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RESEARCH ARTICLE

THE RELATIONSHIP OF KNOWLEDGE OF PULMONARY TUBERCULOSIS PATIENTS WITH THE LEVEL OF TREATMENT ADHERENCE IN PRIMARY HEALTH CENTER IN MEDAN DENAI SUB-DISTRICT

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ABSTRACT

Tuberculosis is a global health problem, especially in countries that are grouped in high-burden countries, including Indonesia. Indonesia was in second position with the highest number of TB patients in the world in 2016. Based on the annual report of Medan City Health Department in 2016, succeed rate in Medan City was 73.04%. This study was conducted to determine the relationship of knowledge of pulmonary TB patients with the level of treatment adherence. uses correlational analytic design with cross sectional approach obtained 80 TB patients who had treatment in community health centers of Medan Denai District. Data were collected through interview using questionnaire and analyzed by *chi-squar*e test with 95% confidence interval. The results showed an association between patients knowledge (p=0.001) with the level of treatment adherence in the primary health center of Medan Denai District.

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INTRODUCTION

Infectious diseases are still a public health problem that causes high morbidity, mortality and disability so that is necessary to carry out prevention through effective and efficient prevention, control and eradication efforts. One dangerous infectious disease is tuberculosis. Tuberculosis is an infectious disease that is still a public health problem and one of the causes of death so that a tuberculosis prevention program needs to be carried out continuously (Kemenkes RI, 2016). Regarding TB, according to WHO Global Tuberculosis Report 2016 data, Indonesia ranks second with the highest TB burden in the world. The TB rate in Indonesia is microscopically based on 759 per 100,000 respondents for ages 15 years and over with a higher number of male than female, and the number in urban areas is higher than in rural areas (WHO, 2016). In line with the increase in TB cases, the national TB control program began implementing short-term treatment strategies with direct supervision, namely *Directly Observed Treatment Short-course* (DOTS) which is carried out at the primary health care in stages. Since 2000, the DOTS strategy has been implemented nationally in all Health Service Facilities. The DOTS strategy consists of five key components namely political commitment, case finding, standard treatment, management system and availability of anti TB drugs (OAT) and monitoring systems (Kemenkes RI, 2016).

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Based on 2016 District / City Health Profile data, the average treatment success rate at the provincial level reached 92.19%, with a breakdown of 85.52%, but this increased by 2.58% compared to 2015 (89.61 %). The rate of success rate in 2016 has been able to exceed the national target of 85%. From 33 regencies/cities, there are 2 regencies / cities that have not been able to reach a success rate of 85%, including Medan and Padang Sidempuan. According to the Medan City Health Profile data in 2016, the discovery of new cases of BTA (+) was 2,829 cases, when compared to new cases of BTA (+) found in 2015 namely 3,111 cases and in 2014 there were 3,047 cases, the number of these cases decreased. However, the cure rate in Medan City in 2016 was 73.04%. Lack of information obtained by TB patients about their illnesses and drug side effects that may arise after taking anti-tuberculosis drugs such as nausea, dizziness, vomiting, blurred eyes and muscle / bone pain causes non-adherence with taking medication. Starting from the problem above, the researchers felt interested in examining the relationship of knowledge of patients with pulmonary TB with treatment adherence in Primary health center of Medan Denai sub-district. The results obtained in this study are expected to be used as a basis for planning for officers managing pulmonary TB programs primary health center of Medan Denai sub-district. The purpose of this study was to analyze the relationship of knowledge about pulmonary TB with treatment adherence in primary health center of Medan Denai sub-district.

Objective: The aim of this research is to investigate the relationship of the level of knowledge of patients with

pulmonary TB with treatment adherence in primary health center of Medan Denai sub-district.

METHODS

Study Design: This research uses correlational analytic design with cross sectional approach.

Data Source: The study was conducted on all pulmonary tuberculosis patients treated primary health center of Medan Denai sub-district and the selected respondents will be included in this study, was namely 80 respondents. During a period of 1 year (from April 2017 to March 2018), This study uses primary data sources from pulmonary TB patients and secondary data includes reports of pulmonary TB disease in primary health center of medan denai sub-district.

Data Collection: The following data were collected for each case identified: age, sex, education level, occupation, respondents' knowledge about TB, and the level of treatment adherence. Data collection and statistical analysis were carried out using Statistical Product and Service Solutions (SPSS).

RESULTS

Details of Patients: There were 80 respondents of the interviewees were male namely 45 respondents (56.3%), and 35 respondents were female (43.8%). The highest percentage of age groups of respondents is in the age group ≤ 25 years namely 42 respondents (524%) and the lowest in the age group > 50 years, which is only 18 respondents (22.5%). Table 1 shows the highest percentage of respondents' education level was at junior high school as 25 respondents (31.3%) and the lowest at basic education, which was only 11 respondents (13.8%). Regarding occupation, 40 respondents (50.8%) were entrepreneurs.

Table 1: Characteristics of the study population in Primary health center of Medan Denai Sub-district (n = 80)

Variables	n = 80	%
Sex		
Female	35	43,8
Male	45	56,3
Age		
≤ 25 years	42	52,4
26-50 years	20	25,0
> 50 years	18	22,5
Education level		
Basic education	11	13,8
Junior high school Senior high	25	31,3
school	21	26,3
Higher education	23	28,8
Occupation		
Laborer	21	26,3
Entrepreneur	40	50,0
BUMN	3	3,8
PNS	10	12,5
Unemployed	6	7,5

Table 2. Respondents' Knowledge about TB

Knowledge	N	%
High	17	21,3
High enough	25	31,3
Low	38	47,5
Total	80	100

Table 3. The Level of Treatment Adherence

Adherence	N	%
Adherence	38	47,5
Non-adherence	42	52,5
Total	100	100

Details of Respondents' Knowledge about TB: Table 2 shows the level of knowledge of 80 respondents was observed, it can be seen that the majority of the respondents' knowledge level was at a low level of 35 respondents (47.5%).

Details of The Level of Treatment Adherence: The distribution table of the level of knowledge of 80 respondents, it can be seen that the majority of respondents did not adhere to the treatment of the disease namely 42 respondents (52.5%).

Details of The Relationship Between Respondents' Knowledge Level about Pulmonary TB with Treatment Adherence: Bivariate analysis is used to see whether there is a relationship between the independent variables, namely the level of knowledge of the respondents with the dependent variable of respondents responding to treatment at a significance level of $\alpha = 0.05$. The analysis used in this study is chi square analysis. Based on the results of the analysis, it can be seen that there were 15 respondents (88.2%) with a high level of knowledge and adherence, only 2 respondents non-adherence (11.8%). Respondents with a high enough level of knowledge and adherence there were 21 respondents (84.0%) while only 4 respondents (16.0%) non-adherence. Furthermore, there were only 2 respondents with a low level of knowledge and adherence (5.3%) while 36 respondents (94.7%) non-adherence.
Then, on the results of the analysis with chi-square, p-value is 0.001 or $p < \alpha$ (0.05). This means, variable knowledge level about pulmonary TB disease is significantly associated with variable treatment adherence.

DISCUSSION

Assessment of respondents' knowledge is based on the ability of respondents to answer questions about TB disease and treatment. Patient's knowledge of TB includes TB disease, signs and symptoms of TB, side effects of TB, prevention of TB, diagnosis of TB, and TB treatment. Increased knowledge can lead to changes in someone perceptions and habits. Experience and research show that behavior based on knowledge will last longer than those not based on knowledge.
Based on the respondent's answers it is known that the results of the analysis of respondents' knowledge about TB shows 21.3% of respondents have high knowledge and 47.5% low knowledge about TB. This shows that most of TB respondents primary health center of Medan Denai Sub-district still have a low level of knowledge. The authors analyze that health education that given by health workers is not effective enough and has not shown optimal results. The results of this study indicate that namely 47.5% of TB patients at the Primary health center of Medan Denai Sub-district adherence on taking Anti-tuberculosis drugs. 52.5% indicated that respondents who did not adherence. The authors observed one of the adherence factors taking anti-tuberculosis drugs is the presence support from treatment observer that reminds Pulmonary TB patient to take medicine. Based on the results of the analysis, the proportion of respondents who have more knowledge many are adherence compared to those who don't adherence.

Table 4. The Relationship Between Respondents' Knowledge Level About Pulmonary TB with Treatment Adherence

Knowledge	Adherence		Non-adherence		Total		p *value*
	F	%	F	%	F	%	
High	15	88,2	2	11,8	17	21,2	0,001
High enough	21	84,0	4	16,0	25	31,3	
Low	2	5,3	36	94,7	8	47,5	
Total	38	47,5	42	52,5	80	100	100

This based on the results of bivariate analysis in this study that there is a relationship between knowledge level of TB patients with treatment adherence is indicated with the test results statistic p value = 0.001 (α = 0.05). This can be seen from the percentage of respondents with a high level of knowledge have a high level of treatment adherence is 88.2% while respondents with a low knowledge have a low level of treatment, which is 94.7%. This research is in accordance with Notoatmojo's theory that someone's actions against health problems basically will influenced by someone's knowledge against the problem. (Notoadmodjo, 2003). Treatment adherence is a key factor for treatment success and inadequate adherence is associated with various adverse outcomes like the development of M. tuberculosis strains resistant to the medication, relapse, continued transmission of the disease and even death. For this reason, the World Health Organization (WHO) recommends that patients diagnosed with TB take medication daily at recommended dosages for at least six months (WHO, 2017). Ariyani's research in 2016 showed that on statistical analyses α = 0.05 has obtained r = 0.383 and ρ = 0.015, so there is a significant relationship between the level of knowlodge with pulmonary TB patient's adherence. Saptuti's research in 2016 showed there is a significant relationship between knowledge level of compliance with treatment in patients with pulmonary tuberculosis in dr. Soehadi Prijonegoro Sragen with significant value 0.009. Susilowati's research in 2012 about The relationship of knowledge about TB disease TB patients with anti-Tuberkulosis medication adherence (OAT) showed that Results from contingency coefficient statistical test obtained results (p) = 0,000 and α = 0,05. Kondoy's research in 2014 showed that the variable, which relates with treatment compliance of TB patient, is education. (p=0,000) and knowledge (p=0,000). Sugiono's research in 2017 showed that test chi-square statistic obtained level of education (p value = 0.317), knowledge (p value = 0.009), the distance or range (access) to health facilities (p value = 0.019), support supervisor taking medication (p value = 0.002), and support health workers (p value = 0.000). Fitria's research in 2016 showed that the higher the level of knowledge about tuberculosis patients taking the drug, the more obedient. Kurniawan's research in 2011 suggestion to maintain or improve home visit activities to increase the compliance treatment in patients with tuberculosis in primary health care at Jayapura City.

Conclusion

Based on the respondent's answers it is known that the results of the analysis of respondents' knowledge about TB shows 21.3% of respondents have a high knowledge and 47.5% of respondents have a low knowledge about TB. This shows that most of TB respondents primary health center of Medan Denai sub-district still have a low level of knowledge. The results of this study indicate that namely 47.5% of TB patients at the Primary health center of Medan Denai Sub-district adherence on taking Anti-tuberculosis drugs there are. 52.5% of TB patients who did not adherence.

This based on the results of bivariate analysis in this study that there is a relationship between knowledge level of TB patients with treatment adherence is indicated with the test results statistic p value = 0.001 (α = 0.05). This can be seen from the percentage of respondents with a high level of knowledge have a high level of treatment adherence is 88.2% while respondents with a low knowledge have a low level of treatment, which is 94.7%.

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