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FACTORS ASSOCIATED WITH HEALTH SEEKING BEHAVIOR AMONG TUBERCULOSIS SUSPECTS IN RURAL AREA: A COMMUNITY BASED STUDY

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ABSTRACT

Background: Tuberculosis (TB) is still a major cause of death and suffering globally, and remains one of the top four causes of death in Indonesia. Problem of early detection is still arise particularly in rural area. Knowing the risk factors which related to health seeking behavior among TB suspect indeed important to be releaved.

Materials and Methods: This study was cross sectional with 113 samples of TB suspect, which conducted in rural area, Banyumas Regency, Central Java, Indonesia. Variables with included in this study were sex, education, economic status, nutrition status and smoking behavior. Data collection was obtained by questionnaire, and analysed by chi-square to find out correlation with health seeking behavior.

Result: Only nutrition status which correlated with health seeking behavior among TB suspect in rural area, Banyumas Regency. While other variables such as education, working status, economic status, smoking behaviour also did not correlate with respondent's behaviour to seek treatment to health services

Conclusion: Results of this study revealed that TB suspect with underweight tend to have more poor health seeking behaviour than people with normal weight. More active case finding and raising public awareness are urgently needed to minimize the spread of TB transmission and also to reduce disease severity.

Keywords: Tuberculosis, suspects, health seeking behaviour

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1.0 Introduction

Tuberculosis (TB) was one of top ten causes of death which has caused 1.7 million deaths worldwide, in which Indonesiandonesia is one of the 22 countries with the highest TB burdens in the world [1]. TB is an infectious disease caused by *Mycobacterium tuberculosis* with the main symptoms of cough lasting up to two weeks whether with sputum and blood, or not, shortness of breath, body weakness, decreased appetite, weight loss, fatigue, sweating at night even without physical activity and fever of more than one month. [2] Transmission occurs when a person inhales droplet nuclei containing *M. tuberculosis* , and the droplet nuclei traverse the mouth or nasal passages, upper respiratory tract, and bronchi to reach the alveoli of the lungs [3]

Several attempts to prevent the severity of TB cases are early detection, immediate initiation of TB treatment and taking medication regularly. Those efforts are undoubtedly important for an effective TB control program to minimize further disease progression at the individual level and transmission within the community. Therefore, a good health seeking behavior is absolutely necessary to prevent the severity of TB. Positive health seeking behavior helps the patients to obtain appropriate health facility and treatment [4]. Unfortunately, there is still low public awareness to seek treatment to health facilities when they had symptoms of TB. Late diagnosis and treatment of TB are still to be the main problem in control program [5] Several studies observed that treatment delay was associated with more severe clinical manifestation and poor clinical outcomes [6-8].

Indeed, it is essential to find out factors associated with health seeking behavior among TB suspects. By knowing factors related to health seeking behavior, it can be useful to improve early treatment of tuberculosis. It is also important to prevent transmission of tuberculosis, since continued spread of TB can partly be attributed to delayed or undiagnosed TB [8]. Several studies stated that various factors related to TB seeking treatment behavior such as perception, social stigma, socio-economic factors, accessibility and affordability of TB health care [9,10]. However, TB health care seeking behavior of TB suspects could varies in every area, since it is a dynamic process which is influenced by cultural, religious, sociodemographic, environmental, political, and other issues [10]

In this study, we eager to analyse which factor related to health seeking behaviour of TB suspect, particulary in rural area which is generally far away from health facilities, with low education and socioeconomic levels. Accessibility to healthcare facility was the main determinant of patient delay. Our study area, Banyumas Regency, Central Java, Indonesia, is one of the districts in Indonesia that has a high number of TB cases, from pulmonary TB cases alone recorded 1,701 patients from 2004-2008 [2], thus it is estimated that there are about 340 patients with pulmonary TB in Banyumas every year. The results of study will give beneficial information about factors related to health seeking behaviour, and this could enhance early detection of TB.

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2.0 Materials and Methods

2.1 Study Area

The study site in this study is the Banyumas Regency, located in the southwest of Central Java Province, Indonesia. Its coordinates are as follows: 108" 39` 17`` - 109" 27` 15`` East longitude, and 7" 15` 05``- 7" 37` 10`` South latitude. The total area is 132,760 km^2, with a population of 1.85 Million inhabitants at a male to female ratio of 50:50. Banyumas Regency consists of 27 sub districts, and has 39 community health centres and a total of 331 villages.

2.2 Data Collection

This research was cross sectional study, which conducted in rural area in Banyumas Regency, with 113 respondents of TB suspect as samples. TB suspects in this study were those with one or more symptoms of TB, including cough over three weeks, bloody cough, weight loss, shortness of breath and fatigue. Variables of this research are sex, education, occupation status, economic status, nutritional status and smoking behavior.

All data obtained in this study using interview method with questionnaire. informed consent was given to the respondent before answering the questionnaires. The socioeconomic variable is the categorization of monthly income in which the limit value used is regional minimum wage of Banyumas, which is IDR 1,461,400.[8] Meanwhile, nutritional status was determined by BMI (Body Mass Index) calculated using the weight formula in kilograms divided by the square of the height in meters where the normal category of BMI is 18.5 to 25.0.

2.3 Data Analysis

The analysis used was chi-square using SPSS (Statistical Package for the Social Science) software to find out the relation of sex, education, occupation status, economic status, nutritional status and smoking behavior to health seeking behavior of tuberculosis suspects.

3.0 Result

3.1 Characteristics of respondents

Based in characteristics of respondents, most of the respondents were women (83.2%) with major education were primary school (47.7%) and junior high school (33.0%). The results showed that the majority of respondents are housewife (61.9%) and 71.4 % of respondents have income above regional minimum wage. Majority of respondents had normal nutritional status (59.8%) and most of them did not smoke (81.7%).

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Table 1: Characteristics of respondents

Characteristics	Number	%
Sex		
• Male	19	16.8
• Female	94	83.2
Total	113	100.0
Education		
• Primary school	52	47.7
• Junior high school	36	33.0
• Senior high school	17	15.6
• Diploma	1	0.9
• University	2	1.8
• Uneducated	1	0.9
Total	109	100.0
Occupation		
• Farmer	8	7.6
• Civil servant	1	1.0
• Employee	8	7.6
• Housewife	65	61.9
• Not work	1	1.0
• Entrepreneur	12	11.4
• Other	10	9.5
Total	105	100.0
Economic status		
• < minimum wage	75	28.6
• ≥ minimum wage	30	71.4
Total	105	100.0
Nutrition status		
• Underweight	11	10.8
• Normal	61	59.8
• Overweight	30	29.4
Total	102	100.0
Smoking behaviour		
• Yes	19	18.3
• No	85	81.7
Total	104	100.0

Based on their health seeking behaviour, 55 respondents (48.7%) went to health services, while rest of them (81.3%) did not access health services when they experienced TB symptoms.

3.2 Health Seeking Behavior of TB Suspects

Table 2: Health Seeking Behavior of TB Suspects

Access Health Service	Number	%
• Yes	55	48.7
• No	58	51.3
Total	113	100.0

Based on the analysis, the result showed that there is no difference of health seeking behavior between men and women (p = 0,899). Meanwhile, several variables such as education, working status, economic status, smoking behaviour also did not correlate with health seeking behaviour among tuberculosis suspects. Only their nutritional status which related to health seeking behavior in tuberculosis suspects. An underweight person is 6 times more likely (95% CI: 1.2-30.4) for not seeking treatment than a person with normal nutritional status (Table 3).

Table 3: Relations between Tuberculosis Suspects' Characteristics and Health Seeking Behavior

Characteristics	No seeking treatment		Seeking treatment		P-value	OR (95% CI)
	Number	%	Number	%		
Sex						
• Male	9	47,4	10	52,6	0,899	0,8 (0,3-2,2)
• Female	49	52,1	45	47,9		
TOTAL	58	51,3	55	48,7		
Education						
• Low	46	51,7	43	48,3	0,984	0,9 (0,3-2,3)
• High	11	55,0	9	45,0		
TOTAL	57	52,3	52	47,7		
Work						
• Yes	20	51,3	19	48,7	0,903	0,9 (0,4-1,9)
• No	36	54,5	30	45,5		
TOTAL	56	53,3	49	46,7		
Economic status						
• < minimum wage	41	54,7	34	45,3	0,599	1,4 (0,6-3,2)
• ≥ minimum wage	14	46,7	16	53,3		
TOTAL	55	52,4	50	47,6		
Nutrition status						
• Underweight	9	81,8	2	18,2	0,029	6,1 (1,2-30,4)
• Normal*	26	42,6	35	57,4		1
• Overweight	16	53,3	14	46,7	0,337	1,5 (0,6-3,7)
TOTAL	51	50,0	51	50,0		

Characteristics	No seeking treatment		Seeking treatment		P-value	OR (95% CI)
	Number	%	Number	%		
Smoking behavior						
• Yes	42	49,4	43	50,6	1,000	0,9 (0,3-2,4)
• No	10	52,6	9	47,4		
TOTAL	52	50,0	52	50,0		

4.0. Discussion

Based on results of this study, only nutritional status which correlated with health seeking behavior among TB suspect in in rural area, Banyumas Regency. While other variables such as education, working status, economic status, smoking behaviour also did not correlate with respondent's behaviour to seek treatment to health services. Underweight person seems 6 times more likely for not seeking treatment than a person with normal nutritional status. These findings are of course a concern for early detection of TB, since it turns out people who are malnourished lazier to check their health.

Correlation between malnutrition and TB could be cause-effect relationship, TB can lead to malnutrition and malnutrition also may predispose to TB. Several studies showed that nutritional profile is an important determinant of its TB incidence. Malnutrition such as a low serum albumin level, protein-energy under nutrition impairs T-lymphocyte-mediated immunologic defenses, which in turn increased the risk of TB [11,12]. This in accordance with study which conducted by Aibana et al (2016) which revealed that high body mass index protects adults against TB disease even at levels ≥ 35 kg/m^2 [13]. While TB infection also causes anorexia and weight loss. In fact, weight variation during therapy has been observed as a useful marker to predict TB treatment outcome [14,15].

Indeed, the results of this study should be a concern to enhance active early detection, particularly in underweight people as vulnerable population for TB infection. It is also necessary to raise awareness to the underweight person to pay more attention to their health condition and to seek treatment to the health facility when symptoms arise. Early treatments can improve clinical outcomes of TB patients as individual and also minimizing potential transmission of TB at community level [16,17].

This finding highlighted the problem of TB case detection in rural area, where the awareness to TB infection is remain low, particularly people with malnutrition. It is important to note that the characteristics of rural areas which far away from health facilities may also affect their health seeking behavior. The problem of difficult access to health facilities and personnel in rural area is still become an issue [18]. Therefore, community-based interventions with active case finding could played an important role for the increased case notification rate of TB. Limitations of this study is that there are several variables that may affect the health seeking behavior on TB suspect such as knowledge, perception, support from health workers and support from community leaders which not covered in this study. Others research also showed that financial, psychosocial and cultural characteristics of patients also main reason of TB suspect who do not seek treatment or delay treatment [19,20]. It will be beneficial for future research to conduct analysis of those variables to gain more depth and comprehensive insight of factor related to health seeking behavior among TB suspect.

5.0. Conclusion and recommendation

Finding of this study highlighted that TB suspect with underweight tend to have more poor health seeking behaviour that people with normal weight. This should be a concern for TB management programs that need uplift of awareness for people to seek treatment to the health facility immediately when TB signs appear. Enhancement of active case finding and raising public awareness are urgently needed to minimize the spread of TB transmission and also to reduce disease severity.

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Declaration

Authors declare that we have no conflict of interest

Authors contribution

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