

## The Effort of TB Cadre in The Improving of The Success of TB Therapy and Reducing Side Effects of Anti Tuberculosis Drugs

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**Abstract** - Sumberjambe District is one of districts in Jember Regency, which become case-finding pouches for tuberculosis (TB). In order to tackle TB, Sumberjambe District has a community which called "Sayang TB Community". The existence of community is able to increase the number of CDR of 28% in 2003 to 80% in 2011. In addition, cure rate is one indicator of the success of TB. To obtain healing, TB patients should consume Anti Tuberculosis Drugs (ATD) for 6 months. The side effects appear 2 weeks to 2 months after use of OAT, one of which is hepatotoxic. TB patients with hepatotoxicity requires a longer healing time. Supplementation herbal medicine made from turmeric, ginger and meniran in patients with TB is able to tackle hepatotoxic and speed healing. This research is a quantitative study with an experimental approach to determine the increase of knowledge TB cadre and patients who become members of "Sayang TB Community" by pre-test and post-test. The knowledge about the disease tuberculosis and processing skills to make herbal medicine made from turmeric, ginger and meniran as a food supplement in the treatment of TB. The results showed that there is an increased knowledge of participants, while the decline in the percentage of correct answers on the results of pre-test and post-test showed that the knowledge of trainees is still lacking. In addition there is a material that is difficult to understand by the participants.

**Keywords**- tuberculosis (TB), TB cadre, Sayang TB Community, herbal medicine made from turmeric, ginger and meniran

### INTRODUCTION

Jember is a regency in East Java with the number of people with tuberculosis (TB) is still high. Annual data from Jember District Health Office showed in 2010 discovered new cases of TB BTA (+) of 1,946 patients, and in 2011 discovered new cases of TB BTA (+) patients as many as 2,276 people.

One of the indicators used in the control of pulmonary TB is Case Detection Rate (CDR), which is the proportion of the number of new smear-positive patients were identified and treated against number of new smear-positive patients are estimated to exist in the region. In Jember achievement of CDR in 2011 amounted to 90.60%. This figure has met the minimum target set in the amount of 85%. But at the primary care level, there is still a fairly low figure CDR, among other CDR Jelbuk health center (55.4%), Gumukmas (47.6%), Sukowono (44.1%), Sumberbaru (43.6%), Cakru (32.2%), Sabrang (31.4%) and Gladak Pakem (25.7%).

The lack of value of CDR in the district due to the limited number of health professionals and generally works passively, waiting for patients to come. It is necessary for community empowerment to solve TB problem in the society. One of them with empowerment and cadres Posyandu to improve TB case detection [1], which can be done with the formation of the TB community. Based on the results of the analysis of the situation in real terms in the field, is now known that in Jember district there are only two TB communities, They were formed in Puskesmas Sumberjambe on 2009 which called "Sayang TB Community" and in Puskesmas Sukowono on 2012 which which called "Awas TB Community".

Another problem that caused to the high prevalence of TB in District of Sumberjambe which is the number of TB patients who drop out of medicine. Annual data from Jember District Health Office showed in 2010 Number of patients with TB BTA (+) is a patient in 1946 and in 2011 increased to 2182 patients. Drop out (DO) in Jember achieve 2 to 2.5% of patients with pulmonary tuberculosis. TB patient drug withdrawal because it feels good, long healing time (at least 6 months) and their side effects such as neurological disorders, nausea, vomiting and liver disorders.

Anti-tuberculosis drugs (ATD) in the form of isoniazid, rifampicin, pyrazinamide, ethambutol and streptomycin are given in combination to improve the effectiveness of drugs and prevent resistance. The combined use of ATD and time-frame of granting ATD (minimum 6 months) will increase the risk of drug side effects one liver damage characterized by an increase in

transaminase enzymes. The incidence of hepatotoxicity due to range between 2-27% ATD (Totmann et al., 2007). Isoniazid, pyrazinamide and rifampin in the form of monotherapy and the combination proved to cause hepatotoxicity in patients with TB. Heparoksisitas incidents will increase in the use of a combination of ATD (Steel et al., 1991, Hest et al., 2004).

Transaminase enzyme elevations tripled resulting in symptoms such as jaundice, nausea, vomiting, abdominal pain, and weakness (Saukkonen et al., 2006). These side effects often appear two weeks-two months after the use ATD. Conditions due ATD hepatotoxic in patients with TB will aggravate the TB disease course and treatment affects prognosis. TB patients with hepatotoxicity, requires a recovery time (sputum conversion) longer, which means increased morbidity and mortality risk was increased [3].

Efforts to address the hepatotoxicity of TB patients either by the use of herbal medicine that serves as a hepatoprotective. Various studies have shown turmeric, ginger, meniran, gotu kola and brotowali have hepatoprotective activity. The in vivo test meniran, turmeric and ginger showed hepatoprotective activity in rats induced with paracetamol and ATD (Chatterjee et al., 2006; Sulistyoningrum, 2006). The use of a combination of turmeric, ginger and meniran for 4 weeks proven to prevent an increase in SGPT TB patients who use the drug ATD [5]. The other study was conducted by adhvaru (2008) demonstrate the use of turmeric and brotowali also been proven to reduce the risk of hepatotoxicity.

The TB patients in the District of Sumberjambe has recently taken the form of plant medicine to treat ATD hepatotoxic side effects. Turmeric, ginger and meniran is a plant that is found in Indonesia, including Jember and a partner's activities, namely Sumberjambe IbM. The existence of medicinal plants are abundant in the environment Sumberjambe and do not already know the community will benefit medicinal plants to reduce side effects ATD then, on the activities of IbM is one of the activities is to provide training and mentoring to new cadres of TB and TB patients who are members of the "Sayang TB Community" to make herbal remedies made from turmeric, ginger and meniran. Herbal medicine is made in the form of bulbs that need to be made by boiling or instant herbal medicine that will facilitate their preparation for patients with TB.

### RESEARCH METHODS

This research is a quantitative study with an experimental approach to determine the extent of the

improvement of knowledge and skills of a cadre of TB and TB patients who become members of the “Sayang TB Community” which has 27 people membered. The knowledge and skills include knowledge about TB disease, improvement of skill PMO, and increased processing skills to make an herbal remedy made from turmeric, ginger and meniran as a food supplement or a complementary therapy in the treatment of TB. The instrument used was pre-test questionnaire filled out by the participants prior to the training and post-test filled out by the participants after the training about TB disease and decrease side effects of ATD through herbal food supplement

## RESULTS

The results showed that there is an increased knowledge of participants about the material that has been delivered, while the decline in the percentage of correct answers in the pre-test and post-test showed that the knowledge of participants about the material presented is still lacking. Here are the results of pre-test and post-test trainee in District of Sumberjambe:

Questions	Pre-Test		Post-Test	
	B	S	B	S
1. Definition of pulmonary tuberculosis	21	6	27	0
2. Causes of pulmonary tuberculosis	24	3	27	0
3. Prevention of pulmonary tuberculosis	26	1	27	0
4. pulmonary TB drug resistance	26	1	27	0
5. Drug side effects of pulmonary tuberculosis	8	19	16	11
6. herbal ingredients for side effects ATD	26	1	27	0
7. The dosage of ginger	23	4	27	0
8. The dose of turmeric	20	7	26	1
9. How to make herbal medicine	25	2	21	6
10. Time to boil herbs	24	3	26	1

Information:

B = number of participants who answered correctly  
 S = the number of participants who answered incorrectly

Based on the table it is known that there is a positive outcome (increase in the number of participants who answered correctly on the pre-test and post-test) but also has a negative result (decrease in the number of participants who answered correctly on the results of pre-test and post-test). Questionnaire pre-test and post-test were positive results (up), namely questions 1, 2, 3, 4, 5, 6, 7, 8, and 10. While the questionnaire questions that had negative results (down) is question 9. The increase in the number of participants who answered correctly on the results of pre-test and post-test showed that there is an increased knowledge of the participants while decreasing the number of participants who answered correctly on the pre-test and post-test showed that the knowledge of participants about the material presented is still lacking. In addition to the results of pre-test and post-test at the top there is a number of wrong answers greatest is the answer to question number 5 on the side effects of pulmonary TB drugs. In the pre-test results there were 19 people, the answer is wrong on the question number 5 and the results of post-test there are 11 people who answer wrong on the question of the number 5. This shows that there is still a material that is difficult to understand by the participants.

## DISCUSSION

Knowledge is the result of human senses or results to know a person against an object through the sense he had. Knowledge is influenced by several factors including education, media and exposure information [4].

Training is one part of educational efforts in dalamya going process of changing knowledge, attitudes and behavior of a person or group. On the training of cadres TB and TB patients in top learning occurs within each cadre TP and TB patients, so that those who have less knowledge prior to the implementation of training, become good knowledge after training on TB and herbal remedies decrease the side effects of OAT ,

This study is also consistent with research conducted by [6], on the effect of training Mosquito eradication nest Dengue Hemorrhagic Fever (PSN DBD) to improve the knowledge and attitude of the little doctor in the district Helvetia proved that training activities significantly affect the increase in knowledge and attitudes of little doctor , As well as results of research [2], who studied the Influence of Health Education on Treatment Diabetic Foot Non Ulcer Against ability diabetes are at increased in Doing Foot Care in Puskesmas Kedungwuni II Pekalongan, of the results showed an increase in changes in knowledge and attitudes of respondents after being given health education on foot care.

## CONCLUSION

The conclusion that can be drawn from this study is that there is an increase participants' knowledge about the material that has been delivered by a team of speakers from the University of Jember in training but still there is one material that has not been fully understood by the participants of the training so that the need for an evaluation of the method of implementation of the training activities. We recommend that the delivery of material about TB disease and the side effects of ATD does not just use the lecture method but can use other methods are more easily accepted by the participants of the discussion group, for example: a video or a movie about TB disease and side effects of ATD in patients with pulmonary tuberculosis.

## ACKNOWLEDGMENTS

We are very grateful to Society Services of Jember University, East Java-Indonesia, Sumberjambe Public Health Centre. We acknowledge all data collectors and participats (TB patient and the family in Sumberjambe District) who had volunteered to participate in this study.

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