respondents, 29.27% and in the case group, most respondents worked as self-employed, there were 11 respondents, 26.83%.

Variable Characteristics

Frequency Distribution Table of Physical Conditions in the Control Group

No	Variabel	Memenuhi Syarat		Tidak Memenuhi Syarat		Jumlah	
		F	%	F	%	F	%
1	Jendela	24	58,54%	17	41,46%	41	100,00%
2	Ventilasi	27	65,85%	14	34,15%	41	100,00%
3	Lantai	34	82,93%	7	17,07%	41	100,00%
4	Dinding	35	85,37%	6	14,63%	41	100,00%
5	Langit-langit	34	82,93%	7	17,07%	41	100,00%
6	Pencahayaan	24	58,54%	17	41,46%	41	100,00%
7	Lubang Asap dapur	24	58,54%	17	41,46%	41	100,00%
8	Kelembaban	31	75,61%	10	24,39%	41	100,00%
9	Suhu	26	63,41%	15	36,59%	41	100,00%
10	Kepadatan Hunian	32	78,05%	9	21,95%	41	100,00%
	rata-rata	29,1	70,98%	11,9	29,02%	41	100%

The physical condition that meets the requirements the most is 35 respondents, the ones that do not meet the requirements the most are Windows, Lighting and Kitchen Holes, there are 24 respondents 41.46%

Table of frequency distribution of physical conditions of houses in the case group

No	Variabel	Memenuhi Syarat		Tidak Memenuhi Syarat		Jumlah	
		F	%	F	%	F	%
1	Jendela	17	41,46%	24	58,54%	41	100,00%
2	Ventilasi	15	36,59%	26	63,41%	41	100,00%
3	Lantai	27	65,85%	14	34,15%	41	100,00%
4	Dinding	27	65,85%	14	34,15%	41	100,00%
5	Langit-langit	27	65,85%	14	34,15%	41	100,00%
6	Pencahayaan	16	39,02%	25	60,98%	41	100,00%
7	Lubang Asap dapur	16	39,02%	25	60,98%	41	100,00%
8	Kelembaban	26	63,41%	15	36,59%	41	100,00%
9	Suhu	19	46,34%	22	53,66%	41	100,00%
10	Kepadatan Hunian	23	56,10%	18	43,90%	41	100,00%
	Rata-rata	21,3	51,95%	19,7	48,05%	41	100,00%

The physical condition of the house in the case group that meets the requirements the most is walls, floors, ceilings, there are 27 respondents 65.85% and the ones that meet the requirements the least are lighting, kitchen smoke holes, there are 16 respondents 39.02%

Cross Tabulation

Cross-tabulation table of physical condition of windows with Tuberculosis Incidence

Kejadian TB	Kelompok Kontrol						Kelompok Kasus					
	Jendela				Total		Jendela				Total	
	TMS		MS				TMS		MS			
	f	%	f	%	F	%	F	%	F	%	f	%
TB	1	2,44%	1	2,44%	2	4,88%	24	58,54%	15	36,59%	39	95,12%
Non TB	16	39,02%	23	56,10%	39	95,12%	0	0,00%	2	4,88%	2	4,88%
Total	17	41,46%	24	58,54%	41	100%	24	58,54%	17	41,46%	41	100%

The results of the cross tabulation showed that in the control group the house windows met the requirements and there was no incidence of TB, there were 23 respondents, 56.10%, while in the case group, the physical condition of the windows did not meet the requirements and there was an incidence of TB in 24 houses (58.4%).

Cross tabulation table of physical conditions of ventilation with the incidence of Tuberculosis

Kejadian TB	Kelompok Kontrol						Kelompok Kasus					
	Ventilasi				Total		Ventilasi				Total	
	TMS		MS				TMS		MS			
	f	%	f	%	f	%	f	%	f	%	F	%
TB	1	2,44%	1	2,44%	2	4,88%	26	63,41%	13	31,71%	39	95,12%
Non TB	13	31,71%	26	63,41%	39	95,12%	0	0,00%	2	4,88%	2	4,88%
Total	14	34,15%	27	65,85%	41	100%	26	63,41%	15	36,59%	41	100%

The results of the cross tabulation show that the physical condition of the ventilation in the control group met the ventilation requirements and there were no TB incidents in 26 houses or 63.41%, while in the case group there were 26 houses, 63.41% of which had ventilation that did not meet the requirements and there were

Cross-tabulation table of floor physical conditions with TB incidence

Kejadian TB	Kelompok Kontrol												Kelompok Kasus											
	Lantai				Total				Lantai				Total		
	TMS		MS						TMS		MS					
	F	%	f	%	f	%			f	%	f	%			F	%
TB	1	2,44%	1	2,44%	2	4,88%			14	34,15%	25	60,98%			39	95,12%
Non TB	6	14,63%	33	80,49%	39	95,12%			0	0,00%	2	4,88%			2	4,88%
Total	7	17,07%	34	82,93%	41	100%			14	34,15%	27	65,85%			41	100%

The results of the cross tabulation show that in the control group the physical condition of the floors met the requirements and there were no TB incidents, there were 33 respondents (80.49%) and in the case group the floors met the requirements and there were TB incidents, there were 25 respondents, 60.98%.

Cross-tabulation table of physical condition of walls with TB incidence

Kejadian TB	Kelompok Kontrol												Kelompok Kasus											
	Dinding				Total				Dinding				Total		
	TMS		MS						TMS		MS					
	F	%	f	%	f	%			f	%	f	%			F	%
TB	1	2,44%	1	2,44%	2	4,88%			14	34,15%	25	60,98%			39	95,12%
Non TB	5	12,20%	34	82,93%	39	95,12%			0	0,00%	2	4,88%			2	4,88%
Total	6	14,63%	35	85,37%	41	100%			14	34,15%	27	65,85%			41	100%

The results of the cross tabulation in the control group were that the condition of the walls met the requirements and there was no incidence of TB in the houses, there were 34 houses, 82.9%, and in the case group, the condition of the walls met the requirements and there was an incidence of TB, there were 25 houses, 60.98%.

Cross tabulation of physical floor conditions with TB incidence

Kejadian TB	Kelompok Kontrol												Kelompok Kasus											
	Langit-langit				Total				Langit-langit				Total		
	TMS		MS						TMS		MS					
	F	%	f	%	f	%			f	%	f	%			F	%
TB	1	2,44%	1	2,44%	2	4,88%			14	34,15%	25	60,98%			39	95,12%
Non TB	6	14,63%	33	80,49%	39	95,12%			0	0,00%	2	4,88%			2	4,88%
Total	7	17,07%	34	82,93%	41	100%			14	34,15%	27	65,85%			41	100%

The results of cross tabulation in the control group showed that the ceiling met the requirements and there was no incidence of TB, there were 33 houses, 80.49% and in the case group, the ceiling met the requirements and there was an incidence of TB, there were 25 respondents, 60.98%.

Cross tabulation table of physical lighting conditions with TB incidence

Kejadian TB	Kelompok Kontrol												Kelompok Kasus											
	Pencahayaan				Total				Pencahayaan				Total		
	TMS		MS						TMS		MS					
	F	%	F	%	f	%			F	%	f	%			f	%
TB	1	2,44%	1	2,44%	2	4,88%			25	60,98%	14	34,15%			39	95,12%
Non TB	16	39,02%	23	56,10%	39	95,12%			0	0,00%	2	4,88%			2	4,88%
Total	17	41,46%	24	58,54%	41	100%			25	60,98%	16	39,02%			41	100%

The results of the cross tabulation show that in the control group, the house lighting met the requirements and there was no TB incident, there were 23 houses, 56.10%, and in the case group, the house lighting did not meet the requirements and there was an incident of TB, there were 25 houses, 60.98%.

Cross-tabulation table of physical condition of kitchen smoke holes with TB incidence

Kejadian TB	Kelompok Kontrol						Kelompok Kasus					
	lubang asap dapur				Total		lubang asap dapur				Total	
	TMS		MS				TMS		MS			
	F	%	f	%	f	%	f	%	f	%	f	%
TB	1	2,44%	1	2,44%	2	4,88%	25	60,98%	14	34,15%	39	95,12%
Non TB	16	39,02%	23	56,10%	39	95,12%	0	0,00%	2	4,88%	2	4,88%
Total	17	41,46%	24	58,54%	41	100%	25	60,98%	16	39,02%	41	100%

The results of the cross tabulation showed that kitchen smoke holes met the requirements and there were no TB incidents in 23 houses, 56.1% and in the kitchen smoke hole case group, there were no TB incidents in 25 houses, 60.98%.

Cross tabulation of physical condition of house humidity with TB incidence

Kejadian TB	Kelompok Kontrol						Kelompok Kasus					
	Kelembaban				Total		Kelembaban				Total	
	TMS		MS				TMS		MS			
	F	%	f	%	F	%	f	%	f	%	f	%
TB	2	4,88%	0	0,00%	2	4,88%	15	36,59%	24	58,54%	39	95,12%
Non TB	8	19,51%	31	75,61%	39	95,12%	0	0,00%	2	4,88%	2	4,88%
Total	10	24,39%	31	75,61%	41	100%	15	36,59%	26	63,41%	41	100%

The results of the cross tabulation show that the air humidity in the control group met the requirements and there was no incidence of TB in 31 houses, 75.61% and in the case group, the air humidity met the requirements, there was an incidence of TB in 24 houses, 58.54%.

Cross tabulation of physical condition of house temperature with TB incidence

Kejadian TB	Kelompok Kontrol						Kelompok Kasus					
	Suhu				Total		Suhu				Total	
	TMS		MS				TMS		MS			
	F	%	F	%	f	%	f	%	f	%	f	%
TB	1	2,44%	14	34,15%	15	36,59%	22	53,66%	17	41,46%	39	95,12%
Non TB	1	2,44%	25	60,98%	26	63,41%	0	0,00%	2	4,88%	2	4,88%
Total	2	4,88%	39	95,12%	41	100%	22	53,66%	19	46,34%	41	100%

The results of the cross tabulation show that the air temperature in the control group met the requirements and there was no incidence of TB in 25 houses, 60.98% and in the case group, the air temperature did not meet the requirements, there was an incidence of TB in 22 houses, 53.66%..

Cross tabulation of the physical condition of residential density and the incidence of tuberculosis

Kejadian TB	Kelompok Kontrol Kepadatan Hunian				Total		Kelompok Kasus Kepadatan Hunian				Total	
	TMS		MS				TMS		MS			
	F	%	F	%	F	%	f	%	F	%	f	%
TB	1	2,44%	1	2,44%	2	4,88%	17	41,46%	22	53,66%	39	95,12%
Non TB	8	19,51%	31	75,61%	39	95,12%	1	2,44%	1	2,44%	2	4,88%
Total	9	21,95%	32	78,05%	41	100%	18	43,90%	23	56,10%	41	100%

The results of the cross tabulation show that the residential density meets the requirements and there is no incidence of TB, there are 31 houses, 56.1% and in the case group, the residential density meets the requirements, there is an incidence of TB, there are 22 houses, 53.66%..

Data Analyze
Partial Test

Partial test results were obtained for window P value = 0.879, ventilation P value = 0.004, floor P value = 1.000, walls P value = 1.000, lighting P value = 0.995, humidity P value = 0.217, temperature P value value = 0.363, and residential density P value = 0.144. Based on the data above, it is said to be significant if the P value < α value. The alpha value is the maximum error limit used as a benchmark by the researcher and the specified limit is 5%. So that those who meet the requirements are below 5% (X<0.05) in the ventilation value, namely 0.004, so that 0.004 <0.05. so it is concluded that the ventilation variable significantly influences Y.

Data interpretation

The statistical test results showed that the Nagelkerke R Square value = 0.15, so it can be concluded that the ventilation variable has 15% influence on the incidence of TB, while 85% is caused by other factors outside this study.

DISCUSSION
Physical condition of houses of pulmonary TB sufferers in the Nganjuk Community Health Center working area.

The physical conditions of the houses of pulmonary TB sufferers that most met the requirements were walls, floors, ceilings, there were 27 respondents, 65.85%, and those that met the least requirements were lighting, kitchen smoke holes, there were 16 respondents, 39.02%.

A house is a place to live or shelter from the influence of the surrounding natural conditions (rain and heat) and is a place to rest after carrying out activities to fulfill daily needs (Notoatmodjo, 2007).

A good physical condition of the house, namely a good house, can prevent the spread of infectious diseases. Therefore, the house must meet health requirements, because an unhealthy house and environment will cause disease both among family members and other people (Adnani & Mahastuti, 2006)

1. Window

The physical condition of the windows of houses of pulmonary TB sufferers mostly does not meet the requirements, there are 58.54%

The results of this research are in accordance with research by Anggie Mareta Rosiana (2017) which stated that windows that are rarely opened and left closed will result in the presence of Mycobacterium Tuberculosis bacteria.

The researcher's observations were that windows were always left closed and they were not accustomed to opening the windows every morning, so that most of the windows in the

respondents' houses were not included in ventilation and were not measured in this study, as well as most of the ventilation area did not meet the requirements, namely 10% of the floor area. Respondents should have the awareness to open the windows every day so that the house is not stuffy because the air circulation can be maximized.

2.   Ventilation

The physical condition of ventilation in the homes of pulmonary TB sufferers is 63.41% inadequate. The results of this study are in accordance with the opinion of Kurniawati, (2015) showing that ventilation area has a significant relationship with the incidence of pulmonary TB with a p-value of 0.001.

The main function of ventilation is to maintain air circulation in the house. Lack of ventilation will cause a lack of oxygen in the house and cause the room to feel damp. Another function of ventilation is to free the room air from pathogenic bacteria, because with good ventilation there is continuous air circulation so that bacteria attached to dust will be carried by the wind. Most of the case groups had inadequate ventilation because the ventilation was blocked by cupboards or other furniture so they could not be opened. This is exacerbated by the behavior of respondents who rarely open the ventilation in the bedroom in the morning and afternoon. Generally they only open the ventilation in the windows in the living room.

3.   Floor

The physical condition of the floor of the house of pulmonary TB sufferers is 65.85% meet the health requirements

This research is in accordance with the opinion of Kurniawati (2015) who stated that home conditions can be a risk factor for TB transmission. Dust that sticks to floors that are difficult to clean can become a breeding ground for Mycobacterium tuberculosis bacteria

The results of the assessment of the floor variable in the bedroom showed that most of the floors in the respondent's house had been tiled so that they were watertight and easy to clean, so it could be said to have met the requirements in accordance with Minister of Health Decree No. 829 of 1999 concerning Housing Health Requirements. However, most respondents admitted that they rarely mopped their floors with floor cleaning fluid. They only clean the floor by sweeping it every morning and evening.

4.   Wall

The physical condition of the walls of the houses of pulmonary TB sufferers in the majority meets the requirements at 65.85%

The research results show that most of the walls are made of plaster, but are rarely cleaned, so they can become a breeding ground for bacteria.

5.   Ceiling

The physical condition of the ceilings in the houses of pulmonary TB sufferers is 65.85%.

The results of the study showed that there was no relationship between ceiling variables and the presence of bacteria that cause pulmonary TB, this is probably because the condition of the ceiling in the respondent's house was good.

This finding is in line with research conducted by Novita Diah Dwi Lestari Muslimah (2018) that there is no relationship between ceilings and the incidence of pulmonary TB because the majority of respondents' houses have ceilings that meet the requirements, namely easy to clean and not prone to accidents. Ceilings that meet the requirements aim to guarantee sufficient air volume and are easy to clean and not prone to accidents. Sufficient indoor air volume does not make the house feel damp because the circulation of CO_2 output and body evaporation is blocked, which results in the proliferation of pulmonary TB bacteria.

6.   Light from sun

The physical condition of the lighting in the homes of pulmonary TB sufferers does not meet the requirements for the majority, there are 60.98%

The research results are in accordance with the opinion of May Liani S. Sinaga (2019) that there is no relationship between natural lighting and the incidence of pulmonary TB in the Tuminting Community Health Center Working Area,

The results of the research when measuring by opening the door showed that natural lighting was good. But every day the door is closed. The way light enters is related to the functional condition of the door.

7.   Kitchen ventilation

The physical condition of the kitchen smoke hole in the house of pulmonary TB sufferers mostly does not meet the requirements 60.98%

The research results show that the majority of houses do not have or do not have a kitchen smoke hole.

The research results do not match the opinion of Nur Anisah Apriliani (2020) showing that there is an influence of kitchen smoke on the incidence of pulmonary TB. However, the results of observations were that most respondents had cooked with LPG gas and did not emit much smoke, so the effect on the incidence of pulmonary TB was very small compared to those who cooked using firewood.

8.   Humidity

The physical condition of the humidity in the houses of the majority of pulmonary TB sufferers meets the requirements at 63.41%.

The results of this study are not in accordance with the opinion of Novita Indriyani (2016) who states that someone who lives with high humidity is at risk of developing pulmonary TB disease 2,571 times compared to someone whose house lives with low humidity.

The results of research in the field showed that the air humidity was good but it appeared that mattresses, sheets and pillows had never been dried in the sun, they looked dirty, plus towels and clothes drying placed in the room created a breeding ground for bacteria.

9.   Temperature

The physical condition of the house temperature of the majority of pulmonary TB sufferers does not meet the requirements, there are 53.66%

The results of this study are in accordance with the opinion of Anggie Mareta Rosiana (2018) who stated that there is no relationship between temperature and the incidence of pulmonary TB in the working area of the Kedungmundu Health Center, Semarang City.

During the research, the temperature varied in the respondents' houses, this was influenced by several things, for example the humidity in the house, the ventilation was closed, and the windows were not opened, thus affecting the movement of air entering the house. However, from the results of statistical tests, it was found that there was no relationship between temperature and the incidence of pulmonary TB.

10.   Residential density

The physical condition of ventilation in the homes of pulmonary TB sufferers in the majority meets the requirements, there are 56.10%

The results of this study are in accordance with the opinion of Anggie Mareta Rosiana (2018) who stated that there is no relationship between the density of bedroom occupancy and the incidence of pulmonary TB in the working area of the Kedungmundu Health Center, Semarang City.

From field surveys, in the respondent's house, on average, each room is occupied by 2 to 3 people, namely husband and wife or their children. There are also 1 rooms occupied by only 1 person. The average child is less than 10 years old with a bedroom that meets the requirements, so it is likely that pulmonary TB is not influenced by the density of bedroom occupants.

The incidence of pulmonary TB in the Nganjuk Community Health Center working area

The incidence of pulmonary TB in the Nganjuk Community Health Center work area was 41 casesAccording to Hendrick L. Blum, the level of public health is greatly influenced by four factors, namely behavioral factors, environmental factors, hereditary factors, and health service factors. Of these four factors, the influence that is quite large is behavioral factors, followed by the influence of environmental factors, after that service factors. health, and finally hereditary factors. The four factors above are closely related and influence each other (Syukra and Sriani, 2015).

The physical condition of the houses of pulmonary TB sufferers in the health center area is mostly good and meets the requirements but there are still many who suffer from pulmonary TB, this is due to poor behavior in implementing clean and healthy living habits, even though they are supported by good health services, they do not implement PHBS properly. whether, for example, smoking, spitting anywhere and, not wanting to open windows or curtains, TB transmission still occurs.

Factors of the physical condition of the house on the incidence of pulmonary TB in the Nganjuk

The results of the study showed that 15% had an influence on the incidence of TB. Natural ventilation is measured by comparing the ventilation area with the floor area. Whether or not a respondent's house fulfills the requirements for natural ventilation can be caused by several things, such as the area of the house being disproportionate to the ventilation area and windows or vents made of glass that cannot be opened. Some respondents' houses have ventilation that can be opened and closed, but for reasons of home security, respondents chose not to open the house ventilation even during the day. Lyzigos (2013) stated that closed windows cause poor house ventilation, thereby increasing the risk of TB transmission. Ventilation is a condition of a house that has sufficient air circulation in and out with a ventilation area of at least 10% of the floor area. Poor ventilation can influence the incidence of TB.

A room with a ventilation area that does not meet the requirements (< 10% of the floor area) causes high humidity and temperature in the room due to lack of air exchange from outside the house, thus giving the opportunity for 10 TB bacteria to survive in the room due to the nature of the TB bacteria. which is able to survive in dark and damp rooms. 9 Qualified natural ventilation makes it easier for ultraviolet (UV) rays to enter the house. UV light can kill pathogenic bacteria, including TB bacteria, because TB bacteria are unable to survive if exposed directly

CONCLUSSION

1. The physical condition of the houses of pulmonary TB sufferers in the Nganjuk Community Health Center working area. In the control group, the physical conditions that most met the requirements were walls, namely 35 respondents, the ones that did not meet the requirements the most were windows, lighting and kitchen openings, there were 24 respondents, 41.46% and The physical condition of the house in the case group that met the most requirements was walls, floors, ceilings, there were 27 respondents 65.85% and the ones that met the least requirements were lighting, kitchen smoke holes, there were 16 respondents 39.02%
2. The incidence of pulmonary TB in the Nganjuk Community Health Center work area was 41 cases
3. The factor that influences the incidence of TB in the Nganjuk Community Health Center working area is ventilation with a large influence of 15%.

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