

The Behavior of Pulmonary Tuberculosis Patients With The Occurrence of Pulmonary Tuberculosis Transmission in the Family at Working Area Prambon Health Center Nganjuk Regency

Erni Tri Indarti* , Rystika Angga Sari

STIKes Satria Bhakti Nganjuk, Indonesia

* Correspondent Author: triindarti77@gmail.com

ABSTRACT

Pulmonary tuberculosis can be transmitted to anyone, especially members of the family who have a history of direct contact with patient. The transmission in the family can be terminated if the patient has practiced good prevention of transmission.

The purpose was determine relationship of Behavior of Patients with The Occurrence of Pulmonary tuberculosis Transmission in the Family.

Study design is a correlation with a cross sectional approach. The research was conducted on 27 February-14 March 2020. The population were 54 patients pulmonary tuberculosis. Samples were 39 respondents taken by purposive sampling. Data Collecction using a questionnaire. Data analysis using the Coefficient Contingency with $\alpha = (0,05)$.

The Coefficient Contingency test results $p\text{-value} = 0,000 \leq \alpha = (0,05)$ and relationship The Behavior of Pulmonary tuberculosis Patients with The Occurrence of Pulmonary tuberculosis Transmission in the Family.

Good prevention behavior plays an important role in breaking the chain of transmission.

Keywords: Patients Behavior, Pulmonary tuberculosis, Transmission in the family

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BACKGROUND

Pulmonary tuberculosis is an infectious disease caused by the bacteria *Mycobacterium tuberculosis*, which is also known as Acid-Resistant Bacteria (BTA) and mostly attacks the lungs. Patients with smear positive Lung tuberculosis can infect those around them, especially those who have close contact (Kesehatan, 2018). Transmission of pulmonary tuberculosis in the family occurs related to minimal prevention behavior of pulmonary tuberculosis sufferers such as throwing sputum out of place, never covering the mouth when coughing and sneezing (Rahayu & Nursasi, 2019). The rate of transmission of pulmonary tuberculosis in the patient's family environment is highest, where a patients could infect 2-3 human in his home. Meanwhile, the risk of contracting more than one person in the house is 4 times greater than that of only one patient at home (Fitriani, 2013). Based on a preliminary study in the form of an interview conducted by researchers on November 8, 2019, in the Working Area of the Prambon Health Center, Nganjuk Regency, there were 3 out of 5 patients who claimed to have been infected by a family member who lived at home. A total of 3 sufferers said they never closed their mouths when coughing, did not use a mask, and threw sputum anywhere. Meanwhile, the other 2 patients were not infected by family members. A total of 2 sufferers have good behavior, namely throwing phlegm in a special container given soap, covering their mouths when coughing using a tissue and always wearing a mask

The risk of transmission every year, in Indonesia is considered quite and varies between 1-3%. In areas with transmission every year of 1%, it means that every year among 1000 residents there are 10 people who will be infected (Organization, 2018). According to the 2018 WHO Global tuberculosis Report, the occurrence of pulmonary tuberculosis in Indonesia has reached 842,000 cases. Meanwhile, the prevalence of pulmonary tuberculosis in East Java was 54,811 cases (CNR = 139/1000 population) (Kesehatan, 2018). Based on report data from the 2019 Nganjuk District Health Office, there were 822 pulmonary tuberculosis patients at Nganjuk, while in the Prambon Public Health Center working area there were 54 pulmonary tuberculosis patients and was ranked first with the highest pulmonary tuberculosis rate of all Nganjuk District Public Health Center Work Areas.

Causative factors that contribute to the occurrence of pulmonary tuberculosis transmission are environment, host and agent. Of the three factors, environment and behavior are the biggest factors affecting the degree of public health. Pulmonary tuberculosis is very easily transmitted through the air or sputum droplets of sufferers. The potential for infection is very large from household contacts who do not have good transmission prevention practices such as never covering their mouth when coughing or sneezing, never wearing a mask, and throwing sputum anywhere. This will result in being a source of infection for those around him and it is very possible for the *M.tuberculosis* germ to spread in the house, making it easier for the transmission process to occur (Fitriani, 2013).

The main risk of pulmonary tuberculosis transmission starts at the household level so that prevention behavior of pulmonary tuberculosis sufferers needs to be emphasized so as not to transmit the disease to other family members. Transmission prevention behavior begins with BCG immunization, early diagnosis if there are chronic cough symptoms, treatment packages regularly and routinely to completion, and patient behavior such as cough etiquette, throwing sputum, taking regular medication to completion (Gero & Sayuna, 2017). The behavior of patients with pulmonary tuberculosis an important role in breaking the chain of infection transmission in the family unit and the role of professional community nurses is also needed in order to strengthen aspects of health services for patients with

pulmonary tuberculosis. Cooperation between families and nurses is something that needs to be simultaneously improved in order to achieve optimal public health.

METHODS

The research design used correlation research with cross sectional approach. This research was conducted on 27 February - 14 March 2020 in the Work Area of the Prambon Community Health Center, Nganjuk Regency. The population of this study were 54 patients with pulmonary tuberculosis in the working area of Prambon Public Health Center, Nganjuk Regency. Samples were taken by purposive sampling technique as 39 respondents. The sample in this research were patients with pulmonary tuberculosis who met the inclusion criteria. The inclusion criteria in this study were respondents aged 18-65 years, did not have complications and could communicate well.

The independent variable is the Behavior of Pulmonary tuberculosis Patients and the dependent variable is the Occurrence of Pulmonary tuberculosis Transmission in the Family. Data collection using a questionnaire. Data analysis used the contingency coefficient test with $\alpha = (0.05)$. An ethics that must be considered are informed consent, autonomy, confidentiality, beneficent, non-maleficent, justice and fidelity.

RESULTS

A. Characteristics Of Respondents

Table 1. Characteristics of respondents for gender, age, education, profession, Information, long suffered, treatment and living together (n=39)

Variables	F	%
Gender		
Man	23	59
Woman	16	41
Age		
18-25 Years	5	12,8
26-35 Years	8	20,5
36-45 Years	8	20,5
46-55 Years	6	15,4
56-65 Years	12	30,8
Education		
No school	1	2,6
Elementary School	10	25,6
Middle School	18	46,2
High School	10	25,6
Profetion		
Housewife	9	23,1
Farmer	19	48,7
Enterpreneur	8	20,5
government employees	1	2,6
No work	2	5,1
Information		
Already	13	33,3
Not yet	26	66,7

Long	Suffered		
Tuberculosis Paru		39	100
<5 Years		0	0
>5 Years			
Treatment Tuberculosis Paru			
1-2 Month		11	28,2
2-3 Month		20	51,3
3-4 Month		8	20,5
5-6 Month			
Living Together		10	25,6
Wife/Husband		1	2,6
Grandmother/Grandfather		17	43,6
Parents		11	28,2
Child			

B. Behavior of Pulmonary Tuberculosis Patients in the Work Area of the Prambon Public Health Center, Nganjuk

Table 2. Frequency of Behavior Pulmonary Tuberculosis Patients in the Work Area of the Prambon Public Health Center, Nganjuk.

Behavior Pulmonary Tuberculosis Patients	F	%
Good Behavior	10	25,6
Enough Behavior	11	28,2
Insufficient Behavior	18	46,2
Total	39	100

Based on table 2, it can be seen that of the 39 respondents of pulmonary tuberculosis patients in the working area of the Prambon Community Health Center, Nganjuk Regency, almost half, namely 18 patients (46,2%), had insufficient behavior regarding the prevention of pulmonary tuberculosis transmission.

C. Occurrence of Pulmonary Tuberculosis Transmission in Families at the Work Area of the Prambon Public Health Center, Nganjuk Regency

Table 3 Frequency Occurrence of Pulmonary tuberculosis Transmission in Families in the Work Area of the Prambon Public Health Center, Nganjuk

Occurrence of Pulmonary tuberculosis Transmission in Families	F	%
Have Transmission	19	48,7
Have not Transmission	20	51,3
Total	39	100

Based on table 3 it can be seen that of the 39 respondents with pulmonary tuberculosis in the working area of the Prambon Public Health Center, Nganjuk Regency, most of them 20 patients (51.3%) did not transmission.

D. The Correlation Behavior of Pulmonary Tuberculosis Patients with The Occurrence of Pulmonary Tuberculosis Transmission in the Family at Work Area of Public Health Center Prambon Nganjuk

Table 4 Cross Tabulation The Correlation Behavior of Pulmonary tuberculosis Patients with The Occurrence of Pulmonary tuberculosis Transmission in the Family at Work Area of Public Health Center Prambon Nganjuk Regency.

Behavior	Occurrence of Pulmonary tuberculosis Transmission				Total	
	Have Transmission		Have not Transmission		Σ	%
	F	%	F	%		
Good Behavior	0	0	10	25,6	10	25,6
Enough Behavior	1	2,6	10	25,6	11	28,2
Insufficient Behavior	18	46,2	0	0	18	46,2
Total	19	48,7	20	51,3	39	100

Contingency Coefficient test ρ value = 0,000 \leq α = 0,05

Based on table 4, it can be seen that of the 39 respondents of pulmonary tuberculosis patients in the working area of the Prambon Public Health Center, Nganjuk Regency, almost half, namely 18 patients (46,2%) who had poor behavior and experienced transmission. The results of the contingency coefficient statistical test obtained the value of ρ value = 0.000 \leq α 0.05, which means that H_a is accepted so that it can be concluded that a correlation between the behavior of pulmonary tuberculosis patients with the occurrence of pulmonary tuberculosis transmission in the family in the working area of the Prambon Nganjuk Health Center.

DISCUSSION

Behavior is the totality (totality) of a person's understanding and activities which are a joint result of internal and external factors (Notoatmodjo, 2014). One of the external factors that influence a person's behavior is information. According to Notoatmodjo, information is a whole meaning which can be interpreted as someone's notification of new information for the formation of an attitude towards it. Suggestive messages are conveyed by this information. This approach usually uses mass media. Sources of information can be obtained through printed media (newspapers, magazines, books), electronic media (radio, television, internet) and through health education activities by distributing leaflets, seminars, counseling and so on.

According to Rohmawati Notoatmodjo (2007) exposure to health information to individuals will encourage health behavior. The more a person gets information from various sources, the more likely a person is to take a good attitude about something, and in the end there can be changes in good health behavior.

Age affects a person's perceptive power and mindset. As you get older, your comprehension and mindset will be more developed so that the behavior you get will get better. The older a person is, the better his mental development processes, but it is estimated

that IQ will decrease with age, especially vocabulary skills and general knowledge (Nursalam & Efendi, 2008). The results of this study support the research of Sekar et al (2018), namely that of 380 respondents who did not do PHBS, 227 respondents (59, 7%) were > 40 years old, indicated by the unwillingness of individuals to seek new information related to health problems, in addition to that individual it is difficult to change behavior to adopt new, good behaviors (Prihanti, Lista, R Habibi, Hanggara, Galih, & Sinta, 2018).

The highest risk of transmission of pulmonary tuberculosis is during 1 year after infection, especially the first 6 months. The incubation period for pulmonary tuberculosis can be 4-8 weeks in the range of 2-12 weeks. In a study conducted by Kartasasmita, it is stated that family members are very vulnerable to infection because they have a long history of contact. The factor of the patient's closeness to family members is very likely to transmit the infection if the family members and sufferers do not get correct and accurate information. In the study, out of 39 respondents, 19 respondents (48, 7%) were infected. The role of family members is very important in reminding and controlling sufferers to carry out behaviors to prevent pulmonary tuberculosis transmission, so that transmission in the patient's house will be reduced (Kartasasmita, 2016).

Health behavior is a person's response to external stimuli related to health. According to H.L Bloom's theory, it can be described that the transmission of pulmonary tuberculosis has many factors, namely behavior, environment, genetics and health services (Notoatmodjo, 2014). Behavioral factors are the second largest component affecting health status. Health status will be achieved optimally when all these factors work together in good condition. If one of the four factors above is disturbed, it will affect the occurrence of pulmonary tuberculosis transmission in the family (Putra, 2011).

The results this study support research from Gero and Sayuna, which states that the behavior of people with pulmonary tuberculosis who is less likely to have the potential to transmit the disease to the same household is 2,6 times (Gero & Sayuna, 2017). This study also supports previous research conducted by Mujahidin (2015) which states that it is very necessary to pay attention to preventive practices such as using masks and covering the mouth with tissue when coughing and sneezing can prevent transmission of pulmonary tuberculosis to other family members (Mujahidin, 2015).

CONCLUSION

Behavior of patients with pulmonary tuberculosis in the working area of Public Health Center Prambon, Nganjuk Regency, almost half of them, as many as 18 patients (46,2%), had Insufficient attitudes about the prevention of pulmonary tuberculosis transmission.

The occurrence of pulmonary tuberculosis transmission in families in the work area of Public Health Center Prambon, Nganjuk Regency, almost half of them, namely 19 patients (48,7%) experienced the occurrence of transmission.

There is a relationship between the behavior of pulmonary tuberculosis patients and the occurrence of pulmonary tuberculosis transmission in the family in the work area of Prambon Public Health Center, Nganjuk. The results of the statistical Contingency Coefficient test $p \text{ value} = 0,0000 \leq \alpha (0,05)$.

REFERENCES

- Fitriani, E. (2013). Faktor Risiko Yang Berhubungan Dengan Kejadian Tuberkulosis Paru . *Unnes Journal Of Public Health*, 1-7.
- Gero, S., & Sayuna, M. (2017). Pencegahan Penyakit Tuberculosis Paru Yang Utama Dimulai Dari Dalam Rumah Penderita. *Jurnal Info Kesehatan*, 120-128.

- Kartasmita, C. B. (2016). Epidemiologi Tuberkulosis. *Sari Pediatri*, 124-129.
- Kesehatan, K. (2018). *Info Data dan Informasi Tuberkulosis*. Jakarta: Pusat Data dan Informasi Kemenkes RI.
- Mujahidin, D. (2015). Gambaran Praktik Pencegahan Penularan Tuberculosis Paru di Keluarga di Wilayah Kerja Public Health Center Kedungwuni I Kabupaten Pekalongan. *FIKKes*, 2-8.
- Notoatmodjo. (2014). *Promosi Kesehatan dan Perilaku Kesehatan*. Jakarta: Rineka Cipta.
- Nursalam, & Efendi, F. (2008). *Pendidikan Dalam Keperawatan Education in Nursing*. Jakarta: Salemba Medika.
- Organization, W. H. (2018). *Global Tuberculosis Report*. WHO.
- Prihanti, G. S., Lista, D., R Habibi, I. A., Hanggara, S., Galih, R., & Sinta, F. (2018). Faktor-Faktor Yang Mempengaruhi Tingkat Perilaku Hidup Bersih dan Sehat Pada Tatanan Rumah Tangga di Wilayah Kerja Public Health Center Poned X. *Saintika Medika: Jurnal Ilmu Kesehatan dan Kedokteran Keluarga*, 7-14.
- Putra, N. R. (2011). *Hubungan Perilaku dan Kondisi Sanitasi Rumah dengan Kejadian TUBERCULOSIS Paru di Kota Solok*. Padang: Universitas Andalas Padang.
- Rahayu, S. A., & Nursasi, A. Y. (2019). Pencegahan Tuberculosis Paru dalam Keluarga. *Jurnal Penelitian Kesehatan SUARA FORIKES* , 270-274.