

## Success Factors in Improving Patients' Adherence to Tuberculosis Treatment Program: Case Study in Sleman, Yogyakarta, Indonesia

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### ABSTRACT

Improving patients' adherence to treatment programs is important for the success of tuberculosis (TB) treatment. The study aims to identify the underlying factors of TB treatment program success. A qualitative approach, i.e., an in-depth interview, and the purposive sampling method in selecting respondents were used to conduct this study. There are 15 persons involved, i.e., 3 persons each: pharmacists as providers, TB programmers, medicines supervisor (MS), TB cadres as supporters, and recovered TB patients as actors (17 years old and over). The data obtained were analyzed using the triangulation method (providers, actors, and supporters). The results of the study show that the family's role is very important in MS by taking medicines from primary health care and giving medicines on time. TB counselors play a role in monitoring the treatment program and making occasional home visits to motivate patients to recover. TB programmers and pharmacists play a role in providing patients' education and MS, as well as monitoring medication-taking schedules and medical check-ups. Patients play a role in motivating themselves to get back to work soon. In conclusion, the underlying factors in TB treatment program success are the discipline of providers, supervisors, supporters, and patients' motivation.

### INTRODUCTION

Tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis*, which causes lung infections. Globally, the number of tuberculosis cases decreased from 7.1 to 5.8 million during the period of 2019–2020 due to the impact of the COVID-19 pandemic (WHO, 2021). Indonesia had the third-most tuberculosis cases in 2021; however, the success rate of tuberculosis treatment is 83% (WHO, 2020). In the period of 2018–2019, TB cases in Sleman Regency increased by 1824 cases, and the achievement of TB cure in Sleman Regency in 2019 was quite high, i.e., 87.88%. This figure exceeded the national success rate (85%), and even in 2020, the success rate of TB treatment in the Sleman Regency achieved 90% (Sleman, 2020).

Generally, patients stop treatment

because they feel the condition is starting to improve, and they only do a medical check-up when they feel a complaint. The most common complaint is that they are unable to tolerate the side effects of anti-tuberculosis medicines (ATM) (Parlaungan et al., 2021). Lack of patient education by the health care provider leads to a lack of patients' knowledge about the medicines they have to take. Therefore, the role of pharmacists and TB programmers as health care providers to deliver patient education and monitor patients' adherence to treatment programs is important (Maelani and Cahyati, 2019).

The Indonesian Ministry of Health created a program to enhance and monitor TB treatment by involving pharmacists, TB programmers, TB counselors (TB programmer assistance), and medicine supervisors (family

members). The program goal is to increase the recovery rate of TB patients. The program is implemented in all of primary health care (PHC) in every district in Indonesia. Sleman is one of the districts that has successfully implemented the program. Therefore, it is interesting to identify the underlying factors of the TB treatment program.

## METHODS

The study was conducted in primary health care, namely Kalasan, Mlati 1, and Depok 3. A qualitative approach, i.e., an in-depth interview, and the purposive sampling method in selecting respondents were used to conduct this study. There were 3 persons each, i.e., pharmacists as the health care providers, TB programmers in primary health care, medicine supervisors (MS), TB cadres as supporters, and recovery TB patients as actors (17 years old and over) involved in the study.

The interview guideline, which has been validated by three pharmacists whose work in the PHC (Expert Judgement Method), writing tools, voice recording, and informed consent as proof of the research ethics are used as the instrument of the study. The data obtained were analyzed using the triangulation method (providers, actors, and supporters) and then presented in narratives and tables.

## RESULTS AND DISCUSSION

The study results are presented in two parts, i.e., the demographic characteristics of respondents and the results of in-depth interviews with the recovered patients, MS, TB Cadres, TB Programmers, and Pharmacists.

### Respondents' characteristics

There are 15 respondents involved in the study, consisting of 3 persons each of the recovered TB patients: MS, TB Cadres, TB Programmers, and Pharmacists. Patient demographic characteristics consist of age, status, education, gender, and length of TB suffering. The results show that respondents were 20 years old and over, working, and one of them has married status. The result is summarized in Table 1.

The role of the family in accompanying patients in undergoing treatment for six months and the regularity of taking medicines according to the schedule that health workers always control, especially in the initial phase of treatment, dramatically affects the success of therapy (Hakim and Putri, 2015; Noveyani and Martini, 2014). Tuberculosis can infect anyone;

however, it mainly occurs in adults and, in more cases, in males (WHO, 2021). It is likely due to smoking habits and poor residential or working environments that respondents are of productive age and are likely to be infected at work (Sari, 2018).

### Interview with Medicines Supervisor (MS)

MS plays a vital role in the recovery of tuberculosis patients. Therefore, it is strongly recommended that the family carry it out because the family is the closest person who can supervise the patient's situation directly every single day, from the beginning of the complaint and along the treatment process. The family can motivate the patient to undergo treatment regularly (Fitriani and Ayuningtyas, 2019). Families also have an essential role in reminding or accompanying patients to take medicines at the PHC before they stock out at home. At the same time, patients can also undergo medical examinations according to the schedule agreed upon with the TB programmer (Aditya et al., 2021) (P13 & P14).

*"(P7) Dorongan dari adik saya agar saya sembuh, dan saya juga ingin sembuh, dan didukung udara pedesaan disini lebih bersih membuat nyaman."*

*"(P7) My sister encouraged me to get well, and I also want to get well and be supported by cleaner rural air here to make me comfortable."*

*"(P13) Saya memberi makan teratur sesuai anjuran, minum obat tiap pagi, sesudah anak saya minum obat baru saya berangkat kerja, saya juga biasa membantu mendampingi anak saya periksa mulai dari awal pengobatan karena waktu itu masih lemas, (selanjutnya) ada jadwal pengambilan obat dan jadwal chek up yang sebelumnya sudah diatur puskesmas."*

*"(P13) I feed regularly according to recommendations, take medicine every morning, and after my child takes medicine, I go to work. I also usually help accompany my child to check on him from the start of treatment because, at that time, he was still weak. Then there is a schedule for taking medication and a check-up schedule previously arranged by primary health care."*

*"(P13)... karena demi anak perlu kesabaran untuk selalu membujuk... anak saya juga pernah merasa bosan."*

*"(P13)... because for the sake of children, it takes patience to always persuade... my child"*

also feels bored.”

The family, as in MS, always tries to provide nutrition and maintain a suitable patient environment. In providing a good atmosphere, the family always keeps the bedroom damp. It must be clean and dry, with sufficient illumination, sunlight entering the patient's room, and adequate ventilation. Families always provide positive support for patients, including in terms of good exercise, and families help to separate eating utensils from other family members to reduce the transmission of tuberculosis (Septia and Rahmalia, 2014; Tode et al., 2019).

“(P8) tempat makan nya sendiri dicuci

sendiri, dipisah dari yang lain. Saya juga sering jalan pagi menghirup udara diluar, saya juga berusaha berhenti begadang dan merokok.”

“(P8) The dining area itself is washed separately from the others. I also often go for a walk in the morning to I also try to stop staying up late and smoking.”

“(P8) 3 bulan pertama kami kesulitan menaikkan berat badan kakak saya tetapi saya selalu memotivasi kakak saya untuk menjaga nutrisi makan.”

“(P8) For the first 3 months, we had difficulty gaining weight for my brother, but I always motivated my brother to maintain food nutrition.”

**Table 1.** Respondent Demographic Characteristics

<i>Participant code and description</i>		
P1 (a cadre of Depok 3 PHC)	P6 (pharmacist of Kalasan PHC)	P11 (programmer of Kalasan PHC)
P2 (pharmacist of Mlati 1 PHC)	P7 (recovered TB patient of Kalasan PHC) *	P12 (recovered patient of Mlati 1 PHC) *
P3 (pharmacist of Depok 3 PHC)	P8 (MS of Kalasan PHC)	P13 (MS of Mlati 1 PHC)
P4 (TB Programmer of Depok 3 PHC)	P9 (a cadre of Mlati1 PHC)	P14 (recovered Patient of Depok 3 PHC) *
P5 (TB Programmer of Mlati 1 PHC)	P10 (Cadre of Kalasan PHC)	P15 (MS of Depok 3 PHC)
<i>Respondents Characteristcs</i>	<i>Respondents (n= 15)</i>	
	n	%
<b>Gender</b>		
Male	2	13.3
Female	13	86.6
<b>Age</b>		
20 - 30	5	33.3
31 - 40	3	20
41 - 50	7	46.6
<b>Status</b>		
Married	13	86.6
Not married	2	13.3
<b>Last education</b>		
Junior high school	-	-
Senior high school	2	13.3
University	13	86.6

\*Recovery patients with 6 months of treatment

### Interview with the Recovery Patients

The TB treatment program has an impact on the emergence of side effects of medicines, such as nausea and vomiting, joint aches, red urine, and numbness in the limbs. Therefore, the family is needed to accompany the patient to the PHC to get the painkillers (Pernadi, M., Suyanto, and Simbolon, 2015). Here are the statements of the MS and the recovered patient:

*"(P8) Pemeriksaan sama tante, untuk konsultasi. Sesuai jadwal periksa, mereka punya pola periksa sendiri."*

*"(P8) Check-up with aunt for consultation. According to the check-up schedule, they have their own check-up schedule."*

*"(P13) Anak saya dikasi dari dokter puskesmas obat penghilang nyeri. Ambil obat awal pengobatan senin rabu, saya ambil obat dengan anak saya sekaligus pemeriksaan, pengobatan awal masih lemas dan pusing, anak saya belum kuat ke puskesmas sendiri."*

*"(P13) My child was given painkillers from the doctor at the primary health care. Take the initial medicine for treatment on Monday and Wednesday. I take the medicine with my child at the same time as a check-up. The initial treatment for my child is still weak and dizzy; my child is not yet strong enough to go to primary health care by himself."*

*"(P12) Efek samping obat buat lemas, pegal kaki tidak bisa gerak, dokter berikan obat pengurang rasa nyeri. Pengobatan berjalan 6 bulan"*

*"(P12). The side effects of the drug are weakness, leg aches, being unable to move, and the doctor giving painkillers. The treatment lasts six months."*

One of the reasons the patient wants to recover is the desire to get back to work immediately to meet the needs of life. The awareness of patience and sincerity in treatment must always be instilled. Consequentially, the role of the family as the MS in supervising the implementation of the treatment program should not be ignored (Widyastuti Sakti et al., 2021). Patients also stated that family and TB cadres always motivate them to get back to work soon, as stated in their statement below.

*"(P8) Saya beri kesadaran untuk kakak*

*agar sembuh sembuh, kalo kakak hidup seperti dulu tidak bisa, saya juga memberikan kesadaran hidup sehat, kaka saya belum bisa kerja karena TB, perusahaan menolak. Usia sekarang agak susah kerja, nanti gampang usaha apa begitu. Kakak saya selama sakit menjahit tas dan kain sendiri."*

*"(P8) I gave awareness to my brother so that he could recover; if my brother lived like before, he couldn't. I also raised awareness about living a healthy life; my brother couldn't work because of TB, and the company refused. It's a bit difficult to work at this age; what will it be easy to do later? When my brother was sick, he sewed bags and clothed himself."*

The existence of accessible facilities from the government makes it easier for anyone who needs them, so that the examination can always be fulfilled according to the schedule that the Primary Health Center has arranged. It also causes TB patients not to feel burdened and increases their desire to recover immediately (Amran et al., 2021). The results of interviews with recovered patients (P8) also illustrate the same thing:

*"(P8) Mengenai pengambilan obat dan chek up dokter kami sudah menerima jadwal sesuai kartu obat yang kami terima dari Puskesmas, kami juga ambil obat terpisah dengan pasien umum digedung utama dan pengobatan kami juga gratis."*

*"(P8) Regarding taking medicine and check-ups with the doctor, we have received the schedule according to the medicine card we received from Primary Health Care; we also take medicine separately from general patients in the main building, and our treatment is also free."*

### Interview with the TB Cadres

The role of TB cadres as monitors in the implementation of TB treatment programs is via mobile phones, and occasionally they do home visits to build good relationships and motivate the patients (Heppy Martin Susetyowati et al., 2018). The research above was experienced as the patient respondents were related to TB cadres during the COVID-19 pandemic. Cadres did not always visit patients due to the COVID-19 pandemic, so cadres could contact patients or families using a cell phone to ask about the patient's condition and treatment and provide motivation and support for patient recovery. As stated by the cadre

below:

*(P10) Sebulan rata-rata investigasi kontak minimal tiga kali, pendampingan pasien dan PMO dikomunikasikan lewat WhatsApp dan sering kunjungan.*

*(P10) An average month of contact investigations occurs at least three times. Assistance for patients and MS is communicated via WhatsApp and frequent visits too.*

*(P09) Kader mendampingi pasien sampai sembuh, keluarga atau pasien di WhatsApp waktu malam diingatkan untuk minum obat rutin jangan putus obat, buat yakin pasien bisa sembuh, saya juga menjadi PMO.*

*(P09) Cadres accompany patients until they recover, and families or patients on WhatsApp at night are reminded to take regular medication; don't stop taking medication to make sure the patient can recover. I am also a MS.*

#### Interview to the TB Cadres

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#### Interview Results with TB Programmers of Health Care

Implementation of the role of a TB programmer in the field requires knowledge and training regarding the proper communication and recording of TB reporting to health care. Good cadre communication can help influence MS and patients to perform medical examinations and comply with drug consumption (Arfan et al., 2020). The TB programmer conveyed the statement:

*"(P11) Pelatihan dari (SINERGI) bertahap, per 20 programer TB selama 3 hari (1 angkatan), dilanjutkan kader lain."*

*"(P11) Training from (SINERGI) in stages, per 20 TB programmers for 3 days (one batch), then other cadres."*

*"(P5) Ada pertemuan semua Programer TB dan keluarga penderita TB dan puskesmas, biasanya puskesmas melakukan penyuluhan 2 kali setahun, ada 4-5 kali pertemuan kader."*

*"(P5) There is a meeting of all TB programmers and families of TB recovered and the primary health care; usually the primary health care conducts counseling twice a year; there are 4-5 cadre meetings."*

*"(P5) kami menerima pelatihan dan sosialisasi dari (Aisyah dan sinergi) mengenai pendampingan yang tepat dan solusinya juga untuk pasien."*

*"(P5) We received training and outreach from Aisyah and Sinergi regarding proper assistance and solutions for patients as well."*

*"(P4) Penyuluhan dari (sinergi) ke kami mengenai apa itu TB, gejala, tingkat pengobatan, efek samping obat, dan pendampingan lewat whatsapp ke pasien atau PMO seperti mengingatkan pasien malam hari untuk minum obat rutin, jangan putus obat dan harus dipastikan ke keluarga nya, apakah pasien diminum tidak obatnya?"*

*"(P4) Drug information from (Sinergi) to us about what TB is, symptoms, levels of treatment, drug side effects, and assistance via WhatsApp to patients or DS, such as reminding patients at*

night to take routine medication, don't stop taking medication, and have to make sure to go to his family; did the patient take medicine or not?

"(P1) Kami juga sering di WhatsApp diingatkan dari sinergi mengenai kunjungan kami ke pasien dan pasien terduga TB untuk melakukan kunjungan."

"(P1) We are also frequently reminded on WhatsApp from the synergy regarding our visits to patients and suspected TB patients to make visits."

The lack of contact investigation of TB sufferers is due to the reluctance of TB suspects to do a self-examination when experiencing a cough for more than two weeks, which is a factor in case finding and low treatment success. For this reason, TB prevention needs to include contact investigations by health care, namely a team, especially field officers such as TB programmers, who are in charge of visits, screening, and contact investigations (Mardiana and Ulfa, 2021). The speaker was:

"(P10) kami dibantu dari pertemuan Pemberdayaan Kesejahteraan keluarga (PKK) untuk mendapat pasien terduga TB dan kami datang ke keluarga pasien, kami mensosialisasi kondisi kamar pasien mengenai arah sinar matahari masuk ke kamar, berjemur, dan kebersihan juga."

"(P10) We are assisted by the Family Welfare Empowerment (PKK) meeting to get suspected TB patients, and we visit the patient's family; we socialize the condition of the patient's room regarding the direction of sunlight entering the room, sunbathing, and cleanliness as well."

"(P9) kami memberi informasi kepada pasien seputaran pola hidup, makanan yang bernutrisi, dan kebersihan lingkungan."

"(P9) We provide information to patients about lifestyle, nutritious food, and environmental hygiene."

"(P1) kami juga melihat kondisi keluarganya batuk-batuk tidak?, kami datang ke rumah di samping kiri, kanan, belakang dan depan rumah pasien untuk melakukan investigasi kontak."

"(P1) We also saw the condition of his family coughing or not? We went to the house on the left, right, back, and front of the patient's

house to investigate contacts."

"(P1) kesulitan yang dihadapi pasien terduga TB tidak mau ditemui, infonya ada yang berhenti pengobatan, kemudian kami datang ke rumah ditanyakan kenapa berhenti minum obat, ada juga saya ditolak sebelum ketemu, mereka tidak mau ketemu."

"(P1) The difficulties faced by suspected TB patients are that they don't want to be met; the information is that someone stopped treatment; then we went to the house and asked why they stopped taking medication; I was also refused before meeting them; they didn't want to meet."

"(P10) Misalnya pasien tidak ada kerja sama diawal, pasien terduga menolak dikunjungi, selanjutnya kami mengunjungi bersama Pak Dukuh untuk melakukan kunjungan bersama ke pasien terduga TB."

"(P10), for example, the patient did not cooperate at the beginning; the patient refused to be visited, then we visited with the head of Hamlet to make a joint visit to the suspected TB patient."

### Interview Results with Pharmacists

Pharmacists improve patient knowledge by educating patients on the use of both prescription and non-prescription drugs for themselves or their families. The most important delivery is easy to understand, know, concise, clear, proven, and avoids the nature of patronizing, forcing, and blaming pharmacists in counseling patients (Aditya et al., Oki Nugraha Putra et al., 2021).

"(P3) Apoteker menyiapkan kesediaan obat TB kategori 1, 2, anak dan lanjutan, kita ada menyiapkan obat untuk pasien TB dari permintaan progremer TB atau dokter, penyerahan obat juga di poli ISPA. Pasien TB baru di konseling dan pasien juga di tensi, dihitung berat badan hingga pengambilan obat pasien mengambila di Poli Infeksi Saluran Pernapasan Atas (ISPA). Stok obat TB dari Rumah Sakit Respira Bantul, dan misalnya pasien putus obat akan ditanyakan ke kader atau ke rumah pasien langsung."

"(P3) Pharmacists prepare the availability of TB drugs for categories 1, 2, children, and advanced options; we have prepared drugs for TB patients at the request of TB programmers or doctors; drug delivery is also at the URIP. New TB patients are counseled, and patients are also under blood pressure. Weight is calculated until

*the patient takes the medicine at the Upper Respiratory Infection Polyclinic (URIP). TB drug stock from Respira Hospital, Bantul, and for example, patients who drop out of medication will be asked to go to the cadres or to the patient's house directly."*

*"(P6) Apoteker membantu menyiapkan obat dan memberikan edukasi kepada pasien bagaimana cara minum obat, penanganan efek samping obat. Seperti edukasi obat rimfapicin yang membuat kencing merah dan sering batuk. Distribusi obat dari Pengelolaan Obat dan Alat Kesehatan (POAK), puskesmas ambil sendiri ke POAK, kecuali vaksin diantar POAK."*

*"(P6) Pharmacists help prepare medicine and provide education to patients on how to take medicine and handle drug side effects. such as education on the drug rimfapicin, which makes red urine, and frequent coughing. Drug distribution from the Medicines and Medical Devices Management (POAK), the HPC will take it themselves to POAK, unless the vaccine is delivered by POAK."*

*"(P6) Di Puskesmas kalasan setiap hari jumat pasien TB mengambil obat, kemudian apoteker menyediakan obat dan menyerahkan obat ke pasien di gedung Poliklinik Batuk Pilek (BAPIL), karena pasien TB tidak ikut antrian pasien umum, keluarga pasien bisa ambil obat langsung tetapi pasien ikut kontrol juga ke dokter."*

*"(P6) At the Kalasan Primary Health Center, every Friday, the TB patient takes the medicine, then the pharmacist provides the medicine and hands the medicine over to the patient at the Cough and Cold Polyclinic Building. Because TB patients do not join the general patient queue, the patient's family can take the medicine directly, but the patient also checks up with the doctor."*

Tuberculosis attacks productive groups due to high activity, mobility, lifestyle, and smoking habits. The increased activity increases the likelihood of being susceptible to infection from others, so they are likely infected with TB. Men are more vulnerable to TB due to their mobility outside and tend to consume alcohol, smoke, and go out at night, which can reduce the immune system. Still, educational factors do not affect TB patients' treatment success. The duration of ATD treatment is divided into three categories: TB medicine: <6 months, six months, and >6 months. Patients who received treatment for more than six

months because they did not comply with it or did not comply come to the Primary Health Care to do therapy. Another factor was that the patient's lab results still showed positive results at the end of the 6-month treatment period, so they were still given continued ATD. According to the Ministry of Health, TB treatment in category one patients undergoing treatment for six months is divided into two parts, namely intensive and advanced treatment (Korua, 2015; Dewi, 2021; Absor et al., 2020).

The study results show that the treatment compliance of tuberculosis patients in Sleman Regency is good. Respondents said that the role of families, cadres, and health workers in the Primary Health Care supported the success factor of treatment. Respondents explained that the role of the family as a person who lives close to the patient in one house takes an essential role as a DS in supervising the taking of drugs, assisting in the regularity of taking the patient's medication, and taking an emotional role in supporting the success of the treatment for six months. The long-term treatment bored the patient, so the family needs open and two-way communication. The role of the family in reminding and motivating the patient during treatment can accelerate the patient's healing and solve the patient's problems effectively by giving a positive impact (Hannan and Hidayat, 2013).

There are various forms of attention given to the family as a DS, including realizing that there are health disorders in the family so that the family as a DS helps check patients into the Primary Health Care. The Primary Health Care facilitates the treatment of new TB patients from the beginning of the examination by the doctor in charge of diagnosing them. The Primary Health Care cadres also helped with sputum collection and gave sputum to laboratory personnel, as well as informing the patient of the lab results, which were delivered directly to the patient's family suspected of TB via WhatsApp. After receiving the patient's message, the cadres were advised to carry out treatment at the health center closest to the patient's home so that it was easier to carry out further examinations and take the next drug if the drug had been exhausted, so that it did not experience a drug vacancy in the patient's home, as happened to the P14 respondent (Pratama et al., 2019; Fadlilah, 2017). During the COVID-19 pandemic, treatment can be accessed and reached by TB patients, assisted by the cadres and TB programmers of the Primary Health Care to prepare (Napitupulu and

Prasetyo, 2021).

Assistance in swallowing drugs by the family ensures that the patient takes medicine on time before the family, as DS, does any activities. Another concern that researchers found was that families should provide nutritious food so as not to worsen the patient's health. Patients are given calorie and protein needs so that the disease healing process can go well (Rahardja, 2015).

Other family motivations encourage patients so that they do not get tired of taking drugs. Families continue to accompany patients in taking drugs because many drugs must be taken, plus the size of the drug is significant so that it is challenging to swallow patients, and patients often complain about the side effects of drugs, such as nausea and tingling (Pratama et al., 2019; Fadlilah, 2017), as experienced by P12 respondents at the beginning of treatment. The family also contacted the Primary Health Care TB cadres, asking about complaints of side effects of drugs experienced by patients and looking for other supportive treatments that can reduce the side effects of drugs (Rejeki et al., 2021). The cadres also accompanied the DS through WhatsApp, asking about patients' needs, providing motivation and advice for the family and the recovery of patients, and reducing home visits due to the COVID-19 pandemic to reduce disease transmission (Susetyowati et al., 2018).

The role of the family is to accompany the patient to take medicine at the Primary Health Care before the medicine runs out and, at the same time, carry out a medical examination according to the schedule agreed upon with the TB programmer so that the patient can receive the medicine from the pharmacist or the TB programmer to be able to receive education in improving the patient's medication compliance (Aditya et al., 2021). The TB programmer and the pharmacist will coordinate to contact the patient's family if they have not taken medicine according to the schedule that has been made (Yasin et al., 2016).

Supervised patients taking drugs; the role of the family as MS is critical so that patients do not break up drugs. This study found that the role of the family as MS, Cadre, TB Programmer, and Pharmacist positively impacted the treatment of tuberculosis patients. Starting from the role of the family providing motivation, attention, and drug availability and the role of the MS overseeing the regularity of taking the patient's medication, Cadres as DS assistants, and patients during treatment, the

researcher has a view that the combined roles of all families, Cadres, TB Programmers, and Pharmacists will be carried out well in the treatment of tuberculosis. Plus, respondents are highly willing to complete treatment until it is completed to recover because they want to return to work. Most of the respondents in this study were obedient to taking drugs based on patient recognition, family statements, and health workers at the Primay Health Care.

The researcher experienced some limitations and factors that can be considered for future research in perfecting this research because this research has shortcomings that are expected to be corrected in future studies. The researcher got some limitations in the form of a lack of direct observation, namely, seeing cadre visits to patients' homes and counseling conducted by the Primay Health Care to the community due to the COVID-19 pandemic.

## CONCLUSIONS

Based on the results of research conducted on recovered TB patients, MS, Cadre, the Health Center's programmer, and pharmacists, it is known that the success of TB treatment in Sleman Regency is influenced by the role of the family itself as MS in efforts to improve drinking compliance in TB patients. Patients want to immediately recover from being able to work again, and assistance is provided to TB Cadres as an accompaniment to patients in monitoring the regularity of treatment by asking the MS through communication tools (cellphone) and occasionally making home visits. TB Programmers and Pharmacists, as health center officers, conduct service duties well in providing education and drug information to patients and MS well and monitoring the drug-taking and patient check schedule.

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