

# Relationship Of Individual Characteristics, Physical Home Environment And Behavior With The Incidence Of Pulmonary Tb In Cijoro Pasir Village, Muara Village East Ciujung And West Rangkasbitung Village, Rangkasbitung Subdistrict, Lebak Regency 2019

AJRI



Author Notification  
02 December 2019  
Final Revised  
13 January 2020  
Published  
13 January 2020

Rojali<sup>1</sup>, Dwita Indah Sari<sup>2</sup>

Department of Environmental Health, Health Polytechnic of Ministry of Health  
Jakarta II, Indonesia<sup>1,2</sup>

email: [rojaliijaya@yahoo.com](mailto:rojaliijaya@yahoo.com) , [dwita38@gmail.com](mailto:dwita38@gmail.com)

## To cite this document :

Rojali, R., & Sari, D. (2020). RELATIONSHIP OF INDIVIDUAL CHARACTERISTICS, PHYSICAL HOME ENVIRONMENT AND BEHAVIOR WITH THE INCIDENCE OF PULMONARY TB IN CIJORO PASIR VILLAGE, MUARA VILLAGE EAST CIUJUNG AND WEST RANGKASBITUNG VILLAGE, RANGKASBITUNG SUBDISTRICT, LEBAK REGENCY 2019. *ADI Journal on Recent Innovation (AJRI)*, 1(2), 167-179.

DOI : <https://doi.org/https://doi.org/10.34306/ajri.v1i2.36>

## Abstract

*This study entitled "Relationship of Individual Characteristics, Physical Environment of the House and Behavior with the incidence of pulmonary TB in Cijoro Pasir Village, Muara Ciujung Timur Village and Rangkasbitung Barat Village, Rangkasbitung District, Lebak Regency in 2019" and behavior with pulmonary TB incidence. The design of this study was cross sectional. Data was analyzed using univariate tests and bivariate tests consisting of chi-square. The total population is 123 The results showed that the incidence of pulmonary TB as many as 37 patients with positive pulmonary TB (60.7%) and 24 patients with negative AFB pulmonary TB and still found a physical environment that did not meet the requirements as many as 42 houses (68.9%), lighting as many as 38 houses (63.3%), humidity of 43 houses (70.5%), BCG immunization 35 people (57.4%), closing mouths of cough / sneezing compilation 38 people (62.3%), phlegm carelessly 32 people (52.5%) and use of eating utensils 39 people (63.9%).*

*Keywords: Tuberculosis smear-positive pulmonary, Tuberculosis treatment compliance and supervisor taking medicine.*

## I. INTRODUCTION

Tuberculosis is an infectious disease that attacks the lungs caused by the bacteria *Mycobacterium tuberculosis*. *Mycobacterium tuberculosis* bacteria enter the human body through the respiratory tract, digestive tract, and open sores on the skin. Most tuberculosis infections occur through the air, namely sputum sputum containing tubercular bacilli germs from an infected person. Tuberculosis can cause compilation of the respiratory system and circulation. (Akmal, Mutaroh et al, 2016).

Tuberculosis is a disease that is of global concern. Based on sustainable development targets, targets for TB incidence reduction. Lung by 90% in 2035 and decreased the number of deaths by 95% in 2035. Although the number of deaths due to tuberculosis decreased by 22% between 2000 and 2015, tuberculosis still ranked the 10th highest cause of death in the world in 2016. The five countries with the China, the Philippines and Pakistan. (Indah 2018) In 2017, the number of cases of pulmonary TB in Indonesia was 360,770 cases. Banten Province ranks 6th highest in the discovery of all cases of tuberculosis in the amount of 13,837 cases with a population of 12,488,160 people). Based on sex, the number of cases in men was higher than in women, that was 58.11% and women amounted to 41.89%. with the age group 45-54 years by 17.09%; age group 35-44 years by 16.43% and age group 15-24 by 15.60%. This shows that most pulmonary TB attacks sufferers of productive age (Ministry of Health 2018).

According to the theory of Hendrik L. Blum (1974) in (Notoatmodjo 2011) states that there are 4 factors that affect the health status of individuals and society. These factors are heredity, environment, behavior and health services. According to the Ministry of Health (2000) in (Hardiyanti 2016), environmental factors have the highest percentage in influencing a person's health at 45%. The quality of the physical environment of the home that does not meet health requirements is a risk factor for pulmonary tuberculosis. The physical environment of an unhealthy home plays an important role in the transmission and propagation of *Mycobacterium tuberculosis*. (Rahayu and Sodik 2014). The requirements for a healthy home are regulated in a Decree of the Minister of Health of the Republic of Indonesia 829 / Menkes / SK / VII / 1999 regarding Housing Health Requirements and Permenkes no. 1077 / Menkes / Per / V / 2001 concerning Guidelines for Indoor Air Sanitation. In Lebak Regency, based on reports from the Puskesmas, there was an increase in lung tuberculosis cases from year to year, including the coverage of the discovery of positive smear pulmonary TB cases in 2015 by 57%, in 2016 by 73%, in 2017 amounted to 76% and in 2018 amounted to 78% This shows that in Lebak District tuberculosis cases are still high. Rangkasbitung Public Health Center is the highest Puskesmas with pulmonary TB sufferers in Lebak Regency.

In 2018, there were 101 Positive AFB Lung TB sufferers, an increase compared to 2017 which was 34 Positive AFB Lung TB sufferers and in 2016 there were 21 Positive AFB Lung TB sufferers. Based on healthy house data obtained from the Lebak District Health Office, out of 18,245 houses inspected by officers in the Rangkasbitung Community Health Center working area, there were 12,271 houses (67.3%) included in the category of healthy homes and 5,974 houses (32.7%) which not included in the category of a healthy home. Based on healthy house data obtained from the Lebak District Health Office, out of 18,245 houses inspected by officers in the Rangkasbitung Community Health Center working area, there were 12,271 houses (67.3%) included in the category of healthy homes and 5,974 houses (32.7%) which not included in the category of a healthy home.

Rangkasbitung Public Health Center has 10 working area coverage. Of the 10 work areas, Cijoro Pasir Village, Muara Ciujung Timur Village and Rangkasbitung Barat Village are the three regions with the highest discovery of all pulmonary TB cases in the Rangkasbitung Community Health Center working area in 2018. The number of pulmonary TB cases in Cijoro Pasir Village is 38 people, with TB TB Positive BTA Lung as many as 20 people, the number of cases of Lung TB in Muara Ciujung Timur Kelurahan as many as 55 people, with Positive BTA Lung TB as many as 18 people and the number of cases of Lung TB in Rangkasbitung Barat Kelurahan as many as 30 people, with Positive Lung TB cases of 14 people.

Cijoro Pasir Urban Village, from 2,024 houses inspected, there were 785 (38.7%) houses that were classified as unhealthy houses with a population of 10,265 people, in Muara Ciujung Timur Village of 3,470 houses inspected, there were 2,110 (60.8) % houses included in the category of unhealthy houses with a population of 14,102 people and in Rangkasbitung Barat District, of the 1,620 houses inspected there were 318 houses (19.6%) which were included in the category of healthy homes with a population of 6,638 people.

Based on this background, the authors are interested in conducting research with the title "The Relationship of Individual Characteristics, Physical Home Environment and Behavior with Lung TB Events in Cijoro Pasir Village, Muara Ciujung Timur Village and Rangkasbitung Barat Village, Rangkasbitung District, 2019 Lebak Regency".

## II. METODE

This study was conducted using analytical research design with a "cross sectional" design, namely to determine the relationship of individual characteristics, physical environment of the house and behavior with the incidence of pulmonary TB in Cijoro Pasir, Muara Ciujung Timur and Rangkasbitung Barat District Rangkasbitung District Lebak Regency. Samples are the samples used in this study were positive smear pulmonary TB patients and negative smear pulmonary TB patients, who were recorded as TB sufferers in the Rangkasbitung Puskesmas register, from January - December 2018 in accordance with the characteristics of inclusion and exclusion.

## III. RESULT AND DISCUSSION

**Table 1** Relationship between Age and Positive BTA Lung and BTA Lung Negative Events in Cijoro Pasir, Muara Ciujung Village and Village Rangkasbitung West 2019

Age	TB Paru				Amount		OR (95% CI)	P Value
	TB Paru BTA (+)		TB Paru BTA (-)		N	%		
	N	%	N	%				
Not productive	8	50	8	50	16	100	0,552 (0,174 – 1,750)	0,473
productive	29	64,4	16	35, 6	45	100		
Amount	37	60,7	24	39, 3	61	100		

Based on table.13 the results of the analysis between age and positive BTA Pulmonary TB events showed that there were 8 (50%) respondents who were not productive of having TB BTA positive, while among respondents who were of productive age there were 29 (64.4%) who had TB BTA is positive. Based on the results of statistical tests obtained P.Value = 0.473 with OR = 0.552.

**Table 2.** Relationship between Gender and the Occurrence of Positive BTA Lung and TB BTA Lung Negative in Cijoro Pasir Village, Muara Ciujung Village and West Rangkasbitu Village in 2019

Age	TB Paru				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		Negative BTA Lung TB		N	%		
	N	%	N	%				
Man	23	63,9	13	36,1	36	100	1,390 (0,490 – 3,941)	0,723
Girl	14	56	11	44	25	100		

Amount	37	60,7	24	39,3	61	100		
--------	----	------	----	------	----	-----	--	--

Based on table.2 the results of the analysis between sex with the incidence of positive AFB in TB obtained that there were 23 (63.9%) respondents who were male accompanied by AFB positive TB, while among respondents who were female there were 14 (56% ) who accompanied positive smear pulmonary TB Based on the results of statistical tests obtained P.Value = 0.723 with OR = 1.390.

Table. 3 Relationship between Bcg Immunization and the Occurrence of Positive Bta Lung and TB BTA Lung Negative in Cijoro Pasir Village, Muara Ciujung Timur Village and Rangkasbitung West Village 2019

BCG Immunization	TB Paru				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative		N	%		
	N	%	N	%				
Never	26	74,3	9	25,7	35	100	3,939 (1,329 – 11,673)	0,024
Ever	11	42,3	15	57,7	26	100		
Amount	37	60,7	24	39,3	61	100		

Based on the table. 3 results of the analysis between BCG immunization with the incidence of smear positive pulmonary TB obtained that there were 26 (74.3%) respondents who had never been immunized with BCG had positive smear pulmonary TB, while among respondents who had been immunized with BCG there were 11 (42.3% ) who accompanied BTA Lung TB. Based on the results of statistical tests obtained P.Value = 0.024 with OR = 3.939

Table. 4 Relationship between Occupational Density and the Occurrence of Positive Bta Lung and Negative Bta Lung in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019.

Occupancy Density	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative		N	%		
	N	%	N	%				
Not eligible	17	68	8	32	25	100	1,700 (0,585 – 4,941)	0,476
eligible	20	55,6	16	44,4	36	100		
Amount	37	60,7	24	39,3	61	100		

Based on table 4 the results of the analysis between the occupancy density and the incidence of positive AFB lungs TB obtained that there were 17 (68%) respondents whose occupancy density did not meet the requirements of positive AFB L TB TB, while among respondents whose occupancy density met the requirements there were 20 (55.6 %) which is associated with smear pulmonary TB Based on the statistical test results obtained P.Value = 0.476 with OR = 1,700.

Table.5 Relationship between Ventilation and Positive BTA Lung and BTA Lung Negative Events in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Ventilation	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative					
	N	%	N	%	N	%		
Not eligible	30	71,4	12	28,6	42	100	4,286 (1,360 – 13,503)	0,023
eligible	7	36,8	12	63,2	19	100		
Amount	37	60,7	24	39,3	61	100		

Based on table.5 the results of the analysis between ventilation and the incidence of positive pulmonary TB obtained that 30 (71.4%) of respondents whose ventilation did not meet the requirements for positive pulmonary TB, while among respondents who ventilated their houses met the requirements there were 7 (36.8 %) who accompanied smear pulmonary TB were positive. Based on the results of statistical tests, the value of P.Value = 0.023 with OR = 4.286.

Table. 6 Relationship of Lighting with the Positive BTA Lung TB and Negative BTA Lung in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Lighting	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative					
	N	%	N	%	N	%		
Not eligible	27	75	8	25	36	100	4,500 (1,498 – 13,515)	0,013
eligible	10	40	15	60	25	100		
Amount	37	60,7	24	39,3	61	100		

Based on table.18 the results of the analysis between lighting and the incidence of positive pulmonary TB obtained that there were 27 (75%) of respondents whose home lighting did not meet the requirements of positive smear pulmonary TB, while among respondents whose home lighting met the requirements there were 10 (40%) who with positive smear pulmonary TB .. Based on the results of the statistical test, the value of P.Value = 0.013 with OR = 4,500.

Table.7 Relationship between Humidity and Positive TB Lung and TB BTA Lung Negative Events in Cijoro Pasir Village, Muara Ciujung Timur Village and Rangkasbitung Barat Village 2019

Humidity	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative					
	N	%	N	%	N	%		
Not eligible	31	72,1	12	27,9	43	100	5.167 (1,580 – 16,900)	0.011

eligible	6	33, 3	12	66,7	18	100		
Amount	37	60, 7	24	39,3	61	100		

Based on table.7 the results of the analysis of humidity with the incidence of positive pulmonary TB obtained that there were 31 (72.1%) of respondents whose house humidity did not meet the requirements of positive smear pulmonary TB, while among respondents whose house humidity met the requirements there were 6 (33, 3%) who accompanied smear positive pulmonary TB. Based on the results of statistical tests, the value of P.Value = 0.011 with OR = 5.167 is obtained.

Table.8 Relationship of Mouth Closing When Coughing / Sneezing with the Occurrence of Positive Bta Lung and TB BTA Lung Negative in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Shut up	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative					
	N	%	N	%	N	%		
Not eligible	29	76,3	8	23,7	38	100	6,042 (1,936 – 18,858)	0,003
eligible	8	34,8	15	65,2	23	100		
Amount	37	60,7	24	39,3	61	100		

Based on table.8 the results of the analysis between closing the mouth when coughing / sneezing with the incidence of positive smear pulmonary TB obtained that there were 29 (76.3%) of respondents who did not close their mouth when coughing / sneezing with smear positive pulmonary TB, while among respondents who closed their mouth when coughing / sneezing there were 8 (34.8%) who had positive smear pulmonary TB. Based on the statistical test results obtained P.Value = 0.003 with OR = 6.042

Table.9 Correlation with Random Phlegm Disposal with the Occurrence of Positive BTA Lung and Bt Lung Negative Bta Lung in Cijoro Pasir Village, Muara Ciujung Timur Village and Rangkasbitung Barat Village 2019

Remove phlegm	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		BTA Lung TB is negative					
	N	%	N	%	N	%		
Throwing sputum carelessly	24	75	8	12,6	32	100	3,692 (1,248 – 10.920)	0,032

Throwing sputum is not haphazard	13	44,8	16	55,2	29	100		
Amount	37	60,7	24	39,3	61	100		

Based on table.9 the results of the analysis between sputum indiscriminate with the incidence of positive smear pulmonary TB obtained that there were 24 (75%) of respondents who indiscriminately expelled sputum positive smear pulmonary TB, while among respondents who disposed sputum non-indiscriminately there were 13 (44.8% ) who accompanied smear positive pulmonary TB. Based on the results of statistical tests, the value of P.Value = 0.032 with OR = 3.692 was obtained.

Table.10 Relationship between smoking and the incidence of positive BTA lung and TB negative BTA lung in Cijoro Pasir, Muara Ciujung Village and Rangkasbitung Barat Village in 2019

Smoke	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		Positive BTA Lung TB		N	%		
	N	%	N	%				
Smoke	12	80	3	20	15	100	3,360 (0,835 – 13,515)	0,144
Do not smoke	25	54,3	21	18,1	46	100		
Amount	37	60,7	24	39,3	61	100		

Based on table.10 the results of the analysis between smoking and the incidence of smear positive pulmonary TB obtained that there were 12 (80%) of respondents who smoked with positive smear pulmonary TB, while among respondents who did not smoke there were 25 (54.3%) who accompanied smear pulmonary TB positive. Based on the results of statistical tests, the value of P.Value = 0.144 is obtained with OR = 3.360.

Table.11 Relationship between the use of cutlery with the incidence of positive BTA lung and Tb negative BTA lung in Cijoro Pasir, East Muara Ciujung and Rangkasbitung Barat sub-districts in 2019

Use of cutlery	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		Positive BTA Lung TB		N	%		
	N	%	N	%				
Yes	29	76,3	10	25,6	39	100	5,075	0,008
No	8	36,4	14	63,6	22	100		
Amount	37	60,7	24	39,3	61	100		

Based on table.23 the results of the analysis between the use of cutlery with the incidence of positive AFB had obtained that there were 29 (76.3%) respondents who used the same cutlery

along with positive AFB smear TB, while among respondents who did not use the cutlery together there were 8 ( 36.4%) accompanying BTA Lung TB. Based on the results of statistical tests, the value of P.Value = 0.008 with OR = 5.075 was obtained.

Tabel 12 Distribution of the use of cutlery for patients with BTA Lung Positive and BTA Lung Negative BTA in lung in Cijoro Pasir, East Muara Ciujung and Rangkasbitung Barat sub-districts in 2019

Use of cutlery	Amount	Presentase
Yes	39	63,9%
No	22	36,1%
Amount	61	100%

Based on table 12 it can be seen that based on the variable use of cutlery, from 61 respondents, there were 39 people (63.9%) who used cutlery together with family members and there were 22 people (36.1%) who did not use cutlery together with family member (has special cutlery).

Table 13 Age Relationship with Positive BTA Pulmonary TB Events and Negative BTA Pulmonary TB in Cijoro Pasir, East Muara Ciujung and Rangkasbitung Barat sub-districts in 2019

Age	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		Negative BTA Lung TB					
	N	%	N	%	N	%		
Not productive	8	50	8	50	16	100	0,552 (0,174 – 1,750)	0,473
productive	29	64,4	16	35,6	45	100		
Total	37	60,7	24	39,3	61	100		

Based on table 13 the results of the analysis between age and positive BTA Pulmonary TB events showed that there were 8 (50%) respondents who were not productive of age and had AFB positive pulmonary TB, while among respondents who were of productive age there were 29 (64.4%) who had Pulmonary TB BTA positive. Based on the results of statistical tests obtained P.Value = 0.473 with OR = 0.552.

Table 14 Relationship between Gender and Positive Bt Lung and Bt Lung Negative Events in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Gender	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		Negative BTA Lung TB					
	N	%	N	%	N	%		
Man	23	63,9	13	36,1	36	100	1,390 (0,490 – 3,941)	0,723
women	14	56	11	44	25	100		
Total	37	60,7	24	39,3	61	100		

Based on table 14 the results of the analysis between the sex with the incidence of positive AFB in TB obtained that there were 23 (63.9%) respondents who were male accompanied by AFB positive TB, while among respondents who were female there were 14 (56%) who accompanied positive

smear pulmonary TB Based on the results of statistical tests obtained the value of P.Value = 0.723 with OR = 1.390.

Table 15 Relationship between BCG Immunization and the Occurrence of Positive Bta Lung and Tb Bta Lung in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

BCG Immunization	Lung TB				Amount		OR (95% CI)	P Value
	Positive BTA Lung TB		Negative BTA Lung TB					
	N	%	N	%	N	%		
Never	26	74,3	9	25,7	35	100	3,939 (1,329 – 11,673)	0,024
Ever	11	42,3	15	57,7	26	100		
Total	37	60,7	24	39,3	61	100		

Based on the table. 15 results of the analysis between BCG immunization with the incidence of positive pulmonary TB obtained that there were 26 (74.3%) respondents who had never been immunized with BCG had positive smear pulmonary TB, while among respondents who had been immunized with BCG there were 11 (42.3%) who accompanied BTA Lung TB. Based on the results of statistical tests obtained P.Value = 0.024 with OR = 3.939.

Table 16 Relationship between Occupancy Density and the Occurrence of Positive Bta Lung and TB BTA Lung Negative in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Occupancy Density	Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Not eligible	17	68	8	32	25	100	1,700 (0,585 – 4,941)	0,476
Qualify	20	55,6	16	44, 4	36	100		
Total	37	60,7	24	39, 3	61	100		

Based on table 16, the results of analysis between occupancy density and the incidence of pulmonary tuberculosis positive were obtained that there were 17 (68%) respondents whose occupancy density did not meet the requirements of positive smear pulmonary TB, while among respondents whose occupancy density met the requirements there were 20 (55.6%) with TB BTA. Based on the statistical test results, the value of P.Value = 0.476 with OR = 1,700 is obtained.

Tabel 17 Relationship between Ventilation and Positive Bt Lung Incidence and Negative BTA Lung in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Ventilasi	Lung TB	Amount	OR	P Value
-----------	---------	--------	----	---------

	TB Paru BTA Positif		TB Paru BTA negatif		Amount		(95% CI)	
	N	%	N	%	N	%		
Not eligible	30	71,4	12	28,6	42	100	4,286 (1,360 – 13,503)	0,023
Qualify	7	36,8	12	63,2	19	100		
Total	37	60,7	24	39,3	61	100		

Based on table.17 the results of the analysis between ventilation and the incidence of positive pulmonary TB obtained that 30 (71.4%) of respondents whose ventilation did not meet the requirements for positive pulmonary TB, while among respondents who ventilated their houses met the requirements there were 7 (36.8 %) who accompanied smear pulmonary TB were positive. Based on the results of statistical tests, the value of P.Value = 0.023 with OR = 4.286.

Table 18 The Relationship of Lighting with the Events of Positive BTA Lung and TB BTA Lung Negative in Cijoro Pasir, Muara Ciujung Kelurahan and Rangkasbitung Barat Kelurahan 2019

Lighting	Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Not eligible	27	75	8	25	36	100	4,500 (1,498 – 13,515)	0,013
Qualify	10	40	15	60	25	100		
Total	37	60,7	24	39,3	61	100		

Based on table.18 the results of the analysis between lighting and the incidence of positive pulmonary TB obtained that there were 27 (75%) of respondents whose home lighting did not meet the requirements of positive smear pulmonary TB, while among respondents whose home lighting met the requirements there were 10 (40%) who with positive smear pulmonary TB .. Based on the results of the statistical test, the value of P.Value = 0.013 with OR = 4,500.

Table.19 Relationship between Humidity and Positive Tb Lung and TB BTA Lung Negative Events in Cijoro Pasir Village, Muara Ciujung Village and West Rangkasbitung Village in 2019

Kelembaban	TB Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Not eligible	31	72,1	12	27,9	43	100	5.167 (1,580 – 16,900)	0.011
Qualify	6	33,3	12	66,7	18	100		
Total	37	60,7	24	39,3	61	100		

Based on table.19 the results of the analysis of humidity with the incidence of positive pulmonary TB obtained that there were 31 (72.1%) of respondents whose house humidity did not meet the requirements of positive smear pulmonary TB, while among respondents whose house humidity met the requirements there were 6 (33, 3%) who accompanied smear pulmonary TB were positive. Based on the results of statistical tests, the value of P.Value = 0.011 with OR = 5.167 is obtained

Table.20 Relationship of Mouth Closing When Coughing / Sneezing with the Occurrence of Positive Bta Lung and TB BTA Lung in Cijoro Pasir Village, Muara Cijung Village and West Rangkasbitung Village in 2019

Shut up	TB Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Don't close your mouth	29	76,3	8	23,7	38	100	6,042 (1,936 – 18,858)	0,003
Shut up	8	34,8	15	65,2	23	100		
Total	37	60,7	24	39,3	61	100		

Based on table.20 the results of the analysis between closing the mouth when coughing / sneezing with the incidence of positive smear pulmonary TB obtained that there were 29 (76.3%) of respondents who did not close their mouth when coughing / sneezing with smear positive pulmonary TB, while among respondents who closed their mouth when coughing / sneezing there were 8 (34.8%) who had positive smear pulmonary TB. Based on the statistical test results obtained P.Value = 0.003 with OR = 6.042

Table.21 Relationships of Random Phlegm Disposal with the Events of Positive Bta Lung and TB BTA Lung Negative in Cijoro Pasir Village, Muara Cijung Village and West Rangkasbitung Village in 2019

Throwing sputum carelessly	Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Throwing sputum carelessly	24	75	8	12, 6	32	100	3,692 (1,248 – 10.920)	0,032
Throwing sputum is not haphazard	13	44, 8	16	55, 2	29	100		
Total	37	60, 7	24	39, 3	61	100		

Based on table.21 the results of the analysis between sputum indiscriminate with the incidence of positive smear pulmonary TB obtained that there were 24 (75%) of respondents who indiscriminately expelled sputum positive smear pulmonary TB, while among respondents who disposed sputum non-indiscriminately there were 13 (44.8% ) who accompanied smear positive pulmonary TB. Based on the results of statistical tests, the value of P.Value = 0.032 with OR = 3.692 was obtained.

Table.22 Relationship between smoking and the incidence of positive BTA lung and TB negative BTA lung in Cijoro Pasir Village, Muara Ciujung Village and West Rangkasbitung Village in 2019

Smoke	Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Smoke	12	80	3	20	15	100	3,360 (0,835 – 13,515)	0,144
Do not smoke	25	54, 3	21	18,1	46	100		
Total	37	60, 7	24	39,3	61	100		

Berdasarkan tabel.22 hasil analisis antara merokok dengan kejadian TB Paru BTA positif diperoleh bahwa ada 12 (80%) responden yang merokok menderita TB Paru BTA positif, sedangkan diantara responden yang tidak merokok ada 25 (54,3%) yang menderita TB Paru BTA positif. Berdasarkan hasil uji statistik diperoleh nilai P.Value = 0,144 dengan OR = 3,360.

Table.23 Relationship between the use of cutlery with the incidence of positive BTA lung and Tb negative BTA lungs in Cijoro Pasir, Muara Ciujung Timur and Rangkasbitung Barat sub-districts in 2019

Use of cutlery	Lung TB				Amount		OR (95% CI)	P Value
	TB Paru BTA Positif		TB Paru BTA negatif					
	N	%	N	%	N	%		
Yes	29	76,3	10	25,6	39	100	5,075	0,008
No	8	36,4	14	63,6	22	100		
Total	37	60,7	24	39,3	61	100		

Based on table.23 the results of the analysis between the use of cutlery with the incidence of positive AFB had obtained that there were 29 (76.3%) respondents who used the same cutlery along with positive AFB smear TB, while among respondents who did not use the cutlery together there were 8 ( 36.4%) who accompanied smear pulmonary TB. Based on the results of statistical tests, the value of P.Value = 0.008 with OR = 5.075 was obtained.

#### IV. CONCLUSION

Positive smear pulmonary TB as many as 34 people (60.7%), and smear negative pulmonary TB 24 people (39.3%) due to individual characteristics such as never being immunized BCG, bad physical environment of the house such as ventilation, lighting and humidity as well as patient behavior such as the habit of not closing the mouth when coughing / sneezing, expelling phlegm indiscriminately and using cutlery combined with family members. Behavior that does not close the mouth when coughing / sneezing there are 38 people (62.3%) and those who close their mouth when coughing / sneezing there are 23 people (37.7%). 32 people (52.5%) indiscriminate disposing of phlegm and 29 people (47.5%) removing phlegm. Behavior of smoking, as many as 15 people (24.6%) and non-smoking as many as 46 people (75.4%). Behavior of using cutlery together with family members as many as 39 people (63.9%) and those who do not use cutlery together with family members (having special cutlery) as many as 22 people (36.1%). Occupancy density did not meet the requirements of 20 houses (32.8%) and 41 houses (67.2%) whose occupancy density met the requirements. Ventilation that did not meet the requirements were 42 houses (68.9%) and 19 houses (31.1%) whose ventilation was eligible. Lighting, which did not meet the requirements of 38 houses (62.3%) and 23 houses (37.7%) whose lighting met the requirements. Humidity fulfills the requirements of 43 houses (70.5%) and 18 houses (29.5%) whose house humidity meets the requirements. ) Behavior that does not close the mouth when coughing / sneezing there are 38 people (62.3%) and those who close their mouth when coughing / sneezing there are 23 people (37.7%). 32 people (52.5%) indiscriminate disposing of phlegm and 29 people (47.5%) removing phlegm. Behavior of smoking, as many as 15 people (24.6%) and non-smoking as many as 46 people (75.4%). Behavior of using cutlery together with family members as many as 39 people (63.9%) and those who do not use cutlery together with family members (having special cutlery) as many as 22 people (36.1%).

#### ACKNOWLEDGMENT

The authors would like to thank the institute for Research and Community Service (LPPM), Ministry Health Jakarta II Polytechnic

#### REFERENCES

- [1] Achmadi, U. F. 2008. Manajemen Penyakit Berbasis Wilayah
- [2]. Bambang Ruswanto, tesis 2012. Analisis Spasial Sebaran Kasus Tuberkulosis Paru Ditinjau Dari Faktor Lingkungan Dalam Dan Luar Rumah Di Kabupaten Pekalongan.
- [3]. Budiarto, E. 2002. Biostatistika untuk Kedokteran dan Kesehatan Masyarakat. Jakarta: EGC.
- [4]. Chandra, B 2006. Pengantar Kesehatan Lingkungan (Jakarta: Penerbit Buku Kedokteran EGC
- [5]. Dotulong, J. F. J., Sapulete, M. R., & Kandou, G. D. jurna penelitian 2015. Hubungan faktor risiko umur, jenis kelamin dan kepadatan hunian dengan kejadian penyakit tb paru di desa wori kecamatan wori. Jurnal Kedokteran Komunitas Dan Tropik, III, 57–65
- [6]. Elisa S. Korua, 2014 Hubungan Antara Umur, Jenis Kelamin, Dan Kepadatan Hunian Dengan Kejadian Tb Paru Pada Pasien Rawat Jalan Di Rumah Sakit Umum Daerah Noon
- [7]. Fatimah, S. 2008. Faktor Kesehatan Lingkungan Rumah Yang Berhubungan Dengan Kejadian Tb Paru Di Kabupaten Cilacap (Kecamatan : Sidareja, Cipari, Kedungreja, Patimuan, Gandrungmangu, Bantarsari) Tahun 2008.
- [8]. Hardiyanti, D 2016. Kondisi Rumah Penderita Tuberkulosis Paru Dan Non Tuberkulosis Paru Di Wilayah Kerja Puskesmas Piyungan Kabupaten Bantul Yogyakarta skripsi
- [9]. Hidayat, H 2011 Hubungan Sanitasi Fisik Rumah Dengan Kejadian Penyakit TB Paru

- Di Desa Kalikatak Kecamatan Arjasa Kabupaten Sumenep Tahun 2011
- [10]. Kementerian Kesehatan 1999. Kepmenkes RI No. 829 Tahun 1999 (1999).
- [11]. Kementerian Kesehatan 2011. PERATURAN MENTERI KESEHATAN REPUBLIK INDONESIA NOMOR 1077/MENKES/PER/V/2011
- [12]. Kementerian Kesehatan 2014. Pedoman Nasional Pengendalian Tuberkulos

