

# Analysis of the Role of the Drug Swallowing Supervisor in Improving Treatment Adherence Drug-Sensitive Tuberculosis Patients in Palembang City

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## Abstract

The role of drug swallowing supervisors was needed from the beginning of treatment so that patients could be monitored regularly to prevent drug resistance. This study aimed to determine the role of drug swallowing supervisors in improving treatment adherence of drug-sensitive tuberculosis patients in Palembang City. This research used a qualitative design with a descriptive approach. Eleven informants were determined through purposive sampling technique. Data analysis employed Miles and Huberman's qualitative data analysis model, consisting of data reduction, data presentation, and conclusion. In improving treatment adherence of patients with drug-sensitive tuberculosis in Palembang City, drug swallowing supervisors provided education, motivated, supervised, and accompanied patients during the treatment process until they were declared cured. The role of drug swallowing supervisors greatly influenced patient compliance in undergoing treatment.

**Keywords:** compliance; drug swallowing supervisors; tuberculosis

## Introduction

Tuberculosis (TB) is one of the infectious diseases included in public health problems to date. Transmission is quite easy, namely through airborne droplets released by sufferers, for example when talking, coughing, and sneezing, so it is not surprising that the increase in cases is increasing (Pramudaningsih et al., 2023).

Based on the WHO Report, Indonesia with a percentage of 10% is in second place as a contributor to the highest incidence of TB in the world after India, followed by China, the Philippines, and Pakistan (WHO, 2023). The estimated incidence of TB in Indonesia until January 2023 is 1,060,000 cases, with the number of deaths reaching 134,000 cases. Nationally, South Sumatra Province ranks 8th with an estimated incidence of 36,710 cases, with Palembang City being the region with the highest TB cases. Based on SITB data in 2023, the estimated incidence of TB in Palembang City is 9,858 cases with an absolute number of case finding reaching 7,415 cases, the proportion of Drug Sensitive TB is 7,319 cases and Multi Drug Resistant TB is 96 cases (SITK MSS, 2023). Based on these data, it can be concluded that Indonesia, especially Palembang City, faces a major problem in TB control. The large number of cases, both drug-sensitive and drug-resistant, indicates the need to increase TB surveillance, detection, and treatment efforts to prevent the spread of TB and drug resistance.

Irregular treatment leads to worse outcomes, longer treatment duration, high costs, and higher mortality rates

making management of MDR-TB more complex than drug-sensitive TB. MDR-TB or Multi-Drug Resistant is an advanced form of drug-sensitive TB. MDR-TB occurs due to TB bacteria being resistant or resistant to anti-tuberculosis drugs such as isoniazid and rifampicin with or without resistance to other types of first phase. In contrast to Drug-Sensitive TB, which has a treatment duration of six to nine months, MDR TB has a longer treatment time span, which can be up to 18 months of treatment or even more and has a higher risk of transmission than drug-sensitive TB. Given the adverse effects that patients experience if they are affected by MDR-TB, it is desirable to achieve patient cure in the treatment of Drug-Sensitive TB (Yobeanto and Setiawan, 2022).

Quoting from the Regulation of the Minister of Health of the Republic of Indonesia Number 67 of 2016, drug swallowing supervisors TB is a person chosen to monitor TB patients in swallowing drugs, checking sputum again on schedule, and preventing patients from absent or dropping out of treatment. Exploring more about how drug swallowing supervisors interact with patients and their influence on treatment adherence is necessary, considering that the role of drug swallowing supervisors is needed from the beginning of the patient's treatment at the health service facility until the patient is declared cured. The success of treatment is highly dependent on the performance of the supervisor. The better the contribution of drug swallowing supervisors in the patient's treatment process, the better the compliance of TB patients (Sondang et al., 2021).

Knowing the importance of the role of drug swallowing supervisors in the treatment process of drug-sensitive TB patients, researchers conducted a study that aims to determine the description of the role of drug swallowing supervisors in improving treatment adherence of drug-sensitive TB patients in Palembang City.

## Methods

This research is a qualitative design with a descriptive approach. The research was conducted in Palembang City in June-July 2024 in accordance with the certificate of ethical clearance issued by the Faculty of Public Health, Sriwijaya University Number 307/UN9.FKM/TU.KKE/2024. The population in this study were people who had been a drug swallowing supervisors of drug-sensitive TB patients in Palembang City. Eleven informants were selected using purposive sampling technique. eight main informants with code A who have characteristics as drug swallowing supervisors who have accompanied drug-sensitive TB patients until they recovered, and three expert informants with code B have characteristics as people who are experts or work in the field of TB control in Palembang City. Primary data was obtained from in-depth interviews, with the instruments used being paper, pen, recorder, and cellphone camera. Data analysis used Miles and Huberman's qualitative data analysis model consisting of data reduction, data presentation, and conclusion (Rijali, 2019).

## Results

Based on the research that has been carried out on the role of the drug swallowing supervisors in Improving treatment adherence of drug-sensitive TB patients in Palembang City on eleven informants, the characteristics of the informants obtained are as follows:

**Table 1.** Characteristics of informants

Code	Gender	Age (Year)	Relationship with Patients
A1.1	P	47	Wife
A1.2	P	53	Child
A1.3	P	49	Child
A1.4	P	52	Sister
A2.1	P	54	TB cadres
A2.2	P	57	TB cadres
A2.3	P	47	TB cadres
A2.4	L	49	TB cadres
B.1	L	30	Technical Officer TB from Health Department
B.2	L	41	Focal point TB from Health Center
B.3	L	32	Staff Program & MEL from Community

(Source, 2024)

The informants were divided into two groups: main informants and expert informants. The main informants with the letter code A1 are four drug swallowing supervisors from the families of TB patients and the letter code A2 is four TB cadres. Meanwhile, expert informants with the letter code B are three people who work in the field of TB prevention in Palembang city.

### The Role of The Drug Swallowing Supervisors in Providing Education to Drug-Sensitive TB Patients

The following is an excerpt from an interview with the main informant:

*"... related to his treatment, which of course we explain according to what he must do in his treatment, be it routine in taking his medicine, must not be absent..." (A2.4)*

*"... We educate that TB disease is like this, it is contagious but does not have to be isolated, we still maintain a clean and healthy lifestyle. patients must take medicine, don't not take medicine, must be routine, maintain personal and home hygiene, maintain a diet..." (A2.1)*

The statement from the main informant above was validated by expert informants as follows:

*"...the drug swallowing supervisors are usually trained before they become the drug swallowing supervisors, especially if they are cadres. The cadres are usually trained first by the community or health office, or health centre. So that they will understand how to deal with patients, and how to educate patients regarding problems during their treatment." (B1)*

Based on the results of the interviews, it is known that the education delivered by drug swallowing supervisors to TB patients is related to prevention efforts, treatment mechanisms, modes of transmission, and eliminating stigma related to TB.

### The Role of The Drug Swallowing Supervisors in Providing Motivation to Drug-Sensitive TB Patients

The following is an excerpt from an interview with the main informant:

*"..cheer up, take your medication regularly, eat nutritiously, encourage activity, exercise at least once a week..." (A1.2)*

*"...always encouraging them, treating them as normal and not ostracizing them..." (A2.3)*

The main informant's statement above was validated by expert informants, as follows:

*"... encouraging the patient, comforting the patient so that they do not feel alone, which certainly reassures the patient that this TB disease can be cured as long as they take medicine regularly.." (B1)*

Based on the results of interviews, it is known that drug swallowing supervisors of TB patients in Palembang City provide motivation to TB patients during treatment through expressions of encouragement, motivation, and hope, as well as invitations to do activities together.

### **The Role of The Drug Swallowing Supervisors in Monitoring Treatment of Drug-Sensitive TB Patients**

The following is an excerpt from an interview with the main informant:

*"...I checked his medicine supply, whether it was all gone, because I was the one who prepared his drink, waiting early in the morning to prepare the medicine for him to drink.. " (A1.1)*

*"...sometimes we make home visits, or phone calls. we call to let you know if the medicine has run out, for this initial stage we have to check the sputum again...." (A2.3)*

The following is validation from expert informants regarding the role of the drug swallowing supervisors in patient monitoring:

*"... The way to monitor the patient is to make visits, provide assistance at home, whether it's at the hospital or the health centre. And it is really when he wants to take the medicine that is seen. For example, if you can't be at home, it's usually via virtual, via video call and making sure that the patient is indeed swallowing the medicine....." (B3)*

Interviews showed that drug swallowing supervisors monitor the treatment of drug-sensitive TB patients at home, at the health facility, and over the phone to remind and ensure that patients have swallowed their medication. The swallowing supervisor, who is the patient's family member, also checks the patient's medication stock, and prepares for the patient's need to take medication.

### **The Role of The Drug Swallowing Supervisors in Accompanying the Treatment of Drug-Sensitive TB Patients**

The following is an excerpt from an interview with the main informant:

*"...if I, the alarm has gone off 10 minutes before eating medicine, that's a sign to be ready, waking him who is still sleeping while carrying medicine and drinking water... " (A1.1)*

*"...If he's in control, I'll be there to help him register so he can just go...." (A1.2)*

*"...usually there are various kinds of assistance, there is assistance at home, there is assistance at the health centre, there is assistance in the hospital according to the conditions....." (A2.4)*

Validation from expert informants regarding the drug swallowing supervisor duties in assisting patients:

*"... the patient must be accompanied by a supervisor to swallow the medicine every day, because taking TB medicine is every day. accompanied and informed when it is the schedule to take medicine or the schedule for sputum examination...." (B2)*

This study found that drug swallowing supervisors accompany patients when they are scheduled to swallow medication and accompany patients when they are scheduled to visit health services. Assistance improves patient adherence because the supervisor must ensure that the patient has swallowed the medication.

## **Discussion**

Drug swallowing supervisors are people trusted by patients to accompany them throughout the medication process. In an effort to improve patient adherence, the swallowing supervisor monitors, encourages, and educates the patient. Medication for TB patients must be swallowed by following established guidelines, swallowed regularly,

paying attention to dosage, and directly supervised by the drug swallowing supervisor. Drug swallowing supervisors who fulfil their role optimally will ensure the successful treatment of TB patients (De Fretes et al., 2021).

The role of drug swallowing supervisors in patient care is very important to avoid patient dropout. Assistance provided by drug swallowing supervisors helps to improve adherence to taking medication so that it will support the patient's recovery. Adherence to treatment for drug-sensitive TB patients is essential, as failure to do so could potentially lead to MDR (multi-drug resistant) TB, which has a longer treatment period with more severe side effects (Kurniasih & Sa'adah, 2017).

A drug swallowing supervisor is a person who is close to the TB patient and willing to be involved in the patient's treatment by supervising, encouraging, reminding, and providing information that is important for the patient to know. Drug swallowing supervisors should come from health workers, but can also come from health cadres, family members, and community leaders (Kemenkes RI, 2016).

Theory of Planned Behavior proposed by Ajzen (1991), reveals that individual behavioral intentions are influenced by three main factors, attitudes towards behavior, subjective norms, and perceived behavioral control. The behavior referred to in this study is the adherent behavior of drug-sensitive TB patients in treatment. Drug swallowing supervisors play a role in building positive attitudes and increasing subjective norms, as well as helping patients overcome treatment-related barriers.

### **The Role of The Drug Swallowing Supervisors in Providing Education to Drug-Sensitive TB Patients**

According to the Regulation of the Minister of Health of the Republic of Indonesia No. 67/2016, Drug Swallowing Supervisors in carrying out their duties to ensure that TB patients have swallowed drugs in accordance with recommended treatment procedures, must convey information that needs to be understood by patients, including information that TB can be cured through treatment, the stages of patient treatment, how TB is transmitted, symptoms of TB, efforts to prevent TB, and eliminate TB-related stigma. This study found that drug swallowing supervisors in drug-sensitive TB patients in Palembang City have carried out their duties in providing education related to general TB information, patient treatment mechanisms, and eliminating stigma that still exists in the community.

Suryana and Nurhayati (2021) in their research said that drug swallowing supervisors before being appointed need to receive brief training so that they understand the duties of drug swallowing supervisors well. Gunawan and Jaysendra (2020), stated that the role of drug swallowing supervisors in providing education to patients is by conveying information about the treatment mechanism and medical actions that patients will undergo during treatment, so that patients will know important information to support their recovery.

In line with research conducted by Erwinsyah et al (2023) says that providing health education to TB patients is very influential on patient recovery and preventing transmission. Education provided by drug swallowing supervisors greatly affects patient treatment because with the education they receive, patients become more aware of the treatment they must adhere to. Drug swallowing supervisors should receive training on the importance of supervision for TB patients, understanding the symptoms of TB, and how to manage side effects that patients may experience (Filipus et al., 2020).

Before starting to assist patients, TB cadres in Palembang City have received training from the Health Office, health centre, and the community. So that cadres can understand the correct way to care for patients and deliver education that must be given related to TB. However, drug swallowing supervisors who come from family members

of patients do not receive training before becoming drug swallowing supervisors. According to the researchers, it is recommended that the supervisors who come from family members should also be equipped with knowledge related to their duties as drug swallowing supervisor so that they can be more optimal in assisting patients.

### **The Role of The Drug Swallowing Supervisors in Providing Motivation to Drug-Sensitive TB Patients**

Motivation is a form of encouragement that arises from within and outside a person that can affect the person's willingness to be driven to take an action. The long treatment process and the side effects experienced by patients make the role of drug swallowing supervisors very necessary in motivating patients to undergo regular treatment until they are declared cured (Sondang et al., 2021).

Research conducted by Sitorus et al (2020), the role of drug swallowing supervisors in encouraging patients to take their medication regularly will increase patient enthusiasm and compliance in treatment. Analysis of the results of the interviews found that the role of drug swallowing supervisors in providing motivation to patients by showing expressions of encouragement, as well as expectations that can increase patient motivation in undergoing treatment until recovery.

Research conducted by Zhafirah et al (2020) found that drug swallowing supervisors, especially family, play an important role in motivating patients to undergo treatment to completion. Support from those closest to TB patients while undergoing treatment plays an important role in motivating patients to recover. The greater the support received by patients, the greater the level of patient compliance in taking medication. Other studies have also found that strong support provided to patients is helpful in the healing process.

Based on this study, motivation provided by the drug swallowing supervisor influences TB patients' adherence to treatment. With the motivation they receive, patients feel supported by those closest to them, which will encourage them to recover. Motivational support from drug swallowing supervisors will make TB patients more confident that their TB disease can be cured by complying with drug swallowing rules.

### **The Role of The Drug Swallowing Supervisors in Monitoring Treatment of Drug-Sensitive TB Patients**

Drug swallowing supervisor is responsible for ensuring that TB patients swallow their medication as recommended and reminding patients to have their sputum rechecked on time. Supervision by the drug swallowing supervisor can be done at the nearest health service where the patient is taking treatment or by visiting the patient's residence (Kemenkes RI, 2016). This study found that drug swallowing supervisor monitor patients' treatment in person or via telephone to remind and ensure that patients have swallowed the medicine.

Sondang et al (2021), states that supervision for TB patients is very important because it will influence the patient's actions to adhere to their treatment, including the duty of drug swallowing supervisors who remind patients to swallow medicine regularly, take medicine, and check sputum back to the health service facility. Supported by research by Erwinsyah et al (2023), that the task of the drug swallowing supervisor in supervising TB patients can facilitate the healing process and prevention of transmission. Monitoring in patient treatment aims to ensure patient compliance in swallowing drugs and checking sputum according to the specified schedule. The role of the drug swallowing supervisor in supervising patients to swallow drugs is needed to achieve treatment success. Supervision by the drug swallowing supervisor plays an important role in reducing the risk of treatment failure (Zhafirah et al., 2020).

TB patients need someone who can remind them to swallow their medication, ensure drug stocks are available, and bring sputum rechecks to health services on schedule. Monitoring by a drug swallowing supervisor influences

patient adherence to treatment, as monitoring ensures that patients have swallowed their medication.

### **The Role of The Drug Swallowing Supervisors in Accompanying the Treatment of Drug-Sensitive TB Patients**

The role of the drug swallowing supervisor is not to replace the patient's obligation to take medicine at health care facilities. Drug swallowing supervisor must also accompany patients during treatment. Starting from accompanying patients to swallow drugs and accompanying patients when re-checking sputum at health care facilities. Analysis of the results of the study found that the drug swallowing supervisor accompanied patients during the schedule of swallowing drugs to accompany taking drugs and re-checking sputum.

In line with research conducted by De Fretes et al (2021), drug swallowing supervisor accompany patients, including when re-checking sputum, taking patients to health services to take medicine, and when patients swallow medicine. Other studies have also revealed that the form of role shown by the drug swallowing supervisor in accompanying patients is by reminding the remaining stock of drugs and delivering patients to take drugs, and always monitoring when patients swallow patient medication (Yuda and Utoyo, 2018).

Drug swallowing supervisor carry out their duties to accompany patients by taking medicine at the health service if the patient is not available, accompanying patients to recheck sputum, and accompanying patients when swallowing medicine. In providing assistance, drug swallowing supervisor utilize technology such as telephone or text messages to remind patients to take their medication. Drug swallowing supervisor who successfully accompany the patient's treatment will greatly assist in the patient's treatment process and have a high treatment success rate.

### **Conclusion**

The role of drug swallowing supervisors of drug-sensitive TB patients in Palembang City is to ensure that patients swallow drugs from the beginning of treatment until they are declared cured. Drug swallowing supervisor provide education to patients related to TB treatment, efforts to prevent transmission, and eliminate stigma related to TB. In addition, the drug swallowing supervisor also provide motivation to patients in the form of expressions of encouragement and hope, as well as monitoring and accompanying during the patient's treatment process, from accompanying swallowing medicine to checking up on health services.

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### **Author Contribution and Competing Interest**

all authors have contributed to this research from the preparation stage to the completion of the final manuscript.

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