Determinants Of Pulmonary Tuberculosis Patients' Cure In The Working Area Of Sei Agul Health Center, Medan West District, Medan City

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Abstract.
Tuberculosis is an infectious disease caused by the bacterium Mycobacterium tuberculosis, this bacterium usually attacks the lungs, but TB bacteria can attack any part of the body such as the kidneys, spine and brain. TB is one of the top 10 causes of death and the main killer of HIV sufferers worldwide. Based on WHO's 2018 Global Truberculosis Report, the incidence of tuberculosis in Indonesia in 2018 increased by 420,994 cases compared to the number of cases in 2017 of 360,565 cases and 2016 of 330,910 cases. According to gender, the number of cases in men is higher than in women, namely 1.4 times compared to women in each province throughout Indonesia. Methods: The study used a quantitative approach with an analytic observational type with a cross-sectional research design. Research results: motivation variables with significant values (0.000), medical history (0.005), knowledge (0.04), socioeconomic conditions (0.035) and education (0.022) have a relationship to the recovery of TB patients. While other variables are not related to the recovery of TB patients.

Keywords: *Tuberculosis, Patient, and Pulmonary TB.*

I.   INTRODUCTION

Tuberculosis (TB) is still a public health problem both in Indonesia and internationally so that it becomes one of the goals sustainable health development (SDGs). It encourages National tuberculosis control continues to be carried out by intensifying,accelerating,program extensification and innovation (Ministry of Health, 2019). Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis and is one of the 10 main causes of death worldwide. Indonesia is ranked 3rd with the highest TB sufferers in the world after China. Globally, it is estimated that 824,000 people will suffer from TB in 2020. Although there has been a decrease in new TB cases, it is not fast enough to achieve the target of the 2020 END TB Strategy, namely reducing TB cases by 20% between 2015 – 2020. In 2015 – 2019 a cumulative reduction in TB of only 9% (WHO, Global Tuberculosis Report, 2021). Based on recorded data, the incidence of TB is 301 per 100,000 (9.9 million people) while 93,000 people die from the disease.Based on WHO's 2018 Global Truberculosis Report, the incidence of tuberculosis in Indonesia in 2018 increased by 420,994 cases compared to the number of cases in 2017 of 360,565 cases and 2016 of 330,910 cases. According to gender, the number of cases in men is higher than in women, namely 1.4 times compared to women in each province throughout Indonesia. From the results of the tuberculosis prevalence survey, it was found that men have a 3 times higher risk of contracting it than women, this happens because men are more exposed to TB risk factors such as smoking and non-adherence to taking medication.Globally, the success rate of TB treatment among new cases determined by the National TB program is 85%.

There are 0.5 million new cases of drug-resistant TB per year. This complicates the treatment process to cure TB cases because it requires a long treatment time and the cost (price) of the drug. The cure rate for TB cases in the world is around 50% (Yolanda, 2019).According to the Annual Report On Global TB Control 2016, Indonesia is one of 22 countries with high burden countries. In 2012, Indonesia ranks 4th in the world with the highest pulmonary TB cases of 0.37-0.54 million after India (2.0 - 2.5 million), China (0.9 - 1.2 million), South Africa (0.40 - 0.59 million) and in 2014 Indonesia ranks the 2nd largest TB cases in the world with 930,000 cases after India with 2,200,000 cases. In 2016 TB ranked 3rd (336,729) after India (1,740,435) and China (804,163) and in 2017 Indonesia ranked 2nd (1,020) after India (2,790) (WHO, 2017) Likewise with deaths from TB, the number of deaths in 2019 was 1.4 million. Globally, deaths from TB per

year are decreasing globally, but do not reach the target of the 2020 END TB Strategy of 35% between 2015 – 2020. The cumulative number of deaths between 2015 – 2019 is 14%, which is less than half of the set target (WHO, Global Tuberculosis Report, 2020) Globally, in 2017 the highest number of TB cases occurred in the Southeast Asia and West Pacific regions with 62% of new cases, followed by the African region with 25% of new cases. TB cases occurred in 30 countries by 87%, eight countries accounted for two-thirds of new TB cases namely India, China, Indonesia, Philippines, Pakistan, Nigeria, Bangladesh and South Africa.

(WHO, 2018) Indonesia, along with 13 other countries, is included in the list of HBC (high burden countries) for 3 indicators, namely TB, TB/HIV, and MDR-TB (WHO, 2017)Data from the North Sumatra Provincial Health Office in 2015, the number of TB suspects was 182,257 people, while the number of positive smear TB patients was 18,370 people and the cure rate was 82.83% (14,178 people). The highest positive smear-positive TB cases were in North Sumatra, namely Medan City (3,217 people), Deli Serdang (2,623 people) and Serdang Bedagai (1,091 people). At the Regency/City level, the cure rate was still below the national target of 85%, namely Central Tapanuli (40.57%), Asahan (48.77%), South Tapanuli (58.80%), Humbang Hasundutan (59.68%), North Nias (64.29%), Medan (73.99%), Batu Bara (77.75%), North Labuhan Batu (79.2%) and Tanjung Balai (83.77%) (North Sumatra Health Office Profile, 2016).Data from the Medan City Health Office in 2016 the total number of TB cases was 6,362 people, the proportion with TB smear + examination was 44.46% (2,829 people), the number of treated was 2,853 people and the proportion who recovered was 74.02% (2,112 people). Medan City is the city with the first highest smear positive pulmonary TB case in North Sumatra Province with a proportion of 17.51%. While the second and third ranks are Deli Serdang Regency (14.27%) and Serdang Bedagai Regency (5.93%) (Medan City Health Office Profile, 2016).In 2020 the number of tuberculosis cases found was 351,936 cases, a decrease compared to all tuberculosis cases found in 2019, namely 568,987 cases. The highest number of cases were reported from provinces with large populations, namely West Java, East Java and Central Java. Tuberculosis cases in these three provinces account for almost half of the total tuberculosis cases in Indonesia (46%). When compared by gender, the number of male cases is higher than that of women nationally and in each province.

Even in Aceh, North Sumatra and North Sulawesi cases in men are almost twice as high as women (Indonesian Health Profile, 2020)Provinces that achieve a success rate of treating all tuberculosis cases of at least 90% in 2020 are 10 provinces, namely Lampung (96.7%), South Sumatra (94.5%), West Sulawesi (93.6%), Central Sulawesi (93. .1%), Riau (92.0%), Jambi (90.7%), East Kalimantan (90.5%), Kep. Bangka Belitung (90.2%), West Nusa Tenggara (90.1%) and North Sumatra (90.0%). (Indonesia Health Profile, 2020)TB control program efforts with the Directly Observed Treatment Shortcourse (DOTS) Strategy began in 1955 in Indonesia. DOTS is a comprehensive strategy used by primary health workers around the world to detect and cure pulmonary TB patients. TB control with the DOTS strategy can provide cure rates which is high where WHO targets a cure rate of at least 85% for positive pulmonary TB sufferers. The DOTS principle is to determine treatment services for sufferers so that they can directly monitor the regularity of taking medication. This strategy is supervised by Puskesmas officers, Non-Governmental Organizations (NGOs) and other parties who understand DOTS (Dirjen P2M, 2015).Success in achieving a cure rate below the national target (85%), this can be detrimental to both the government and TB sufferers in terms of financing treatment. The low coverage of the cure rate has a negative impact on public health and the success of program achievements because it provides opportunities for transmission (Ministry of Health RI, 2014).

According to the results of Irnawati's research (2016) in Kotamobagu, it was explained that there was a relationship between family support and adherence to taking medication in pulmonary TB patients. Family support was an important factor in TB treatment adherence. In this case, family support encouraged sufferers to adhere to taking medication regularly, showing sympathy and concern. Family support is very important for the healing process for TB sufferers.The high rate of treatment failure in pulmonary TB patients in general due to the rate of non-compliance in undergoing treatment as it is drop out. This can lead to cases or findings of pulmonary TB patients with smear-resistant smears or what is commonly referred to as MDR-TB (Multi Drug Resistant) (Napitupulu and Harahap, 2020). Therefore to

ensure regularity and compliance of TB patients In undergoing treatment, PMO is needed. Apart from supporting the achievement of recovery for TB patients, the presence of PMO is also useful for preventing the transmission of bacteria that cause TB disease so that it does not become more widespread and avoids cases of MDR-TB patients (Herda, Tunru, and Yusnita, 2018).

The success of DOTS in the treatment of pulmonary tuberculosis is influenced by various factors including the behavior of the supervisor taking medication for pulmonary tuberculosis. Knowledge is the result of knowing and this happens after a person senses a certain object, so good knowledge from a PMO can have a good impact on the pulmonary tuberculosis patient he/she accompanies (Ministry of Health RI Number 67, 2017).Patients who receive less supervision from the PMO are 1.83 times at risk for not recovering from pulmonary TB disease compared to patients who are properly supervised by the PMO (Kholifah, 2009)Based on a preliminary survey at the Medan City Health Office, data on the cure rate for TB sufferers were still below the national target, namely 85% in several Community Health Centers and Hospitals in Medan City in 2016. Several Community Health Centers were still below the national target of 2021100% (SITB data for 2021 as of October 18, 2021), at the Sei Agul Health Center, obtained data for 2021, the recovery rate for TB sufferers was 40 people.

II.   METHODS

The research uses a quantitative approach with the type of observational analytic with a cross sectional research design, ynamely the research design used to determine the determinants of the recovery of Pulmonary Tuberculosis patients. The population in this study were all suspected pulmonary TB patients. Research procedure :

a. Preparation phase

Training on how to collect data, namely how to conduct interviews and fill out questionnaires to research subjects (case and control groups).

b. Implementation Stage

1) Selection of research subjects in the case and control groups who met the inclusion criteria.

2) The research subjects (cases or controls) found were then asked for their willingness to become research subjects.

3) The writing stage was carried out after the data was collected and then data analysis was carried out in a univariate, bivariate or multivariate manner based on the influence of the variables studied.

III.   RESULT AND DISCUSSION

Characteristics of the most respondents were female as many as 38 people (53.5%), for ages 46-55 years old as many as 29 people (40.8%), for education at most elementary and junior high school levels, namely as many as 40 people (56.3%) while for socio-economic categorized as high, namely as many as 42 people (59.2%).This study shows the results that the results of the measurement regarding the healing of most respondents were in the cured category, namely as many as 40 people (56.3%).Based on the results of the study, those that have an influence on recovery are motivation variables with a significance value (0.000), medical history (0.005), knowledge (0.04), socioeconomic conditions (0.035) and education (0.022).

Based on the multivariate results, variables that have a p value less than 0.05 are said to have a significant effect on recovery. So that the variables of education (0.007), socio-economic (0.005), knowledge (0.011) and motivational support (0.000) have a partially significant effect on patient recovery.The variable of socioeconomic status has the most dominant influence on patient recovery with an odds ratio of26.324, then the patient education variable with an odds ratio value of 6.149, compliance variable with an odd ratio value of 0.128 and motivational support variable with an odds ratio value of 0.023.

IV. CONCLUSION

1. Motivation variables with significant values (0.000), medical history (0.005), knowledge (0.04), socioeconomic conditions (0.035) and education (0.022) have a relationship to the recovery of TB patients. While other variables are not related to the recovery of TB patients.

2. The variables of education, socio-economic, knowledge and motivational support partially have a significant effect on the recovery of TB patients. This is evidenced by the p value of the multivariate test which is less than 0.05. The variable of socioeconomic status has the most dominant influence on patient recovery with an odds ratio of 26.324, then the patient education variable with an odds ratio value of 6.149, compliance variable with an odd ratio value of 0.128 and motivational support variable with an odds ratio value of 0.023.

V. ACKNOWLEDGMENTS

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VI. ETHICAL CONSIDERATIONS

This research has been declared ethically compliant according to the WHO 7 Standards 2011 by the Health Research Ethics Commission (KEPK) University of Prima Indonesia.

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