

# THE INFLUENCE OF GUIDELINES FOR TB OBSERVER TASK IN TAMANSARI

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## ABSTRACT

**Background:** Tuberculosis (TB) is still one of the world's biggest health problems especially in Indonesia. This is a challenge for health workers to cope with TB disease in Indonesia. The increasing number of TB incidents in Indonesia and the many factors causing non-adherence to tuberculosis so that important government efforts are needed to overcome them. The role of government in tackling and reducing the incidence of Tuberculosis is by Directly Observed Therapy Shortcourse (DOTS). One component of the DOTS program recommends that each TB patient has observers (Drug Swallow Supervisor) who accompanies the patient for 6-8 months of treatment. In Indonesia, especially in the city of Tasikmalaya up to now for the observer does not have observer guidelines covering all the tasks of observer as stipulated in the regulation of the minister of health. The aim of this study was to determine the effect of the Guidelines for TB Observer Task in health center Tamansari Tasikmalaya City, West Java Province of Indonesia. **Method:** The design of this research is quasi-experiment with one group pre and posttest design. The research method using Cross Sectional Survey type approach which aims to know the Influence of Guidelines for TB Observer in Tasikmalaya City, West Java Province of Indonesia. Test data analysis using *t*-test. **Conclusion:** Characteristics of observers patients TB in Tasikmalaya city of West Java Province in Indonesia were mostly from family member. There was a significant increase in observer task of TB patients before and after using the observer guidelines.

**Keywords:** *Guidelines, Observers, Tuberculosis*

## INTRODUCTION

Tuberculosis (TB) is still one of the world's biggest health problems. It is estimated that by 2015 there will be 1.4 million deaths worldwide due to TB and 0.4 million deaths due to HIV coinfection. The goal of sustainable development or The Sustainable Development Goals (SDGs) is targeting to end the global TB epidemic by 2030 (WHO, Global Report TB, 2016).

The prevalence of TB in Indonesia is still high, it is a challenge for health workers to tackle TB, based on the results of the Regional Health Research (Risksedas) shows that TB prevalence is still in the same position for 2007 and 2013 at 0.4% (Indonesian Ministry of Health, 2013).

The prevalence of TB in Indonesia in 2013 has increased more than 2 times in 2014. The incidence of TB has also almost doubled from 2013 to 2014, while the mortality rate has decreased from 41/100,000 population in 2014 to 25 / 100,000 population in 2015 (WHO Global TB report, 2015 in Health Profile Indonesia, Indonesian Ministry of Health, 2015).

Increasing incidence of TB in Indonesia resulted in Indonesia currently ranking third in the world by number of TB patients. Efforts from the government and various parties are very important to tackle TB in Indonesia. The government is targeting the national TB Control Program, TB elimination in 2035 and TB free Indonesia in 2050 (Indonesian Ministry of Health, 2016). TB control can be achieved if patients and health care staff work together. Every health and community service provider has an important role in tackling TB (WHO, 2010).

The increasing number of TB incidents in Indonesia and many other factors are causing non-adherence to tuberculosis so important government efforts are needed to overcome them. The role of government in tackling and reducing the incidence of Tuberculosis is by Directly Observed Therapy Shortcourse (DOTS) (Indonesian Ministry of Health, 2014). One component of the DOTS program recommends that each TB patient has observer (Drug Swallow Supervisor) who accompanies the patient for 6-8 months of treatment. Observers tasks are listed in the Regulation of the

Minister of Health of the Republic of Indonesia number 67 of 2016 on Tuberculosis Control. In Indonesia, especially in the city of Tasikmalaya up to now for the observer does not have guidelines covering all the tasks of observer as stipulated in the regulation of the minister of health. Observers are limited to monitoring patients while taking oral medication or written in a checklist. The observer has not yet been able to record whether the drug has actually been swallowed by the patient every day, not identifying side effects after taking anti-tuberculosis medication, and not all observers have motivated patients and family members to examine the sputum. Yet if the tasks of observing is done well then the observer not only can deliver TB patients obedient treatment until healed but also able to prevent transmission of TB to family members and the surrounding environment. That's why the observer guidelines are required which can cover all activities that become the tasks of observer.

One of the five components of the DOTS strategy is a system for monitoring, recording and reporting TB treatment accompanied by direct supervision, this is closely related to directly improving adherence to TB treatment. This supervision is carried out in order to ensure the TB patient's compliance remains consistent until the treatment schedule is complete in the hope of healing the patient, preventing death, preventing recurrence, breaking the chain of transmission and preventing the occurrence of germ resistance to Anti Tuberculosis Medication (OAT) (Indonesian Ministry of Health, 2014).

Treatment of TB patients requires rational use of OAT by health workers to achieve a high cure rate and adequate support from various parties to TB patients and the role of observer. Every TB patient has an observer, Who can optimize patient's treatment compliance and the implementation of education for patients and observer (Indonesian Ministry of Health, 2011). Compliance with patients pill swallowing can be guaranteed when direct supervision was carried out in line with the DOTS strategy with the involvement of observer (Indonesian Ministry of Health, 2014).

Observation should be done by people who understand the principles of TB treatment. The provision of OAT in the early and advanced stages using the DOT principle with the initial stage prioritized observer from health workers, the advanced stage can be carried out by

trained health cadres (Indonesian Ministry of Health, 2016).

Observer from family members gives the greatest influence on adherence to TB treatment if it is controlled by a good level of observer knowledge and or the closeness of the familial relationship between observer and TB sufferers (Sidy, 2012). Research conducted by Okanurak, 2007 in Bangkok showed a significantly greater level of TB treatment completion when supervisions were carried out by family members, compared with supervisors by professional health workers. In Nepal, supervisors by family members are more effective than professional health workers (Newell *et al.*, 2006).

Family members are good DOT supervisors and can improve TB compliance and cure rates (Thiam *et al.*, 2007). The involvement of other family members can determine the completion of treatment and recovery. Evaluation of the use of family members as DOT supervisors in TB patients in Brazil, using a prospective method shows the results that supervisors using DOT strategies by family members have been proven effective and able to reduce the cost of treatment, this strategy proved effective and is a cheap technique (Maciel *et al.*, 2008).

Observer is one of the people closest to TB patients and can monitor patients for almost 24 hours because most TB observers come from family members. In India in the RNTCP DOTS-Plus Treatment Card or control card TB patients have noted adverse drug reactions and actions taken to overcome the drug's reaction (Central TB Division, India, 2010). The observer National Tuberculosis Center (NTC) guidelines in New Jersey, that every individual who observes a patient while taking TB drugs must complete the DOT-Log observation sheet every day, by reporting the side effects that arise then immediately referring to any serious drug reactions to health care facilities closest (New Jersey Medical School 2003). The general objective of this research is to know the effect of Guidelines for TB Observer Task in Tamansari Health Center Tasikmalaya City, West Java, Indonesia.

## RESEARCH METHODOLOGY

### Ethics Statement

All respondents in this study had previously been given an explanation of the research process and respondents

were allowed to choose to participate in the research or would like to resign, respondents who were willing to take part in the research process were asked to fill out an informed consent sheet signed by the respondent and one witness.

### **Population and Sampling Technique**

This study uses quasi-experiment in one group to see the TB observer's task before and after being given an observer guide. Guidelines given to TB observers based on the results of the literature review conducted by previous researchers (Sari, 2017) in which the guidelines include tasks that must be carried out by observers ranging from monitoring TB patients swallowing drugs, observing TB side effects, motivating TB patients to always spend medicine according to medical advice, motivate family members to contact the house for sputum as part of the passive case finding of TB patients. The population in this study was 46 observers, while the sampling technique used total sampling technique.

### **Data analysis**

This study uses univariate analysis to determine the characteristics of respondents through the frequency distribution of respondents seen from age, gender, observer education. While bivariate analysis was used to determine the effect of TB observer guidelines on TB observer task. In the bivariate analysis, the research data was previously tested to see the normality of the data using the Shapiro-Wilk formula, then the data were analyzed using paired sample *t* test. The results of the final conclusions are based on *p* value, if  $p < 0.05$ , the null hypothesis of the study is accepted, meaning that there are differences in TB observer duties after using the TB observer guidelines.

### **Research Stage**

The first step of the investigator's study of demographic information data and questionnaire about age, sex, education level, tasks of observer before using observer guidelines. The second step data was analyzed and interventions have explanatory guidelines and explanations on the use of observer guidelines. At this stage respondents will use the observer's guidelines in carrying out their duties, each activity related to the observer's task is documented in the guide. Observer was observed for one month in using observer guidelines. The observer guide was the result of

qualitative research from previous researchers by conducting interviews with 12 participants including 6 policy-holder TB experts and 6 TB observers to explore what needs were needed in the TB observer guidelines. Previous researchers have also conducted literature reviews on guidelines for TB observers (Sari, 2017). The results of producing TB guidelines can measure the ability of observers from the cognitive, psychomotor and affective domains, details of the contents of the TB observer guidelines are as follows: important information that observers need to know about TB disease and its response, how to administer TB drugs for two months intensive treatment and four months follow-up treatment, recording of TB patients taking medication and side effects caused by both mild and severe side effects, where if there are severe side effects the observer must immediately bring the TB patient to the nearest health service for immediate medical treatment, then later in the observer guidelines there is also a column of notes when family members who have examined sputum, this is one of the task in case finding TB. The third step after the respondent used the guidelines for a month and then measured the implementation of the observer's tasks and measured whether there were differences in the implementation of the observer's duties after using the guidelines. All respondents in this study amounted to 46 respondents who observed for one month the observer accompanied TB patients who were undergoing the TB treatment process either in the intensive phase of two months or the four month follow-up phase.

### **Research sites**

This research was carried out at Tamansari Health Center, Tasikmalaya City, West Java, Indonesia. Characteristics of Tamansari sub-district was mountainous areas with a large enough area compared to other districts in the city of Tasikmalaya. The number of TB patients every year in Tamansari sub-district also tends to increase every year.

## **RESULTS AND DISCUSSION**

### **A. Characteristics of respondents**

The characteristics of respondents in this study are described in the categories of age, sex, and education. The most age of TB observers in productive age, this gives positive support for TB patients to pay more attention in assisting TB patients during treatment. For

more details the characteristics of the observer respondents are described in Table 1 regarding the

frequency of distribution of TB observers in 2017 at the Tamansari health center.

**Table 1: Frequency Distribution of Observer According to Age Characteristics, Gender and Education Year 2017**

No	Variable	Total	
		f(x)	%
1	<b>Age</b>		
	15 – 19	0	0
	20 – 29	5	10.9
	30 – 39	27	58.7
	40 – 49	12	26.1
	50 – 60	2	4.3
2	<b>Sex</b>		
	Female	39	84.8
	Male	7	15.2
3	<b>Education</b>		
	No formal education	0	0
	Elementary school	3	6.5
	Junior High school	35	76.1
	Senior High school	8	17.4
	High education	0	0

Judging from the level of education, the characteristics of TB observers at Tamansari Health Center have the most educational background equivalent to junior high school level, this has become one of the supporting factors in terms of knowledge for observers to more easily understand about TB disease and its response.

Sis *et al.* (2014) compared supervisors in TB handlers between DOTS versus family-based DOTS professional families who produced more professional observers will be able to provide better results in handling TB. This

professionalism can certainly be more easily achieved by supporting the knowledge of good observers with a good educational background as well.

**B. Differences of observer Tasks before and after using observer guidelines.**

The result of statistic analysis of paired samples before and after using the guideline can be seen in table 2. Before using observer guidelines the average of observer tasks were 8,0435, while the average of observer tasks after using observer guidelines increased to 15.1304.

**Table 2: Analisis Statistik Paired Samples**

	Mean	N	Std. Deviation	Std. Error Mean
Before using Observer guidelines	8.0435	46	1.11468	.16435
After using Observer guidelines	15.1304	46	1.42375	.20992

Before using the guideline the task of observers watching TB patients swallowing drugs is only limited to asking TB patients who have taken medication or not, observer monitoring is only done orally without

complete documentation. After the observers were given guidelines and the observers used the guidelines for a month, the observer's duties became more neatly recorded in the guidelines, the TB observer was also a

concern with the side effects caused by TB drugs. Observer also motivated family members to come home to check sputum so that the observer's task could

be a case finding of TB cases, this condition was very helpful for health workers in handling TB cases in their area.

**Table 3: Influence Analysis of Observer's Guidelines for Tuberculosis Patients**

Paired Differences					<i>t</i>	df	Sig. (2-tailed)
Mean	SD	SE	95% Confidence Interval of the Difference				
			Lower	Upper			
-7.08696	1.29660	.19117	-7.47200	-6.70192	-37.071	45	.000

The results showed that the *p* value was <0.05, which meant that there were differences in task of observers before using the guidelines by using the observer task guidelines. The increased observer's task was to identify the side effects of TB drugs. Previously, observers did not pay attention to the side effects that arise due to taking TB drugs. Observers' supervision is also usually conducted orally which is merely reminding TB patients to take their medication regularly. Whereas TB patients who undergo TB treatment 6-8 months most will experience side effects both mild and severe. A correct understanding of the side effects of this TB drug by observers is very necessary because it will continue to be able to assist TB patients undergoing treatment without hesitation. So far, many TB patients have dropped out due to lack of understanding about the side effects of TB drugs and do not know how to overcome these side effects. With the correct understanding by the observer, the drop-out rate is expected to be lowered.

Another observer's task is to motivate family members to check sputum of other family members. It can also be said that the task of TB observers is as a case finding in the family. According to Obermeyer *et al.*, 2008 that through the DOT program can be used as a method in case finding TB. Indonesia's geographical conditions are included in developing countries where there is a limited number of health workers, especially in the

community, so the observer's duty to find TB cases in family members is very well treated and very helpful in TB control in Indonesia. According to Fox (2012), in Vietnam that family members who have household contact with TB patients have the potential to experience higher TB transmission. The TB observer in this study all came from family members, so it was hoped that in addition to implementing their duties as observers, they could also anticipate that family members would not be infected with TB.

Passive casefinding in TB carried out by observers can be started from a risk group, ie contact with TB patients with family members who live at home and then can expand their area according to the ability of existing resources (Ho, 2016).

Monitoring TB patients in consuming anti-TB drugs continues to grow rapidly. Wade *et al.*, 2012 has developed ways to monitor TB patients taking TB drugs with videophones home. This application is more appropriately applied in developed countries that have sufficient resources in terms of technology. Whereas in Indonesia, especially in the city of Tasikmalaya with limited resource conditions, the economy also does not support the use of videophones home applications that will be implemented in the DOT program, so using this observer guidelines can reduce the incidence of TB in the city of Tasikmalaya. as passive case finding in families at home contact with TB patients.

Observer who performs his duties optimally in the supervision of TB patients swallowing drugs will be very beneficial for health workers to control the progress of TB patients during the treatment process. This condition will further increase TB case notifications, which according to Philip *et al.*, 2015 in India that TB case notifications required support from many parties, both government and private. The results of the reporting records in the TB observer guide can be used as baseline data which is very useful to always get the latest data on the condition of TB patients.

### CONCLUSION

Characteristics of observers patients TB in Tasikmalaya city of West Java Province in Indonesia were mostly from family member. The tasks of observer's Tuberculosis patients before using observers guidelines in Tamansari health center, Tasikmalaya city was 8.0435. Tasks of observers Tuberculosis patient after using observer's guidelines at Tamansari health center Tasikmalaya city amounted to 15.1304. There was a significant increase in observer of TB patients before and after using the observer's guidelines.

### ACKNOWLEDGEMENT

The author would like to thank all respondents who were willing to participate in this research. Thank you also to the authors for the Tasikmalaya City Tamansari Health Center and Muhammadiyah Tasikmalaya University, Faculty of health science who have provided opportunities, support for researchers so that this research can run so well.

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