

THE RELATIONSHIP BETWEEN READINESS PROGRAM OFFICER AND THE IMPLEMENTATION OF THE TB-DM COLLABORATION PROGRAM AT SEMARANG COMMUNITY HEALTH CENTER, CENTRAL JAVA

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ABSTRACT

Background: Tuberculosis (TB) is a national health problem both in the world and in Indonesia. Diabetes mellitus (DM) is a comorbid disease that contributes to 15% of TB cases in the world. In an effort to eradicate TB, the government has launched a TB-DM collaboration program in every health facility. This study aimed to determine the relationship between readiness program officer and the implementation of the TB-DM collaboration program at Semarang Community Health Center, Central Java.

Subjects and Method: This study was an observational study with a cross-sectional design conducted at community health center, Semarang. A sample of 37 TB service providers. The data were collected by questionnaire and in-depth interview. The data was analysed by Chi-square.

Results: A total of 71.6% (53 respondents) of 74 respondents have implemented the TB-DM collaboration program well. As many as 87.7% (65 respondents) have satisfactory readiness in implementing the TB-DM collaboration program. Readiness and implementation of the TB-DM collaboration program were significantly related ($p < 0.001$).

Conclusion: The readiness of officers and the implementation of the TB-DM collaboration program are mostly good, and have a close relationship.

Keywords: TB, DM, Collaboration, implementation

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BACKGROUND

Tuberculosis (TB) is an infectious disease that is the leading cause of morbidity and mortality worldwide and is a health problem in countries, especially countries with middle to lower socio-economic conditions (WHO, 2013). TB is an infectious disease caused by infection with the bacteria *Mycobacterium tuberculosis*, which generally attacks the lungs and partly attacks the lungs, such as lymph nodes (glands), skin, bones, the lining of the brain (Ministry of Health, 2016)

Diabetes Mellitus (DM) is a metabolic disease that causes high levels of glucose in the blood. According to the IDF in 2015, Indonesia was ranked 7th out of 10 countries with the highest incidence of DM in the world, which is 10 million cases (IDF, 2015)

World Health Organization (WHO) data shows that DM will increase the risk of tuberculosis (TB) infection. Times more significant than the average population (WHO, 2011). Countries with a prevalence of DM tend to have an increased prevalence of TB as well. Besides, the health burden due to

TB will increase to DM prevalence (Magee et al., 2011). Some people with TB or DM are undiagnosed or diagnosed late. DM patients diagnosed with TB have a higher risk of death during TB treatment and a chance of relapse after finishing treatment (Alisjahbana et al., 2016). DM also increases the risk of therapy failure and death. So that further attention is needed regarding screening tests for DM and TB in both populations (Dooley et al., 2009; Baker, 2011)

The problem of TB and DM is a burden for every country in the world. Therefore true collaboration must be carried out to reduce the load double DM and TB. The Indonesian government has compiled a TB-DM collaborative program, but there has not been much evaluation of program implementation. This research was conducted to determine the relationship between officers' readiness to the program and the TB-DM collaboration program's performance at 37 Puskesmas Semarang City.

SUBJECTS AND METHOD

1. Study Design

This study is an observational study with a cross-sectional approach. This research was conducted at 37 Semarang City Puskesmas in June-December 2019.

2. Population and Sample

This study's population were all officers at Semarang City Public Health Center who provided services to TB patients. Respondents of this study were 74 Puskesmas officers in Semarang City. The sampling technique used in this study was *purposive sampling*. This study's inclusion criteria were that the respondents worked in health centers and handled TB cases, and

were willing to become research respondents.

3. Study Variables

This study dependent variable is the implementation of the TB-DM program and the independent variable is the officers' readiness.

4. Operational Definition of the Study Variables

The suitability of TB-DM patient management assesses implementation with TB-DM collaboration guidelines in the FKTP of the Indonesian Ministry of Health. While readiness is evaluated by several aspects, including the preparedness of knowledge, skills, and infrastructure availability that supports the TB-DM collaboration program's implementation. The research instrument used was a structured questionnaire.

5. Study Instruments

The data collection method uses interviews. The univariate analysis is presented in tabular form in frequency and percentage.

6. Data Analysis

Bivariate analysis was performed by using analysis *Chi-square* with a degree of significance $p < 0.05$.

7. Research Ethics

This research has passed the ethical review of the Research Ethics Commission of the Faculty of Medicine, UNDIP.

RESULT

This study involved 74 respondents who were TB service providers in 37 Puskesmas in Semarang City. Sample characteristics were reported in Table 1. Based on table 1, most respondents were women, with a proportion of 74.3% (55 respondents).

Table 1 also shows that most respondents are between 31-40 years old, with a proportion of 59.50% (44

respondents). At the same time, most respondents education is S1 as much as 79.79% (59 respondents). Based on the characteristics of the length of work of respondents in handling TB patients, most

of the respondents have worked for more than 10 years, as many as 43.2% (32 respondents), this is not much different from the length of work for 5-10 years, namely 41.90% (31 respondents).

Table 1 Characteristics of respondents Research

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	19	22.70
	Female	55	74.30
Age	20-30 years	10	13.50
	31-40 years	44	59.50
	41-50 years	16	21.60
	over 50	4	5.40
Education	S2	7	9.50
	S1	59	79.70
	D3	8	10.80
Old Working	Less than 5 years	11	14.90
	5-10 years	31	41.90
	More than 10 years	32	43.20

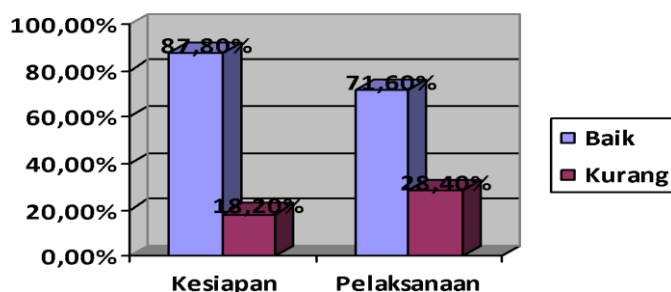


Figure 1 provides an overview of the TB-DM collaboration program's readiness and implementation at the Semarang City Health Center. Figure 1 shows that the officers' enthusiasm is mostly good, namely 87.8%, and most of the TB-DM collaboration program implementation has also been good, namely 71.6%. This readiness includes readiness in terms of knowledge, skills, and infrastructure availability that supports the TB-DM collaboration program's implementation.

Meanwhile, in terms of performance, it shows that most officers have followed the TB-DM collaboration guidelines in the FKTP issued by the Indonesian Ministry of Health.

Figure 1. An overview of the readiness and implementation of officers in the TB-DM collaboration program. The chi-square analysis results show that there is a significant relationship between readiness and implementation of the collaboration program (OR = 7.2, 95% CI 1.1-45.8 p = 0.000).

DISCUSSION

TB is a disease that is a problem in the world, including in Indonesia. TB disease is easily exposed to anyone because it is a type of infectious disease. Handling TB becomes more difficult if a patient also has DM. Cohort studies by Corona show that TB

patients with DM have more severe clinical manifestations, delayed sputum conversion, the likelihood of treatment failure, recurrence, and recurrence rates (Corona, 2013). Impaired immune function due to DM increases a person's tendency to be infected with TB. DM and TB complicate each other and present enormous clinical challenges (Kibirige et al., 2013).

WHO recommends early detection of TB infection in DM patients, and vice versa detecting DM in TB patients. In patients diagnosed with DM, doctors are advised to regularly evaluate the presence of complaints such as coughing > 2 weeks, persistent fever, weight loss, and night sweats. If these symptoms are found, it is advisable to carry out further examinations to evaluate the presence of TB infection (Reid, 2013)

Given the increasing double burden of TB and DM, the need to integrate TB and DM services to provide quality services to patients is very important (Workneh et al., 2016). This collaboration is urgently needed to reduce the burden of non-communicable and communicable diseases and be a driving force to strengthen the health system (Ujainah, 2017). The implementation of the TB-DM collaboration program is inseparable from various aspects, namely the knowledge and skills of health workers, logistics, space examination of patients, waiting rooms, laboratory facilities that meet the requirements, as well as guidelines for implementing TB-DM control collaboration (Ruminah et al., 2016).

One of the factors for the policy success is the availability of sufficient human resources, both in quantity and quality. Human resources are active actors who will carry out activities as implementers of policies (Inayah, 2019; Faradis, 2016).

The readiness of officers is an essential aspect of human resources that support the implementation of health programs. Enthusiasm is an attitude that shows a willingness to respond or react to a situation it faces. The condition of readiness includes 3 aspects, namely: a) Physical, mental and emotional disorders. b) Needs, motives, and goals and c) The skills, knowledge, and understanding learned (Slameto, 2010). Readiness is an ability that a person has physically, mentally, and equipment (Dalyono, 2009). In this study, the preparedness of health center officers regarding the TB-DM collaboration program was mostly right. This can be a good foundation in implementing the TB-DM collaboration program. The unpreparedness of health workers can cause the impact of failure in implementing health programs (Susilawati et al., 2019).

This study suggests that the readiness of the polyclinic in collaboration TB program DM mostly good, collaborative TB-DM in public health center Semarang most are satisfactory, and there is a significant relationship between readiness officer with the implementation of the program of collaboration TB-DM

Increased TB cases in DM sufferers are a new challenge to carry out a global and integrated TB program. The high prevalence of DM in TB requires an integrated and multidisciplinary handling approach between DM and TB program holders, health workers in health facilities, and the community.

The TB-DM collaboration program is one of the strategies for eradicating TB and DM. Support and fulfillment of program support facilities are needed to increase officers' readiness and make this program a success. Further research and program

development are required to implement the TB-DM collaboration program can be carried out optimally.

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