ANALYSIS OF OBEDIENCE TUBERCULOSIS PATIENTS TO PREVENT DRUG RESISTANCE IN SUKOHARJO DISTRICT

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Article Information	Abstract
	Background: *Succes rate of tuberculosis treatment decrease become 85%. Positive suspect proportion compare with all cases in Sukoharjo district to 2016 has not decrease significantly . Increasing case caused by treatment adherence where important in succesfull recovery of tuberculosis. According to Minister Health of Indonesia, success rate of recovery was decrease. The factors behind the adherence to treatment are numerous, but many are characterized by behaviors such as health trust behavior. The Behavior of the Health Belief Model consists of perceived susceptibility, severity, benefits and barriers. This study is to explain the relationship of Health Belief Model to tuberculosis treatment adherence* **Methode:** *Method use in this research was an observational quantitative study with cross sectional approach. 100 respondents as the sample was taken using simple random sampling method, which was taken randomly from patients who were taking tuberculosis treatment at 12 Sukoharjo Primary Health Care in 2017. Data collection was done with face to face interview. Data analysis was done with bivariate analysis to explain the relationship between the factors of Health Belief Model to the adherence of tuberculosis treatment.* **Result :** *Report Results show from 100 respondents, 57% were categorized as non-adherent in treatment. Based on the four behaviors of the Health Belief Model factor, there was a significant relationship between perceived susceptibility (p = 0.005), perceived severity (p = 0.013), and perceived benefit (p = 0.013) with treatment adherence. While the perceived barrier factor did not correlate significantly (p = 0.446).* **Conclusion :** *Conclusion from research is patients who treated tuberculosis in Sukoharjo had low adherence levels (43%). Non-adherence was still associated with susceptibility, severity, and perceived benefits of treatment, whereas from the side of the barrier there is no problem because tuberculosis drug is provided free of charge.*

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INTRODUCTION

Indonesia is currently ranked 2nd in new cases of tuberculosis after India (WHO, 2016). An increase in tuberculosis cases in Indonesia from 2014 to 2015 was 324,539 cases to 330,910 cases. The latest 2015 Ministry of Health survey results, the prevalence of pulmonary tuberculosis with positive bacteriological results of 759 per 100,000 population and 257 per 100,000 population. Java and Bali, the bacteriological prevalence is 217 per 100,000 population (Kemenkes, 2015). Bacteriological diagnosis can be determined from the sputum test, whereas for children, the diagnosis of tuberculosis is determined by the scoring method.

The number of new tuberculosis cases in 2015 was 130 per 100,000 population, an increase compared to the previous year of 129 per 100,000 population (Kemenkes, 2016). On the other hand, tuberculosis mortality in Indonesia is 40 per 100,000 population (WHO, 2016). Not only the problem of morbidity and mortality, the success of treatment (Success Rate) has decreased which in 2010 amounted to 92%, while in 2015 it decreased to 85% (Kemenkes, 2015).

The profile report of the Central Java Provincial Health Service in 2015 showed that the Tuberculosis Cure Rate was 81.84% which according to the Kemenkes (2012), was guaranteed by medication adherence. Tuberculosis cure rates in Central Java have not met the minimum target of 90%.

In Sukoharjo Regency, the cure rate from 2015-2016 decreased (93.03% to 50.51%). Although above the average in Central Java, the success rate of treatment in Sukoharjo District has decreased (89.49% to 72.02%). The head of the tuberculosis section of the Health Office (HO) Sukoharjo explained that the decrease in success was often attributed to patients stopping treatment, leaving treatment, and changing residence. In addition, irregularities or patients who are not compliant with treatment are also a concern of the HO.

A preliminary study of interviews with puskesmas staff at several Sukoharjo puskesmas explained that patients were not compliant / stopped in treatment for several reasons, including not taking OAT because they felt well, did not need treatment anymore and were bored with treatment. Forgetting taking drugs at the puskesmas is also a matter of drug consumption even though health workers have warned.

The proportion of Acid-Resistant Bacteria (ARB) positive compared to all cases of tuberculosis recorded and reported from 12 puskesmas from 2014 to 2016 has not experienced a significant decrease (59.9%; 50.4%; and 56.3%). This shows that the problem of infectious tuberculosis is still a very important concern.

Tuberculosis cases can increase if the patient's treatment is done disobediently. Hudan's research (2013) shows that there is a significant relationship between knowledge, income, and distance from the place of health care with adherence to taking anti-tuberculosis pulmonary drugs. According to Rahmawati, et al (2015), the failure of the treatment of pulmonary tuberculosis caused by family support, the role of PMO and patient motivation are the dominant factors. Furthermore, variables in the Health Belief Model (HBM) have a significant relationship with compliance with pulmonary tuberculosis treatment (Chell, 2016; Johari et al. 2014; Tola et al, 2016; Aderita et al, 2016).

From the description above, researchers are interested in conducting a study of medication adherence in terms of perceived vulnerability, perceived severity, benefits and constraints felt by tuberculosis patients in Sukoharjo Regency.

METHOD

This type of research is a quantitative observational study (quantitative observational study) through a cross sectional approach. Conducted in October-November 2017. The research sites in 12 working areas of the Puskesmas in Sukoharjo with a population of tuberculosis patients who are still seeking treatment in 2017 amounted to 185 people. A sample of 100 people was obtained where the technique of sampling was Simple Random Sampling. Previously tested the validity and reliability in Sukoharjo Regency. Respondents in Sukoharjo taken were aged ≥18 years and recorded in the medical record at 12 Puskesmas in Sukoharjo. Interviews were conducted in a structured

manner using a questionnaire in which there were sociodemographic variables of tuberculosis patients, compliance with treatment of tuberculosis patients, susceptibility in tuberculosis patient disease, severity in tuberculosis patient disease, benefits and obstacles perceived by tuberculosis patients in treatment. The data generated will be analyzed using a computer application.

RESULT AND DISCUSSION

Based on table 1, the sub-districts with the most respondents were Bulu sub-districts and the sub-district with the fewest respondents was Kartasura sub-district. the average age of respondents was 46.6 years, most respondents were 56 years old, with the youngest age was 18 years and the oldest was 78 years. The most respondents are male with 57 people. The education level possessed by respondents with the highest number was elementary school and at least one Master / S2 was only 1 person. Respondents who have Drug Supervisors (PMO) are 80 people, while 20 people do not have Drug Supervisors.

Based on table 2 the frequency distribution of respondents based on medication adherence during tuberculosis treatment which includes the cessation of treatment for several reasons (forgetfulness, irregularity, and others). As many as 53% of respondents are not compliant, while the remaining 47% are obedient. The vulnerability felt by respondents is a feeling in themselves that the respondent is susceptible to an illness. There were 73% of respondents who felt vulnerable, while 27% of respondents did not feel vulnerable. Assess the extent of the disease felt by the patient when suffering from tuberculosis. From table 3, the number of respondents who felt severe in their illness was 55% of respondents and 45% did not feel severe. The number of respondents who felt the benefits of the tuberculosis treatment process were 84%, while those who did not feel the benefits were only 16%. Perceived barriers to the majority of respondents (82%) did not have obstacles in the process of treating tuberculosis.

Table 1. Frequency distribution of Respondent Characteristics by Sub-District, Age, Gender, and Education in Sukoharjo Regency

Variable	n	%
Subdistrict:		
Sukoharjo	12	12
Weru	7	7
Grogol	9	9
Baki	6	6
Gatak	6	6
Nguter	6	6
Tawangsari	9	9
Bulu	14	14
Bendosari	12	12
Polokarto	6	6
Mojolabant	8	8
Kartasura	5	5
Age :		
17-25	14	14
26-35	13	13
36-45	19	19
46-55	18	18
56-65	27	27
>65	9	9
Gender :		
Male	57	57
Female	43	43
Education :		
No School	20	20
Elementary	39	39
Junior High	7	7
Senior High	26	26
D3/S1	7	7
Magister/S2	1	1
Drug Supervisors (PMO) :		
There is PMO	80	80
There is no PMO	20	20

Table 2. Frequency Distribution of Research Variables in Respondents

Variable	n	%
Obedience		
Obey	47	47
Not obey	53	53
Preceived Susceptibility		
Susceptible	62	62
Not Susceptible	38	38
Preceived Severity		
Severe	55	67
Not Severe	45	33
Preceived Benefit		
Usefull	84	84
Useless	16	16
Preceived Obstacle		
Not hampered	82	82
Hampered	18	18
Total	100	100

Chi-square test used in this analysis to analyze trends between perceived vulnerability and compliance with tuberculosis patients in Sukoharjo Regency is presented in the following table:

Respondents who felt susceptible and compliant were 36 people (58.1% of all patients who felt susceptible), while respondents who did not feel susceptible and disobedient were 27 people (71.1% of all patients who did not feel susceptible). Patients who are not obedient but feel susceptible, there are 26 people (41.9% of all patients who feel susceptible). The result of the analysis shows that there is a relationship between perceived susceptible and compliance with tuberculosis patients in Sukoharjo District (p = 0.005). The contingency coefficient on the susceptible variable is 0.272 (weak relationship closeness).

The results of this study have similarities with research by Aderita et al (2016) with a p-value = 0.003 (p <0.05) which indicates that there is a positive relationship with the meaning of respondents who have a high sense of vulnerability will follow medication adherently. As for the low sense of vulnerability will tend to be disobedient. Patients who feel vulnerable, have a tendency to be obedient. According to Chell (2016), Johari et al (2014), and Anjie J. (2016) medication adherence and behavior have a re-lationship with the HBM variable. Perceptions about health and illnesses suffered by patients can affect adherence in treatment.

In other studies, perceived vulnerability has no relationship with medication adherence as indicated by research by Safri et al (2014). Although there is no relationship, if the vulnerability variable is analyzed together with the perceived severity, benefits, and obstacles a relationship will emerge.

The severity felt by tuberculosis patients is a condition related to the severity of the disease felt by the patient and his perception. Respondents who felt severe were 55 people and 32 of them were obedient (58.2% of all patients who felt severity). Respondents who did not feel severe and disobedient were 30 people (66.7% of all respondents who did not feel the severity). Of the 47 obedient respondents, 15 of them felt impurity. After the analysis was performed showed that there was a relationship between the severity of perceived compliance with treatment of tuberculosis patients in Sukoharjo District (p = 0.013) with a weak relationship closure (0.240).

This study is in line with research by Aderita et al (2016), with a result of p <0.001 which means that the severity or seriousness felt in the disease has a relationship with medication adherence. In contrast to the results shown by Safri et al. (2014) where the two are unrelated due to insufficient sample size.

The facts obtained in the field, respondents with obedient treatment found more stated that they saw the disease they suffered was in the severe category (68%) so they chose to follow the advice of health workers.

Other studies show the same thing, according to Anjie J. (2016) and Dimatteo M. et al (2007), the perception of severity in disease has a strong association with medication adherence, where in the treatment of tuberculosis can prevent germ resistance.

Table 3. Relationship between Variables with Treatment Obedient

Variable	Obedient						P Value	Coefficient Contingency
	Not Obey		Obey		Total			
	n	%	n	%	n	%		
Susceptibility								
Not Suceptible	27	71,1	11	28,9	38	100	0,005	0,272
Susceptible	26	41,9	36	58,1	62	100		
Severity								
Not Severe	30	66,7	15	33,3	45	100	0,013	0,240
Severe	23	41,8	32	58,2	55	100		
Benefit								
Useless	13	81,2	3	18,8	16	100	0,013	0,240
Usefull	40	47,6	44	52,4	84	100		
Obstacle								
Hampered	11	61,1	7	38,9	18	100	0,446	0,76
Not Hampered	42	51,2	40	48,8	82	100		

Source: Analyze Data 2017

Tuberculosis treatment patients who benefit from the treatment process there are 84 people and 52.4% of them adhere to treatment. Of the 16 respondents who did not feel the benefit of treatment only 3 were compliant (18.8%) and the remaining 13 people (81.2%) were not compliant in treatment. The results showed that there was a relationship between adherence of patient treatment with tuberculosis patient adherence (p = 0.013). The closeness of the relationship in the perceived benefit variable can be categorized in a weak relationship (0.240). The benefits felt by tuberculosis patients are from medications that make the patient's pain decrease and even heal.

According to Chell (2016), Anjie J. (2016), Nurhayati et al (2015), Aderita et al (2016) and McDonnel M. et al (2001) state that there is a relationship between the perception of a person's benefits on tuberculosis treatment where the benefits of treatment will be felt by patients who are obedient in medicine. For this reason, it is important for health center health workers in particular to provide an understanding of tuberculosis treatment not only for patients, but for families, and surrounding communities in order to achieve treatment compliance.

According to Notoatmodjo (2010), if an individual feels himself vulnerable to illnesses that are considered serious (serious), he will take a certain action. This action will depend on the perceived benefits and the obstacles found in taking the action. In general, the benefits of an action are more decisive than the obstacles that might be found in carrying out the action. In the research of Johari et al (2014), there was a relationship between a person adopting health behaviors and perceived benefits (p <0.001). According to Bastable (2003), the perceived need to take action is influenced by variables that affect a person's perception and consequently not affect his health behavior. These modifying factors include the level of education they have, cultural differences, age, personal experience, gender, and economic status, and can influence perceived perceptions of benefits and obstacles.

Table 3 shows the results of cross tabulation between variables between perceived obstacles and patient compliance with treatment. The number of obedient respondents was 47 people, 40 of whom did not feel obstacles. A total of 53 respondents were not compliant, only 11 respondents who did not feel obstacles. There is no relationship between perceived obstacles and medication adherence shown with p-value> 0.05 (0.446).

This study is in line with research by Safri et al (2014) with p = 0.998. The small number of respondents and the cross sectional research model can make it possible to make this

study unrelated. Some obstacle questions are too common and not relevant to today such as the use of transportation which is still difficult. There are other questions that have not been listed in this study that are more in line with the conditions / today.

This research is not in line with research by Aderita (2016). Perceived barriers have a negative relationship b = -1.81 (p = 0.034) which means that the smaller barriers can improve tuberculosis patient compliance in treatment. Likewise, a study by Anjie (2016) which states that perceived barriers have a relationship with medication adherence with p = 0.04.

CONCLUSION

Research conducted therein to measure compliance to take medication for tuberculosis patients in Sukoharjo Regency. Some Health Belief Models variables studied include vulnerability, severity, benefits, and perceived obstacles. However, only perceived benefit and obstacle variables have a relationship with tuberculosis treatment adherence. For further research, all Health Belief Models can be used to determine the relationship and influence of these variables with medication adherence. Determination of the treatment phase in patients concurrently and thoroughly will make the research results more perfect. Besides HBM, other variables such as knowledge, attitudes, and sociodemography and others can be used together with HBM variables.

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