

The Family Role of Patient with Pulmonary TB About Prevention of Household Contacts Transmission in the Work Area of Puskesmas Perumnas II Pontianak

1st Sitti Syabariyah

Sekolah Tinggi Ilmu Kesehatan 'Aisyiyah Bandung
Bandung, Indonesia
sittisyabariyah@gmail.com

2nd Dithya Enggal Pratiwi

RS Bhayangkara Anton Sujarwo Pontianak
Bandung, Indonesia

Abstract—Pulmonary TB cases at Puskesmas Perumnas II Pontianak in the last 2 years (2014 and 2015) was the cases highest in Pontianak. Based on interviews at health center officer Perumnas II Pontianak that the obstacles faced by the officer were the patients came to the health center without accompanying family with them, so to tell the important things such as prevention of transmission is not conveyed to the family that responsible for the control of patients with pulmonary TB. The family role is very important in preventive health care stages and jointly caring for sick family members. The family's ability to provide nursing care will affect the health of family and individual. Aim: To know the family role of a patient with pulmonary tuberculosis about the prevention of household contact transmission at Puskesmas Perumnas II Pontianak. Method: This research used a descriptive quantitative design with a cross-sectional study approach. The research sample is the family taking responsibility for the pulmonary tuberculosis patients 33 respondents. The data collection instrument used questionnaires and analyzed with Spearman Rank statistical test. Result: The result of the family role of a patient with pulmonary tuberculosis about prevention of household contact transmission in the good category, includes the knowledge (81,8%), attitude (57,6%) & action (60,6%). There is a relationship between education with knowledge $p\text{-value} = 0.017$ ($p < 0,05$) and action $p\text{-value} = 0.029$ ($p < 0,05$). Conclusion: The family role of patient with pulmonary tuberculosis about the prevention of household contact transmission in the good category. There is also a relationship between education with knowledge and action.

Keywords—Pulmonary TB, The family role, Prevention of household contact transmission.

I. INTRODUCTION

Pulmonary TB is a disease of global concern. With various control measures taken, the incidence and deaths from pulmonary TB have decreased, but pulmonary TB is estimated to still attack 9.6 million people and cause 1.2 million deaths in 2014 [1],[2]. Six countries accounted for 60% of new cases, namely India, Indonesia, China, Nigeria, Pakistan and South Africa. In developing countries, pulmonary TB is a direct infectious disease caused by TB germs (*Mycobacterium tuberculosis*), most

of these germs attack the lungs but can also attack other organs of the body [3].

Based on data from the Republic of Indonesia Ministry of Health 2016 found that the number of pulmonary TB cases in Indonesia in 2015 amounted to 330,910 cases, an increase compared to all pulmonary TB cases found in 2014 which amounted to 324,539 cases. Based on data from the Ministry of Health the West Kalimantan Province health profile (2017) recorded the incidence of pulmonary TB as much 3,463 cases. The prevalence rate is 70,21 / 100,000 population [4]. Mortality rate 38 cases of pulmonary TB. While the notification rate of positive smear pulmonary TB cases in 2015 became 105 / 100,000 population, increasing from 94 / 100,000 population in the previous year [4]. Based on data from the Pontianak city health profile, Puskesmas Perumnas II in the last 2 years namely 2014 and 2015 was ranked first in the city of Pontianak with the number of new cases of positive pulmonary TB BTA [4].

Based on the results of interviews with Pontianak Perumnas II Community Health Center staff, it is undeniable that there are some families who do not understand pulmonary TB or its prevention. One obstacle obtained by the officers themselves is that the patient comes to the puskesmas without being accompanied by his family, so to notify important matters such as prevention of transmission is not conveyed to the family responsible for supervision of pulmonary TB sufferers.

The results of an interview conducted on a family member of pulmonary TB that before being taken to the health center, the patient had been treated by a shaman, but did not get any changes. When the illness got worse, the family decided to bring it to the Puskesmas and it was found that they had been diagnosed with smear pulmonary TB (+). The patient's family also does not prevent pulmonary TB transmission. So that with these conditions have a great opportunity to cause new cases in one house.

Based on the background above, the researcher is interested in conducting research on the Role of Family of Lung TB Patients About Prevention of Home Contact Transmission in the Work Area of Public Health Center II Pontianak. The general objective of this study was to

determine the role of the family of pulmonary TB sufferers in preventing the transmission of household contact in the working area of the Pontianak Perumnas II Public Health Center. Special purposes this study was to find out about family knowledge, attitude and actions about pulmonary TB disease, ways of transmission and prevention of pulmonary TB disease to other family members and find out about the relationship between education and knowledge and the relationship between education and action.

II. METHOD

This research method uses a quantitative descriptive design with a cross-sectional study approach. This study aims to describe the role of the family of pulmonary TB patients about the prevention of transmission of household contacts in the working area of the Pontianak Perumnas II Health Center. The population referred to in this study were all families of pulmonary TB sufferers in the working area of Pontianak Perumnas II Health Center, totaling 33 people. This study uses a total sampling technique, samples taken from this study were 33 people. The inclusion criteria taken in this study are willing to be a respondent (a family that is can make decisions against patients aged ≥ 17 years); families caring for pulmonary TB patients; families who live in the same house with pulmonary TB patients; Families of patients who are can communicate actively.

III. RESULTS

TABLE 1. DISTRIBUTION OF RESPONDENT CHARACTERISTICS BASED ON

Characteristics (groups)	F	%
Age		
Late Teenager (17-25 thn)	4	12,1
Early Adult (26-35 thn)	3	9,1
Late Adult (36-45 thn)	9	27,3
Early Elder (46-55 thn)	14	42,4
Late Elder (56-65thn)	3	9,1
Total	33	100,0
Sex		
Male	8	24,2
Female	25	75,8
Total	33	100,0
Work		
Civil	3	9,1
Private	4	12,1
Laborer	2	6,1
Housewife	23	69,7
Students	1	3,0
Total	33	100,0
Education		
Elementary	4	12,1
Junior high school	5	15,2
Senior high school	18	54,5
Bachelors	6	18,2
Total	33	100,0
Source: Primary Data		

Table 1. shows that most of respondents are at the age early elder of 46-55 years (42,4%). Most of the respondents female (75,8%), most of them are housewives (69,7%) and education was senior high school (54,5 %).

TABLE 2. DISTRIBUTION OF RESPONDENT IS BASED ON

Variable	F	%
Family Knowledge		
Good	27	81,8
Enough	4	21,1
Less	2	6,1
Total	33	100,0
Family Attitudes		
Positive	19	57,6
Negative	14	42,4
Total	33	100,0
Family Action		
Good	20	60,6
Enough	12	36,4
Less	1	3,0
Total	33	100,0

Source: Primary Data

Table 2. show family knowledge about preventing the transmission of household contact, most respondents have a good knowledge (81.8%), good family attitudes (57,6%) and good action (60.6%).

TABLE 3. THE RELATIONSHIP BETWEEN EDUCATION AND KNOWLEDGE

Variable	Mean	SD	CI	Value r	p value
Education Knowledge	2,79 1,24	0,893 0,561	3,10 1,44	0,412	0,017

Table 3. Shows that the relationship between education and family knowledge in prevention of household contact transmission. Based on the result of statistical *Spearman Rank test* obtained *p value* of 0.017, which means $p < 0.05$, so it can be concluded that H_0 is rejected, meaning that there is a statistically significant relationship between education and knowledge.

TABLE 4. THE RELATIONSHIP BETWEEN EDUCATION AND ACTION

Variable	Mean	SD	CI	Value r	p value
Education Action	2,79 1,42	0,893 0,561	3,10 1,62	0,381	0,029

Table 4. Shows that the relationship between education and family action in prevention of household contact transmission. Based on the result of statistical *Spearman Rank test* obtained *p value* of 0.29 which means $p < 0.05$, so it can be concluded that H_0 is rejected, meaning that there is a statistically significant relationship between education and action.

IV. DISCUSSION

A. Family knowledge about preventing the transmission of household contact

The results showed the level of knowledge of respondents, research conducted on 33 respondents found that most respondents had good knowledge (81.8%). Good knowledge in this study is the respondent's understanding of pulmonary TB disease and its prevention. Knowledge is influenced by internal factors and external factors. External factors namely, environmental and socio-cultural factors, while internal factors, namely work, age, and education

[5]. Education influences the learning process, the higher a person's education is, the easier the person is to receive information. The more information that comes in the more knowledge gained about health. The results of this study are in line with research conducted by Choudhary (2017), was a higher level of education was significantly protective against the spread of PTB. Higher education (intermediate or college grade) and higher income (>5000/month) were significantly associated with not being a TB patient [6].

Other factors that influence respondents' knowledge besides factors education is age. The age factor of respondents can influence knowledge because the more age someone has, the level of one's knowledge and maturity will be more mature in thinking and receiving information. The results of this study were also supported by Indriana (2016) with 56 respondents, 41 respondents (73.2%) had good knowledge about pulmonary TB. This shows that increasing age will affect one's knowledge [7].

B. Family attitudes about preventing transmission of household contact.

Research by Bani (2015) explained that in determining the whole attitude, knowledge, thoughts, beliefs, and emotions play an important role, as well as knowledge, attitude also has levels based on its intensity, as follows: willing to accept the stimulus provided (objects), provide answers or responses to questions or objects encountered, give positive values to objects or stimuli, even invite or influence or encourage others to respond and take responsibility for what they believe [8].

The results of the study conducted on 33 respondents showed that the majority of respondents had a positive attitude about preventing the transmission of household contact in patients with pulmonary TB (57.6%). This study is in line with research conducted by Astuti (2014), the attitude of respondents had a positive attitude. Where most of the education level of respondents is high school so that they have a good understanding of the prevention of pulmonary TB disease that can affect respondents in behaving [9].

C. Family actions regarding prevention of household contact transmission

The results showed that most respondents had good actions (60.6%) about preventing the transmission of household contact in pulmonary TB sufferers. This is caused by factors of knowledge and attitudes owned by respondents, the majority of which have a good category. If the family has good knowledge about transmission and prevention of pulmonary TB disease, it is easy for the family to determine their attitude and make it happen in an action.

The results of this study were supported by Nasirudin (2014) that most respondents behaved well (55.6%) [10]. The results of this study are in line with Nurfadillah (2014). It is known that the majority (53.3%) of respondents take good precautions, this is likely to be supported by the knowledge of respondents who are mostly already good, because knowledge or cognitive is a

very important domain for the formation of an individual's actions, in addition to knowledge of other factors also influence, such as motivation that encourages someone to take an action, also environmental factors that support a person to take such action which in this case is, take action to prevent the transmission of pulmonary TB [11]. Then from the results of Sulistiyana's study (2017) with the number of samples in this study were 32 families of pulmonary TB patients in the Kesunean health center area, as many as 23 respondents (71.9%) had good prevention efforts [12].

D. Relationship between Education and Knowledge

Spearman Rank correlation test results obtained by Sig. (2-tailed) or p -value = 0.017, which means that there is a significant relationship between respondent education and knowledge and Correlation coefficient = 0.412. So that the relationship between the two variables is unidirectional, thus it can be interpreted that the higher the level of one's education, the better the level of knowledge.

Dongxiang (2018), research results reported that a person's education will affect one's knowledge including a home that meets health requirements and knowledge of pulmonary TB disease, so that with sufficient knowledge, a person will try to have a clean and healthy life behavior. Education shows the quality of human resources that will greatly affect human productivity itself [13].

E. The Relationship between Education and Action

Spearman Rank correlation test results obtained by Sig. (2-tailed) or p value = 0.029, which means that there is a significant relationship between respondent education and actions and Correlation coefficient = 0.381 so that the relationship between the two variables is in the same direction so it can be interpreted that if the family has a high education and knows about the transmission and prevention of pulmonary TB disease well, it is easy for the family to determine attitudes and realize them in an act/action.

Indriati (2016) explained that one of the factors that influence behavior is the level of education. The results of his research indicate that the higher a person's education will affect one's behavior [7]. A similar study conducted by Astuti (2014) reported that respondents with good levels of knowledge had better prevention measures for pulmonary TB compared to respondents with less and sufficient levels of knowledge. This is because some of the respondents have a high school education level and knowledge which is a very important domain for the formation of one's actions [9]. Researchers believe that with good education, a person will be able to understand the information provided about the transmission and prevention of pulmonary TB, with a good understanding it will be easy and understand to apply it into an action.

V. CONCLUSION

Based on the results of research and discussions, it can be concluded as follows: The majority of respondents have good knowledge (81.8%), have a positive attitude (57.6%)

and have good actions regarding (60.6%) the prevention of transmission of household contacts of pulmonary TB disease. There is a relationship between education and respondent's knowledge about preventing transmission of household contact with pulmonary TB patients with p -value = 0.017 and Correlation coefficient = 0.412. There is a relationship between education and respondent's actions regarding prevention of household contact transmission of pulmonary TB patients with p -value = 0.029 and Correlation coefficient = 0.36.

This research suggests to increasing health promotion to the community about preventing pulmonary TB transmission so that it can raise public awareness to make efforts to prevent pulmonary TB disease, as well as provide encouragement or motivation to the community to always carry out regular treatment and examination. It is hoped that it can increase the role of nurses in health promotion as health educators and become literature material on the prevention of pulmonary TB disease transmission.

Maintaining the good actions that the respondent knows about pulmonary TB and how to prevent transmission, breaking the chain of pulmonary TB transmission to other family members so that other family members are not infected. For further researchers, it is expected that for the research area to be developed, the number of population and variables studied are also added, so that it can produce broader and more accurate results. Then in the analysis of the data used not only in univariate and bivariate analysis but multivariate analysis can be done. It can also conduct qualitative research so that it can be explored more deeply about the participation of his family.

ACKNOWLEDGEMENT

Thank you to STIK Muhammadiyah Pontianak, Bhayangkara Anton Sujarwo Hospital Pontianak and health center officer Perumnas II Pontianak, Dinkes Kota Pontianak and Ministry of Health RI for facilitating this research. The same remark was also conveyed to the research team for their contribution.

REFERENCES

- [1] World Health Organization (WHO), "Global Tuberculosis Report," 2015. [Online]. Available: http://apps.who.int/iris/bitstream/10665/191102/1/9789241565059_eng.pdf. [Accessed: 20-Dec-2016].
- [2] W. H. Organization, "Global Tuberculosis Report 2019," 2019. [Online]. Available: https://www.who.int/tb/publications/global_report/en/. [Accessed: 31-Dec-2019].
- [3] Kementerian Kesehatan RI, "Tuberculosis," Jakarta, 2018.
- [4] D. K. P. P. K. Barat, "Profil Kesehatan Provinsi Kalimantan Barat Tahun 2017," 2017. [Online]. Available: https://www.kemkes.go.id/resources/download/profil/PROFIL_KE_S_PROVINSI_2017/20_Kalbar_2017.pdf. [Accessed: 31-Dec-2019].
- [5] K. Middelkoop, L.-G. Bekker, C. Morrow, N. Lee, and R. Wood, "Decreasing household contribution to TB transmission with age: a retrospective geographic analysis of young people in a South African township," *BMC Infect. Dis.*, vol. 14, no. 1, p. 221, 2014.
- [6] N. P. Choudhary P, Singh S, Adhikari L, "Occurrence Of

- Pulmonary Tuberculosis: Associated SocioDemographic Factors And The Role Of Knowledge And Awareness," *Int. J. Innov. Res. Adv. Stud.*, vol. 4, no. 9, 2017.
- [7] T. Indriana, "Hubungan Tingkat Pengetahuan Keluarga dengan Perilaku Pencegahan Penularan TB Paru Di Rumah Sakit Khusus Paru Respira Bantul." STIKES Jenderal A. Yani Yogyakarta, 2016.
- [8] S. F. Bani, F. N. Rosid, and N. A. W. Jadmiko, "Relationship between knowledge level and public attitudes against prevention of pulmonary tuberculosis in Dayu Village area." Dissertation, Universitas Muhammadiyah Surakarta, Surakarta, 2015.
- [9] S. Astuti, "Hubungan tingkat pengetahuan dan sikap masyarakat terhadap upaya pencegahan penyakit Tuberkulosis di rw 04 Kelurahan Lagoa Jakarta Utara Tahun 2013," 2013.
- [10] M. R. Nasirudin, "Hubungan Tingkat Pengetahuan Dan Sikap Dengan Perilaku Pencegahan Penularan Tuberkulosis (TB) Di Wilayah Kerja Puskesmas Ngemplak Kabupaten Boyolali." Universitas Muhammadiyah Surakarta, 2014.
- [11] N. Nurfadillah, I. Yovi, and T. Restuastuti, "Hubungan Pengetahuan dengan Tindakan Pencegahan Penularan pada Keluarga Penderita Tuberkulosis Paru di Ruang Rawat Inap Paru RSUD Arifin Achmad Provinsi Riau," *J. Online Mhs. Fak. Kedokt. Univ. Riau*, vol. 1, no. 2, pp. 1-9, 2014.
- [12] C. S. Sulistiyana and S. Susanti, "Hubungan Pengetahuan dan Sikap Keluarga Pasien Tuberkulosis Paru dengan Upaya Pencegahan Penyakit Tuberkulosis Paru di Wilayah Kerja Puskesmas Kesunean dan Pegambiran Kota Cirebon," *Tunas Med. J. Kedokt. Kesehat.*, vol. 2, no. 3, 2017.
- [13] D. Pan *et al.*, "Tuberculosis Transmission in Households and Classrooms of Adolescent Cases Compared to the Community in China," *Int. J. Environ. Res. Public Health*, vol. 15, no. 12, p. 2803, 2018.