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Aktualisasi Risalah Pencerahan untuk Dakwah Melintas Batas melalui TBC Care 'Aisyiyah

PRINCIPAL RECIPIENT
TBC-HIV 'AISYIYAH GLOBAL FUND ATM

abad kedua 'aisyiyah

THE MDR TB CASE MANAGEMENT EVALUATION RESEARCH (DRUG-RESISTANT TUBERCULOSIS)

By:

RESEARCH BOARD

FACULTY OF MEDICINE

TRISAKTI UNIVERSITY

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LIST OF ABBREVIATIONS

B/BKPM	Balai (Besar) Kesehatan Paru Masyarakat
Balitbangkes	Badan Penelitian dan Pengembangan Kesehatan Indonesia
BTA	Bakteri Tahan Asam
CNR	Case Notification Rate
DOTS	Directly Observed Treatment Shortcourse
DOT	Directly Observed Treatment
DPM	Dokter Praktek Mandiri
DICOM	Digital Imaging and Communications in Medicine
FKTP	Fasilitas Kesehatan Tingkat Pertama
FKRTL	Fasilitas Kesehatan Rujukan Tindak Lanjut
FGD	Focused Group Discussion
Fasyankes	Fasilitas Pelayanan Kesehatan
Gerdunas TB	Gerakan Terpadu Nasional untuk Pengendalian Tuberkulosis
GDI	Global Drug-resistant TB Initiative
IRB	Institutional Review Board
IMT	Indek Masa Tubuh
JPEG	Joint Photographic Experts Group
JKN	Jaminan Kesehatan Nasional
KemendagrI	Kementrian Dalam Negeri
KIE	Komunikasi, Informasi Dan Edukasi
LKC	Library and Knowledge Center
LKNU	Lembaga Kesehatan Nahdlatul Ulama
MDG	Milenium Development Goals
MK	Manajer Kasus
MDR	Multidrug-Resistant
NGO	Non Government Organization
NFM	New Funding Model
OAT	Obat Anti Tuberkulosis
Permenkes	Peraturan Kementerian Kesehatan
PMDT	Programmatic Management of Drug Resistance TB
PMO	Pengawas Menelan Obat / Pengawas Minum Obat

PPM	Puskesmas Pelaksana Mandiri
PKM	Pusat Kesehatan Masyarakat
PPK	Panitia Pemilihan Kecamatan
PP	Pendukung Pasien
PS	Pendidik Sebaya
PE	Peer educator
PR	Principle Recipient
RR	Rifampicin-Resistant
RSP	Rumah Sakit Paru
RS	Rumah Sakit
RSUD	Rumah Sakit Umum Daerah
RSUP	Rumah Sakit Umum Pusat
SDG	Sustainable Development Goals
SAT	Scholastic Assessment Test
SR	Sub Recipient
SSR	Sub Sub Recipient
SSF	Singel Stream Funding
TB	Tuberkulosis
TB-RO	Tuberkulosis Resistan Obat
TB-HIV	Tuberkulosis - human immunodeficiency virus
TOSS-TB	Temukan **TB** Obati Sampai Sembuh
TCM	Test Cepat Molekuler
UN-SDG	United Nation - Sustainable Development Goals
UMR	Upah Minimum Regional
WHO	World Healt Organization
XDR	Extensively Drug-Resistant

RESEARCH TEAM

- Head of Research Team : Dr.dr. Husnun Amalia, SpM
- Deputy head of the research team : dr. Nany Hairunisa, MCHSc
- Senior technical advisor : Prof. Dr.dr. Adi Hidayat, MSc
- Researcher Supervisory Coordinator : Prof. Dr.dr. Pusparini, SpPK
- Researcher 1 : dr. Rita Khairani, M.Kes, SpP
- Researcher 2 : dr. Henie Widowati, SpP
- Researcher 3 : dr. Lie T. Merijanti S., MKK
- Researcher 4 : dr. Meiyanti, SpFK
- Researcher 5 : dr. Dyah Ayu Woro Setyaningrum, M.Biomed
- Researcher 6 : Agus Rahmat Hidayat (Community researcher)
- Data manager : dr. Mulia Rahmansyah, Sp.Rad
- Administration : Eka Nurmayanti, Amd
- Finance : Yulianti, SE

EXECUTIVE SUMMARY

MDR TB Case Management Evaluation Research (Drug-Resistant Tuberculosis)

Introduction

New TB cases in Indonesia still rank third in the world. In 2017 there were 842,000 new cases (319 / 100,000 population) with a death rate of 116,400 (44 / 100,000 population). The number of MDR TB cases is estimated at 12,000 cases originating from 2.4% of new cases and 13% of re-treatment cases. This is a big challenge and requires attention from all parties because of the high burden of morbidity and mortality.

The Sustainable Development Goal calls for TB to be eliminated in the next 15 years, namely 2030, but the annual reduction in TB has only reached 1.5%. One of the reasons is the increasing resistance to TB drugs, which, if left untreated, will not achieve the goal of eliminating TB. In 2016, only 8% were diagnosed with MDR TB from an estimated 32,000 people. Based on this, this study aims to assess the implementation and mechanism of case management carried out by TB care 'Aisyiyah, as well as to explore the problems and obstacles in accessing TB services. Besides, identify the factors that affect the success rate of treatment and evaluate the implementation of case management, including service flow (social risk, behavior, and stigma).

This study will answer how the role and work of the case management team of PR TB Aisyiyah and other stakeholders in hospitals and other health facilities in the MDR-TB case management process. Also, whether the referral flow has been running well, and what are the problems that arise in terms of various factors and how to overcome them

Method

The research design is a survey method based on a questionnaire (quantitative) and qualitative, which will be complementary. The research was conducted in 8 provinces and ten districts/cities in Indonesia in 2019, involving 214 respondents in the quantitative process as well as 121 key informants in qualitative respondents in in-depth interviews (IDI) and 67 key informants in focus group discussions (FGD). Quantitative analysis was carried out using SPSS.

Result

Problems and barriers found in access to and TB services in health services are accessible from a place to live, services that have not been maximal, facilities at health care facilities are not yet optimal, the

number of health workers is not enough, some deficiencies in the work of the Community MDR TB Team.

The factors that influence the success of MDR TB treatment are internal and external factors. Internal factors were female gender (OR 0.66) and age <50 years. External factors are occupation (OR 0.31, p = 0.004), income (OR = 0.27, p = 0.015), length of treatment (p = 0.000), side effects (p = 0.007 to p = 0.027), health care facilities place. taking medication (p = 0.041), Knowledge of MDR TB (p = 0.002), health care facilities where to take the drug (p = 0.038), = 0.027), adequate income (p = 0.003), having a monthly salary (p = 0.000), transportation assistance (p = 0.000), stigma (p = 0.013).

Evaluation on the implementation of case management found that there was a risk of a long service flow before starting treatment, social aspects that affected (socioeconomic and halfway house facilities), patient behavior was good in terms of treatment but most did not take medication at the health facility and motivation from case management and family very supportive of treatment.

Stigma is found to come from the workplace and society.

The referral flow that has been determined is going well, the way case management and stakeholders work is going well, laboratory gaps are found, the role of the MDR TB team of the PR TB ‘Aisyiyah community has been going well, and the relationship that exists with the community is good. The flow of recording, reporting, and patient assistance by PR TB ‘Aisyiyah, although running well, is not optimal.

Conclusion

The implementation and case management mechanism carried out by TB care ‘Aisyiyah has been running well. However, there are still several factors that can be improved to make it more optimal. Barriers to access to TB services are accessible from a place to live, services that are not maximal, facilities at the health care facilities that are not yet maximal, the number of health workers is not enough, some deficiencies in the work of the Community MDR TB Team. There are internal and external factors that affect the success rate of treatment implementation of case management, namely the referral flow, the workings of case management and stakeholders, the role of ‘Aisyiyah's MDR TB PR team, the relationship with the community is also going well.

Recommendation

Efforts to overcome problems and obstacles in access to services are to increase the number of health facilities that are referred to MDR TB, make standard Health Care services to obtain homogeneity of quality, bring patients closer to health facilities through open houses according to their budget and paid at the beginning of the year (not monthly). The service system is made more practical, and fast tracts

are provided for patients who will and have started treatment, and the maintenance of facilities and infrastructure must be improved. Services can be maximized by increasing the number of health workers and providing administrative personnel to complete reports. In addition, routine training is held for health workers/administration accompanied by certificates.

External factors that affect treatment are income and employment because while undergoing treatment, many patients who cannot work optimally are even dismissed from their jobs so that they rely on the Global Fund for transportation to go to the health facility to continue treatment. Other factors can be overcome by increasing understanding of medicine and its side effects, namely providing counseling/information to patients and their families.

The stigma found can be pursued by providing open houses, if there are budget constraints, it is hoped that local government support (lending one official home) is expected. Stigma is the responsibility of all elements of society and across sectors. The public can be given socialization, explanation, and understanding in an integrated manner by the Ministry of Health, religious leaders, community leaders, and government structures from the smallest (RT / RW) to the top frame. This disease can be cured and treated. Community support helps case finding, supports patients, and keeps patients treated thoroughly while protecting their immediate environment. TB survivor groups are expected to provide support for government programs by providing sharing, motivation, and also being recruited into case management teams.

Keywords: PR-TB ‘Aisyiyah, MDR TB, case management

CHAPTER I

INTRODUCTION

1.1 BACKGROUND

In the last 15 years (2000 to 2015), as stated in the Millennium Development Goals (MDG) of the United Nations / World Health Organization (WHO, 2015; WHO, 2016), incidence rates and mortality rates due to tuberculosis (TB) has decreased significantly at the global level. [(1)]

Furthermore, the Sustainable Development Goals (SDG) place TB eliminated in the next 15 years between 2016 and 2030 (UN-SDG (United Nations - Sustainable Development Goals), 2015). However, if the global annual reduction is still at the current rate of 1.5% [(2)], the time needed to eliminate TB will be very long. This is because the majority of people with active TB worldwide are still not reached by intervention programs due to various problems, including the inadequate provision of services and programs so that the effectiveness of TB programs is less than optimal. [(1)] Included in program outreach, especially on what is referred to as the TB key population, namely people who are at higher risk of contracting TB, so that the spread of the disease in this population tends to be disproportionately concentrated. [(2)]

Besides, the elimination of SDG versions of TB also considers increasing resistance to TB drugs which, if not handled properly, by 2030 will make this TB epidemic even more complex, especially in key populations. [(2)]

1.1.1 Epidemic Status and the National Strategy for TB Control in Indonesia

Indonesia ranks first in terms of the burden of TB among countries in the Southeast Asia region. On the other hand, Indonesia has also succeeded in achieving the Global Target for TB in 2006, which is 70% of the findings of new TB smear-positive cases with a treatment success rate of 85 %. TB prevalence from the most recent survey conducted in 2014-2015 shows that Indonesia is ranked second among the countries with the highest TB burden worldwide. Indonesia also faces new challenges inherent in this burden, for example, by handling TB-HIV, MDR TB, TB among children, and other vulnerable populations. The map below illustrates the incidence of TB in Indonesia by district/city. [(3)]

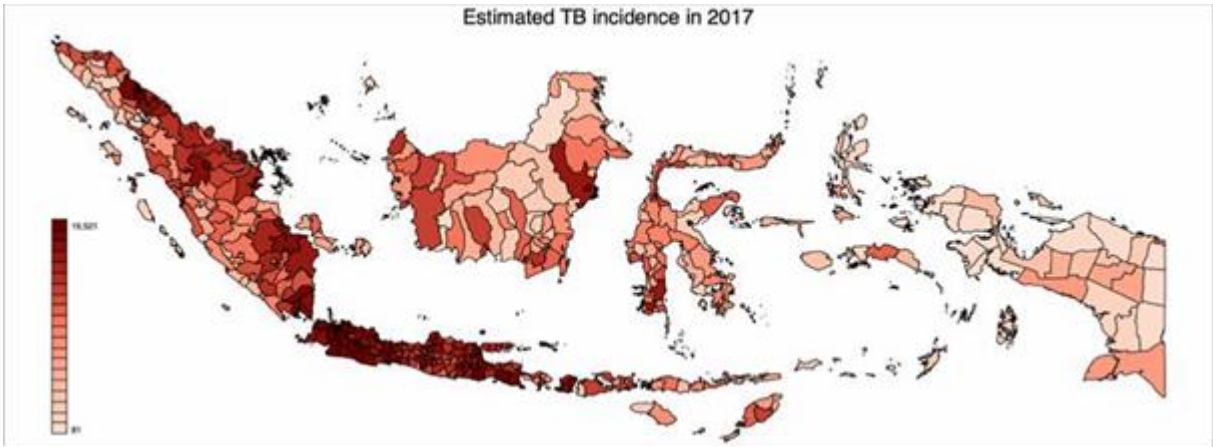


Figure 1. Estimated Number of Incidents in 514 Regencies/Cities in Indonesia[3]

The TB survey results (Ministry of Health, 2014) show that the prevalence of all types of TB for all ages is 1,600,000 people (660 per 100,000 population), with 100,000 new cases occurring every year. This figure shows the need for urgent efforts to accelerate TB control.[4] Based on Global TB report 2018: [5]

- In 2017 in Indonesia there were 842,000 new TB cases (319/100,000 population)
- Deaths from new TB of 116,400 (44 per 100,000 population) including TB-HIV positive
- The case notification rate (CNR) of all cases was reported as 171/100,000 population
- The number of MDR TB cases is estimated to be 12,000 cases (among confirmed pulmonary TB patients) originating from 2.4% of new cases and 13% of re-treatment cases

New TB cases in Indonesia are still ranked third globally and are one of the biggest challenges facing Indonesia and require attention from all parties because they provide a high burden of morbidity and mortality. [5]

The figures above emphasize Indonesia's need to seek breakthroughs in bringing in more patients who are not notified (but detected) or have not yet been detected, to access quality TB services. The EPI study carried out in 2017 regarding the analysis of the patient's travel path to health personnel showed that 70% of people who may have contracted TB started seeking care from private practices, which resulted in TB programs unable to monitor the large number of people affected by TB (detected or no) to access this service. [4]

The conditions described above have led Indonesia to set relatively high targets in numbers, accompanied by a strategy to provide comprehensive services as described in the national strategy of the National TB Control Program (2017-2020) in effect since early 2017, as below:[4]

1. Strengthening the leadership of the TB Program Management at the district/city level
2. Improve quality TOSS-TB access services
3. Manage and control risk factors
4. Enhancing TB Partnership through the Coordination Forum
5. Increase community involvement in TB control
6. Strengthening Health Systems

This study will contribute to Strategies 2 and 5 above (Re: Control of Risk Factors and Community Involvement). Indonesia hopes that community support will be meaningful for the progress of program implementation as soon as possible.

Before detailing the study's aims and objectives, below is a brief description of the current situation of TB control policy and practice.

1.1.2 Current Control Policy and Implementation in Indonesia

As with the health system in Indonesia, TB control is carried out on the principle of decentralization, where autonomy is at the district/city level, especially in its programmatic management, which includes: planning, implementation, monitoring and evaluation, and ensuring the availability of resources (funds, personnel, facilities, and infrastructure). [4]

TB control is implemented using the DOTS strategy (Directly Observed Treatment, Short-course, or provided free of charge OAT package - Anti-Tuberculosis Medicine) as the main strategy, which also considers the global TB strategy control (Global Stop TB Strategy). Policy strengthening is aimed at increasing local commitment to TB control programs. Namely, strengthening TB control efforts by improving the quality of services and easy access to case finding and treatment is expected to break the chain of transmission and prevent drug-resistant TB from occurring. [2]

Findings and treatment in the context of TB control are carried out by all First Level Health Facilities (FKTP) and Follow-up Referral Health Facilities (FKRTL), including Puskesmas (Puskesmas Kecamatan Level), Public and Private Hospitals, Pulmonary Hospitals

(RSP), Balai (Large) Community Lung Health (B / BKPM), Medical Clinics and Independent Practitioners (DPM). [4]

Basic TB diagnosis and treatment (without complications) are provided by Primary Health Care Facilities (Puskesmas, Private Clinics, and Independent Practitioners). Another advanced TB treatment was referred to as the FKRTL. The TB control program includes health promotion using cooperation and partnerships between the government, non-government, private, and community sectors under the National Integrated Movement for Tuberculosis Control (Gerdunas TB). [4]

Among people affected by TB reported in 2016, only 8% of the estimated 32,000 TB-MDR (TB-Multi Drug Resistance) people were diagnosed. Until 2017, the problem of delaying confirmation of drug resistance status, limited access to centralized PMDT (Programmatic Management of Drug Resistance TB) facilities, fear of side effects, and length of treatment were the causes of high morbidity and mortality rates even though the government had actually provided sufficient referral centers. many in Indonesia (i.e., 37 PMDT referral centers, 32 referral centers, and 1,217 satellite services). [4]

Factors associated with the incidence of MDR include predisposing factors, enabling factors, and Reinforcement factors. In this case, Predisposing factors are Knowledge, Values, Beliefs, Perceptions, and Demographic variables (gender, age, education level, and occupation). Meanwhile, the enabling factors are the availability of facilities, affordability of facilities, skills of officers, government commitment, availability of drugs, and drug side effects. Another factor is the reinforcing factor, which includes health workers' attitudes and behavior, supervisors for ingesting drugs (PMO), families, cadres, and community leaders. [5]

One of the challenges in TB control in Indonesia is that many people access public and private health services simultaneously and with non-centralized registration, plus, most people affected by TB seek initial care in private practice (there are about 80,000-100,000 service providers, and only 78,597 registered doctors) and, in 2016, only 495 DPM (Independent Practitioners), 63 private hospitals, and 225 private clinics gave their patient notifications. Even though patients were treated with the same method, this private care provider contributed only a small number of TB patient notifications, namely: 4,952 (1.5%) from DPM, 26,547 (8%) from private hospitals, and 5,505 (1.5%) people from private clinics. [4]

In Indonesia, one of the problems with poor TB patient outcomes is the large number of patients being lost to follow-up. According to research in Surakarta, the common causes of patient loss to follow-up due to side effects of treatment, transportation costs, no escort, boredom, and inability to come to work. (6)

One of the recommendations of the WHO Report (2018) in handling the MDR TB problem includes the need " increasing coverage of drug susceptibility testing in people diagnosed with TB, reducing incomplete TB diagnoses, models that make it easier to access and continue treatment, new diagnoses, and new drugs and treatment regimens with higher levels of efficacy and better safety." (7) Therefore, in line with WHO recommendations and common causes of loss to follow-up, during the NIP Period, PR TB 'Aisyiyah together with the Ministry of Health will adopt a new approach in dealing with MDR TB treatment. This approach attempts to achieve community support targets for TB patients, from the initial diagnosis to recovery and completion of the treatment period. This approach uses the Case, Management model. At the district level, at the Programmatic Management of Drug-Resistant Treatment (PMDT) Hospital, there will be a Case Manager who manages and manages the roles of Patient Support, Peer Educators, and cadres to increase the coverage of MDR TB patients from the beginning to the end of the treatment period. As this is a new approach, evaluation research on the process and mechanism of case management is important to determine their effectiveness and improve better services for MDR TB patients.

1.2 Objectives

General Objective

To assess the implementation and mechanism of case management carried out by TB care 'Aisyiyah

Specific Objectives

1. Exploring problems and barriers to access and TB services in health services
2. Identify the factors that influence the success rate of TB treatment, including internal and external factors, MDR TB issues, and regional and central policies in the management of MDR TB
3. Evaluating the Implementation of Case Management including service flow (social risk, behavior, stigma)

1.3 Research Questions

1. Is the referral flow to guide MDR TB patients in the community going well?
2. What problems have arisen regarding poor treatment outcomes at the district/city level?
3. What are the MDR TB problems in terms of various factors and how to deal with them?
4. What are the roles and ways of working between case managers, peer educators, patient supporters, and other stakeholders in hospitals and other health facilities?
5. Are there gaps in the number of laboratories confirming MDR TB patients and registering at the district level (RS PMDT)?
6. What is the role of the community MDR TB Team (Case Manager, Patient Support, peer educators, and cadres) in the case management process?
7. What is the relationship between the MDR TB Team, the community, and related stakeholders (Provincial/District/City Health Office, PMDT Hospital, PPM, and Puskesmas)?
8. Is the flow of recording, reporting, and mentoring MDR TB patients by case managers, PS, PE, and cadres running well?

CHAPTER 2

LITERATURE REVIEW

2.1 Drug-Resistant Tuberculosis

M. tuberculosis resistance to OAT is a condition where the germs can no longer be killed by OAT. Drug-resistant TB (MDR TB) is essentially a human-made phenomenon resulting from inadequate treatment of TB patients and transmission of MDR TB. [5]

2.2 The global epidemiology and magnitude of the problem of MDR-TB

What is meant by MDR-TB TB is the resistance of M. TB, where germs can no longer be killed with OAT that has been used so far. There are 5 categories of resistance to anti-TB drugs, namely monoresistance, polyresistance, multidrug-resistant (MDR), extensively drug-resistant (XDR), and rifampicin-resistant (RR). [8] This resistance can be identified by examining sputum at a referral hospital and Sub-designated reference. At this time, MDR-TB is a health problem that has threatened various countries. Globally, there were found new MDR TB cases in 3.6% (2.1-5.1%), and 20% (13-27%) previously treated cases. [9] Approximately 60% of MDR TB cases were found in China, India, the Russian Federation, and South Africa. [10] In 2017 worldwide, it is estimated that there were around 558,000 (between 483,000–639,000) rifampicin-resistant cases of MDR TB, and 82% were multidrug-resistant TB. [11] In 2017 in Indonesia, 23,000 people had MDR TB symptoms, 5070 people were diagnosed, and only 3042 people were taking treatment. [12] The socio-economic impact on people with MDR TB and the health system has been proven. Treatment for MDR TB patients is given every day and lasts more than 20 months. It greatly affects MDR TB patients. The cost of treating MDR TB patients is 50-200 times greater than those susceptible to TB treatment and globally. Treatment success of MDR TB is shallow, in the range of 48%. [13]

The World Health Organization has responded to the challenges of MDR TB by establishing the Global Drug-resistant TB Initiative (GDI). The main focus of GDI is to accelerate the global response of MDR TB through a collaborative approach that involves all key stakeholders. The GDI mission is to support countries to develop programmatic management of drug-resistant TB in both the public and private sectors.[15]

2.3 MDR TD Diagnosis

The diagnosis is made based on the sensitivity test result, aiming to determine the presence or absence of M.Tuberculosis resistance to OAT. The sensitivity test must be carried out by a laboratory that has been certified by the national TB reference laboratory. The examination was carried out by standard methods available in Indonesia, namely phenotypic and genotypic methods. Currently used is the molecular rapid test (TCM) with results obtained after 2 hours. (5)

The MDR TB diagnosis flow is after the diagnosis made using TCM examination or microscopic examination (if TCM is not possible). Treatment is carried out according to the evaluation results with certain criteria; usually, short-term treatment is carried out if met. If not fulfilled, it will be viewed according to individual guidelines. Treatment of MDR TB patients can be given in 2 ways, namely treatment with short-term guidance (6-10 months) and treatment with individual guidance (long-term) (up to 20 months). (5)

Figure 2. Flowchart of MDR TB diagnosis and treatment

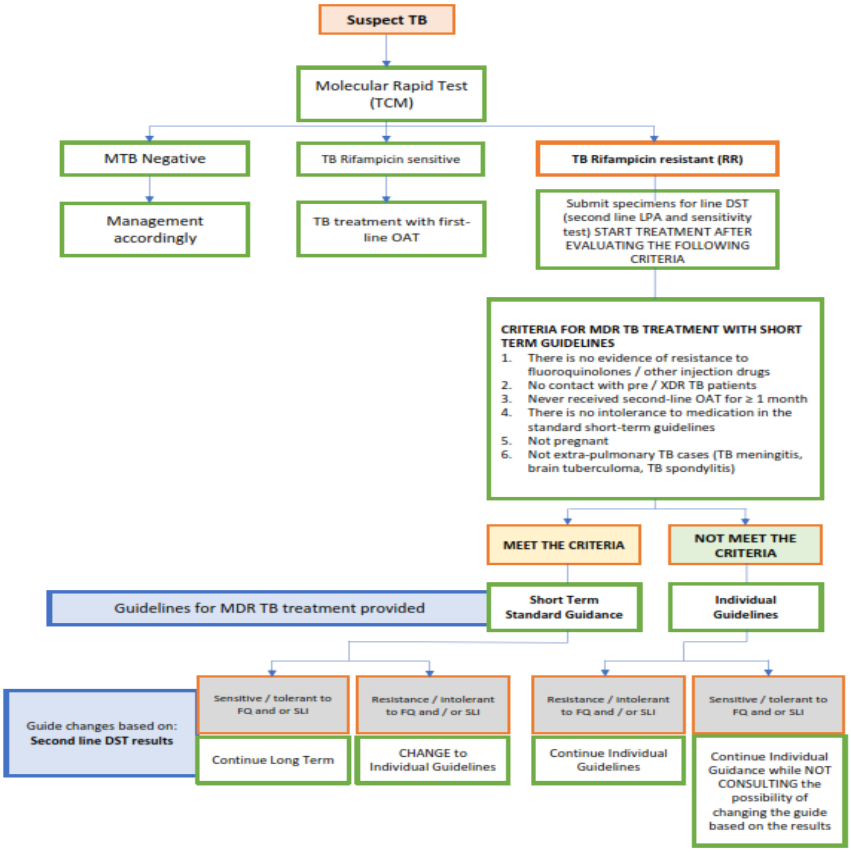


Figure 2. The flow of diagnosis and treatment of MDR TB

2.4 Managerial aspects of PMDT

Diagnosing, treating, and treating MDR TB patients is a managerial challenge in any health care system, even in developed countries. The long-term plan of the National TB Program aims to prevent and control the transmission of TB drug resistance through PMDT. This program will be an integrated part of the National TB control program and ensure universal access to diagnosis and treatment through public and private health service facilities. Good management is essential to provide quality service and achieve the expected goals. The programmatic management of drug-resistant TB should be included in the national TB control management structure. However, it is very complex and requires coordination with hospitals, laboratories, ministries of health, government sectors, health care centers, and community organizations. The management structure of MDR TB is country-specific. In many countries, the case manager (key managers) for PMDT usually occupies one of the positions listed below:[(11)]

a. National TB control program manager.
b. Manager of national reference laboratories (and other designated PMDT laboratories).
c. The manager or focal point of the designated hospital and referral laboratory.
d. Officer / focal point responsible for the PMDT component of the TB control program.
e. Head of the district health office (e.g., district TB medical officer oversees the sub-district PKM.
f. Officer / focal point responsible for PMDT district health services.

The implementation of TB control needs to be supported by efforts to develop and strengthen coordination mechanisms, as well as partnerships between TB program managers and government agencies across sectors and programs, stakeholders, service providers, community organizations, health insurance, both at the central, provincial and district/city levels. [(4)]

2.5 Care and support for MDR TB patients

Currently, the WHO defines DOT as a person observing a patient taking medication in real-time. Treatment observers do not have to be health care workers but can also be friends, relatives, or laypeople who work as caregivers or supporters of care. Observed care can also be

achieved by real-time video observation and video recording. However, in this document, DOT refers to care given under the direct observation of another person. Definitions of adherence varied across studies. However, in general, compliance is defined as receiving. When DOT alone was compared with self-administered or unsupervised treatment (SAT), patients taking DOT had a better 2-month treatment success rate, adherence, and sputum conversion; and slightly lower loss to follow-up and drug resistance. However, patients taking DOT had a slightly higher recurrence rate. [(12)]

2.6 Direct supervision of ingesting drugs

Treatment will be successful if all the drugs given are taken as directed. If this is done, new TB patients will cure most of the patients without triggering the emergence of drug-resistant germs. For this to be achieved, it is essential to ensure that the patient swallows the medication given as directed, with direct supervision by a Ingesting drug supervisors (PMO). This is done to prevent drug resistance. The choice of place for giving treatment should be agreed upon with the patient to provide comfort. Patients can choose to come to the nearest health facility or PMO to come to the patient's house. PMO requirements are: (a) someone who is known, trusted, approved by both the health worker and the patient, besides, must be respected and respected by the patient; (b) someone who lives near the patient; (c) willing to help patients voluntarily; (d) willing to be trained or receive counseling together with patients.[(4)]

Ingesting drug supervisors should come from health workers, but they may also come from health cadres, teachers, PKK members, community leaders, or family members if this is not possible. The duties of the PMO are: (a) to supervise the patient to take medication regularly until after treatment; (b) Encourage patients to seek regular treatment; (c) Remind the patient to do sputum examinations at a specified time; (d) provide counseling to family members of TB patients who have suspicious symptoms to carry out an examination immediately. PMO's job is not to take drugs from the service unit, but patients who have to take medicine, and it is ensured that the dose of medicine that day is swallowed in front of the health worker. Health care officers carry out MDR TB PMO. In certain conditions, MDR OAT is carried out at the patient's home, so if this happens, the PMO can come from health workers, or cadres, or the patient's family, which has previously been agreed by the health worker and patient. [(4)]

2.7 Recommendation

- Health education and counseling about disease and treatment adherence should be provided to patients on TB treatment.
- Treatment adherence intervention packages can be offered to patients on TB treatment and the selection of appropriate treatment administration options.
- One or more of the following treatment adherence interventions (complementary and not mutually exclusive) may be offered to patients on TB treatment or to health care providers: [13]
    a. Material support (Material support can be in the form of food or financial support: food, food baskets, dietary supplements, food vouchers, transportation subsidies, living allowances, housing incentives, or financial bonuses. This support addresses the indirect costs incurred by patients or their servants to access health services and, possibly, try to reduce the consequences of the loss of income associated with this disease to patients (conditional recommendation, moderate certainty in evidence);
    b. Psychological support (psychological support can take the form of counseling sessions or peer group support) to the patient (conditional recommendation, low certainty of the evidence);
    c. Staff education (staff education can be compliance education, visual charts or reminders, educational tools, and desktop aids for decision making and reminders) (conditional recommendations, low certainty in evidence).
- Patients with MDR-TB should be treated using outpatient care primarily rather than a care model based primarily on inpatient care.
- The decentralized model of care is recommended over the centralized model for patients taking MDR-TB treatment.

2.8 Aisyiyah's TB-HIV care program

Aisyiyah began to work in the field of tuberculosis (TB) control with the help of The Global Fund / GFATM by becoming an SR (Sub-Recipient) or recipient of secondary funds from the Principle Recipient / PR-GF ATM of the Ministry of Health as the main recipient of funds in Round 1 and Round 5 during the period 2003-2008 time. In round 8 (2009-2013),

'Aisyiyah has been selected as a Global Fund partner as the main recipient of funds (Principal Recipient) representing civil society groups.

The program being implemented is called Community TB Care 'Aisyiyah. Through this program, 'Aisyiyah coordinates 23 recipients of secondary funds (SR) involving 16 Regional Leaders' Aisyiyah and 6 Non-Government Organization (NGO) Partners, namely LKNU, PKPU, LKC, TB Care Yarsi, Perdhaki NTT, and KMP Sidobinangun. For her performance during her career as a PR, 'Aisyiyah through the Community TB Care program is again trusted as a Global Fund partner as PR in the SSF (Singel Stream Funding) Round, which started in 2014-2016. In this round, 'Aisyiyah works in 12 provinces in 48 districts/cities and partners with TB Care Yarsi, PKPU, and KMP Sidobinangun. To ensure the achievement of program objectives supported by The Global Fund effectively and efficiently, PR TB 'Aisyiyah has compiled Project Implementation Guidelines (PPP) as a guide for all project implementing components, starting from the central, provincial, and district/city levels. (16)

Tuberculosis (TB) Prevention Program, 'Aisyiyah strives to participate in health development in Indonesia and achieve the Millennium Development Goals (MDGs) no. 6, namely the reduction in the number of infectious diseases. As a mandate from the Congress and Tanwir 'Aisyiyah, these TB control efforts are carried out in areas that have received support from donor agencies and independently. Therefore, 'Aisyiyah's TB Control (Community TB Care) program continues to be developed in 33 provinces in Indonesia. (17)

These programs are programs to combat Tuberculosis that are focused on community-based activities, which are managed by the Central Executive Health Council 'Aisyiyah. 'Aisyiyah is responsible for coordinating activities in 160 districts/cities. 'Aisyiyah also collaborates with other religious institutions and CSOs in several provinces such as in NTT in collaboration with Catholics (PERDHAKI). In North Sulawesi in collaboration with the Pelita Kasih Christian Foundation (PELKESI). (17)

Through the Round NFM, the program was developed into Community TB-HIV Care 'Aisyiyah. The NFM Program also developed Community System Strengthening and Removing Legal Barriers for TB-HIV Patients. Main Strategy of Community TB-HIV Care 'Aisyiyah. The NFM program strategy is continuing the SSF Round, where the focus of community change is not just an “object” but a subject where 'Aisyiyah as CSO acts as a facilitator in the national TB-HIV response program. (17)

With the potential and community movement, Aisyiyah began to take part in Tuberculosis (TBC) control, which was implemented in 31 provinces in the Aisyiyah region and involved 20 hospitals belonging to Aisyiyah and Muhammadiyah in the TB Control Program. [18]

Aisyiyah in the TB control program has a special community called Community TB Care 'Aisyiyah is based in Jakarta and receives assistance from The Global Fund as a recipient of secondary funds from the Principal Recipient (PR). The Community TB Care'Aisyiyah program is implemented in 30 Provinces of the 'Aisyiyah region, one of Central Java Province, especially in the City of Surakarta, by involving several trained cadres in each working area as one of the keys to the success of the program. (19)

MDR-TB treatment control will address the high drop out rate of treatment. The community empowerment approach model has been applied from 2013-2020 with adjustment modifications. Patient mentoring is carried out by community MDR-TB management, namely case managers, patient supporters (PS), peer educators (PE), and cadres, who have undergone training to assist MDR-TB patients. [20]

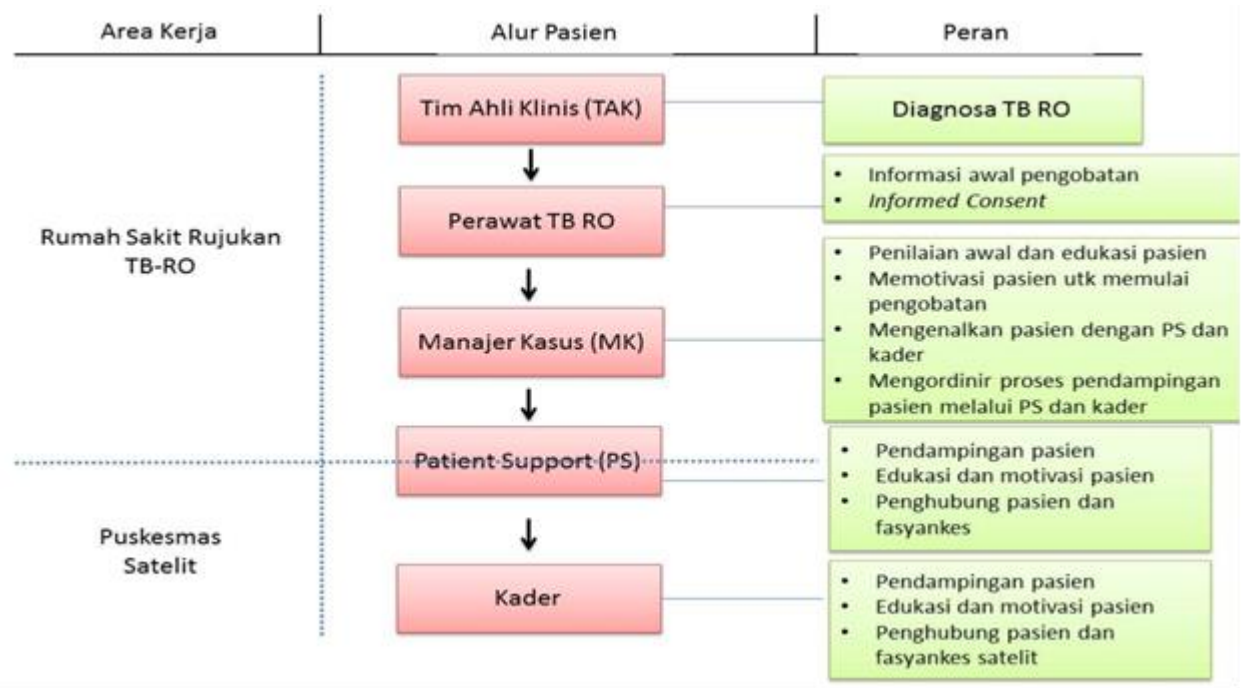


Figure 3. MDR TB Community management work area, patient flow, and management roles

MDR TB management's distribution in the Aisyiyah community is in 14 provinces, 28 districts, with 32 PMDT hospitals with 39 case managers, 195 PS / PE, and 15 cadres. [20]

The case manager is the person who is responsible for managing, in this case, MDR TB cases from the patient's diagnosis to the completion of treatment. The case manager is responsible for coordinating support for patients, both medical and psychosocial support. The case manager has the role of identifying MDR TB patient needs/assessments, developing individual case management plans (including strategies, interventions, resources to meet patient needs), connecting patients to specialist services, and support groups available from start to finish of treatment.

The duties and responsibilities of the case manager are: (a) to conduct an assessment of the patient at an early stage regarding psychosocial conditions, contributing factors or possible obstacles to joint treatment with the patient, the patient's family and health workers; (b) Develop an individual case management plan together with the patient, patient's family and health worker; (c) Inform patients about the importance of treatment and procedures for undergoing MDR TB treatment until recovery and prevention of transmission at home; (d) Helping to facilitate patients who need referrals for consultations and / or specialist services if needed, such as making referrals to peer educators, coordinating with hospitals to refer patients to Puskesmas, and so on; (d) Facilitating capacity building of patient companion groups, including in carrying out their roles and duties; (e) Coordinate with the MDR TB team in health facility services and patient companions at every level of health facilities; (f) Documenting, recording and reporting all assistance and coordination activities related to MDR TB integrated with the national program; and (g) Establishing or strengthening the MDR TB assistance system in the work area. [21]

Peer Support is a coping mechanism and a fundamental task in providing a human relationship, an individual, and a group who experience the same experiences and challenges. Coping strategy is a method or method used by each individual to overcome and control the situation. or problems experienced and seen as obstacles, challenges that are painful and harmful threats. The term coping is associated with the way individuals use to reduce stress. However, it's not that simple. Coping is a strategy for managing behavior to solve the most simple and realistic problems. It functions to free oneself from real and unreal problems and are all cognitive and behavioral efforts to overcome, reduce, and withstand demands (distress demand). Besides, coping is the process through which individuals resolve stressful situations

and individual responses to situations that threaten themselves both physically and psychologically. Coping is also an attempt to control, reduce/learn to tolerate threats that cause stress. Coping is an effort to overcome, reduce/tolerate threats that become a burden on feelings created by stress. [22]

Peer educators emerged because there was an assumption that the influence of age was significant. Teens talk more easily with friends than with older people. Peer education involves educating and supporting youth to make changes in their peer group. It is recognized that peer education programs increase adolescence. [22]

Research in Kenya, Africa, on the implementation of peer educators has concluded that peer educator motivation affects performance and retention, creating understanding and responses to community motivation for the successful implementation, sustainability, and scalability of community-based interventions. The peer educator is, in fact, not necessarily the same age. Peers cannot be seen from the same age, for example, 15-19 years or 10-14 years. But more so those who have the ability to explain related health problems. Sometimes peer educators are older and don't live with teenagers. The way peer educators conduct education also needs to pay attention to methods, including social media. However, the peer education method using the telephone is no more effective than the usual method for maintaining health impacts. Peer educators can share experiences, contextualized knowledge through norms, beliefs, and values. [22]

To eradicate tuberculosis, a cadre role in the community is needed. For example, cadre Aisyiah TB care, with her cadres doing TOS TB (Find Treatment Until recovered), including becoming PMO (monitoring taking medication). Aisyiah TB care cadres consist of existing health cadres and some newly recruited to implement the program, which is currently being funded by donors. They carry out activities with very various motivations and levels of activity to have the impression that the cadres are not active. Even though they have done seriously in addition to doing their jobs as housewives, employees, state civil servants, farmers, etc., if it can be described, the hierarchy in finding suspected (suspected) TB, accompanying examinations and treatment, monitoring treatment, strengthening TB patients, communicating, information, and education (IEC), including advocacy with TB services at the health center, is felt to be a missing element. To sustain these cadres. That element is a former TB patient who has recovered. They are strong and persistent individuals because they have taken medication for at least 6 months with high adherence; that is, they did not take medication even for 1 day.

They are willing to go back and forth to the health center/health center to take medication regularly, including routine checks. Not to mention the various ways and strategies to deal with drug side effects. Some are even willing to leave their job first to focus on recovering, and their strengths are many. [22]

Research carried out at the Turkish health science faculty on the effects of peer education programs against violence against women explains that peer education should be included as a part of nursing education as average-1 in combating violence against women. Peer support or peer educators' important role is to provide connections between people, individuals, or groups of people through the same or similar experiences and challenges. [22]

In the field of TB, the problem of CNR coverage (case notification rate), suspected findings, invitations for examination, invitations to take medication to a health center/health service, participate in monitoring taking medication, motivating TB patients to comply with long-term treatment (6 months), accompanying patients in managing the side effects and others that lead to the goal of curing TB patients. And how not to relapse too. So, it is very appropriate if they are invited to be empowered as peer educators, peer support who together with cadres conduct IEC, suspect discovery, assistants, and monitors, and friends for those who are currently on TB treatment. They are also the most important part of achieving a TB Free Indonesia in 2035, including minimizing the MDR-TB occurrence. For example, factors that have the potential for resistance are a low body mass index (BMI), stopping taking medication, forgetting to take medication, living with TB resistant patients, TB plus diabetes, and a previous history of TB treatment. [22]

2.9 Conceptual Framework

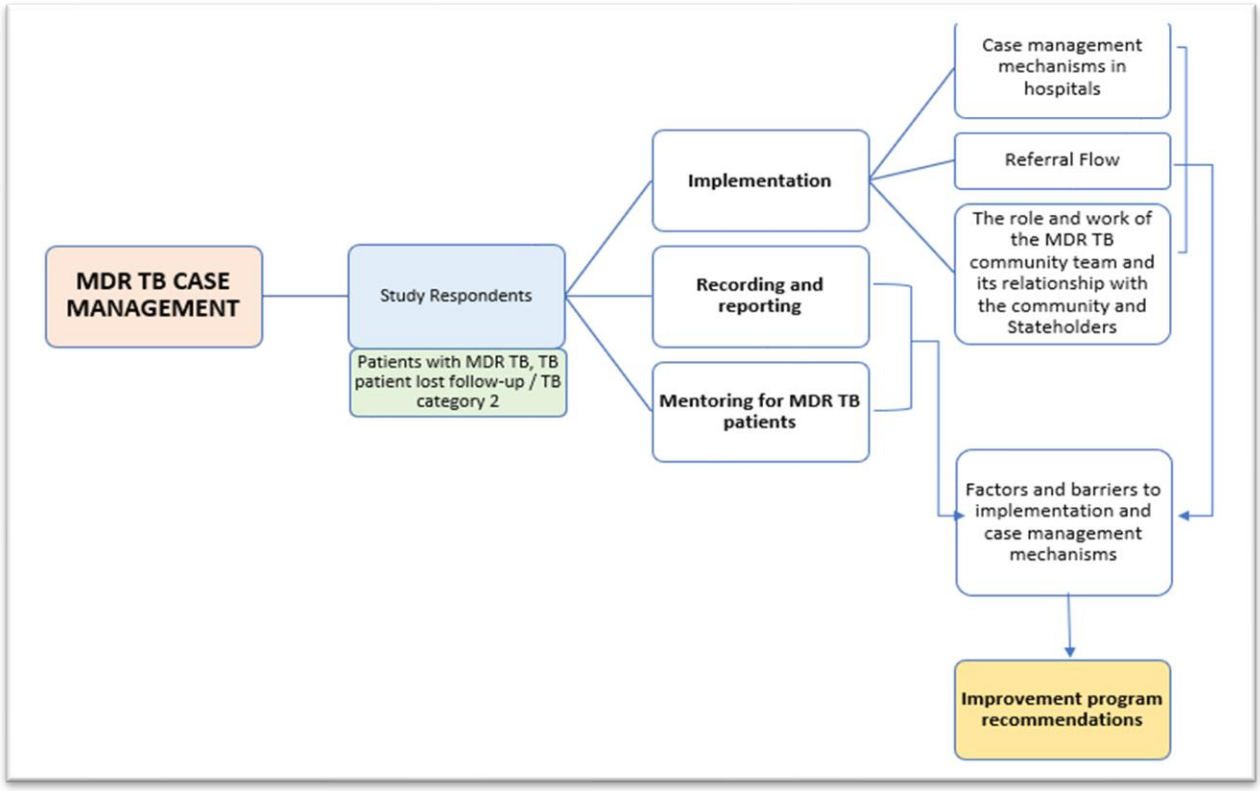


Figure 4. Conceptual Framework 1

2.10 Theoretical Framework

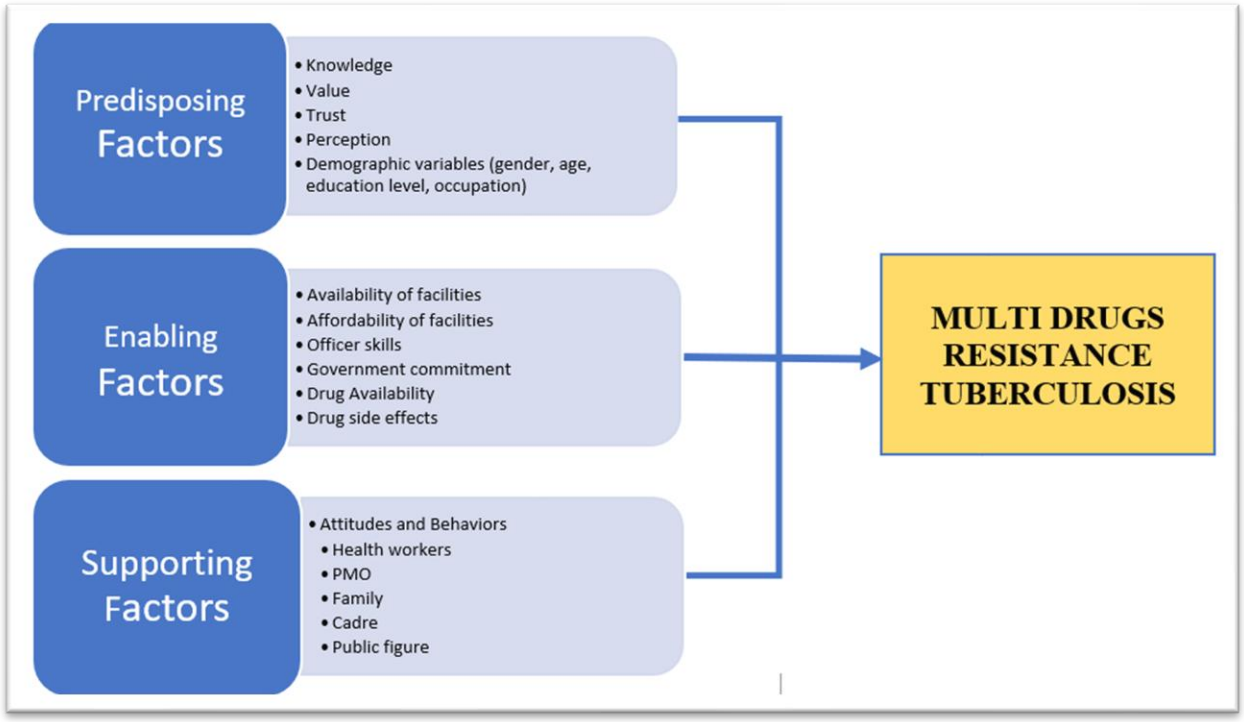


Figure 5. Theoretical Framework 1

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Study Design

This evaluation research will use questionnaire-based (quantitative) and qualitative survey methods, which will complement it.

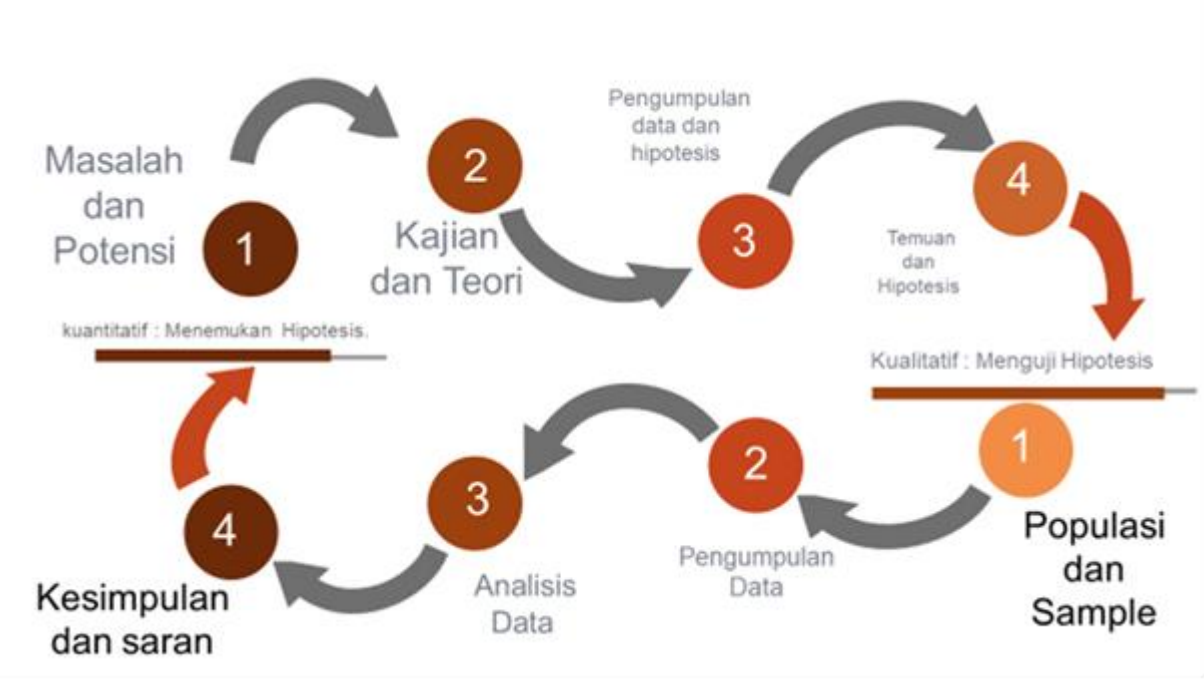


Figure 6. Study design 1

3.2 Location

The research was conducted in 8 provinces and 10 districts/cities. The selection of a specific location was based on the criteria discussed and agreed upon with the PR TB 'Aisyiyah.

3.3 Time and Duration

The research was conducted for 7 months with the following stages:

- Preparation

  Conducted in August 2019, at this stage the preparation of instruments in the form of a questionnaire, finalization of research protocols and research methods, and preparation

of the licensing process from the Ethics Commission and Bakesbangpol was carried out at this stage.

- Data retrieval

  It was held in September - November 2019 in 8 selected provinces and 10 districts/cities

- Data Analysis and Reporting of Research Results

  Held in November 2019 - February 2020.

3.4 Research Schedule

No	Activity	Aug	Sept	Oct	Nov	Dec	Jan	Feb
1	Preparation of Tools, Protocols, and licensing processes from the Ethics Committee (IRB) and the Ministry of Home Affairs of the Republic of Indonesia							
2	Protocols, frameworks, and study tool development							
3	National stakeholder meeting to disseminate research concepts							
4	Data Enumerator Training at district level							
5	Questionnaire Validation (Tools Trial) Preliminary study in Jakarta							
6	Preliminary study evaluation and questionnaire validation							
7	Instrument Trial evaluation meeting (questionnaire)							
8	Data Collection							
9	Data Management and Analysis							
10	Report writing							
11	Validation Workshop / National Dissemination Workshop							
12	Final Report							

3.5 Population and Sample size

The population of this study was MDR TB patients and MDR TB patients who were lost follow up (who would be involved in the quantitative process), case managers, peer educators, patient supporters, cadres, people in charge of TB programs at the health service level (RSPMT, private hospitals/clinics, and PKM), the person in charge of the TB program at the Provincial / District / City Health Office and TB survivors / TB survivors and stakeholders (who will be involved in the qualitative process) in 10 districts/cities in 8 selected provinces.

3.6.1 Sampling Technique

Determination of the sample size for quantitative using the **Infinite Formula**:

$$n_o = \frac{z\alpha^2 \text{ x } p \text{ x } q}{d^2}$$

Note:

n_o : The optimal sample size required

z : At the 95% significance level, the amount is 1.96

p : The prevalence of TB patients in East Java as the province with the highest prevalence, namely 13.39%

q : Prevalence / proportion not suffering from TB (1-p)

d : The accuracy of the measurement precision, for p ≥ 10% is 0.05

N : Population size (Number of TB patients from 8 provinces = 143,025)

$$n_0 = \frac{1{,}96^2 \text{ x } 0{,}134 \text{ x } (1\text{-}0{,}134)}{(0{,}05)^2}$$

$$= 178{,}3$$

Formula : finite population

$$n = \frac{no}{(1 + no/N)}$$

$$n = \frac{178{,}3}{1+(178{,}3/143.025)} = \mathbf{178}$$

The number of samples was 178 patients, Additional 20% for drop out = 178 + (20% x178) = 213.6 = 214

The total sample was **214 participants**

The sample above is for a quantitative study evaluating the referral flow that guides MDR TB patients in the community, problems related to treatment outcomes, and evaluating the role of the MDR TB Community Team.

3.6.2 Respondent Criteria for Quantitative

The number of samples as respondents were TB patients with the following criteria:

- **Inclusion Criteria**:
    1. ≥ 17 years old
    2. Patients with MDR TB (confirmed MDR TB and have started treatment and have not started treatment)
    3. Patients with MDR TB are loss to follow-up
    4. Patients with MDR TB Drop out

- **Exclusion criteria**:
    1. Patients with extrapulmonary TB
    2. Not cooperative

The calculation of the sample population from each province is calculated using the Proportion of Total TB Patients in 8 provinces as follows:

No	Province	Number of TB cases	Sample calculation /province		Number of Samples	Total Data Enumerator
	Jawa Timur	48.323	44826/143.025x214	67		
1	• Surabaya				49	**5**
2	• Jember				18	**2**
	Jawa Tengah	42.272	42.272/143.025x213	62		
3	• Semarang				48	**5**
4	• Cilacap				14	**1**
5	Bengkulu	1.971	1.971/143.025x214		8	**1**
6	Medan	20.429	20.429/143.025x214		31	**3**
7	Makasar	8.508	8.508/143.025x214		13	**1**
8	Palembang	11.107	11.107/143.025x214		17	**2**
9	Kupang	5.350	5.350/143.025x214		8	**1**
10	Pontianak	5.065	5.065/143.025x214		8	**1**
T O T A L					**214**	**22**

3.6.3 Respondent Criteria for Qualitative

The method of calculating qualitative samples using the purposive technique.

Participants for qualitative research from each district were:

A. In-dept Interview

No	Participant	Number	Total number at 10 District/City
1	Case Manager	1	10
2	Patient Supporter*	2	20
3	Peer Educator*	2	20
4	MDR TB patient (not yet *enrolled*)	1	10
5	MDR TB patient (*enrolled*)	1	10
6	MDR TB patient (*Drop out*/loss follow up)	1	10
7	The person in charge of the TB program at the City / District Health Office	1	10
8	The person in charge of the TB program at PMDT Hospital	1	10
9	The person in charge of the TB Program at the private hospital/clinic	1	10
10	The person in charge of the TB Program at Puskesmas/PKM	2	20
11	MDR TB *Survivor*	1	10
12	Cadre	2	20
TOTAL		**16**	**160**

*5 districts that have separate patient support and peer educators (Jember, Surabaya, Semarang, Cilacap, Medan, Makasar, Kupang)

B. Focus Group Discussion

No	Participant	Number	Total number at 10 District/City
1	Head of District / City Health Office	1	10
2	Director of PMDT Hospital	1	10
3	Director of private Hospital/Clinic	1	10
4	Head of Puskesmas	2	20
5	SR/SSR TB 'Aisyiyah Program Manager	1	10
6	TB Community / TB Survivor Group	1	10
TOTAL		**7**	**70**

3.7 Data Collection

A questionnaire set was used to collect the information and data required in the quantitative method regarding the implementation and mechanism of case management, poor treatment outcomes, and referral channels at the Provincial / District / City level. Quantitative data from MDR TB patients were a questionnaire and be interviewed by data enumerators specially trained. The number of data enumerators needed is 22 people, with each district's division consisting of 1 to 5 people depending on the number of samples.

As for qualitative, three core activities were carried out which included in the implementation evaluation (mechanism, referral flow, roles and work methods of the MDR TB team), reporting recording and mentoring of MDR TB patients: (1) In-depth interviews with key informants; and (2) Focus group discussions. Collecting additional information such as chest radiographs was needed as qualitative data to assess the characteristics of the commonly found lesions in MDR TB cases. Data enumerators were trained to collect chest radiographs when diagnosed with MDR TB in JPEG or DICOM format.

- **In-depth interviews with key informants**

  In-depth interviews were conducted on;

  1. Case Manager
  2. Patient Support (PS) *
  3. Peer Educators (PE) *
  4. MDR TB patients (not enrolled)
  5. MDR TB patients (already enrolled)
  6. MDR TB patients (Drop out / loss to follow-up)
  7. Person in charge for the TB program at the City/District Health Office
  8. Person in charge for the TB program at PMDT Hospital
  9. Person in charge for the TB program at the private hospital/clinic
  10. Person in charge for the TB program at Puskesmas
  11. TB Community / TB Survivor
  12. Cadres

  The information that has been obtained from these groups is the implementation of MDR TB cases, roles, ways of working, and relationships between community MDR TB teams (case managers, peer educators, patient support, and cadres) and other

stakeholders in hospitals and other health facilities; and the registration flow at the district level (PMDT Hospital); problems/obstacles related to poor treatment outcomes at the district level (PMDT Hospital); referral flow to guide MDR TB patients in the community; the flow of recording, reporting and mentoring MDR TB patients by case managers, PS, PE, and cadres..

- **The Focused Group Discussion (FGD)**

  The Focused Group Discussion involved 7 stakeholders. The information that has been obtained from this focus group discussion is the implementation of programs and policies on the MDR TB program in selected districts/cities and the role of TB control stakeholders.

3.8 Data Management and Analysis

For quantitative, data analysis was performed using SPSS 23.0. Dichotomous variables were analyzed using the chi-squared test (Descriptive described by percentage, mean, and standard deviation). Multivariable analysis was performed using binary logistic regression.

For Qualitative, all in-depth interviews were conducted in Indonesian and digitally recorded, while researchers took extensive field notes. The FGD was conducted in Indonesian and recorded digitally. The recording is instantly transcribed. Analyzes will use Nvivo software following a combination of open and thematic coding, based on literature consultations and notes taken during fieldwork. The coding was done on the FGD transcript and a combination of field notes and interview transcripts. Thus, codes were identified based on repeatability and broader relevance, including those relevant to the MDR-TB literature. The codes and preliminary findings were shared and discussed in a special meeting with health professionals in Jakarta to get further feedback on our interpretation of the data and enable the necessary refinement of the analysis.

3.9 Research Ethics

This research was conducted after submitting and obtaining approval from the Institutional Review Board (IRB), namely the Research Ethics Committee at the Faculty of Medicine, Trisakti University. Permits and research support have also been requested from the Ministry of Home Affairs, the TB Sub-Directorate for the Ministry of Health, PMDT Hospital, and other local Health Offices, and permission has also been requested from Bakesbangpol.

Approval of participation as a respondent was requested from each participant before data collection. To protect respondents' privacy, interviews are conducted in private places. The confidentiality of information and data will be strictly protected by removing all personal identifiers from questionnaires and field notes.

3.10 Application, Dissemination, and Transposition of Results

The results of this study were submitted to PR TB 'Aisyiyah. The research team incorporates a consultative group as part of the analysis team to conclude the main findings and recommendations. The team invited stakeholders from the relevant provincial and district health offices to a validation workshop to obtain input and share research results. The research team plans to share results at international conferences and through submitting peer-reviewed journals after obtaining approval from PR TB 'Aisyiyah.

3.11 Potential Risks And Benefits

Human Subjects

According to guidelines from the Indonesian Health Research and Development Agency (Balitbangkes), this study involved human subjects and the protection of human subjects. The study was conducted by submitting the protocol to the Institution Review Board at the University in Jakarta, namely the Research Ethics Committee at the Faculty of Medicine, Trisakti University, to review the protection of the dignity, rights, safety, and welfare of all research participants, both actual and potential. Whatever the risks and benefits, this study states that the study's objectives, no matter how important, do not allow anyone to override research subjects' health and well-being. No research or recruitment of subjects will commence without the approval of the IRB.

Source of Material

Literature studies, which are one of the main analyzes, will use several printed or electronic materials, such as program reports, national policies (including regulations, circulars, and guidelines), digital files (i.e., interview files and transcripts), papers, and electronic files of notes and minutes, will be stored at the PR Office of TB 'Aisyiyah, Jakarta, in a locked cupboard. The cabinets will be made accessible only to the research coordinator, lead researcher, and research co-researchers.

Potential Risks

The risk to the participants was minimal, given the aim of this study. This study used in-depth interviews as the main data collection method, and data enumerators were trained to protect participants' privacy from eliminating risks. To address the risk, respondents and key informants were informed about the voluntary nature of their participation and their right to end participation in the study at any point during the study without any consequences.

3.12 Adequacy of Protection from Various Aspects

Recruitment and Informed Consent

This study used written and oral informed consent before the data collection process. The consent form will be signed by both the data enumerator and the participant (subject) to confirm this research's explanation to the participants; confidentiality is guaranteed. They may refuse or withdraw from taking part in the assessment at any time.

Confidentiality

The study team ensured that learning notes and materials are kept confidential. The team will cancel the list of participants with a special identifier. Once data is stored in a locked cupboard or a password-protected laptop, they stay safe in their place. The research coordinator and principal investigator will be the only people who will have access to these records.

Data Monitoring

The research team carried out data monitoring and quality control at all research locations. A random check of complete records and transcripts will be carried out to ensure their completeness and accuracy. Files, both electronic and hard copy, will be stored in a safe and confidential environment.

Payment for participation

No fee had to go out of the study participants to participate in the study.

3.13 Budget

This research is under the PR TB Aisyiyah program, which is funded by The Global Fund ATM (GF-ATM)

CHAPTER 4

RESULTS AND DISCUSSION

Data collection was carried out in October and November 2019 in 10 cities/regencies (from 8 provinces) in Indonesia. Quantitative data consisted of 214 respondents with a sample population calculation from each province calculated using the Total Proportion of TB Patients in 8 provinces and qualitative respondents as many as 121 key informants in in-depth interviews (in-depth interviews) and 67 key informants in focus group discussions. Group Discussion). The analysis was carried out qualitatively and qualitatively. Quantitative analysis was carried out univariate and bivariate regarding the factors that influenced the respondent's recovery.

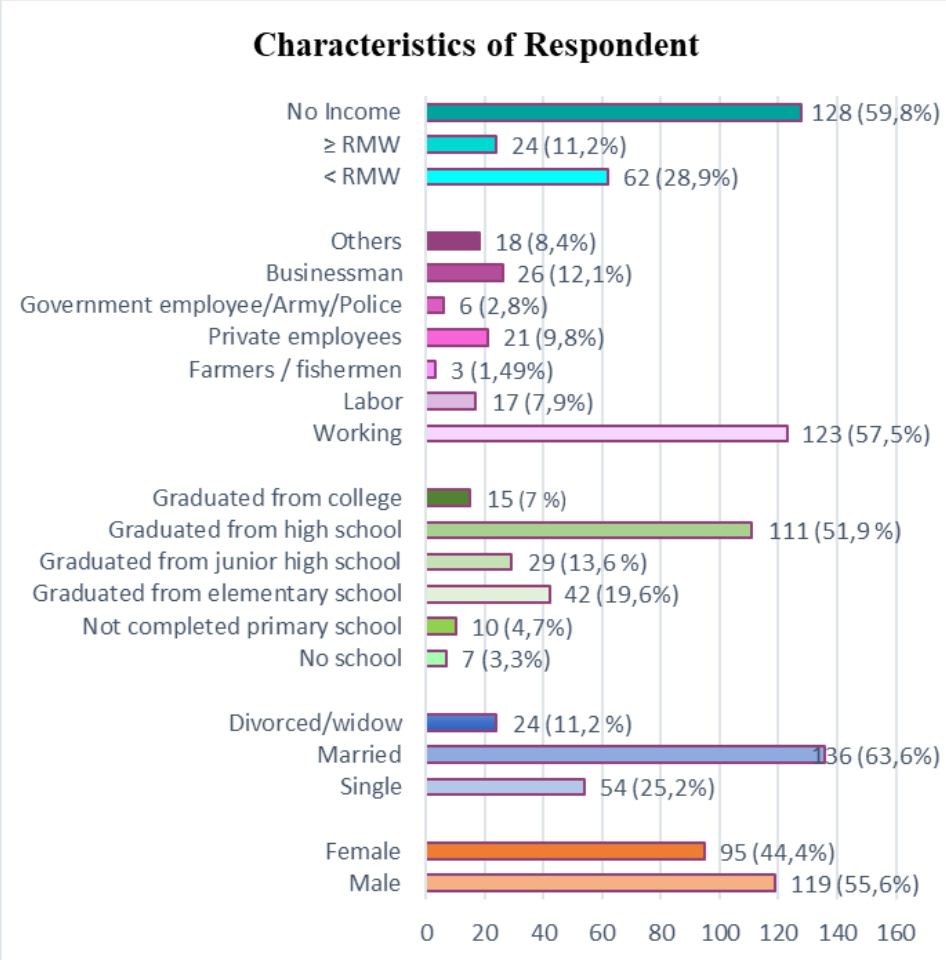
Research locations in 8 provinces (10 cities) are:

No	District/City	Hospital	Puskesmas
1	Surabaya	RSUD Dr. Soetomo	• Puskesmas tenggilis • Puskesman Kedurus
2	Jember	RSUD Paru	• Puskesmas Silo • Puskesmas Ledokombo • Puskesmas Kaliwates
3	Semarang	RSUP Dr. Kariadi	• Puskesmas Kedungmundu
4	Cilacap	RSUD Cilacap	• Puskesmas Adi Pala 1 • Puskesmas Kawunganten
5	Bengkulu	RS Dr. M. Yunus	• Puskesmas Sukamerindu • Puskesmas Nusa Indah
6	Medan	RSUP H. Adam Malik	• Puskesmas Helmetia • Puskesmas Sentosa Baru
7	Makassar	RSUD Labung Baji	• Puskesmas Pattinggaloang
8	Palembang	RSUD M.Hoesin	• Puskesmas Tujuh Ulu • Puskesmas Punti Kayu

9	Kupang	RSUD Yohanes RS St. Caroleus	• Puskesmas Oebobo • Puskesmas Sikumana
10	Pontianak	RSUD Dr. Soedarso	• Puskesmas Sanggau

4.1 Respondent Characteristics

Table 4.1.1. Distribution of Respondent Characteristics



Based on the characteristics, most of the respondents were 51-60 years old (26.6%), male (55.6%), married status (63.6%), graduated from high school (51.9%), do not work (57.5%), and do not have income (59.8%).

This study indicates that the majority of patients are of productive age and are male and are married. Men will become the head of the family when married and have the responsibility

to support their family. However, it was found that most respondents did not work and had no income. This is something of a concern.

Similar results were shown in a study conducted in China, which included 1154 MDR TB patients, that 65.6% of MDR TB patients were less than 45 years old, and the majority were men 67.33%. (14) A retrospective study in China showed that MDR TB patients' frequency was more common in patients 25-44 years. [(15)] A meta-analysis and systematic review showed those aged <45 years had a 1.57 times risk of developing MDR TB (OR = 1.57; 95% CI 1.12-2.03), and for male subjects, the risk was 1.83 times (OR = 1.83; 95% CI 1.19-2.48). [(16)]

MDR TB can occur in young age groups because patients are not adherent to taking the medication regularly in TB treatment. The frequency of MDR TB patients who reach their peak at a young age and men requires developing a special strategy to control MDR TB in this subject group.

Our results showed that 57.5% of MDR TB patients did not work. Similar results were shown in case management studies in Ethiopia; 82.8% of MDR TB patients were unemployed. (17) MDR TB control should increase compliance with MDR TB patients for treatment and carry out special promotional activities for young age groups to preventing transmission.

Table 4.1.2. Relationship of characteristics with cured status

Variable	Cured Status		p value
	Cured	Not cured yet	
Gender			
Male	16	103	0,274
Female	18	77	
Age			
< 50 year old	28	111	**0,020***
≥ 50 year old	6	69	
Marital status			
Single	9	45	0,561
Married	23	113	
Divorced/widow	2	22	
Level of education			
Didn't finish high school	10	78	0,139
Graduated from high school	24	102	
Occupation			
Does not work	12	111	**0,004***
Working	22	69	
Income			
< Regional Minimum Wage	14	48	**0,015***
≥ Regional Minimum Wage	7	17	
No income	13	115	

*Chi-square test

Factors of age (p = 0.020), occupation (p = 0.004) and income (p-0.015) affect the recovery status of respondents. Our results show that the risk of recovery for men on MDR TB treatment is 0.66 times smaller than that of women, but it is not significant statistically (OR = 0.66; 95% CI = 9.32-1.38; p = 0.274). However, a study in the Netherlands on 545 MDR TB cases showed different results, men had a risk of recovery of 3.55 (OR = 3.55; 95% C.I. = 1.31–9.60; p = 0.008) greater than women (27).

In MDR TB patients aged <50 years, the risk of recovery is 2.90 times greater than those aged ≥50 years (OR = 2.90; 95% CI = 1.42-7.36; p = 0.020). The same results were shown in Morocco (28) and the Netherlands (27), where age was not significantly associated with MDR TB patients' recovery. Our results showed that MDR TB patients who did not work had a significantly lower risk of recovery 0.31 times than those who worked (OR = 0.31; 95% CI = 0.14-0.68; p = 0.004). Research in Morocco obtained different results; MDR TB patients' occupation was not significantly related to recovery. (28) In our study, MDR TB patients who did not have an income risk of recovery were 0.27 times less than MDR TB patients who earned ≥ UMR (OR = 0.27; 95% CI = 0.09-0.78; p = 0.015). However, different results were obtained in a study in Pakistan which stated that parents with MDR TB who earned <5000 PKrs had a 4.113 times greater risk of recovery than those with> 20,000 PKrs, but this was not statistically significant (OR = 4.11; 95% CI = 0.85– 19.86; p = 0.078). (29) MDR TB patients are more often found in patients with low socioeconomics and low education.

This is evident in the results of in-depth interviews conducted with key informants who are undergoing MDR TB treatment and key informants who have recovered; it is found that most key informants stop working because, during treatment, they are unable to work. After all, they are not resistant to drug side effects.

"….I used to be a porter, for socio-economics, if there was anything to eat, then eat it, if there was nothing to eat, okay, my daily income was sometimes 15 thousand rupiahs. I can farm if I am still strong, the doctor advised me to rest, but when it is normal I want to work again ":
IDI with patient enrolled, male, Jember

"Look, I'm a small bus driver, when I was sick for 2 years I didn't work, according to life I needed help, that's what assistance was used, now I don't work, my legs are weak":
IDI with patient enrolled, male, Medan.

"I went alone because my wife had to work so that the economy wouldn't be paralyzed":
IDI with patient recovered, male, Kupang

Several key informants also lost their jobs or livelihoods while undergoing MDR TB treatment, as experienced by the following key informants:

"……. But maybe from the beginning, I was infected. I am a trader and I don't know that a neighbor has TB disease and I often talk with him…. Now I don't trade anymore, the medicine is for 9 months I can't drink it… for a living, if there are things we can sell, so we sell ":
IDI with patient enrolled, female, Surabaya.

"I used to work as an elementary school teacher… .. But now I don't work anymore. the principal suggested taking a break, I was surprised at that time because I felt he was laying off my work subtly. But when the letter of rest was ready, it turned out that I was only asked to rest for 3 months, not being dismissed. When I received the letter, I was stressed, I couldn't sleep at night because I was worried about how to make money. "
IDI with patient enrolled, female, Palembang.

4.2 History of Diagnosis and Treatment of MDR TB

Table 4.2.1. Distribution of Frequency History of Diagnosis and Treatment of MDR TB

Variable	n(%)
Confirmed MDR TB	
< 1 year	**155 (72,4)**
1-2 year	53 (24,8)
> 2 years	6 (2,8)
Place of diagnosis	
Hospital	**157 (73,4)**
Puskesmas	47 (22)
Private practice doctor	10 (4,7)
Immediately start therapy	
Yes	**183 (85,5)**
No	31(14,5)
Current status of respondents (on medication)	
Cured	28 (13,1)
Failed	10 (47)
Disconnect treatment	31 (14,5)
Completed	6 (2,8)
Not Evaluated	19 (8,9)
On medication	**120 (56)**
Been hospitalized before MDR TB therapy	
Yes	80 (37,4)
No	**134 (62,6)**
Duration of MDR TB treatment	
< 1 year	**155 (72,4)**
1-2 years	53 (24,8)
> 2 years	6 (2,8)
Have ever stopped treatment	
Yes	66 (30,8)
No	**148 (69,1)**

Have ever not take the medicine?	
Yes	68 (31,8)
No	**146 (68,2)**
Reasons for quit medication	
Side effects	**46 (69,7)**
Lack of Information	3 (4,6)
Other	17 (25,7)
Side Effects	
Yes	**189 (88,3)**
No	7 (3,3)
Don't know	18 (8,4)
Type of side effects	
Nausea	**174(81,3)**
Dizziness	152 (71)
Itchy skin	53 (24,8)
Diarrhea	6 (2,8)
Tingling sensation	51 (23,8)
Joint / muscle pain	75 (35)
Impaired vision	42 (19,6)
Hearing loss	59 (27,6)
Yellow skin	6 (2,8)
The chest feels hot	51 (23,8)
Peeled skin	16 (7,5)
Depression	24 (11,2)
Hallucination	14 (6,5)
Other	54 (25,2)
Know the number of MDR TB drugs	
Yes	**181(84,5)**
No	36 (15,5)
Where to take MDR TB drugs	
Puskesmas	64 (29,9)
Hospital	63 (29,4)
Home	**66 (30,8)**
Don't know	21 (9,9)

In the history of diagnosis and treatment, it was found that most of the respondents were patients who were on treatment (56%), and 85.5% of respondents immediately underwent therapy after being diagnosed with MDR TB. This shows that most of the respondents are cooperative in carrying out treatment. Most of the respondents never stopped taking medication (69.1%) during treatment, with most of them never taking medication (68.2%). Most of the reasons for those who had stopped their medication were the drugs' side effects (69.7%). It appears that the drugs' side effects are bothersome so that the patient does not want to take medicine. This side effect occurs in 88.3% of respondents, with nausea being the side effect most often complained of (81.3%). Also, almost all respondents know the amount of medicine taken every day (84.4%), and respondents take OAT at home (30.8%). This shows that Puskesmas in 10 cities have not been able to facilitate drinking MDR TB medicine because there are still quite a few who take medicine at home for various reasons and considerations.

In in-depth interviews conducted with key informants who were undergoing MDR TB treatment, and those who had recovered (survivors), the same statement was obtained that the key informants were cooperative in undergoing treatment.

"… ..Because I wanted to recover, many people didn't seek treatment and died immediately, so I want to recover, so I have to be enthusiastic and have to take the medicine":
IDI with patient enrolled, female, Surabaya.

"Because the children see maybe. Because I also gave up hope, but my son told me not to stop halfway. Cook, you have to stop in the middle of the road; how many months have you taken medicine? Why you want to stop. So, let's go on.
IDI with TB survivor, female, Makassar.

Several key informants who dropped out of medication in in-depth interviews said side effects were the reason they did not want to continue treatment.

"As a side effect, I couldn't walk, my body was all sick, hot chest and convulsions made me stop treatment .... Currently, I am drinking my own concoction of herbs to be fresh."
IDI with loss follows up patient, male, Cilacap.

"My ears are a bit deaf, if I eat rice nausea, the cough is better ... if my condition is strong I want to continue, the hope is like that if I eat good I want to continue ... So I say goodbye to the puskesmas, I'm afraid myself if it drops, it's not nausea. I can't sleep at night ":
IDI with loss follows up patient, female, Jember.

It was also found that almost all key informants knew how many drugs were taken while the key informants were undergoing treatment.

"Side effects include nausea, vomiting, dizziness, sore knees; I try to have to eat, even though I have no appetite at all. By eating drinking reduces the effect altogether. Initially, I took 16 pills of medicine, after gaining 10 kg of weight and added to 21 pills of medicine because, at that time, the side effects disappeared, the officer referred to the hospital and added 21 pills, side effects appeared again."
IDI with TB survivor, male, Jember.

"Hospital services are good, we didn't wait long because mom came early, the doctor was concerned about mom and always came first, then there were injections and took 12 pills of medicine":
IDI with patient enrolled, female, Kupang.

"One day I fainted, my stomach felt hot, I vomited, if I eat, I have to blend it because I am not strong. At Hospital X, Mrs. Y (hospital officer) said I was too much, even though it was really painful. Finally stopped treatment. Two years without treatment, the body feels healthy, there are no complaints, I am strong for walking everywhere ":
IDI with patient enrolled, female, Bengkulu.

We also asked key informants where to take medicine to confirm whether the medicine was taken at the health facility or at home.

"Sometimes the medicine is taken at the health center, some at home, provided there is PMO, PMO can be family, parents, or wife":
IDI with Person in charge of TB program at Puskesmas, Women, Cilacap

Table 4.2.2. Relationship between treatment and cured status

Variable	Cured Status		p value
	Cured	Not Cured Yet	
Treatment duration			
< 1 year	15	140	**0,000***
1-2 years	17	36	
> 2 years	3	3	
Immediately start therapy			
Yes	29	154	0,910
No	6	25	
Have ever stopped treatment			
Yes	6	60	0,067
No	28	120	
Side effects			
Yes	31	158	0,774
No	3	22	
Have ever not take the medicine			
Yes	7	61	0,122
No	28	118	
Side effect of tingling sensation			
Yes	2	49	**0,007***
No	32	131	
Side effects of nausea			
Yes	27	147	0,659
No	9	31	
Side effects of dizziness			
Yes	25	127	0,760
No	10	52	
Side effects of itchy skin			
Yes	6	47	0,134
No	29	131	
Side effects of diarrhea			
Yes	0	6	0,279
No	35	173	
Side effects of Joint pain			
Yes	13	63	0,991
No	23	116	

Side effects of visual impairment			
Yes	9	33	0,280
No	26	146	
Side effects of hearing loss			
Yes	13	46	0,280
No	23	132	
Side effects of yellow skin			
Yes	3	3	0,239
No	31	175	
Side effects of the chest feel hot			
Yes	3	48	**0,025***
No	31	132	
Side effects of peeling skin			
Yes	4	12	0,752
No	32	166	
Depression			
Yes	0	25	**0,021***
No	34	155	
Hallucination			
Yes	6	8	**0,027***
No	30	170	
Place to take medicine			
Puskesmas	11	53	**0,041***
Hospital	15	48	
Home	5	61	

**Chi square test*

The factors of duration of treatment (p = 0.000), side effects were tingling sensation (p = 0.007), hot chest (p = 0.025), depression (p = 0.021), hallucinations (p = 0.027) and the location of health facilities where the respondent took medication (p = 0.041) affects the respondent's recovery status.

In table 4.2.2, it can be seen that the cure rate in this study was only 16.3%, more than half of the patients (56%) respondents were still undergoing treatment, some respondents dropped out of treatment (14.5%) and failed treatment (4.7%), and 8.9% of patients were not evaluated for their treatment outcome. If you look at the success rate of MDR TB treatment for 2016 in Indonesia, it was only 48% according to the 2019 global TB report issued by WHO, lower than what has been targeted, namely at least 75%. [(1)] The WHO report also mentions India's success rate equal to Indonesia, while China is slightly larger at 52%. Globally, MDR TB treatment success rates have increased in recent years by 56%. Several countries with high MDR TB patients but with treatment success rates of more than 70% were found in Bangladesh, Ethiopia, Kazakhstan, and Myanmar. [(21)]

Research on the success of MDR TB treatment has also been carried out in several other countries. Research conducted by Meressa et al. [(22)] in Ethiopia found the highest MDR TB treatment success rate of 78.6% consisting of 64.7% cured and 13.9% complete treatment. The treatment success rate was slightly lower in East Taiwan, as reported by Lin et al. [(23)], namely

78.4%, 71.9% cured, and 6.5% complete treatment. Alene et al. [24] found a lower treatment success rate in China's Hunan province of 60%, consisting of a 57% cure rate and 3% complete treatment, while in Morocco, the treatment success rate was only 53.4% consisting of 44, 5% recovered and 8.9% complete treatment. [19] The success rate of rifampin-resistant TB treatment has also been studied in 9 African countries, with a fairly large success rate approaching 80%. [25]

Several systematic reviews and meta-analyses have been conducted to investigate the success rate of MDR TB treatment. In a meta-analysis conducted by Weiss et al. [26] of 10 studies involving 1288 MDR TB patients, the treatment success rate was 65%, higher than the previous meta-analysis conducted by Orenstein et al. [27], who analyzed 33 studies on 20 countries involving 8506 respondents, get a success rate of 62%. In this analysis, it was found that the individual treatment regimen had a higher success rate of 64% (95% CI 59–68%), but it was not significantly different from the standard treatment regimen by 4% (95% CI 43–68%). [27] Meta-analysis was larger in 2016, including 74 studies, including 17,494 MDR TB patients, having a treatment success rate of 60%. Patients who received an individual treatment regimen had a greater and significantly different success rate than the standard regimen (64% versus 52% $p < 0.001$). [28]

Treatment success is influenced by case finding. MDR TB case detection rates in Indonesia are increasing every year; in 2017, 5,201 patients were confirmed bacteriological MDR TB, increasing to 8,507 patients in 2018, but this was not matched by the number of MDR TB patient treatment rates. In 2017 the treatment rate reached 59% but decreased in 2018 to 51%. The WHO report states that there is a gap between patients who have been diagnosed and those who start treatment, and Indonesia is in 10 countries that account for 75% of the gap. Globally, the number of people who started treatment in 2018 was only about a third of those with confirmed cases, around 500 thousand people in 2018. This gap can be avoided by increasing the case detection rate, proportion of cases confirmed bacteriologically, availability of resistance testing in all patients who have confirmed, and treatment coverage of TB-RO patients. In this study, most of the respondents immediately started treatment (85.5%) with a treatment success rate of 15.8% of them. [21] The gap in this study could be caused because before starting treatment, patients had to undergo a series of examinations described in the technical guidelines for control management. The patient should perform an MDR TB test, several laboratory tests, and other investigations before starting treatment. [29]

MDR TB treatment's success rate is not only influenced by the case finding rate as described above, but the mortality rate and drug withdrawal also influence it; this is a serious

global threat to the treatment and control of MDR TB. Indonesia has a mortality rate of 17%, with a dropout rate of 26% in 2016, as reported by WHO. [21] In this study, there were 30.8% of respondents who had dropped out of drugs. Several countries had high withdrawal rates exceeding 15%, such as in Korea (32.2%), Taiwan (29.1%), South Africa (21%), and Russia (20%). [23]

An important factor associated with withdrawal is drug side effects. The majority of respondents in this study had experienced drug side effects, namely 88.3%, and 34.8% of them had finished treatment and were declared cured. Table 2 shows some of the most common side effects of drugs that the respondents complained about, namely nausea (81.3%), joint/muscle pain (35%), and hearing loss (27.6%). The same study results were obtained by Meressa et al., who reported that 88.9% of respondents had complained of at least one side effect or treatment toxicity. The most common complaints were flatulence (42.6%, nausea (40.5%), and joint pain/arthralgia/arthritis (39.7%), and only 6% complained about hearing loss. [22] Yang et al. obtained different research results. In South Korea, only 37.1% of respondents had reported at least one drug side effect, which resulted in 17.2% being changed to their treatment regimen. 5%) and arthralgia (4.7%). In Yang et al.'s study, the treatment success rate was high, namely 85.9%. [30]

Table 4.2.2. showed several drug side effects that were significantly related to the patient's recovery status, such as tingling sensation (23.8% p = 0.007), hot chest (23.8% p = 0.025), depression (11.7% p = 0.021) and hallucinations (6.54, p = 0.027). Drug side effects are usually overcome by adding drugs according to complaints or reducing the dosage of drugs that are thought to cause and when to take the drug. If it cannot be resolved, one or more drugs can be stopped temporarily or permanently by the doctor. The treatment regimen is changed and adjusted according to the patient's condition. [30,31] Most side effects usually occur in the first 3-4 months of treatment. The doctors' team will avoid permanent discontinuation of the drug unless the side effects are threatening or cannot be treated beforehand. [31]

This study's limitation is that most of the respondents have just undergone treatment for less than 1 year so that the criteria for recovery or complete treatment are still few. There is no information since side effects occur, and it isn't easy to know whether those who experience side effects can continue to complete treatment until they recover. Special research is needed to determine the effect of side effects on treatment outcomes and how much TB-RO patients who have to modify their treatment related to the side effects complained of.

From in-depth interviews conducted by researchers with key informants in treatment and survivors, it was found that almost all key informants experienced side effects of nausea, headaches, and some experienced hearing loss and hallucinations.

"At first I felt weak, nauseous and had vomited but after a while, I didn't feel any longer, dizzy and my ears made a 'nging' sound, especially when I got injections every day":
IDI with patient enrolled, female, Cilacap.

"After 2 weeks, side effects began to arise, up to 3 times nearly committing suicide. I felt hot and itchy, and I could not sleep. Every 5 to 10 minutes, I woke up. …… I thought I was a victim of malpractice. I want to stop treatment because I am not strong against side effects. I was like a crazy person, hallucinating, screaming; the neighbors thought I was crazy. ":
IDI with TB survivor, Male, Kupang.

"Starting to take medicine in April, I was depressed, like a crazy person, I wanted to run out of the house, my body felt hot, we thought Mama was crazy. We think that taking drugs too much is going crazy. Sometimes I sleep under the bed and put my feet under the bed until it's hard for my brother to get it out ":
IDI with patient enrolled, female, Kupang.

"Yes, there is, nausea, vomiting, then the skin is blackish, itchy. Yes, the stomach feels hot ":
IDI with patient enrolled, female, Semarang.

In in-depth interviews conducted with key informants of patients who were lost to follow-up, it was found that the length of treatment and side effects made patients reluctant to undergo treatment.

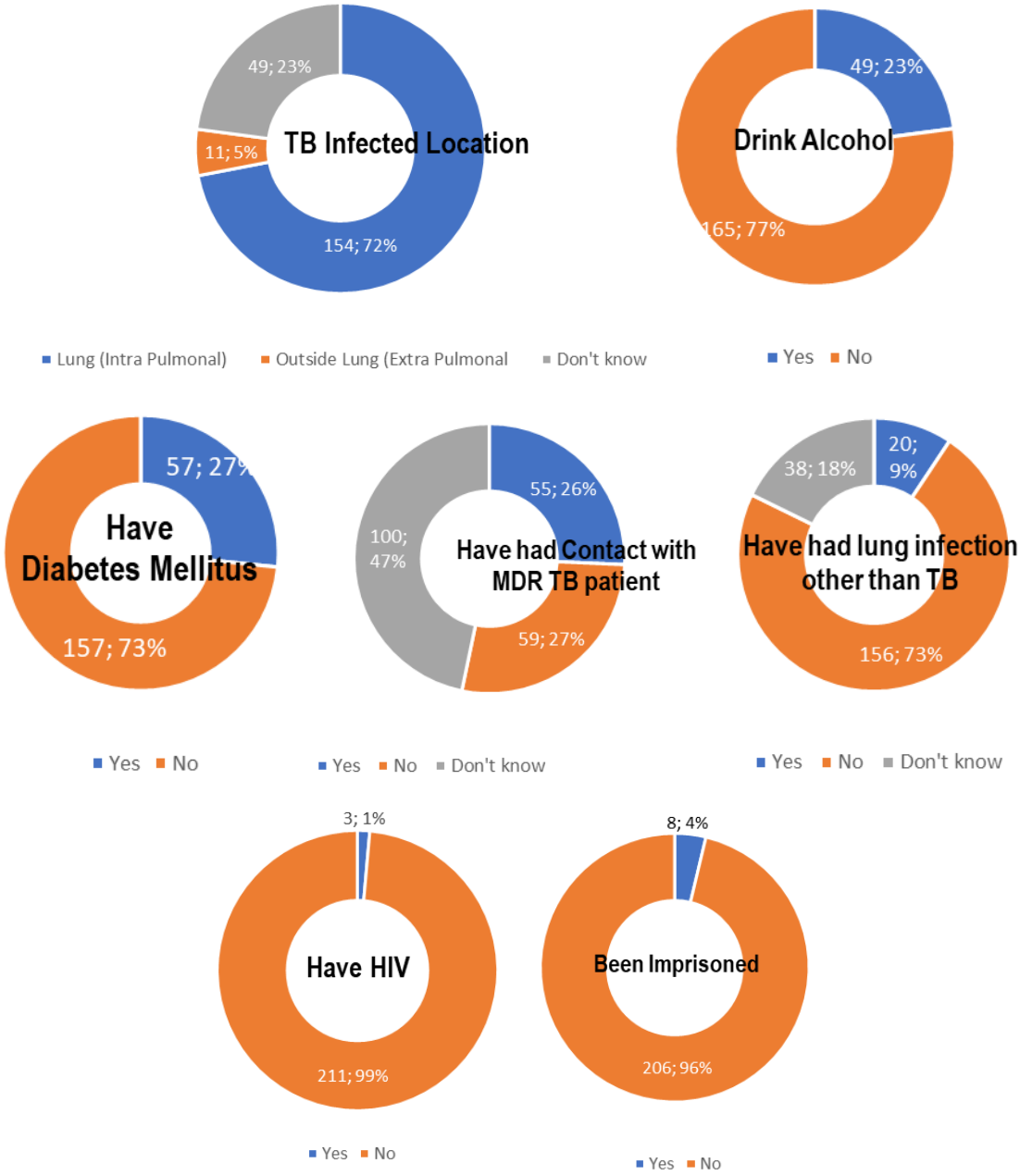
"The treatment took a long time ... I was told to seek treatment, but I didn't want to, I was asked to seek treatment but didn't want to, last week I was invited but didn't want to:"
IDI with a loss to follow-up, male, Makassar.

"I couldn't walk. After I was hospitalized from RSUD X after receiving injections every day, Mrs. X came to the house to give medicine and injections. When I was admitted to the hospital, I often had seizures every time I took medicine …. After 1 week of injections at home, I couldn't stand it, didn't want to be injected, and took medicine anymore. Poor my wife and children who take care of me, even my neighbors often come to help me when I have a seizure ":
IDI with a loss to follow-up, Male, Cilacap.

"Yes, there are several days of vomiting, vomiting at my house when I take a new medicine, it seems blurry in my vision. Because of that, I can't take medicine anymore":
IDI with a loss to follow-up, female, Makassar.

4.3 MDR TB Risk Factors

Table/Pie chart 4.3.1. Frequency Distribution of MDR TB Risk Factors



The characteristics of MDR TB risk factors according to Table 4.3.1 above indicate that most of the respondents are not alcohol drinkers (77.1%), do not suffer from diabetes mellitus (DM) (73.4%), are not HIV patients (98.6%), and not drug users (93%). This can indicate that the incidence of MDR TB disease depends not only on the factors mentioned above but also on other factors such as age, the regularity of treatment, and type of drug resistance. According to the study of Sharma K et al. [(32)], the highest cause for the incidence of MDR TB is a history of previous TB treatment even though some MDR TB patients do not have previous treatment

history. Non-compliance or irregularity in treatment is a major risk factor for MDR TB. [33] Most of the respondents in this study did not consume alcohol; this is probably because many Indonesians are not used to drinking alcohol. This is in line with the study of Fauziah L et al. [34] However, the study analyzed that the higher the level of alcohol consumption, the more risk for MDR TB. Research conducted in Thailand showed that consumption of cigarettes (OR 2.7) and alcohol (OR 5.1) was also a risk factor in developing resistance to OAT, which eventually became MDR TB. A history of alcohol consumption is not a major factor in MDR TB; many TB patients believe that alcohol consumption will worsen TB symptoms. [35]

Research in China by Xue HG [36] showed that more DM patients with MDR TB (17.7%) than non-DM MDR TB patients (9.3%) (p-value <0.01). There are several reasons why the case of MDR TB is higher in DM patients compared to non-DM patients, one of which is the weakness in drug absorption in the gastrointestinal tract so that it has implications for treatment.

HIV is not an independent factor for its role in the development of MDR TB. However, HIV has shown an effect in increasing the risk of transmission of Mtb's multidrug-resistant Mtb strain. [37]

Most of the locations where the respondents were infected with MDR TB were in the lungs (72%), and only a small part was outside the lungs (5.1%); the rest said they did not know (22.9%). This situation can occur because most TB cases in Indonesia are located in the lungs. Most of the respondents stated that they did not know that there was a history of contact with TB patients with MDR before (46.7%), as many as 27.6% said they had never had contact, and 25.7% stated that they had had contact. This can occur due to the lack of information about MDR TB cases around the respondent's environment. The results of this study differed from studies conducted in 4 countries in Europe by Casal M et al. [38], showing that there was a significant relationship between contact with MDR TB patients with the incidence of MDR TB with OR 2.01 and in line with the study of Diande S et al. [39] in West Africa. Crofto J et al. [40], in their study, stated that patients with sputum (+) often infect their family members, especially children, because they live in close contact. People who have a history of contact with MDR TB people have a high chance of contracting it. Even though in this study, most of the respondents did not know whether the family and surrounding environment who suffered from TB were included in the MDR TB class or not. This does not really guarantee that Mycobacterium Tuberculosis has double immunity to OAT.

Most respondents also never experienced pulmonary infection other than MDR TB (72.9%). In terms of sociodemographic, almost all respondents have never been imprisoned (96.3%). These two things indicate that a history of previous pulmonary infection other than TB and a history of incarceration are not risk factors for MDR TB incidence.

Table 4.3.2. Relationship between risk factors and cured status

Variable	Cured Status		p-value
	Cured	Not Cured yet	
Drink Alcohol			
Yes	9	42	0,703
No	29	136	
TB Infected location			
Lung (Intra Pulmonal)	25	129	0,850
Outside Lung (Extra Pulmonal)	1	10	
Don't know	9	40	
Contact with MDR TB patient			
Yes	9	46	0,986
No	9	50	
Don't know	16	84	
Infection other than TB			
Yes	2	18	0,203
No	29	127	
Don't know	3	35	
Have HIV			
Yes	0	3	0,593
No	34	177	
Diabetes mellitus			
Yes	6	51	0,196
No	28	129	
Drugs user			
Yes	1	14	0,540
No	34	165	
Been Imprisoned			
Yes	1	7	0,789
No	33	173	

According to table 4.3.2 above, the cured status of MDR TB patients who drank alcohol was only 7 respondents (14.3%) and 29 respondents (17.6%) who did not drink alcohol. The number who recovered was greater in the non-alcoholic group. Although statistically not significant, these data indicate that alcohol can affect the recovery of MDR TB patients. Research by Johnson J et al. [(35)] stated that many TB patients believe that alcohol consumption will worsen their TB symptoms. If disease B gets worse, the healing will take longer.

All respondents with HIV (100%) had not recovered from MDR TB, and 34 respondents (16.1%) had recovered in the group that did not have HIV. Statistical analysis did show an insignificant relationship, but the trend showed that people with HIV recovered longer than those without HIV. This is in line with the research of Agustina R et al. [(41)] in 2017

concerning the factors that are related to the successful cure for MDR TB patients. However, several other studies have shown a significant relationship between HIV status and cure status. In HIV patients, there is a decrease in the body's immune response resulting in healing failure. The study's difference could be because the number of samples of HIV patients analyzed in this study was very small.

The same thing happened in the group of DM patients and drug users, even though statistical tests did not show a significant relationship between recovery status and risk factors for DM and drug use. However, the trend shows that diabetes mellitus and drug use can slow recovery. The number of patients recovered in DM patients (10.5%) was less than those who recovered in non-DM patients (17.9%). The number of respondents who recovered in the non-drug user group (17.1%) was higher than the number of people who recovered from the drug users (17.9%). This study is in line with research in Yunnan, China, which shows no significant relationship between coordinated disease and cured status. [(42)] Agustina R et al.'s study also found insignificant results between DM patients and healing success. [(41)] However, the study results differ from Faurholt-Jepsen D et al. [(43)] in Tanzania and Tang S et al. [(44)] in China. The Faurholt-Jepsen D et al. [(43)] study found that patients with DM were 2.04 (1.07-3.8) times more likely to experience treatment failure. This difference can occur because of differences in the DM classification, and comorbid DM data are often not reported by patients. The condition of DM can aggravate TB; besides that, it also takes a long time for treatment because it is along with DM treatment therapy and more often feels the OAT's side effects. Treatment that must be done simultaneously between MDR TB and DM also costs a lot, so that many of these patients are unable to reach it. Also, DM patients can be reinfected with MDR TB strains because of low immunity.

Based on TB infection, most RO is located in the lungs, as evidenced by chest X-ray. The number of patients who recovered was 25 respondents (16.2%) in the lung infection location and 1 respondent (10%) in the extrapulmonary infection location group. The statistical test shows no significant relationship between the risk factors for the location of infection and the recovery status. Still, the trend shows that if MDR TB infection occurs in the lungs, it heals faster than when MDR TB occurs outside the lungs. This can occur because the penetration of TB drugs is absorbed more in the lungs than outside the lungs.

There were 9 respondents (16.4%) recovered in the group who had contact with MDR TB patients, and 9 respondents (15.3%) recovered in the group who had never had contact with MDR TB patients. Respondents who had not recovered were 46 people (83.6%) in the group who had contact with MDR TB and 50 respondents (84.7%) in the group who had never

contacted MDR TB patients. Statistical analysis showed no significant relationship between risk factors for contact with MDR TB patients and the recovery status. This can be because many factors affect the recovery of MDR TB patients, including nutritional status, the regularity of treatment, side effects of the drugs, and other diseases (comorbid). Niviasari DN et al. [45] found that factors related to the patient's recovery status were age, the regularity of treatment, and comorbid diseases.

The cured status in the group of patients suffering from infections other than TB was 2 respondents (10%) smaller than the group of patients who did not suffer from infections other than TB, namely 29 respondents (18.6%). The data above shows that patients suffering from other infections and MDR TB infection will slow recovery even though it is statistically insignificant. In a study conducted in Shaanxi Province, China, comorbidity was a large and important predictor of an incurable disease (OR = 5.8). [46]

There is a statistically insignificant relationship between risk factors having been incarcerated and MDR TB cure status. There was 1 respondent recovered (12.5%) in the group who had been imprisoned, smaller than 33 respondents who recovered (16.1%) in the group who had never been imprisoned. Although there is no significant relationship, this condition can occur because patients who have been imprisoned may have a poor lifestyle that can affect their health to impact on healing the disease.

Researchers asked key informants who were currently undergoing treatment, loss to follow-up, and survivors about the possibility of having contact with MDR TB patients. Several key informants admitted that they had previously had contact with MDR TB patients.

"My mother was treated by TBRO at XX Hospital for several months, and I accompanied her. Finally, my mother died in March. Just before Eid, I had complaints of coughing, coughing up blood, and sore back. Then checked at the Puskesmas, checked sputum, then the next day it was found out that he was exposed to TB, he was given red medicine from the Puskesmas, then he was sent to XX Hospital, and the result was positive for MDR TB and told to take MDR TB medicine I didn't want to ":
IDI with loss to follow up patient, Male, Bengkulu

When asked whether he had had a lung infection other than TB before, one key informant answered "yes."

"When I was young I had an accident, and the doctor told me that my lungs were injured and later my lungs would shrink":
IDI with loss to follow up patient, male. Cilacap

In the in-depth interview, it was also asked whether the key informant had Diabetes mellitus. Several key informants admitted that suffering from DM before being diagnosed with TB and considered that this affected the disease's healing.

"At the time of my first treatment, I had diabetes mellitus, but Puskesmas didn't know and didn't ask, and I didn't say that I was a DM sufferer. When he had the second treatment, the hospital suspected why he had relapsed again whether it was due to diabetes or AIDS, so he was examined, and it was just found out that the cause of failure was diabetes":
IDI with TB survivor, male, Kupang.

"At first, I didn't know; what is clear was that I had diabetes; I didn't know at that time and was hospitalized, so I caught my disease at that time. Often treated because the sugar continues to be high, so they caught sight of this, he said I had TB. Indeed, he said that people with diabetes were often infected, but at that time, it had been a long time ago."
IDI with TB survivor, female, Palembang

"Starting January 2013, I have diabetes…. 6 months of treatment was still positive, 9 months of treatment was still positive then I was referred to the RSCM, the TCM sputum check was still positive, then returned to Bengkulu, the injection for 2 months did not heal ":
IDI with patient enrolled, female, Bengkulu

4.4 Respondents' knowledge about MDR TB

Table 4.4.1. Frequency Distribution of Respondents' Knowledge about MDR TB

Variable	n (%)
TB disease is caused by germs	
True	**165 (77,1)**
False	7 (3,3)
Don't know	42 (9,6)
TB symptoms, cough> 2 weeks	
True	**178 (83,2)**
False	4 (1,9)
Don't know	32 (15)
TB is contagious	
True	**187 (87,4)**
False	1 (0,5)
Don't know	26 (12,1)
Not regularly taking medication can get MDR TB	
True	**159 (74,3)**
False	2 (0,9)
Don't know	53 (24,8)
MDR TB due to non-compliance with medication	
True	**128 (59,8)**
False	3 (1,4)
Don't know	83 (38,8)

MDR TB is diagnosed from TCM	
True	**119 (55,6)**
False	3 (1,4)
Don't know	92 (43)
MDR TB needs long treatment	
True	**174 (81,3)**
False	1 (0,5)
Don't know	39 (18,2)
MDR TB needs to take medication every day	
True	**190 (88,8)**
False	1 (0,5)
Don't know	23 (10,8)
MDR TB must wear protection	
True	**196 (91,6)**
False	3 (1,4)
Don't know	15 (7)
Knowledge	
Good (≥7 benar)	**148 (69,2)**
Poor (< 7 benar)	66 (30,8)

Respondents were patients with MDR TB, who were mostly in treatment. In this study, it showed that the respondents' knowledge about MDR TB was very good; that is, 69.2 respondents had good knowledge. All variables regarding knowledge about MDR TB can be answered well by respondents. This shows that in these 10 cities, the system involved in MDR TB case management has provided good education to every patient diagnosed with MDR TB. This is expected to increase the cure rate for MDR TB patients.

In this study, to assess the knowledge about TB from respondents carried out using a questionnaire divided into 9 questions, consisting of 3 parts, namely about epidemiology and transmission/transmission (3 questions), diagnosis (3 questions), and management and prevention (3 questions). The study (Table 4.4.1) show that all questions can be answered properly by the respondent, namely, reaching 55.6% -91.6% can be answered correctly.

In Table 4.4.1. shows that 69.2% of respondents have good knowledge with a fairly high level of adherence, namely, 69.1% never give up their medication (Table 4.2.1), and 68.2% always take their medicine every day (never don't take medication) (Table 4.2.1).
Pasek et al.'s research found the same thing: most respondents had good knowledge (67.5%). Only a small proportion had bad knowledge (32.5%) with a comparison that was almost the same as our study, namely 2: 1. [(47)]. In our study, 69.2% of good knowledge and 30.8% of bad knowledge were obtained.

Research conducted by Bhatt CP et al. [(48)] stated that 82% of respondents knew that the symptoms of TB were a prolonged cough, according to our study, which found 83.2% of respondents knew that the symptoms of TB were cough for more than 2 weeks.

This is similar to the research conducted by Darmadi, entitled Qualitative Analysis of Compliance Behavior of Pulmonary Tuberculosis Patients in 4 Regional Health Centers of Ketapang District in 2000. The results showed that active and inactive pulmonary tuberculosis patients; most of the patients had good knowledge and a few have low knowledge. The researcher stated that in obtaining information, it requires money (for example, school), the socio-economic level is one factor that affects the level of one's knowledge. The higher a person's socioeconomic level, the easier it will be to get information. [49]

Table 4.4.2. Relationship of Knowledge about MDR TB with cured status

Variable	Cured status		p value
	Cured	Not Cured yet	
Knowledge of TB			
Good	31	117	**0,002***
Poor	3	63	

**Chi square test*

Good knowledge affects the respondent's recovery.

Table 4.4.3. Relationship between Education Level and Knowledge about TB

Variable	Knowledge (n(%)		Total	p value*	r§
	Good	Poor			
Education level					
Not complete High school	57 (65,5)	30 (34,5)	**87 (100)**	**0,370**	**0,095**
High School graduated	90 (71,4)	36 (28,6)	126 (100)		

* uji *Chi square*
§ uji *Pearson*

There is no relationship between knowledge and education level.

Nurbaety B et al. conducted a study on 31 respondents in West Nusa Tenggara. They stated that the better a person's knowledge of tuberculosis treatment and cure, the better adherence to treatment would be so that treatment success will be achieved. In his study, it was found that 32.25% had good knowledge and had high adherence to 38.7%. [50] Likewise, Yeti A et al. stated that TB patients with good knowledge had 12,857 times more adherence to TB treatment. There was a significant relationship between TB patient knowledge and treatment compliance (p = 002). Treatment adherence is an important key to treatment success. [51] A similar statement by Pasek MS et al., namely the level of good knowledge, has a significant relationship (p = 0.040) with treatment adherence, and patients who have good knowledge are

16.81 times more likely to be adherent against TB treatment than those with poor knowledge. (47)

Adherence to TB treatment is essential because if treatment is not carried out regularly and not according to the predetermined time, there will be widespread resistance to TB germs against Anti-TB Drugs (OAT), which can be caused by not understanding the importance of adherence in treatment. This is probably due to insufficient knowledge and negative perceptions or ways of looking at TB disease. (47)

Different things were stated by Maulida YN et al. in their research in Malang, that there was no significant relationship between knowledge and the success of TB treatment (p = 0.078). This is because the factors that influence the patient's behavior in taking medicine are predisposing factors (knowledge, beliefs, values, attitudes, and behavior), Enabling factors (health facilities/facilities), and reinforcing factors (family support and attitudes toward health workers). (52)

Table 4.1.1 shows that 51.9% of respondents have completed high school education. According to Yeti A et al. (51), respondents with high school education have better knowledge than respondents with low education. Nurbaeti B et al. (50) stated that the higher the respondent's education level, the better the knowledge about TB. This study (Table 4.5.2) states that 90 respondents with high school education have good knowledge, compared to 57 respondents who did not complete high school. This can be explained because of the higher the patient's level of education, the better the receipt of information about the treatment he receives so that the patient will comply with the treatment of the disease. So, it is expected that TB patients who have a high level of knowledge tend to adhere to TB treatment. (47) However, our analysis results do not show a significant relationship or correlation between the level of knowledge and the level of education of the respondents (p = 0.370, r = 0.095). Likewise, the bivariate analysis results between the level of education and the recovery of follow-up patients showed significant results p = 0.139 (Table 4.4.2).

Shamu S et al. stated in their research that 72% of respondents knew TB, and factors related to this knowledge were age (<21 years), female gender, and education. In their research, 72% of respondents know about TB. This study did not categorize the level of respondents' knowledge of TB. (53)

In in-depth interviews with key informants of patients who had not been enrolled when asked what they knew about TB, several respondents said they did not know much about TB and even linked TB with hereditary diseases.

"TB, that's all I know, I was told to seek treatment, but I didn't want to":
IDI with not yet enrolled patient, male, Makassar

"The origin of illness from heredity did not exist; at that time, the typhoid was long. After the typhus was cured, it fled to TB after I went to Hospital X, the TB treatment should have been for 6 months, so I took medicine for 3 months because I felt good then I stopped. it relapsed. So I went to X Hospital (different hospital) ":
IDI with not yet enrolled patient, male, Pontianak

Most of the key informants described limited knowledge of TB so as not to be aware of the disease before diagnosis.

"When I was 52 years old, about 4 years ago, I was sick with shortness of breath and was treated for 6 months and then declared cured. About 2 months ago, when I was about to leave for the rice fields, I suddenly had difficulty recurring; I didn't have a cough and was treated at X Hospital…. At first, I didn't want to be treated anymore because I didn't feel sick. Then an officer came from Cilacap Regional Hospital (Pak X – MDR TB clinic) and told me that I had TB":
IDI with lost follow up patient, male, Cilacap.

Several key informants in the focus group discussion forums (FGD) and in-depth interviews described general health and limited knowledge of TB in the wider community. The real knowledge has been described as limited and a character/culture that is quite difficult to change.

"We are still thinking about how to draft a regional regulation that requires MDR TB patients ... especially that we have to be willing, but they say this is our human right not to want to, but there are other people's rights not to be infected. That's what we do. still talking because the character of the Palembang people may be different from the Javanese, the Sundanese, the Sundanese may still be afraid, but Palembang people are different, that is still our study."
IDI with person in charge of TB program at Provincial Health Office, Male, Palembang.

"Then, public knowledge about TB is still low. There was a case in Mempawah, the dukun (healer) himself was affected by TB .. went to a dukun (meaning the community)… the dukun went to the hospital…. At the district level, the community's concern was very low ":
Focus group discussion (FGD), Pontianak

4.5 Distance / Residence Access to the Health Center (Puskesmas / Hospital)

Table 4.5.1. Distribution of Frequency Distance/Access to Residence to Health Center (Puskesmas/Hospital)

Variable	n(%)
A place to take medicine	
Hospital	87 (40,7)
Puskesmas	**116 (54,2)**
Other	11 (5,2)
The place is easy to reach	
Yes	**179 (83,6)**
No	35 16,4)
become a barrier	
Yes	10 (28,5)
No	**25 (71,5)**
Have transportation	
Yes	**193 (90,6)**
No	20 (9,4)
Transportation become barrier	
Yes	3 (15)
No	**17 (85)**

This study shows that most of them take medicines at health centers (54.2%) and easily accessible locations (83.6%). Although there were respondents who found it difficult to reach the location where the medicine was collected, transportation was not an obstacle (71.5%). However, 9.4% of respondents did not have access to transportation to the location; this was not a barrier to medical treatment (85%).

The location of health facilities and means of transportation was not an obstacle for most respondents. It could be because, at this time, almost all respondents are carrying out treatment at the Puskesmas, which can be reached from their place of residence. This shows that the system built by the MDR TB Team to place patients for treatment from the health facility closest to the place of residence has been running well. Meanwhile, patients whose houses are quite difficult to reach health facilities due to distance or transportation have been successfully educated so that their enthusiasm or family's enthusiasm makes this not an obstacle to treatment.

Outpatient treatment of patients with MDR / XDR-TB was initially considered a dilemma because of the importance of daily observed therapy (DOT). Still, hospitalization for all patients with longer treatment duration is an impossibility. WHO has also recommended

that patients with MDR-TB be treated using outpatient care. As a result, several outpatient treatment reports of patients with MDR / XDR-TB have shown encouraging results. [54]

Facilities for MDR / XDR-TB outpatients should also be available for contact inquiries, as a storage of data and information between various health services, including laboratories, and to allow data comparability due to the need to obtain the necessary information early, align support, responsibility. the answer, as well as the flow of information. According to standard definitions, treatment outcomes should be recorded at the last outpatient visit, and previous health care providers (hospitals, puskesmas, etc.) and surveillance systems should be informed. End-of-treatment imaging studies are helpful because patients may be reviewed later for suspected relapse or reinfection. Patients must have clear information about the signs and symptoms of recurrent TB. [55] It is these interests that make the return of MDR TB patients to hospitals or health facilities on a regular and scheduled basis so important. Therefore, this study also collects data on patient compliance to return to the health facility where the drug is taken by considering easy access and transportation to health facilities.

The results of this study indicated that the majority of MDR TB patients under Case Manager Aisyiyah visited health facilities where they were taken for drugs even though they were difficult to reach for 16.4% of patients or even without transportation (9.4%). Difficulty reaching the location where the medicine was collected was not an obstacle (71.5%); likewise, the difficulty/absence of transportation was not a barrier to medical treatment (85%).

This condition is because most of the respondents (83.6%) are carrying out treatment at the Puskesmas / Hospital, which is easily accessible from their residence. This shows that the decentralized system implemented to place patients for treatment at the closest health facility to the place of residence has worked well, although there are still 16.4% of respondents who stated that it is difficult to reach health facilities, this condition requires the attention of the local Health Office as a policymaker. The education and motivation carried out by Aisyiyah's team in the field driven by the Constitutional Court were deemed effective enough so that patients whose health facilities were difficult to reach from their places of residence either due to the distance or the absence of transportation had been successfully educated so that visits to health facilities were still carried out.

Continued access to treatment and medical care must be ensured during the outpatient phase of MDR TB patients' treatment. In countries with many MDR TB cases providing incentives, such as subsidized transportation or food delivery, has been shown to increase treatment adherence, especially in high-risk groups such as drug users, the homeless, and prison inmates. (55)

As a comparison, in a study of MDR TB patients in Arba Minch, Ethiopia, it shows that three main reasons influence patient non-adherence to treatment, namely (1) drug side effects, (2) long distance to health facilities, and (3) long waiting times. ; in addition to several other reasons that do not have a significant effect, such as education level, socio-economic level, and monthly income. (56)

Table 4.5.2. Distance/Access to Health Center Relationship with cured status

Variable	Cured Status		p value
	Cured	Not Cured Yet	
A place to take medicine			
Hospital	21	66	**0,038***
Puskesmas	13	103	
Not take medicine yet	0	10	
The place for taking medicine is easy to reach			
Yes	32	147	0,163
No	2	22	
Have transportation			0,263
Yes	33	160	
No	1	6	

**Chi square test*

The location where the drug was taken affects the respondent's recovery (p = 0.038)

Recovery is one of the outcomes and is the most expected of MDR TB patient treatment. In addition to being cured, another outcome is to drop out / loss to follow-up from treatment, so there is no cure, and it can even become XDR TB or end in death. Many factors influence the recovery of MDR TB patients. This study showed that patients who took drugs at the hospital compared to the Puskesmas experienced more and significant healing (p = 0.038).

179 respondents thought that the places for taking medicines were easy to reach, much more than 24 respondents and that there were also far more drug-taking at the Puskesmas than

those at the hospital, an indicator that the decentralization process for MDR TB treatment has been widely implemented even though not all regions have implemented its decentralization.

Decentralization is the transfer of health facilities from PMDT hospitals to health facilities close to the patient's domicile. Decentralization is an important effort to increase patient compliance to visit health facilities and increase patient compliance to visit health facilities 10 times. [57] This needs to be taken into consideration for policymakers such as local health offices to implement a decentralization program in all areas to facilitate access to treatment for MDR TB patients to improve treatment adherence and monitoring of patients to achieve MDR TB eradication according to the target.

In this study, from any of the three variables, either the treatment variable at the health center or hospital, the place for taking medication, and the transportation availability variable, all three showed a lower cure rate than patients who had not yet recovered. respondents are patients who have not completed their therapy regimen, so the results obtained are 'as if' the cure rate is low.

Compared to other studies from several countries that have switched to implementing a decentralized system in the management of MDR TB, the cure rate or treatment response and level of adherence are relatively better than before. This is also the case in Bangladesh. The decentralized system's implementation has helped increase the proportion of MDR TB patients screened and treated, reduce delays in treatment initiation, and increase patient adherence and positive responses to treatment [58].

In comparing MDR TB patient care in regions that use a centralized and decentralized system, there are some positive things in the decentralized system, including fewer cases of loss to follow-up than in the centralized system. However, the difference is not too much in terms of health systems; the system approach decentralization is more cost-saving than a centralized system. [59] The various positive effects of implementing the decentralized system in various countries are a strong consideration. All regions in Indonesia can be prepared for outpatient MDR TB patients implemented in a decentralized manner because it will facilitate monitoring and patient assistance and implementing DOTs / PMO to the patient.

Several key informants in the in-depth interview were asked about the distance between their house and the health facility/hospital where they received TB treatment, saying the distance they had picked up was quite far. This is one of the obstacles, although most of them continue to undergo treatment.

".. far away doc, near the SCTV transmitter…. half an hour if not jammed… ride a motorcycle ":
IDI with patient enrolled, female, Surabaya

"Every day to the hospital for treatment, even though it is far away, but we want mom to recover (crying) ... The hospital is quite far; it can take about 2 hours":
IDI with patient enrolled Children, female, Kupang

"……. Far away, the bus goes around":
IDI with loss to follow up patient, female, Medan

4.6 Availability of MDR TB drugs

Table 4.6.1. Distribution of Frequency MDR TB drug availability

Variable	n(%)
Medicine always available	
Yes	**196(91,6)**
No	18 (8,4)
The quality of medicines	
Good	**205(95,8)**
Bad	9 (4,2)
Expiration noticed	
Yes	**200 (93,5)**
No	14 (6,5)
Look for drugs elsewhere if empty	
Yes	58 (27,1)
No	**156 (72,9)**

The availability of drugs at health facilities that become MDR TB referrals is good; that is, most of them state that drugs are always available (91.6%) and of good quality (95.8%), and most respondents pay attention to the expiration date of the drugs they receive (93.5 %). This shows the good coordination and reporting of drugs from health facilities that have MDR TB patients to the Health Office so that the drugs are always available and in good condition.

There were no problems in the procurement of MDR TB drugs in the study since the Global Fund provided its support since 2009. Several countries have concentrated on managing MDR TB drugs, including drug distribution to the public health service sector and outpatient installations. Meanwhile, the quality of MDR TB drugs is at the pharmacy's discretion, and the National Medicine Boards and clinicians will not be directly involved in this. A coordinated approach in the procurement of MDR TB drugs, including quality, can benefit MDR TB management. [60] Drug management is one of the essential components in PMDT, including drug selection, procurement, storage, distribution, and rational use of drugs. OAT logistics is

one of the challenges of implementing PMDT. The main objective of the National TB Control program in drug management is to guarantee the availability of quality OAT to all PMDT service units, without a shortage (stock-out) of drugs at all levels. [61]

Table 4.6.2. The relationship between MDR TB drug availability and cured status

Variable	Cured Status		p-value
	Cured	Not Cured Yet	
Medicine always available			
Yes	32	134	0,827
No	8	10	
The quality of medicines			
Good	38	167	0,660
Bad	1	8	
Expiration noticed			
Yes	33	167	0,208
No	7	7	
Look for drugs elsewhere if empty			
Yes	11	47	0,651
No	30	126	

The availability and quality of MDR TB drugs did not correlate with the respondent's recovery.

In the table regarding the relationship between MDR TB drug availability and respondent recovery, it shows that drugs that are always available at health facilities, drug quality, drug expiration period, and drug-seeking behavior in other places if the drug is not available, do not have a statistically significant relationship with the respondent's recovery status (p-value > 0.05). This study did not assess the regimen, dose, and duration of therapy that affected the healing status of MDR TB patients [62] (Sutoyo, Dianiati Kusumo | Observations of Multidrug-Resistant Pulmonary Tuberculosis (MDR-TB) Patients in Lung Polyclinic RSUP Friendship).

Whereas in another study, the availability of adequate and quality drugs greatly affects the MDR-TB rate. [63] The data obtained show that the availability of drugs that are always available can meet the respondent's drug needs.

Based on the observations in this study, the availability of drugs is very much considered and is always well supplied. This is being pursued because MDR TB treatment is carried out every day for a period of 18-24 months. One of the MDR TB control strategies is the continuous guarantee of quality OAT availability. This is due to several reasons, including shorter expired, ways of calculating usage requirements based on the needs of each patient, different periods of administration according to treatment response, and some drugs requiring

special storage methods that do not allow them to be packaged in a package system. To ensure that OAT administration is not interrupted, OAT stocks must be available in sufficient quantities at least 6 months before the drug is estimated to run out. (64)

When asked to key informants of enrolled patients and people in charge of the TB program at health facilities in in-depth interviews, all of them said that the drugs received were in good condition and quality.

"Yes, all good. All the medicines are in good condition .. ":
IDI with patient enrolled, Female, Palembang

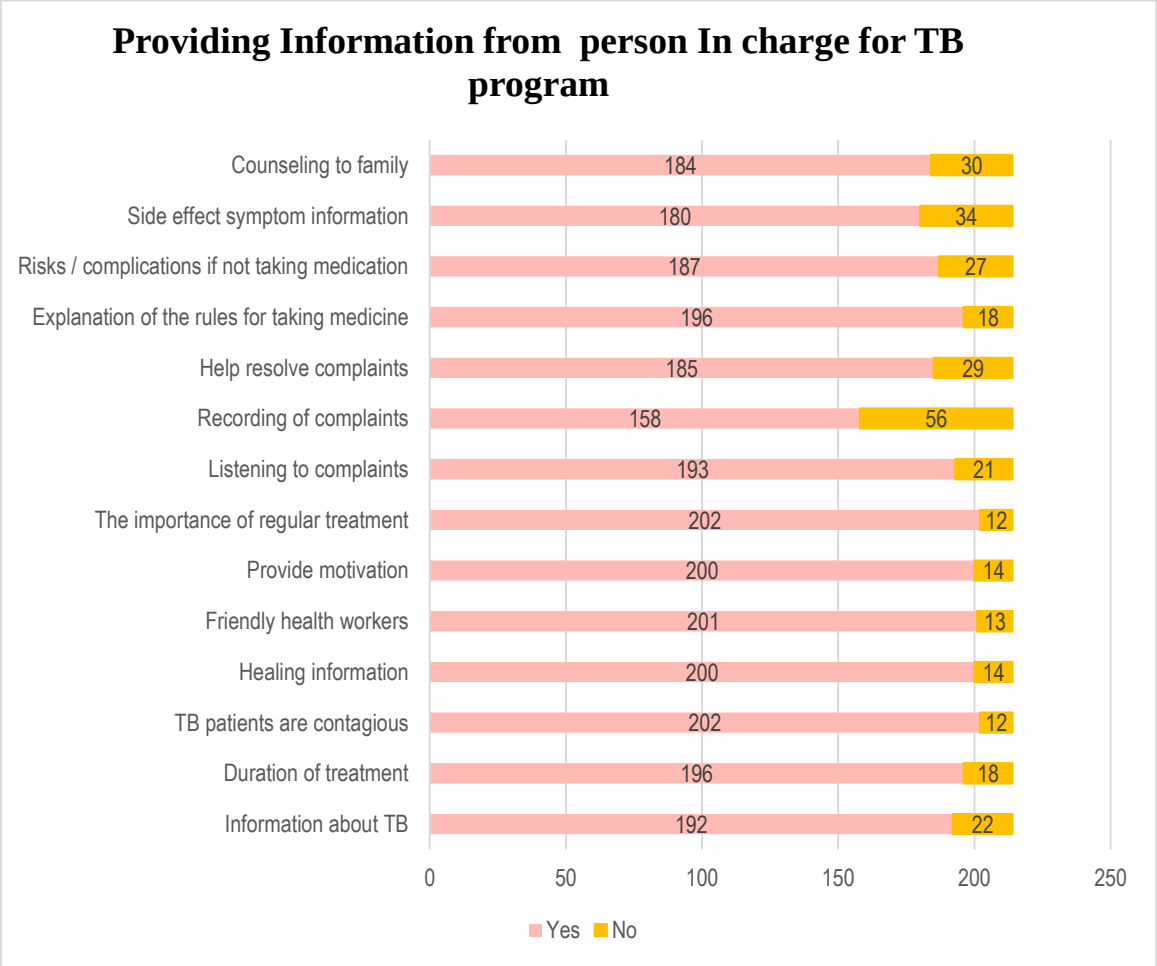
"Medicines with good quality, some 500 and 600 grams, never expire":
IDI with patient enrolled, Male, Medan

"Medicine for ordinary TB is good, for MDR-TB also always get the drug before it runs out already asked for":
IDI with Person in charge for the TB Puskesmas program, Male, Jember

"So friends at the hospital immediately ask the province, so the medicine is enough .. what is lacking is only logistics other than medicine, but if the medicine is not lacking, the patient also did not enroll because the medicine wasn't there a few months ago, it was like that":
IDI with TB program Deputy Supervisor, female, Kupang

4.7 Providing Information from the Officer

Table / Diagram 4.7.1. Frequency Distribution Providing information from officers



The performance of health facility officers and peer educators shows good results. Information conveyed to patients reached> 84% overall, including counseling to the patient's family (86%), officers were considered friendly and took notes, listened to patient complaints, and helped motivate and resolve patient complaints.

In table 4.7.1 above regarding the information provided by health workers regarding MDR TB disease and its management, it is found that coverage has reached 90% except for information about TB disease (89.7%), complications that can occur if you do not take medication (87, 4%), helping to overcome complaints (86.4%), counseling to the patient's family (86%), information about various side effects of the drugs consumed (84.1%) and recording patient complaints (73.8%). If seen, information about the side effects of tuberculosis drugs and recording of patient complaints is in low coverage.

Table 4.7.2 Relationship between the provision of information by officers and the cured status

Variable	Cured Status		p-value
	Cured	Not Cured Yet	
Information from the officer			
Yes	33	159	0,425
No	6	16	
Long treatment information			
Yes	34	162	0,171
No	4	14	
TB is contagious			
Yes	34	168	0,313
No	4	8	
Friendly health workers			
Yes	33	168	0,435
No	6	7	
The officer gave encouragement			
Yes	34	166	0,434
No	5	9	
Take medication regularly			
Yes	34	168	0,437
No	4	8	
Listening to complaints			
Yes	34	159	0,127
No	5	16	
Recording of complaints			
Yes	32	126	**0,004***
No	2	54	
Help resolve complaints			
Yes	32	153	0,502
No	8	21	
Explanation of the rules for taking medicine			
Yes	31	165	0,167
No	7	11	
Risk of complications			
Yes	29	158	0,141
No	10	17	
Side effect symptom information			
Yes	26	154	**0,027***
No	12	22	
Counseling family members			
Yes	31	153	0,705
No	7	23	

**Chi square test*

Recording of complaints (p = 0.004) and information about symptoms of side effects from the staff (p = 0.027) affected the respondent's recovery. Symptoms of side effects that are given before the patient experiences them will make the patient more prepared and less worried if these symptoms appear. This will help to maintain the quality of the patient's motivation for healing.

In table 4.7.2. It was found that recording patient complaints (p = 0.004) and information on the side effects of MDR TB drugs taken (p = 0.027) were significantly associated with the patient's recovery status.

Communication is an important but often neglected matter in the field of tuberculosis care and research. We can identify communication chains in the context of TB care activities that include diagnosis, treatment, patient discharge, and follow-up. This chain includes communication between health workers and patients, health workers, treatment centers, health workers, and the community. Responsibility for communication appears to be overly stressed on patients, treatment guidelines are not consistently implemented across places, and assumptions about other people's roles in the chain are formed. Patient and healthcare workers' reports indicate confusion and disappointment. In the context of TB and particularly DR-TB treatment, there is a large amount of information that is needed to be conveyed to patients, particularly during the process of diagnosis and treatment. However, some patients feel helped by health workers; others feel overwhelmed by remembering all the information provided and feel unable to ask for an explanation. [65]

The results showed that lack of knowledge about a disease and its treatment, distance from health facilities, stigma in the community, perceptions of a disease and its treatment, psychological pressure, change of residence, and economic status are some of the factors that determine the level of patient adherence to TB treatment. TB patients who have psychological distress symptoms have a higher risk of not adhering to treatment than TB patients without psychological stress. This may be because psychological morbidity can lead to memory impairment, and decision-making may cause patients to become discouraged and decide to abandon treatment. [66]

Limited knowledge of MDR-TB and its treatment appears to trigger patient anxiety. Patients who had previously failed treatment for drug-sensitive TB had great fear and lack of confidence in MDR-TB treatment's effectiveness to cure their disease. Many patients and their caregivers have expressed anxiety about knowing the side effects that arise and how to deal with them if they occur. Lack of knowledge also prevents patients from knowing when to seek medical help, whether they experience side effects or symptoms of MDR-TB and whether these side effects will go away. Inadequate information and the resulting worry and confusion lead to further psychological distress from patients and their families. To address anxiety about medication and side effects, both patients and their caregivers have focused on several recommendations for improving care and experience: Clear information provided by healthcare

workers, clear referral routes for a response to side effects, privacy during treatment, with patients emphasizing this attainable even in current facilities. (67)

Nurse training also improves patient relationships, as trained nurses can provide psychological and emotional support and education to patients and their family members. Survivors, trained nurses also reported increased adherence to treatment, although no figures are given. (68)

Another study found that communication, information, and education (IEC) provided by health care facilities had no causal relationship with the occurrence of MDR-TB. Incomplete IEC can cause disappointment among patients and still remind patients to comply with treatment. (69)

Key informants in in-depth interviews were asked whether the officers had ever provided counseling on pulmonary tuberculosis; we found various answers.

"Never, Aisiyah, who came. My supporter is Ms. M ":
IDI with TB survivor, female, Medan

"At first, I had a doctor. I didn't take medicine for 1 week because it was hot, itchy, and black. Asked the Puskesmas, how come the medicine has never been retaken? I feel itchy to my genitals too. Told control to *** (mention the name of the hospital). Ma'am, if what's the matter, please come here and talk, I'll see again which one is allergic, the one that causes itching will be stopped, and another drug will be replaced ":
IDI with patient enrolled, female, Semarang

"Yes ... I was told everything, I have followed it, what regulations should be made, the doctor from the puskesmas visits the house":
IDI with TB survivor, female, Palembang

When we asked the key informant for MDR TB loss to follow-up after the patient decided not to continue treatment; was he still being contacted until now; Who was contacted by? The key informant answered that he had not been contacted for 2-3 months.

"No, the last one, Ms. ** (mentioning name), doc, it's been about 2 to 3 months it's not been anymore. So I treated it alone ":
IDI with patient loss to follow-up, male, Semarang

4.8 Presence of supervisor for administering medication (PMO)

Table 4.8.1 Presence of supervisor for administering medication (PMO) distribution.

Variable	n(%)
Have a medication supervisor	
Yes	**186 (86,9)**
No	28 (13,1)
Who acts as PMO	
Family member	**140 (75,3)**
Health worker	46 (24,7)
Family member as PMO	
Father	17 (12,1)
Mother	27 (19,3)
Little Brother/Sister	6 (4,3)
Big Brother/Sister	13 (9,2)
Husband	22 (15,8)
Wife	**47 (33,6)**
Others	8 (5,7)
PMO reminds to take medicine	
Yes	**178(95,7)**
No	8 (4,3)
PMO encourages regular treatment	
Yes	**181(97,3)**
No	5 (2,7)

Table 4.8.1 shows that most respondents answered that they have PMO (86.9%), which comes from family members (75.3%). Respondents answered that PMO's role is to remind respondents to take medication every day (95.7%) and motivate them to seek treatment (97.3%) regularly.

Herda W et al. (2018) said, "WHO has recommended a Directly Observed Treatment Shortcourse (DOTS) strategy for TB control since 1995 by involving Drug Drinking Supervisors (PMO)". [(70)] The Ministry of Health itself states that PMO is a Supervisor for Ingesting Drugs which its task is "... to ensure patient compliance in taking medication, treatment is carried out under direct supervision (DOT = Directly Observed Treatment)". [(71)]

The Ministry of Health (2014) also states that PMO is prioritized as health workers or trained health cadres. [(71)] In contrast to the results shown in table 4.81., In fact, in this study, it was found that only a small proportion of respondents had PMO from health workers (24, 7%). However, the family is allowed to act as PMO, as emphasized in the Ministry of Health Regulation (Permenkes) No.67 that "in RO TB treatment, control of ingesting drugs is carried out by health workers the health facility. In certain conditions, MDR OAT administration is carried out at the patient's home, so control of ingesting drugs can be carried out by a designated

health worker/cadre or by the patient's family with prior agreement by the health worker and patient. "[4]

In another part, Permenkes No.67 also mentions family members as the last party to be used as PMO "PMO should be health workers, for example, Village Midwives, Nurses, Pekarya, Sanitarian, Immunization Specialists, and others. If there are no possible health workers, PMO can come from health cadres, teachers, PPTI, PKK, or other community leaders or family members. "[4]

The family chose as PMO can be understood given the limited human resources both owned by PR TB 'Aisyiyah and those owned by health services; this is in line with Adyaningrum et al. (2019) research. [72] It is not wrong if family members are PMO whose function and role are important to run well, Manan (2018). [73] also states that "… families play a good role in preventing MDR TB". Whoever becomes a PMO, then his job becomes important because he has to make sure that TB-RO patients actually take medicine and motivate them to continue taking medicine until treatment complete.

Table 4.8.2. Relationship between supervisor for administering medication (PMO) and Peer Educators (PE) with a cured status

Variable	Cured Status		p-value
	Cured	Not Cured Yet	
Have a PMO			
Yes	31	155	0,917
No	8	20	
Have a PE			
Yes	27	133	0,605
No	11	43	

Table 4.8.2 shows that respondents who have PMO (155) and PE (133) have not recovered their status. Based on the p-value, it can be seen that the presence of PMO with P = 0.917 (P> 0.05) and PS with P = 0.605 (P> 0.05), it is concluded that it does not show a significant relationship with the patient's recovery status. The Drug Swallow Supervisor (PMO) is one of the points in the MDR TB treatment principle mentioned by the Ministry of Health (2016). (4) So, its existence is important for the treatment process to be successful. Peer Educators (PE), on the other hand, although their role is not found in the Ministry of Health Regulation on Tuberculosis Control, their presence is felt by MDR TB patients. Based on

activity reports by KNCV Indonesia [74], there are 16 peer educator groups currently assisting in the MDR TB program in Indonesia.

The study conducted by Herda et al. (2018) states that the results of statistical tests using the Chi-Square test obtained p-value = 1,000 (> 0.05), and there is no relationship between the supervisory role of swallowing medication (PMO) on the success of tuberculosis treatment. [70] Different with most studies stating that there is a relationship between PMO and MDR TB patient recovery, for example, the mention of "that the better the role of supervisors taking medication (OBSERVER), the more obedient patients are in taking medication." [75] Other studies by Pratama AN et al. [76] also stated that "statistically significant correlation was also found between the knowledge of treatment observers and TB patients' adherence (p = 0.015).

To gain further understanding, it is necessary to review the treatment period of the respondents involved in this study to know the treatment process they are currently undergoing. Although the results of treatment results have not been seen, PMO and PE's role can be felt by MDR TB patients.

In in-depth interviews asked key informants about PMO. Most of the key informants answered that they had PMO, whether it was Puskesmas officers, cadres, patient support, peer support, and family.

"My PMO is a Puskesmas officer. My father-in-law also often reminds me to seek regular treatment ":
IDI with patient enrolled, Female, Cilacap

"Well, almost all the nurses here":
IDI with patient enrolled, Male, Makassar

"There is a lady who came to the house, she had a disease like this too, she also pushed, come on take medicine, yesterday I wanted to go to the Puskesmas again, but I haven't gone yet, have vomited what to do":
IDI with loss to follow-up patient, Female, Jember.

4.9 The Role of Peer Educators / Cadres

Table 4.9. Frequency Distribution of Peer Educators / Cadres

Variable	n(%)
Have a PE	
Yes	**160 (74,8)**
No	54 (25,2)
Information about TB from PE	
Yes	**156 (96,2)**
No	4 (3,8)
Duration of treatment	
Yes	**153 (95,6)**
No	7 (4,4)
Assistance from PE	
Yes	**81 (50,6)**
No	18 (11,2)
Sometimes	61 (38,2)
Assistance every day	
Yes	52 (22,5)
No	**108 (67,5)**
Friendly PE	
Yes	**160 (100)**
No	0 (0)
Provide motivation	
Yes	**160 (100)**
No	0(0)
The importance of regular treatment	
Yes	**160 (100)**
No	0 (0)
Listen to your complaints	
Yes	**152 (95)**
No	8 (5)
Provide education to the family	
Yes	**152 (95)**
No	8 (5)
There is a special form of side effects	
Yes	69 (43,1)
No	**91 (56,9)**
PE ready to help	
Yes	**153 (95,6)**
No	7 (4,4)

Table 4.9 concerning Peer Educators (PE) role shows that most of the respondents admitted to having PS (74.8%). Although not accompanied by PE every day (67.5%), PE provides information about MDR TB disease, length of treatment, and it must be done regularly and thoroughly, side effects that will arise, counseling for the respondent's family, listening to complaints, and providing suggestions for overcoming these complaints and motivate for healing. Most of the respondents (95.6%) stated that PE was always ready to help them and had done their job well. Providing information about side effects is one of PE's roles, but most respondents (56.9%) did not know that there was a special form to report drug side effects.

This shows that most of the patients are satisfied with the performance of PE. The selection and performance of a good PE result from good screening, training, and monitoring by the structural team above it. The Ministry of Health (2014) in its Guidelines for Organizing Peer Educators' Workshop on Integrated Management of TB Drug Resistance states that “The term peer education refers to something that stands equal to others, something that is comparable, equivalent or in simple words as peer-based education. Peer groups in society categorized by age, class or status, etc." [71]

The peer education approach is often used in HIV-AIDS prevention programs, and it has been felt that the benefits of this approach have been replicated in the MDR TB control program. The Ministry of Health (2014) [71] also states that “The peer education approach method in the context of TB control is a variety of activities aimed at developing knowledge, attitudes, and actions of a person or group of people related to TB control. Peer group education is carried out between these peer groups guided by facilitators who come from community health officials, groups of MDR TB patients, etc. Through peer education, we can develop messages and choose more appropriate media so that the information received can be understood by their peers. "

TB-HIV Care 'Aisyiyah itself did not actually mention Peer Educators (PE) specifically in the MDR TB program. Permenkes No.67 on Tuberculosis Control also does not specify Peer Educators. Cadres, on the other hand, are clearly stated in the regulation, stating that "TB promotion can not only be carried out by special officers but can also be carried out by cadres of community organizations who are partners in TB control." [4]

The statement of respondents stating that they have peer educators (74.8%) in Table 4.9 becomes interesting, who exactly is the peer educator they mean. The peer educator approach in the context of TB-RO in Indonesia has been manifested in a group (peer-group) and was initiated by the KNCV organization in 2013. Support from peer educator groups is indeed quite effective in TB control programs, especially on treatment compliance; this statement is supported by research conducted by Hasanah M et al. (2019) (77), which states that “The results proved that peer group support could affect the medication time adherence on pulmonary tuberculosis patients. It can be concluded that peer group support can be used as an optional intervention to increase the obedience of pulmonary tuberculosis treatment in patients.”

Although Community TB Care 'Aisyiyah did not clearly mention the approach with peer educators, most respondents gave positive answers to PE's role, from providing information related to TB to listening to complaints. (There are PE who convey a lack of

refreshing or further training for them, hoping that the latest information can be delivered quickly.)

In in-depth interviews, we also asked key informants about the role of peer educators/cadres.

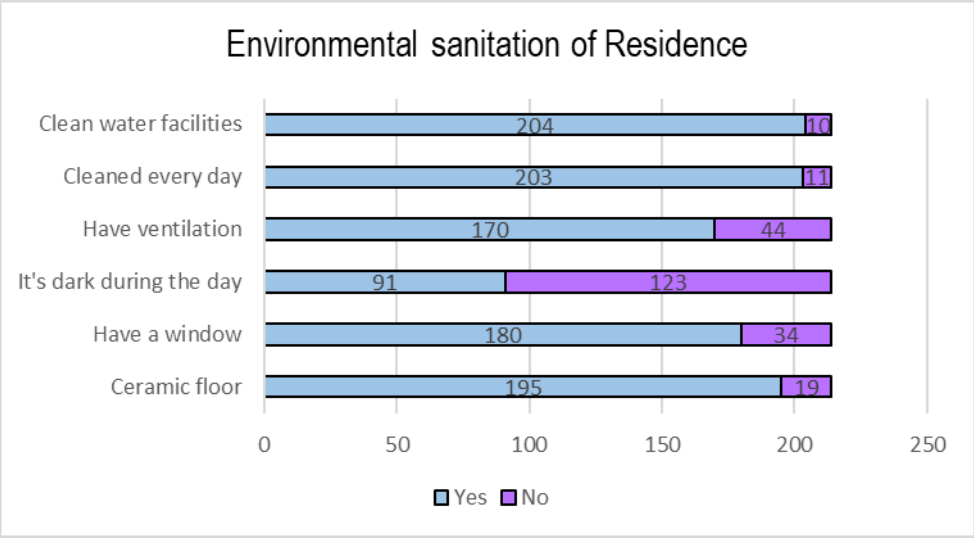
"Yes, parents. Also, Ms. ** (mentioning the name Patient Supporter) also helps remind you to take medicine every day at home ":
IDI with patient enrolled, Female, Palembang

"Yes, a cadre ...mbak ** (mentioning the name of PS)... I have to take medication continuously; I can't break up. If I do break up, the disease will get worse":
IDI with patient enrolled, Male, Jember

"Bang ** (mentioned the name of PS), he understood how difficult it was for me, other doctors didn't understand":
IDI with loss to follow-up patient , Male, Medan

4.10 Environmental sanitation of Respondents' Residence

Table/Diagram 4.10.1. Frequency distribution of the Sanitation for the Respondents' Residence



In the environmental sanitation where the respondent lives, it is possible to be a risk factor for MDR TB. However, most of them have good environmental sanitation.

Most (> 50%) for environmental sanitation where the respondent lived met the criteria for a suitable house for habitation, such as ceramic floors, windows, sunlight, and clean water facilities. The local government carries out house renovation activities. For MDR TB patients who live inadequately, repairs will be carried out, such as making windows or glass tiles to increase circulation and room lighting. As it is known that an unhealthy home environment such as lack of ventilation, poor lighting in the room, the occupancy density can affect the incidence of tuberculosis. [78] Ventilation is following its function to exchange airflow to free room air from pathogenic bacteria such as tuberculosis.

Efforts can be made by opening doors or windows every morning and getting sunlight into the house by installing glass tiles or ventilation so that it is not dark and can reduce humidity. Pulmonary TB incidence most likely occurs at temperatures that do not meet the requirements because TB bacteria will survive at a temperature of 32-40^{0}C. With poor air circulation and air ventilation, it will allow the bacteria to be supported by families living in 1 house. [79]

The condition of the ceramic floor will reduce the humidity level in the house. In the Republic of Indonesia, Minister of Health Regulation No. 1077/2011 regulates the house rooms' humidity condition that meets the 40-60% requirements. (64.66-68) High room humidity will cause Mycobacterium tuberculosis bacteria to last a long room and increase the risk of transmission between family members.

Table 4.10.2. Environmental Sanitation Relationship with cured status

Variable	Cured Status		p-value
	Cured	Not Cured Yet	
Ceramic floor			
Yes	32	163	0,503
No	2	17	
Have a window			
Yes	28	152	0,695
No	6	28	
House is dark			
Yes	14	77	0,862
No	20	103	
Have ventilation			
Yes	27	143	0,997
No	7	37	
Cleaned everyday			
Yes	34	169	0,158
No	0	10	
Have Clean water facilities			
Yes	19	170	0,208
No	15	8	

The sanitation of the environment where the respondent lives show good results, and this does not show a significant relationship for the respondent's recovery status.

Table 4.10.2. in this study showed no significant relationship between environmental sanitation and patient recovery. In this study, the researchers asked about the house's condition through questionnaires and made observations without using tools to measure temperature, humidity, or room lighting. Environmental sanitation conditions greatly affect the transmission of transmission to other family members. Technological innovations to improve environmental sanitation conditions such as exhausts, room filtration devices can improve house sanitation conditions and reduce the risk of transmission. (78,80,81) Previous studies stated that the risk of tuberculosis transmission decreased from 55.4% to 9.6 % by opening windows and doors to increase air circulation. [80]

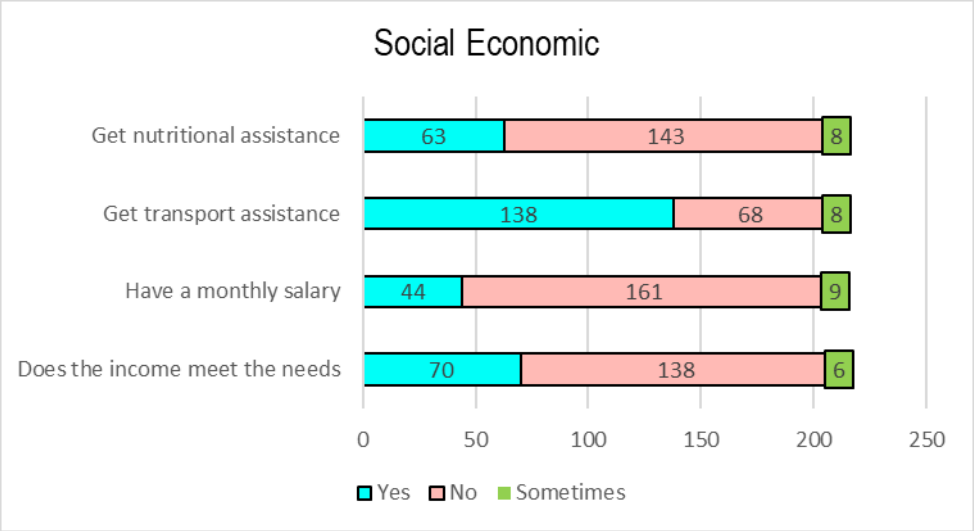
Previous studies concluded a significant relationship between environmental sanitation conditions and the risk of transmission. Rooms with house lighting <60 lux has a higher chance of getting pulmonary TB. Natural lighting plays an important role in the transmission of disease in the family through household contact. Natural direct and indirect lighting is useful for providing lighting for all rooms with a minimum power of 60 lux and does not cause glare. [82]

Houses that meet the requirements must have a ventilation hole area of at least 20% of the land area. Good home ventilation allows TB bacteria to leave the house naturally. Good ventilation will make it easier for sunlight to enter the house so that TB bacteria can be eliminated naturally by sunlight. Another factor that a healthy home needs to have is waterproof floors so that humidity levels are good. Soil floors have a higher humidity level. Previous studies concluded that respondents with cement floor types had a higher chance of developing tuberculosis than those with tiled floors. [83]

Environmental sanitation is more of a role of transmission to other family members. For sanitation, healing is a supporting factor and needs attention. Adherence to taking medication and taking medication as recommended is a determining factor for a patient's recovery.

4.11 Socioeconomic MDR TB Patients

Table / Diagram 4.11.1. Socio-economic Frequency Distribution of MDR TB Patients



Most of the respondents have no income to meet daily living (64.5%) and do not have a monthly salary (75.2%). This is according to the characteristics of the respondents; namely, most of them do not work and have no income (Table 4.1.1). The transportation money-giving program from the Global Fund really helped them, and most of them stated that they had received this assistance (64.5%).

Table 4.11.1 shows that respondents who had sufficient income to meet their daily needs were 32.9%, while those who were not adequate reached 64.5%. In the research of Rahmah PM et al. [(84)], the results were not much different; namely, 26.78% of respondents had medium/sufficient income, and 73.22% had low incomes. In our study, respondents who had adequate income achieved recovery only 27.14%, which is in contrast to the research of Rahma et al. [(84)], where most respondents with a middle income had a cure of 86.7%. Janan M (2019) in the MDR TB research in Brebes Regency found that the number of respondents who had an income below the UMR was 56.5%, and an income above the UMR was 43.5%). [(85)] in her research, Putri VA (2015) found the number of patients who have a monthly salary of 16.7%, not much different from this study, which is 20.6%. [(86)] Meanwhile, Azwar GA (2017) found a larger number, reaching 36.9% of respondents having a fixed monthly salary (Civil servants and private workers). [(87)]

Table 4.11.2. Socio-economic relationship with cured status

Variable	Cured Status		p-value
	Sembuh	Belum sembuh	
The income meets the needs			
Yes	19	51	**0,003***
No	15	123	
Work with a monthly salary			
Yes	13	31	**0,000***
No	21	140	
Mendapat bantuan trasnport			
Yes	33	105	**0,000***
No	1	67	
Mendapat bantuan nutrisi			
Yes	13	50	0,280
No	21	123	

**Chi square test*

Income (p = 003), employment (p = 0,000) and transport assistance from the Global Fund (p = 0,000) showed a significant relationship for the respondent's cured status.

4.11.1 Income

In Tirtana BT's research (2011), which was conducted on 45 MDR TB patients, it found that there was no relationship between treatment success and income level with (p = 1.00) and type of work (0.19). [88] Likewise, with research conducted by Rahmah PM (2018) which states that there is no relationship between income level and treatment success (p = 0.115). (84) In the research, Ruditya (2015) states that this relationship's absence is explained because the TB eradication program does not need to pay or be free, both for drugs and examinations during treatment. This is the government's effort to eradicate and reduce the incidence of TB in Indonesia. [89]

In in-depth interviews conducted with respondents, it was found that the majority of patients had sufficient income while they were still working, but after being diagnosed with MDR TB they were forced to stop working.

"… A day's income is sometimes 15 thousand rupiahs, I can farm if I am still strong. The doctor advised me to rest but when it is normal I want to work again ":
IDI with patient enrolled, Male, Jember

"The obstacle is that I can't work. The obstacle is the economy, doc, money ":
IDI with patient enrolled, Female, Surabaya.

4.11.2 Occupation

In this study, 75.2% of patients without a monthly salary were found (Table 4.11.1), and there was a relationship between working with a monthly salary and the cure rate (p = 0.000). Pare et al. (90) stated that patients who do not work tend to seek treatment irregularly because they are based on their opinion that going to a Puskesmas must pay for transportation and is focused on fulfilling their daily needs rather than for treatment. But the drugs provided by the Puskesmas are free. So, there is no reason for patients not to seek treatment even though it doesn't work regularly. Patients and patients' families should open small businesses to increase income to meet their daily needs.

Researchers asked key informants in in-depth interviews; most respondents did not have a fixed salary or a monthly salary. Several key informants had jobs and received monthly salaries but were forced to stop working because they were undergoing treatment.

"Look, I brought an angkot (a bus driver). During my illness for 2 years I didn't work. According to life, I needed help. when given help is used, now I don't work, weak legs. As a day-to-day household business, selling rice, sometimes it sells sometimes it doesn't ":
IDI with patient enrolled, Male, Medan

"I used to work as an elementary school teacher when I was teaching in grade 2 (SD ** mentioning the name of SD), as a teacher who taught all subjects in that class. But at this time I am not working anymore ":
IDI with patient enrolled, female, Palembang

"I work at night, the company is wise enough, I was not given permission to leave, but I can take a break if I can't work, they are wise, that's when I work at night":
IDI with TB survivor, Male, Semarang

4.11.3 Transportation Assistance

Soepandi P. stated that MDR / XDR-TB could actually cause economic losses because MDR / XDR TB pulmonary patients are generally of productive age (15-64 years) and come from economically weak groups, so MDR / XDR-TB can eliminate various opportunities in education and employment, reduce performance, limit work options and weaken the quality of human resources. [(91)] This causes work productivity for someone suffering from MDR / XDR-TB to continue to decline, and income will decrease.

Situmorang FP (2017), there are many challenges in TB treatment, among others, poverty, employment, and transportation costs to get to a service point. Referring to this, transport assistance is certainly beneficial for people with MDR TB. [(92)]

Hasanah M (2018) states that there is an instrumental domain that also has an important role in improving TB patients' health, including medical and transportation costs. [77]

When researchers asked key informants about transportation costs, almost all of them said they received the assistance even though the method of giving from the responsible party in different regions.

"There is assistance from the health department. Got 750 thousand. But it doesn't come out every month":
IDI with patient enrolled, female, Surabaya

"I got money for transport, took it at the post office. 750 thousand per month. I got it, di rapel (got it every few months) ":
IDI with patient enrolled, female, Semarang

"From the health office I get 15,000 transportation assistance/day, but it's given every 3 months":
IDI with TB survivor, female, Pontianak

"I don't know, yes, it is not clear whether, from Aisyiyah or the hospital, there is transport assistance for three months if I'm not mistaken, I got 750 thousand from 2016-2017, it doesn't go up or down":
IDI with TB survivor, female, Palembang

"The cost of transportation assistance is Rp. 750,000 per month is very helpful to reach the Puskesmas. Very Helpful, thank you very much ":
IDI with patient enrolled, Male, Medan

4.11.4 Nutritional Assistance

In her study, Putri VA (2015) found that 61.1% of MDR TB patients had poor nutritional status. Her research, supported by data, found that only 16.7% of patients had a fixed monthly salary. [86] According to Soepandi P (2014), someone diagnosed with MDR TB would eliminate various opportunities, including lowering performance. This will certainly make income decrease, and nutritional status will be increasingly not maintained. [91] So that nutritional assistance will certainly be of great help to MDR TB patients. Our results showed p = 0.280; that is, there was no relationship between nutritional assistance and the respondent's recovery. This is possible because since 3 years ago, nutritional assistance was no longer provided so that most respondents (66.8%) had no longer received nutritional assistance when this research was conducted.

Although many key informants did not know about this nutritional assistance in the qualitative excavation and were pleased to receive nutritional assistance, several key informants received assistance.

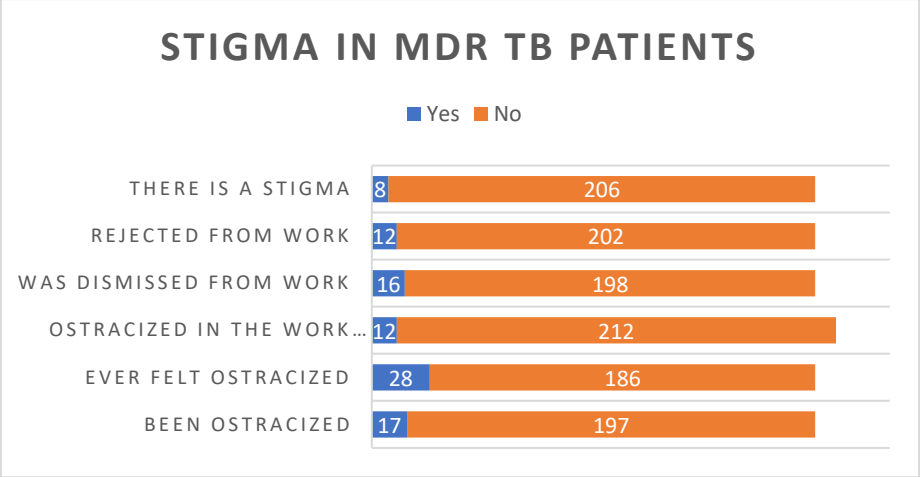
"There are from Ayesha in the form of rice, eggs":
IDI with patient enrolled, female, Surabaya

"Yaa helps like eee side dishes ... from Aisyiah":
IDI with TB survivor, Male, Semarang

"..., there was once Aisyiyah, got milk, but it didn't long":
IDI with TB survivor, woman, Palembang

4.12 Stigma in MDR TB patients

Table / Diagram 4.12.1. Stigma in TB-R patients



In this study, it showed that most respondents did not experience STIGMA due to RO TB disease.

In table 4.12.1. It can be seen that most of the respondents do not experience / do not feel isolated with their status as RO TB sufferers. This is probably due to the majority of respondents in this study aged between 41-50 years (24.8%) and 51-60 years (26.6%) and not working 57.5% (Table 4.1.1). They tend to stay at home more often, not feel stigmatized or feel isolated from their surroundings by not working. Respondents in this study mostly graduated from high school (51.9%), married (63.6%) (Table 4.1.1). Besides, knowledge about TB in this study was mostly good (69.2%). The results of this study's respondents are consistent with the study of Datiko et al. [(93)], who reported that the greatest stigma was found in patients

with low levels of education and poor knowledge of TB. Most of the respondents in this study were married, so they had families to discuss and did not feel the stigma. Research by Datiko et al. [93] also shows that 78.8% of families do not isolate TB sufferers, 75.5% of families with TB sufferers are cooperative, do not avoid TB sufferers, 86.4%, and families do not have different attitudes towards TB patients. 5%. [1] This study's results are also in line with Hidayati E's research [94] regarding the stigma of TB patients, showing that 81.25% of respondents had a low stigma. Stigma is a social process or personal experience characterized by exclusion, rejection, criticism, or devaluation due to adverse social assumptions about individuals or groups due to certain health problems. [94] Stigma arises from interactions between stigmatized individuals and individuals who are stigmatized. Stigma is also caused by experiences of discrimination from others and also feelings from within that person, such as shame if they are found to have TB. Support for TB sufferers is essential to reduce this stigma and the need to motivate TB sufferers to accept the stigma to be an encouragement to recover from TB. [94]

Another thing that might cause the results of this study to show no stigma, among others, is that the method for measuring stigma in TB patients varies depending on the goals to be achieved. Some of the goals that are often used to detect the stigma of TB include: (a). want to find out whether TB stigma causes additional suffering/consequences for TB sufferers, (b). I want to know whether the rights of TB patients are being violated, (c). I want to know whether the stigma of TB causes visits to health facilities to be disrupted, (d). I want to know if TB stigma is a big problem for patients and (e). I want to find out whether stigma causes the failure of health workers to get TB patients. [95] In this study, the objectives to be achieved by knowing stigma are goals 3 and 5. To know the existence of TB stigma is difficult because only a few subjects want openly stated that they received discriminatory treatment. Also, stigma is in the subconscious mind, so the best way to detect stigma is through observation, sketches, indirect questions, and experiments. In this study, to determine whether there is a stigma or not, direct questions are used so that respondents often do not feel that they are getting stigma. Only 7.9% said there was a stigma in themselves, and 13.1% said they had felt isolated. The use of quantitative questions has the advantage of being easy to apply, easy to conduct training for interviewing officers, but it has weaknesses; among others, it is difficult to determine how to intervene in overcoming the presence of stigma. [95]

Table 4.12.2. Stigma's relationship with cured status

Variable	Cured Status		p-value
	Cured	Not Cured Yet	
Been Ostracized			
Yes	4	13	0,369
No	30	167	
Ever felt ostracized			
Yes	3	25	0,422
No	31	155	
Ostracized in the work environment			
Yes	5	7	**0,013***
No	35	177	
Was dismissed from work			
Yes	4	12	0,310
No	30	168	
Rejected from work			
Yes	3	9	0,374
No	31	171	
There is a stigma			
Yes	3	5	0,088
No	31	175	

**Chi square test*

Ostracized from the work environment (p = 0.013) shows a significant relationship for the respondent's recovery status.

Table 4.12.2. shows a significant relationship between being ostracized from the work environment and the respondent's healing status with p = 0.013. This shows that respondents who are ostracized at work tend not to recover from MDR TB disease. This is following the results of the analysis in Table 4.1.2. The relationship between respondents who did not work and low income with the patient's cured status with p values of 0.004 and p = 0.015, respectively. Likewise, Table 4.11.2 regarding the relationship between adequate income (p = 0.003), working with a salary every month (p = 0.000), and receiving transportation assistance (0.000) shows a significant relationship. This shows that by being ostracized from the work environment, a person tends to stop working so that in the end, they become unemployed, and this has an effect on the patients cured of MDR TB.

This study indicates that stigma is not a factor that directly affects the patient's recovery. Still, with the presence of stigma, the respondents are ostracized from their workplaces to affect their income, which results in the absence of TB patients from the treatment they should be running. This result follows Hidayati's research that the stigma experienced by TB patients tends to be low in the sense that TB patients in expressing their disease tend to have less difficulty and show high hopes that the stigma can turn into support for getting TB treatment correctly and completely.

Hidayati's research results also show that health education and TB prevention increase knowledge and reduce stigma. [94] Patients with MDR TB are more often stigmatized and are feared by many people because the TB germs are not easily killed using standard TB drugs and take longer for treatment. [96]

The results of research by Mukerji et al. [97] in India show that there are several manifestations of stigma, including being shunned, gossiped, verbal abuse, discrimination from medical staff, being ostracized, divorced, dismissed from work, not allowed to go to school, fear of losing friends and family. This ultimately affects health, including poor treatment outcomes, increased morbidity and mortality, increased TB transmission rates, and mental health problems.

In this study, the visible stigmas include being ostracized, feeling ostracized, being ostracized from work, being rejected from work, and being laid off. The results of this study are consistent with the research of Mukerji et al. [97]. Besides, it also appears that there is a significant relationship between being excluded from work and healing from TB sufferers.

In the in-depth interviews, we conducted with key informants, most of them did not experience stigma or exclusion from their families or neighborhood. However, some key informants were ostracized.

"Explanation of health workers and patient support to my neighbors and friends about my illness makes me not ostracized, even many neighbors and friends who come to see me":
IDI with patient enrolled, Female, Cilacap

“When I was dismissed, my fellow teachers didn't stay away at all. They even encouraged me to work again. I've been working for 7 years, and they don't feel disgusted by me at all. Especially when first diagnosed ”:
IDI with patient enrolled, Female, Palembang

"I was also ostracized from my neighbors, the children thought that I didn't care about them because I never kissed my children anymore":
IDI with TB survivor, Male, Kupang

“Down too, ……. I am still traumatized until now; the medicine kills me, I can't do anything, I was ostracized, children shouldn't be near us, I sleep alone ”:
IDI with TB survivor, Female, Medan

4.13 Case Management Evaluation

From the FGD, information was obtained about the case manager as follows:

1. Very helpful in analyzing the needs of MDR TB patients
2. Providing education to patients
3. Do monitoring to patient supporters' work
4. Assisting, directing, and finding solutions if there are problems with the supervisor and cadre in carrying out their duties
5. Do coordination with PMDT Hospital in the management of MDR TB cases
6. Arrange mentoring for MDR TB patients to ensure that the preparation process from the beginning until treatment is completed can run smoothly
7. Evaluating the performance of patient supporters and cadres

Analysis obtained from the FGD and IDI:

1. The case manager has been formed for 1 year, namely since the beginning of 2019
2. The case manager has helped Patient Supporters and Cadres in carrying out their duties, helping to find solutions and make decisions when there are obstacles
3. Patient Supporter is faster in getting information when there are new patients at the hospital (because the case manager has a duty to coordinate with the hospital) so that new patients can be assisted more quickly, and this will make the preparation process for starting treatment easier for patients and faster. The sooner you start treatment, it is expected that the better treatment results will be.

The evaluation of the case manager's performance and benefits of the case manager, which was only established for 1 year, shows quite good results. Still, the evaluation carried out in 1 year can be carried out but has not been able to provide a maximum conclusion because it is considered too early. Because the process that occurs in the patient is a learning process first then followed by changes in behavior and it is hoped that the maximum results will be obtained (complete treatment and the patient is cured). Changes in new patients' behavior can be evaluated in year 3, or the long-term evaluation can be carried out within 5 years after the case manager was established.

Evaluation should be carried out after being prepared or compiled according to the Standard Procedure for the case manager, the factors for the quality audit assessment, so that further action can be planned for case management related to the case manager.

4.14 Evaluation Analysis of the Implementation of the MDR TB Case Management Team at PR TB 'Aisyiyah

1. Good team performance in terms of patient satisfaction with PS performance, good coordination of health workers at PMDT Hospital, Puskesmas, referral hospital with TB MDR PR TB management team 'Aisyiyah runs smoothly
2. Most of the PS / PEs work well, but if you are responsible for supervising a large number of patients (in Medan), then the follow-up is not optimal in monitoring treatment adherence.
3. It was also found that PS / PE did not visit the patient when the patient did not come for treatment. This causes treatment compliance is not optimal and has the potential to become MDR TB. This can also be caused by the location where the PS / PE lives are far from the patient's residence so that it must be increased in receiving PP / PE personnel and the mapping so that it is adjusted to the location where the patient lives.
4. If the PS performance is not optimal (found in 1 city), then the workload of the PS will be borne by the case manager; this must be anticipated by conducting screening at the time of receiving the study program so that the case manager does not get more workload and maintains the performance of the case manager.
5. In Kader and PS, who work with good dedication, they are very supportive of patients to continue to seek treatment and come to the health facility with discipline. It was found that a cadre / PS was willing to spend his personal funds to help the patient for whom they were responsible for recovering quickly. This shows that the selection of cadres / PS is quite good.
6. In 1 city, information was obtained that the SSR was overwhelmed in completing the report to proceed to the Health Office. This needs to be evaluated further. Most likely, due to the insufficient number of SSRs. This will impact delays in providing incentives for patients at the local health office and reduce transport incentives before SSR data are received.
7. Overall, the structure of 'Aisyiyah's TB PR Case Management, especially those dealing with MDR TB, has worked well in all regions, although some obstacles and shortcomings can be corrected. All the shortcomings obtained from this study indicate weaknesses in human resource factors and system policies that are not optimal (there are bureaucratic procedures that are sometimes too long), these things. We present the suggested solutions in the conclusions and suggestions section.

8. We did not analyze the implementation and management of cases by the stakeholders because the stakeholders were able to judge according to the goals and duties of PR TB 'Aisyiyah, which the stakeholders had previously determined so that the evaluation can only be carried out following the two points above by stakeholders.
9. Assessment of implementation and case management from the side of MDR TB patients as a whole is considered very helpful for patients, according to the results of the quantitative and IDI studies described above.

4.15 Social Aspects

Social aspects that can act as a background for behavior and influence or not the treatment results in this study are respondents' knowledge, stigma, economic conditions/income, employment, access to health, and socio-economic services.

The results showed that work (p = 0.004) and income (p-0.015) affected the respondent's recovery status. Good knowledge affects the respondent's recovery (p = 0.002). Access to service centers did not affect the patient's recovery (p = 0.163) because most respondents had a means of transportation.

In the socio-economic analysis, adequate income (p = 0.003), work and a monthly salary (p = 0.000) and getting transport assistance (p = 0.000) showed results related to the patient's recovery status.

In the stigma obtained by the respondents, it was found that TBRO sufferers had the stigma of being isolated in the work environment (p = 0.013), indicating a relationship with the patient's recovery status.

4.16 Research Limitations

This study's limitation is that the stigma questionnaire is based on direct questions so that only a few respondents dared to express or feel stigmatized. Special research is needed to determine the presence of stigma by taking an observational or experimental approach and using a special questionnaire to explore the stigma that TB sufferers receive. Besides, research is needed that involves the patient's family and the opinion of the population not affected by TB regarding the stigma in TB patients.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The conclusions in this study are:

1. Problems and barriers to access and TB services in health services:
    a. Access

       Access from places where TBRO sufferers live to places of treatment services in several areas is experiencing problems:
        - The distance is quite far (Kupang, Pontianak, Medan, Cilacap)
        - Vehicles: do not have a vehicle, public transportation does not exist or does not exist directly (Kupang, Medan)
        - Poor road conditions (road from the ground) (Pontianak)
        - In border areas, patients must cross provinces (Medan: patients from DI Aceh province)

    b. Service
        - Recording of complaints: not done properly by officers
        - Information about the symptoms of side effects: the staff has not been able to explain the side effects well to the sufferer (hot chest, depression, and hallucinations)
        - Pulmonary TB counseling: officers provide counseling on MDR TB incidental
        - Patient follow-up: PS / PE was not maximal in monitoring the patient when he did not comply with treatment
        - Patient follow-up: PS / PE was not maximal in monitoring the patient when he did not comply with treatment because: (a) PS / PE, which has responsibility for 16 patients, it becomes difficult (Medan), (b) PS / PE does not come to the patient when the patient does not come for treatment (Semarang)
        - Facilities at the Fayankes (hospitals, health centers, and clinics) are not yet maximal: facilities and infrastructure.

- Inadequate completeness of the examination tools (RSUD in Kupang)
- Examination Room: some are still mixed with other sufferers
- Room for taking medicine: some do not have this room, in the gazebo hospital some are very minimal, even the location is forced there
- Space/place for sputum collection: some are located at the back and are not good (for example, near a health center disposal site)
- The MDR TB Polyclinic Room location does not have direct access from the outside of the Fayankes, so it still passes through the examination room and other polyclinics. This will have the potential for the spread of disease or transmission to other common patients (RS PMDT Kupang)
- Fast Track: Providing fast track for services to TBRO sufferers has not been implemented in all regions throughout the region
- Maintenance of TCM equipment is not good (found to be damaged in Jember), and there is a reagent vacancy for TCM

o Health workers

- The number of nurses and doctors in health care facilities is insufficient
- The skills of nurses and doctors at health care facilities are not entirely good; this is related to the lack of number of health workers and the number of insufficient training, so it is found that health workers have not been able to overcome the problems that arise (side effects) this will cause less than optimal service
- Because the limited number of health workers causes the task to be concentrated on the existing health workers so that when training is held, health workers cannot attend due to the density of work, this will hamper the improvement of service quality and health workers knowledge
- Training that is held from the Health Office / Ministry of Health are often informed suddenly

- Health workers who take training from the Ministry of Health (appointed by health care facilities) are the same person, so there is no equal knowledge/skills (Bengkulu)
- The absence of administrative staff at health care facilities, which has a large number of MDR TB patients, so that health workers cannot work fully in services and cause work to be completed on time (reports of drug availability, treatment reports); this will affect the provision of transportation funds for patients who are obstructed, so the patient cannot accept them on time (PMDT Hospital, Kupang)

- The MDR TB community team at PR TB 'Aisyiyah (Case Manager, Patient Support, peer educators, and cadres) in the case management process
  - Case Manager

    Limited human resources so that there is a finding that the Constitutional Court's duties are not maximally implemented (because some have not received training)
  - Peer Educators and Patient Supporter Found:
    1. Access to the residence of PS / PE and health care facilities or the patient's house is quite far away
    2. PS / PE that does not provide motivation and record of side effects
    3. PS / PE performance is not optimal, so the Case Manager carries out their duties.
  - Cadre

    It was found that a cadre spent personal funds to help fund transport for MDR TB patients
  - SSR: due to limited human resources so that the SSR team was overwhelmed in making reports (Bengkulu)

2. Factors that influence the success rate of MDR TB treatment and MDR TB issues and local and central policies in the management of MDR TB
   a. Factors that affect the success rate of RO TB treatment or cure:

i. Internal factors :

- **Gender**

  Gender Men have a risk cure rate 0.66 times lower than women (OR = 0.66)

- **Age**

  Those aged <50 years had a 2.90 times greater cure than those aged ≥ 50 years (OR = 2.90, p = 0.020)

ii. External factors:

a. Occupation

MDR TB patients who do not work have a risk of recovery 0.31 times smaller than those who work (OR 0.31, p = 0.004)

b. Income

MDR TB patients who do not have income have a risk of recovery 0.27 times smaller than those with an income ≥ UMR (OR = 0.27, p = 0.015)

c. Duration of treatment

MDR TB patients who took longer treatment showed a higher cure (p = 000)

d. Side effects

Some of the side effects that affect the recovery of MDR TB patients, namely:

- Tingling (p = 0.007)
- The chest feels hot (p = 0.025)
- Depression (p = 0.021)
- Hallucinations (p = 0.027)

e. Health care facilities where MDR TB patients take medication.

MDR TB patients who took their medicine every day at the hospital had a higher cure rate (p = 0.041)

f. Knowledge of MDR TB

MDR TB patients who had better knowledge of MDR TB showed a higher cure rate (p = 0.002)

g. Health care facilities where drugs are collected

MDR TB patients who took their drugs routinely at the hospital had a higher cure rate than those who took drugs at the health center (p = 0.038)

h. Disabling Complaints by health workers

Health workers who record patient complaints routinely show a higher cure rate (p = 0.04)

i. Providing information about MDR TB by officers (p = 0.027)

j. Adequate income

MDR TB patients who had adequate income had a higher cure rate (p = 0.003)

k. Have a monthly salary

MDR TB patients who had a monthly salary had a higher cure rate (p = 0.000)

l. Transportation assistance (Rp. 750,000 every month)

MDR TB patients who received transportation assistance had a higher cure rate (p = 0.000)

m. The stigma received by MDR TB

MDR TB patients who are excluded from the environment show a higher cure rate

b. MDR TB issues and local and central policies in the management of MDR TB

i. National policies in providing transportation assistance and nutritional assistance will support local policies and assist in implementing the MDR TB program and supporting recovery.

ii. Bengkulu Regional Government: provides Regional Assistance Funds (Bengkulu) to help increase the success of the Government's program in MDR TB treatment.

3. Evaluation of Case Management Implementation:

a. Service Flow Risk

i. Patients have to go through a long service line to start treatment

ii. Patients (especially those who have not started treatment) do not get a special fast track (or examination package) to facilitate examination in a shorter time. This is because the length of the screening line results in a delay in starting treatment and means that the risk of transmission to the community is greater. It is currently found that JKN users can

only check before treatment for 1 polyclinic/day, so the patient has to return to the hospital more than 10 times. This condition of going back and forth to the health care facilities will also increase the risk of transmission to the community. The patients will travel from home to the health facility and queue both at registration and up to the polyclinic repeatedly. The interaction with the community and hospital patients will be even greater.

iii. The cost of transportation will be burdensome for the patient because the treatment flow process goes through many processes and takes a long time

iv. The long flow process will interfere with the patient's performance at work (having to leave work repeatedly)

b. From a social point of view

i. Patients have a good awareness of the sanitation of the living environment, this is the result of counseling and direction from the case management team so that environmental sanitation factors and the patient's residence do not affect the patient's recovery.

ii. The patient's socioeconomic condition greatly affects the healing factor; this is related to the patient's income, most of whom do not have income. Providing transportation funding assistance is sagacious and helps the government to increase compliance and cure rates for patients. It is necessary to pay attention to the timeliness of providing this transport assistance so that it can be received every month by MDR TB patients.

iii. Shelter house facilities: difficulty finding a location close to health care facilities, rental prices above the provided budget, experiencing rejection from the neighborhood. The availability of this facility will be beneficial for patients whose location is far from health care facilities. Rejection from the neighborhood is a stigma for MDR TB patients.

c. Behavior

i. Patient behavior is considered good in terms of treatment: most of the patients seek treatment immediately, never stop taking medication,

side effects that always appear are not significant for continuity of treatment.

ii. Most of the patients still do not take all their medicine at health care facilities because of the following considerations:

- Patients come alone while there are drugs that have side effects of nausea, dizziness, weakness, etc. which will endanger the patient's safety when returning home; we found someone who took a 2-hour journey to health care facilities.
- The limitations of health workers cause less supervision to take this medicine
- On holidays, health workers give medicine to patients to drink at home
- Difficulties faced by patients due to health care limitations make them look for PMOs to help remind and motivate treatment

iii. The motivation is given by PS/PE/PMO/family really supports MDR TB patients in continuing and completing treatment

d. Stigma

The stigma found was from:

i. Workplace: we found that some patients were stigmatized until they were dismissed from their jobs.

ii. Community: community refused when they found out that their neighborhood would be chosen as a shelter house. As a result, the MDR TB Team found it difficult to get permission from the surrounding environment.

iii. Apart from these two things, most MDR TB patients admit that they do not experience stigma; case management has been going well so that Stigma does not disturb most patients to seek treatment.

4. The referral flow to guide MDR TB patients in the community has been going well.

5. The workings of case managers, peer educators, patient support, and other stakeholders in hospitals and other health facilities have been going well. However, they need improvement, as stated in the suggestions.

6. The gap in the number of laboratory-confirmed MDR TB patients:
    a. Number of Laboratories: considered to be insufficient
    b. Number of analysts: considered to be insufficient
    c. Number of Equipment: In most areas, the tools used (TCM) are used by other diseases (HIV) so that in areas where the MDR TB incidence rate is high, the examination results will be delayed. It is possible that currently, the Covid-19 outbreak will interfere with the smooth running of the examination because it is likely that the TCM tool will be assisted for the Covid-19 examination.
    d. Number of reagents: Availability of reagents is not sustainable; it was found that the vacancy reached 6 months (Jember) so that it interfered with the diagnosis of MDR TB, so it was forced to refer to areas that were further away/between cities/districts
    e. Maintenance: implementation of maintenance in some areas is not done so that eventually, the results of the inspection of this tool will be inaccurate. Overall, there is very little or no maintenance.
    f. Facilities: Not all laboratories at referral facilities can carry out BTA examinations (Jember: because there are no analysts)

7. Role of MDR TB Community Team of PR TB 'Aisyiyah (Case Manager, Patient Support, peer educators, and cadres) in the case management process:
    a. Case Manager

       Good at running the program
    b. Supporting Patients

       Most of them do their job well
    c. Peer Educators

       Most of them do their job well
    d. Cadre

       Most of them do their job well

    The team's role is good and important but will be greatly influenced by the honorariums given. Currently, the honorarium given is considered insufficient. The team's potential to change professions if they get the opportunity to get a better job.

    Some want health insurance/insurance, nutritional benefits, or routine checks for them to remember they are spearheading and meet directly with patients who are infective and at risk of contracting (Bengkulu, Semarang, Palembang)

8. Relationship between MDR TB PR TB 'Aisyiyah Team, the community, and related stakeholders (Provincial / District / City Health Office, PMDT Hospital, PPM, and Puskesmas):
   Have a very good relationship.

9. The flow of recording, reporting, and mentoring of MDR TB patients of PR TB 'Aisyiyah by case managers, PS, PE, and cadres:
   It is going well, but not optimal (partly there is a delay).

5.2 Recommendations

1. Access
   a. Increase the number of health care facilities that become a referral for MDR TB patients. So that patients can seek treatment at the nearest health care facility without any difficulty reaching home
   b. Creating standards that must be met by health care facilities as an MDR TB treatment reference so that all referral places have the same quality of both facilities and services
   c. Bringing the patient closer to health care facilities (shelter House) by adjusting the amount of the budget for each region (each region will be different in price) by considering the cost can be given at the beginning of the year because for the cost of renting facilities some areas have to pay the rental per year at once
   d. The current policy is for patients to seek treatment at the nearest health care facility from their place of residence. Still, the unavailability of transportation means and the unequal quality of service make patients choose health care facilities that are further away but more comfortable.
2. Services
   a. Facilities and infrastructure
      i. Develop a system that is more practical in proposing MDR TB service facilities and infrastructure so that it is not too long and complicated, so as not to affect the quality and safety of services

ii. There is a gazebo facility at every health facility because it really supports patient comfort and becomes a place for a forum to exchange ideas and provide motivation among patients
iii. Fast Track: TBRO patients are given a fast track for services, both patients who have started treatment and those who have not started treatment. Considering that you have to come for treatment every day, besides that, it is also given to patients who have not started treatment, so they don't have to return to the hospital repeatedly
iv. Maintenance of tools and infrastructure has improved both laboratories, polyclinics, treatment rooms, and other supporting facilities

b. Health workers
   i. Increase the number of health workers
   ii. Conducting regular and in-depth training, training can be carried out directly or online; if the training is carried out online, health workers (doctors/nurses) who are far away can still attend the training (provided that the video is activated so that they can be sure that they are present)
   iii. A system has been established to regulate work according to specificity so that health workers bear not all programs

c. Administration staff

   Recruit administrative personnel for each health care facility that accepts MDR TB patients to carry out administrative tasks, such as recording patients, taking medication, and reporting to a predetermined system

d. System
   i. The Health Office carries out regular training and provides training certificates for health workers / administrative personnel
   ii. Counseling and outreach by involving all strata of society and social strata (involving religious leaders, RT, RW, religious leaders, community leaders, stakeholders, government, etc.) to embrace the community from the lowest levels. This was implemented from 2009 to 2012. If the community is empowered with this model, they will find newer MDR TB discoveries to accelerate the eradication program for MDR TB infectious diseases in the community.
   iii. Considering to increase PS/PE honorarium.

iv. Outreach to the community: conducted regularly (at least 4 times a year or every 3 months).
v. Training held from the Health Office to be informed a few weeks in advance.
vi. The smoothness of the transportation funding assistance really helps the smoothness of the treatment program for MDR TB patients; it is hoped that the patient can receive it right at the beginning of every month.
vii. Nutritional assistance: given to help increase patient endurance.
viii. Local governments take part in handling MDR TB: Funding or nutrition assistance, especially for patients who are the backbone of the family, provide shelter house. For shelter house, it can be considered that the existing local government service/inventory houses can be donated to be used as a shelter for MDR TB patients. As currently, in the Covid-19 outbreak, many government facilities can be converted into health facilities. Donating 1 official house will be very meaningful for the success of the MDR TB program, and of course, giving 1 official house will not interfere with local government operations.
ix. The Ministry of Health collaborates across sectors with other ministries (Ministry of Social Affairs, Ministry of Manpower, Ministry of Women's Empowerment, etc.)
x. The government provides funds for the maintenance of laboratory equipment that comes from a grant.
xi. Providing IEC media (communication, educational information) such as brochures, standing banners, educational videos, media can also be made for the benefit of electronic media and social media, in the form of pictures or stickers and others that will make it easier for the public to understand the purpose of socialization. This media will really help the MDR TB team.
xii. Development of applications to detect compliance with injection and medication and side effects. When it is available, the operation can be activated and improved. Apart from that, it should be used throughout the region so that it can include information nationally.

3. MDR TB Community Team
    a. Peer Educators (PE)/Patient Supporters (PS): recruitment can be done from survivors considering that they understand better psychologically because they have experienced and have gone through treatment struggles and finally recovered. It is hoped that it will be able to provide good motivation to MDR TB patients.
    b. Patient Supporters (PS)/Peer Educators (PE): consider involving survivors by providing training to equalize skills and knowledge.
    c. Case Management: recruitment is more selective and has gone through direction and training so that it can carry out its duties properly.
    d. Training: Routinely and in-depth training is held for PS, PE, and case managers so that information is updated, either in person or online. Should be implemented at least 3 times a year.
    e. Monitoring and Evaluation: conducted periodically (for example, every year) to evaluate the performance of the community MDR TB Team, both individually and the team's performance.
    f. Providing health insurance/JKN for the MDR TB team and conducting regular checks on the PE/PS/cadres/health workers who are always in direct contact with MDR TB patients.
4. PMO

    Almost all patients have PMO, namely family members, and are very supportive of patient treatment success. There is no loss if every patient has PMO.

    PMOs can also be good supporters, especially PMOs, who are family members or non-health workers. The PMO can complement data regarding the Community TB team's role in MDR TB patients' treatment process.
5. Socioeconomic
    a. For patients who are the backbone of the family, the transportation funds from the Global Fund (Rp. 750,000 / month) are very reliable for sufferers to continue the treatment until it is complete. So that this program must be continued whether it can come from the Global Fund / Government
    b. Shelter house: shelter houses are provided in each region/city whose location is as close as possible to the health care facility; budget allocation is adjusted to each region and given at the beginning of the year so as not to burden the

implementer of the payment program so that it can be paid yearly, it is recommended to ask for local government support.

6. Stigma
    a. Shelter house: the emerging stigma can be resolved with the support of the local government (lending official housing for halfway houses)
    b. Stigma is the responsibility of all elements of society and across sectors. By providing socialization, explanation, and understanding to the community in an integrated manner by the Ministry of Health, religious leaders, community leaders, government structures from the smallest (RT/RW) to above, that this disease can be cured and treated. So that community support is beneficial for this program in case finding, supporting patients, keeping patients able to get treatment thoroughly, and protecting the immediate environment from transmitting this disease.
    c. Socialization involving cross-sectors, survivors, and communities

7. Patients

    For each patient who is newly diagnosed with MDR TB, the patient and family must immediately be given counseling/information about MDR TB disease, treatment, side effects, and all matters related to MDR TB; MDR TB can be cured if treatment is done diligently. Currently, most regions provide counseling/information when MDR TB patients start treatment. Sometimes, patients who have not started treatment still do not know what to undergo in this treatment.

8. TB survival community group
    a. Create and facilitate TB Survivor Community Groups (such as PETA, POP TB) to provide support for government programs to eradicate MDR TB because this group will be able to provide sharing and motivation to MDR TB patients.
    b. These community groups were formed in each province
    c. Schedule sharing activities regularly

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APPENDIX

Appendix 1

Ethical Approval Letter from the Research Ethics Commission of the Faculty of Medicine, Trisakti University

KOMISI ETIK RISET
FAKULTAS KEDOKTERAN
UNIVERSITAS TRISAKTI
Jalan Kyai Tapa,Grogol, (Kampus B) Jakarta 11440
Telp: (021) 5672731,5655786
Fax : (021) 5660706

PERSETUJUAN ETIK
Ethical Clearance
Nomor: 147/KER/FK/VIII/2019

Komisi Etik Riset Fakultas Kedokteran Universitas Trisakti setelah mempelajari dengan seksama dan mendengarkan penjelasan dari peneliti utama tentang kemungkinan adanya dampak etis terhadap subyek riset, masyarakat dan lingkungan, menetapkan penelitian dengan judul:

"EVALUASI MANAJEMEN KASUS TUBERCULOSIS RESISTEN OBAT (TB-RO) "

Peneliti Utama : Dr.dr. Husnun Amalia,SpM

Lembaga/Tempat penelitian : Surabaya, Jember, Semarang, Cilacap, Bengkulu, Medan, Makasar, Palembang, Kupang, Pontianak

Dinyatakan memenuhi persyaratan etik untuk dilaksanakan.

Jakarta, 6 Agustus 2019

Ketua

Prof.DR.dr.Adi Hidayat,MS

Sekretaris

dr.Alvina.SpPK

Appendix 2

Ministry of Home Affairs Research Certificate

KEMENTERIAN DALAM NEGERI
REPUBLIK INDONESIA
DIREKTORAT JENDERAL
POLITIK DAN PEMERINTAHAN UMUM
Jl. Medan Merdeka Utara No. 7 Jakarta Pusat, Telp. (021) 3450038, DKI Jakarta 10110

SURAT KETERANGAN PENELITIAN
NOMOR : 440.02/427/DV

DASAR	:	1. Peraturan Menteri Dalam Negeri Nomor 41 Tahun 2010 tentang Organisasi dan Tata Kerja Kementerian Dalam Negeri (Berita Negara Republik Indonesia Tahun 2010 Nomor 316), sebagaimana telah diubah dengan Peraturan Menteri Dalam Negeri Nomor 14 Tahun 2011 tentang Perubahan Atas Peraturan Menteri Dalam Negeri Nomor 41 Tahun 2010 tentang Organisasi dan Tata Kerja Kementerian Dalam Negeri (Berita Negara Republik Indonesia Tahun 2011 Nomor 168); 2. Peraturan Menteri Dalam Negeri Nomor 3 Tahun 2018 tentang Penerbitan Surat Keterangan Penelitian.
MENIMBANG	:	Surat dari Fakultas Kedokteran Universitas Trisakti Perihal Permohonan Rekomendasi Penelitian
N A M A	:	**Husnun Amalia**
ALAMAT	:	Jalan Sirnagalih Nomor 5 RT/RW. 003/003 Kelurahan Pasirlayung Kecamatan Cibeunying Kidul Kota Bandung Provinsi Jawa Barat
PEKERJAAN	:	Wiraswasta
JABATAN	:	Peneliti
NOMOR TELPON	:	08161307391
JUDUL PENELITIAN	:	***"Riset Evaluasi Manajemen Kasus TB-RO (Tuberkulosisis Resistan Obat)"***
BIDANG PENELITIAN	:	Kesehatan
LOKASI PENELITIAN	:	Jawa Timur, Jawa Tengah, Bengkulu, Sumatera Utara, Sulawesi Selatan, Sumatera Selatan, Nusa Tenggara Timur, Kalimantan Barat
WAKTU PENELITIAN	:	September 2019 – Februari 2020
STATUS PENELITIAN	:	Baru
ANGGOTA TIM PENELITIAN	:	dr. Hany Hairunisa, MCHSc, Prof.Dr.dr. Adi Hidayat,M.Sc Prof. Dr. dr. Pusparini, SpPK, dr Dyah Ayu Woro S, M. Biomed, dr. Rita Khairani,M.Kes,SpP, dr. Lie T. Merijanti S., MKK, dr. Henie Widowati,SpP, dr. Meiyanti Sp.FK, Agus Rahmat Hidayat, dr. Mulia, SpRad

Dikeluarkan di : Jakarta
Pada Tanggal : 22 September 2019

a.n. DIREKTUR JENDERAL
POLITIK DAN PEMERINTAHAN UMUM
DIREKTUR KEWASPADAAN NASIONAL,

Dr. AKBAR ALI, M.Si
Pembina Utama Muda (IV/c)

MELAKUKAN PENELITIAN, DENGAN KETENTUAN SEBAGAI BERIKUT :

1. Sebelum melakukan kegiatan penelitian harus melaporkan kedatangannya kepada Gubernur Cq. Kepala Badan Kesatuan Bangsa dan Politik setempat dengan menunjukkan surat keterangan penelitian ini.
2. Tidak dibenarkan melakukan penelitian yang tidak sesuai/tidak ada kaitannya dengan judul p enelitian dimaksud.
3. Harus mentaati sesuai ketentuan perundang-undangan yang berlaku serta mengindahkan adat istiadat yang berlaku.
4. Peneliti harus memberikan hasil penelitian kepada Instansi dan/atau Organisasi Perangkat Daerah (OPD) yang menerbitkan surat keterangan penelitian.
5. Apabila masa berlaku surat keterangan penelitian ini berakhir, sedangkan pelaksanaan penelitian belum selesai perpanjangan penelitian harus diajukan kepada instansi pemohon.
6. Surat keterangan penelitian ini akan dicabut kembali dan dinyatakan tidak berlaku, apabila ternyata pemegang surat keterangan penelitian tidak mentaati/mengindahkan ketentuan-ketentuan seperti tersebut di atas.

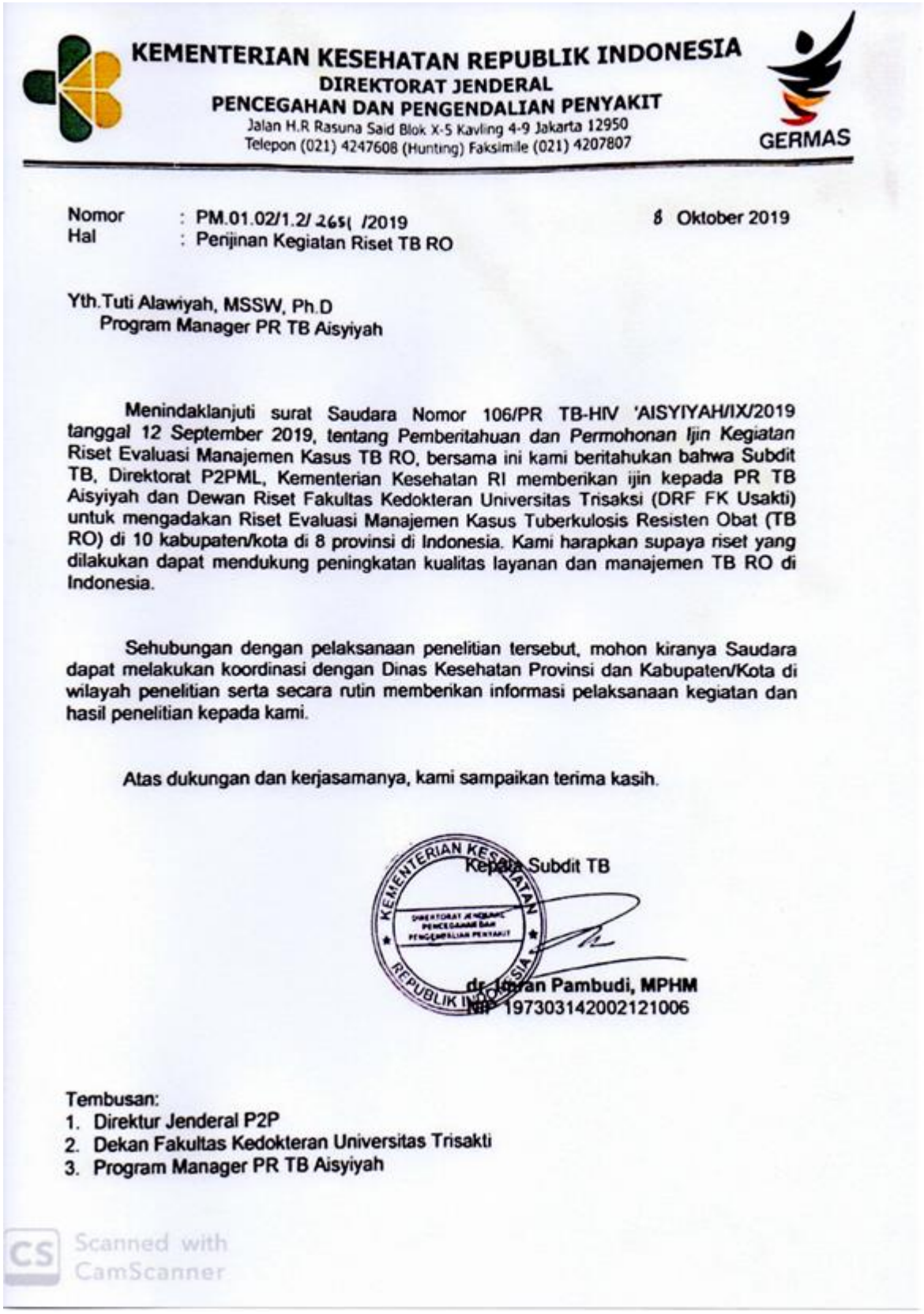
Tembusan kepada Yth :

1. **Kaban Kesbangpol Provinsi Jawa Timur;**
2. **Kaban Kesbangpol Provinsi Jawa Tengah;**
3. **Kaban Kesbangpol Provinsi Bengkulu;**
4. **Kaban Kesbangpol Provinsi Sumatera Utara;**
5. **Kaban Kesbangpol Provinsi Sumatera Selatan;**
6. **Kaban Kesbangpol Provinsi Sulawesi Selatan;**
7. **Kaban Kesbangpol Provinsi Nusa Tenggara Timur;**
8. **Kaban Kesbangpol Provinsi Kalimantan Barat.**

.....

Appendix 3

MDR TB Research Activity Permit from the Ministry of Health



KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
DIREKTORAT JENDERAL
PENCEGAHAN DAN PENGENDALIAN PENYAKIT
Jalan H.R Rasuna Said Blok X-5 Kavling 4-9 Jakarta 12950
Telepon (021) 4247608 (Hunting) Faksimile (021) 4207807

GERMAS

Nomor : PM.01.02/1.2/ 2651 /2019 — 8 Oktober 2019
Hal : Perijinan Kegiatan Riset TB RO

Yth. Tuti Alawiyah, MSSW, Ph.D
Program Manager PR TB Aisyiyah

Menindaklanjuti surat Saudara Nomor 106/PR TB-HIV 'AISYIYAH/IX/2019 tanggal 12 September 2019, tentang Pemberitahuan dan Permohonan Ijin Kegiatan Riset Evaluasi Manajemen Kasus TB RO, bersama ini kami beritahukan bahwa Subdit TB, Direktorat P2PML, Kementerian Kesehatan RI memberikan ijin kepada PR TB Aisyiyah dan Dewan Riset Fakultas Kedokteran Universitas Trisaksi (DRF FK Usakti) untuk mengadakan Riset Evaluasi Manajemen Kasus Tuberkulosis Resisten Obat (TB RO) di 10 kabupaten/kota di 8 provinsi di Indonesia. Kami harapkan supaya riset yang dilakukan dapat mendukung peningkatan kualitas layanan dan manajemen TB RO di Indonesia.

Sehubungan dengan pelaksanaan penelitian tersebut, mohon kiranya Saudara dapat melakukan koordinasi dengan Dinas Kesehatan Provinsi dan Kabupaten/Kota di wilayah penelitian serta secara rutin memberikan informasi pelaksanaan kegiatan dan hasil penelitian kepada kami.

Atas dukungan dan kerjasamanya, kami sampaikan terima kasih.

Kepala Subdit TB

dr. Imran Pambudi, MPHM
NIP 197303142002121006

Tembusan:
1. Direktur Jenderal P2P
2. Dekan Fakultas Kedokteran Universitas Trisakti
3. Program Manager PR TB Aisyiyah

Appendix 4

Qualitative Questionnaire Tools

QUALITATIVE RESEARCH EVALUATION OF MDR TB CASE MANAGEMENT TOOLS

2019

INFORMED CONSENT

Research Title

Case Management Evaluation Research MDR TB (Drug-Resistant Tuberculosis)

Introduction

Good morning, my name is (_____). I work for the Trisakti University Jakarta Medical Faculty Research Council and PR TB 'Aisyiah. We are currently researching drug-resistant tuberculosis (MDR TB) case management. This study will better understand how most people understand what MDR TB is, how to seek help from health workers when experiencing symptoms of MDR TB, and how it is implemented. MDR TB case management program in 10 cities in Indonesia. This information will help PR TB 'Aisyiyah in particular, and the government generally improves the delivery of better services.

This document I hold is a consent form. We ask for your consent to participate as a provider of information in this research. Feel free to ask any questions at any time. If there are any words you don't understand, please ask me.

Your role in this research

We chose you to provide information because of (1) your experience and knowledge in the TB/MDR TB control program (2) You are a person living in the area we selected as the research location. You will be a source of information in this research. If you are willing, I will give you a question using the question guide we have prepared. The interview will take approximately 45-60 minutes. This question guide contains questions about you, about your knowledge about TB/MDR TB, how the TB program is implemented in your area, what is the role of the government in this and what is the government's policy in the TB program, and what is your role in TB case management in the regions. You. If you don't like it, you may not answer this question.

After Research

The research team will record the answers to all those who are willing to become sources of information. However, we will keep confidential records of personal information for all who participated in this study.

Possible Risks and Benefits of Following this research

Risks: Some questions may be uncomfortable, and you can refuse to answer questions.

Advantage

Participation in this research is free of charge. To replace your used time, we provide transport replacement. Your participation in this research can assist the government in improving TB programs in Indonesia.

Confidentiality
We do not record your name or anything else that identifies you. We will keep your information specifically and keep it confidential.

Participation
You are free to choose whether to participate or not, and it does not matter if you choose not to participate. You can stop answering at any time, and you can refuse to answer questions.

Your rights
DRF FK Trisakti University permitted us to conduct this research. You may have questions about your rights in this study. If you need to ask, please contact me:

Name: …… Phone: …… ..…

If you have any questions regarding this research, you can ask the Principal Researcher:
Dr. dr. Husnun Amalia, Sp. Hp: 08161307391

Participation Agreement
I understand what it says about the TB-RO (Drug-Resistant Tuberculosis) Case Management Evaluation Research study, and if I participated. I understand what my rights are and what risks I am facing. I have time to ask. I understand that I participate in my own will. I understand that I can stop participating at any time.

Have all your questions been answered? (CIRCLE)
- □ Yes
- □ No.

Do you agree to join this research?
- □ Yes
- □ No.

As already mentioned, your views / opinions are very important. We will write down everything you say, but since we cannot speak while taking notes, so, so as not to lose information, we will record our speech so that we can write it down later. These recordings will be used only for the purpose of enabling us to better understand your opinion. This recording will not be played back for anything else. The interview will take approximately 1 hour.

Do we get approval to record?

- □ Yes
- □ No.

Interviewer Signature: _____

Date: _____

Informant / Respondent Signature: _____

Date: _____

General information

Interviewer Name: _____

Interviewer Identity: _____

Respondent Name: _____ Position / Title: _____

Organization / institution: _____ District / City: _____

Interview date: _____ / _____ / _____

Location of the Interview:
_____

Starting Time: _____

Time stops :_____

Demographic Information

1. Gender:

    o Male

    o Women

2. Age

    o 18-24 years

    o 25 - 34 years

    o 35 - 44 years

    o 45 years or more

    o Don't know

3. Groups

    o Case Manager

o Patient Support (who have worked> 1 year)

o Peer educators

o Cadres

o MDR TB patients (not enrolled)

o MDR TB patients (already enrolled)

o MDR TB patients (Drop out / loss to follow-up)

o Responsible for the TB program at the City / District Health Office

o Responsible for PMDT Hospital TB program

o Responsible for the TB program in private hospitals / clinics

o Responsible for the TB Puskesmas program

o TB Survivors / TB Survivors

4. Last Education Level

o Did not pass elementary school

o Graduated from elementary school

o Did not pass junior high school

o Graduated from junior high school

o Did not graduate from high school

o Graduated from high school

DATA FORM

Interviewer Instructions
Give key informant greetings. Introduce yourself if you haven't met before. **Thank the Key Informants for giving time to answer questions related to TB-RO case management. Provide a brief overview of the research and the reasons why this interview is necessary.** **Observe the demographic characteristics of Key Informants. Be clear about information, and only ask for information that can't be explained by the observation.**

General information

Interviewer Name: _____ Interviewer ID: _____

Respondent Name: _____ Position / Title: _____

Institution: _____ District / City: _____

Interview date: _____ / _____ / _____

Location of the Interview: _____

Starting Time: _____

Time stops :_____

Demographic Information

1. Gender:

    o Male

    o Women

2. Age

    o 19-24 years

    o 25 - 34 years

    o 35 - 44 years

    o 45 years or more

    o Don't know

3. Groups

- o Case Manager
- o Patient Support (who have worked> 1 year)
- o Peer educators
- o Cadres
- o RO TB patients (not enrolled)
- o RO TB patients (already enrolled)
- o TB RO patients (Drop out / loss to follow-up)
- o Responsible for the TB program at the City / District Health Office
- o Responsible for PMDT Hospital TB program
- o Responsible for the TB program in private hospitals / clinics
- o Responsible for the TB Puskesmas program
- o TB Survivors / TB Survivors

Interviewer Instructions:
Read out the statements below, or provide information in your own words before starting asking questions.

Thank you for taking the time to meet today. As already stated, when we asked your willingness to provide information regarding the implementation and mechanism of case management, poor treatment outcomes, and referral channels at the Provincial/District/City level. We will record the implementation evaluation (mechanism, referral flow, role and workings of the MDR TB team), reporting records, and mentoring MDR TB patients. All content we discuss will be treated ethically and of confidentiality as practiced in good research.

The information you provide will be guaranteed the confidentiality of and will be used only for this research. Participation in discussions is based on volunteerism, and there is no penalty for refusing to provide information on any of the questions. If you have further questions regarding this research, please contact lead researcher Husnun Amalia at 08161307391

Thanks.

Did we get your consent for this discussion? Yes ( ) No ( )

Are there any other questions before we start? Yes ( ) No ( )

Consent for a Recorded Discussion: Yes ( ) No ( )

As already mentioned, your views/opinions are significant. We will write down everything you say, but because it is not customary to speak while taking notes not to lose information, we will record our speech to write it down later. These recordings will be used only to enable us to understand your opinion better. This recording will not be played back for anything else. The interview will take approximately 1 hour.

Do we have your consent to record? Yes ( ) No ( )

Interviewer Signature: _____

Date: _____

Informant / Respondent Signature: _____

Date: _____

A. GUIDELINES FOR STRUCTURED INTERVIEW (In-dept interview) FOR CASE MANAGERS

1. How long have you served as a Case Manager (MK)?
2. Can you describe the process from the beginning when you got your assignment as MK? (Where did the information come from, who contacted him, how did he give the information?)
3. What motivates you to become a Case Manager?
4. What is your job apart from being a Case Manager?
5. If yes: What is your job?
6. What are the daily activities apart from being the Case Manager?
7. How do you divide your time between working as a Case Manager and your daily activities/work other than as a Case Manager?
8. What constraints do you feel when performing your function as a Case Manager?
9. Have you ever attended any training during your term as Case Manager?
10. What training have you received while you were a Case Manager?
11. Have you ever attended MDR TB case management training?
12. Can you tell us about the training? (When did the training take place, who trained it, and how long did the training take?)
13. Did you know that the Case Manager received an honorarium?
14. If you don't get an honorarium, will you still become the Case Manager?
15. If I may know how much honorarium do you get?
16. What is the role of the community MDR TB Team (Case Manager, Patient Support, peer educators/cadres, and cadres) in the case management process?
17. What is the relationship between the MDR TB Team, the community, and related stakeholders (Provincial/District/City Health Office, PMDT Hospital, PPM, and Puskesmas).
18. Is the referral flow to guide MDR TB patients in the community going well? What do you think?
19. How many MDR TB patients have been mentored during 2019?
20. How many MDR TB patients who have not been enrolled (have not started therapy)?
21. How many MDR TB patients who have completed / successful / cured treatment?
22. So far, how many assisted patients have dropped out of medicine?
23. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance? How much is the amount received, and how is it divided?

Thanks for your time and opinion!

B. STRUCTURED INTERVIEW GUIDELINES (In-dept interview) FOR PATIENT SUPPORT (PATIENT SUPPORTERS)

1. How long have you served as a patient supporter (PS)?
2. If it has been more than 1 year, can you tell us the difference between before and after a Case Manager?
3. What motivates you to be patient support?
4. Do you know that PS gets an honorarium?
5. If you don't get an honorarium, will you still become PS?
6. If I may know how much honorarium do you get?
7. How is the amount of the honorarium calculated? (Is it per patient you accompany / visit / day / month)
8. What is your job apart from being a PS?
9. If yes: What is your job?
10. What are the daily activities apart from being a PS?
11. Does PS work interfere with your daily activities?
12. How do you divide your time between work as a PS with your daily activities/work other than PS?
13. What obstacles do you have in performing your function as patient support?
14. Can you tell us how you started as a PS?
15. Are there any specific criteria to become PS?
16. Did you become a PP of your own accord, or is there another reason?
17. Have you ever attended any training during your time as PS?
18. What training have you received during your time as PS?
19. Have you ever attended patient mentoring training?
20. Can you tell us about the training? (When did the training take place, who trained it, and how long did the training take?)
21. Can you describe the process from the start? You got the assignment to assist the patient? (Where did the information come from, who contacted him, how did he provide the information, when and did the case manager already exist at that time?)
22. In your opinion, is there any difference in the process after the case manager's existence?
23. How many MDR TB patients have you assisted so far?
24. How many patients are you currently working with?
25. How many patients have completed/succeeded/cured the treatment?
26. So far, how many patients have you assisted who were absent / dropped out of treatment?
27. What do you think could have caused this patient to drop out? (Can you tell us more about the cases of these patients who dropped out?)
28. What do you think can be done so that this kind of thing does not happen again?
29. How often do you meet the patients you accompany outside the hospital?
30. Can you tell us where you usually meet this patient?

31. Can you tell us about what made you visit/have to meet patients other than in the hospital?
32. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?
33. Is the referral flow to guide MDR TB patients in the community going well? What do you think?
34. What is the role of the community MDR TB Team (Case Manager, Patient Supporter, peer educators/cadres, and cadres) in the case management process?
35. What is the relationship between the MDR TB Team, the community, and related stakeholders (Provincial / District / City Health Office, PMDT Hospital, PPM, and Puskesmas).

Thanks for your time and opinion!

C. GUIDELINES FOR A STRUCTURED INTERVIEW (In-dept interview) FOR PEER EDUCATORS (PE)

1. How long have you served as a peer educator?
2. Is the referral flow to guide MDR TB patients in the community going well? What do you think?
3. What do you do other than being PE?
4. If yes: What is your job?
5. What are the daily activities apart from being PE?
6. How do you divide your time between work as a PE and your daily activities/work other than PE?
7. What constraints do you have in performing your function as PE?
8. Have you ever attended any training while being a PE?
9. What training have you received while you were a PE?
10. Have you ever attended MDR TB case management training?
11. Can you tell us about the training? (When did the training take place, who trained it, and how long did the training take?)
12. Can you tell us about the process from the beginning you got your assignment as PE? (Where did the information come from, who contacted him, how did he give the information?)
13. What motivates you to become a PE?
14. Do you know that PE gets an honorarium?
15. If you don't get an honorarium, will you still become a PE?
16. If I may know how much honorarium do you get?
17. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?

Thanks for your time and opinion!

D. IN-DEPTH INTERVIEWING GUIDELINES FOR CADRES

1. How long have you served as a cadre?
2. Is the referral flow to guide MDR TB patients in the community going well? What do you think?
3. What do you do besides being a cadre?
4. If yes: What is your job?
5. What are the daily activities apart from becoming a cadre?
6. How do you divide your time between work as a cadre and your daily activities/work other than a cadre?
7. What obstacles did you experience in performing your function as a cadre?
8. Have you ever attended any training while becoming a cadre?
9. What training have you received while being a cadre?
10. Have you ever attended a Cadre training for MDR TB case management?
11. Can you tell us about the training? (When did the training take place, who trained it, and how long did the training take?)
12. Can you describe the process from the beginning when you got your assignment as a cadre? (Where did the information come from, who contacted him, how did he give the information?)
13. What motivates you to become a cadre?
14. Did you know that Kader received an honorarium?
15. If you don't get an honorarium, you will still be a cadre?
16. If I may know how much honorarium do you get?
17. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?

Thanks for your time and opinion!

E. GUIDELINES FOR STRUCTURED INTERVIEW (In-dept interview) FOR RO TB PATIENTS (NOT ENROLLED)

1. How were you initially diagnosed with MDR TB?
2. Have you ever received any explanation about MDR TB? Where and who gives)
3. In your opinion, what is the diagnosis made by the Rapid Hospital?
4. What do you think about the facilities and infrastructure in this hospital / puskesmas?
5. Have you had MDR TB treatment?
6. If not, can you tell us what your reason for not starting treatment is?
    a. Is it because the distance to MDR TB services is far or difficult to access?
    b. Is it because of medical expenses?
    c. Is there anything else? Is it because you are worried that others will find out that you have TB? Can you tell me?
7. Can you tell us about the obstacles that kept you from starting treatment?
8. What are you feeling right now?
9. What efforts have you made to reduce or treat the TB symptoms you still have?
10. Did the case manager or PS / Kader try/encourage you to start treatment? How do they do it?

Thanks for your time and opinion!

F. STRUCTURED INTERVIEW GUIDELINES (In-depth interview) FOR MDR TB (ALREADY ENROLLED)

1. How did you start with MDR TB?
2. How did you start with MDR TB treatment at the hospital / puskesmas?
3. In your opinion, what is the diagnosis made by the Rapid Hospital?
4. How long will your TB treatment take?
5. Who provided assistance to pay for your treatment?
6. How much is the monthly expenditure for TB treatment?
7. How do health workers monitor you / during treatment?
8. What do you think about the facilities and infrastructure in this hospital / puskesmas?
9. Do you / have a PMO? Who?
10. Have you ever received an explanation about MDR TB from the case manager / PS/cadre?
11. How are the services provided by health workers at this puskesmas?
12. What problems did you have during the treatment?
13. Regarding MDR TB treatment, do people with MDR TB have the right to free TB medicines?
    a. Are the quality of TB drugs currently available guaranteed?
    b. Does the patient have options regarding the location of treatment?
14. What support is available to help MDR TB patients complete their treatment overall?
15. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?
16. According to you / What factors contributed to your success / in treatment. How about social support from family and services?

Thanks for your time and opinion!

G. STRUCTURED INTERVIEW GUIDELINES (In-dept interview) FOR MDR TB PATIENTS (Drop out / loss to follow-up)

1. How did you start with MDR TB?
2. How did you start with MDR TB treatment at the hospital / puskesmas?
3. In your opinion, what is the diagnosis made by the Rapid Hospital?
4. How will health workers monitor you / during treatment?
5. What do you think about the facilities and infrastructure in this hospital / puskesmas?
6. Do you / have a PMO? Who?
7. Have you ever received an explanation about MDR TB from the case manager/PS/cadre?
8. How are the services provided by health workers at this puskesmas?
9. What were your obstacles during the treatment?
10. Does the patient have options regarding the location of treatment?
11. What support is available to help MDR TB patients complete their treatment in their entirety?
12. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?
13. How often do you meet with your patient support/cadre companions? Every day?
14. Is your PS/cadre always ready to help when you need it?
15. Can you tell us how your PS / Kader assisted? Do they visit your house, or is there another way? Please explain.
16. In your opinion, what were the factors that made it difficult for you to finish the treatment? (side effects, cost, stigma, etc.)
17. After you decided to stop your treatment, what did your companion (PS / Kader) do? Are there any efforts from them to continue to encourage you to return to treatment?
18. What are you feeling right now?
19. What efforts did you make to solve your health problem (your TB)? Are there any attempts outside of treatment? Herbal or traditional medicine?

Thanks for your time and opinion!

H. STRUCTURED INTERVIEW GUIDELINES (In-depth interview) FOR THE PERSON IN CHARGE OF THE TB PROGRAM AT THE CITY/DISTRICT HEALTH OFFICE

1. Under the position that you hold
    a. Do you think that pulmonary TB is important in the health program?
    b. Why do you think / pulmonary TB is important in health programs?
    c. What do you think / the current funding for pulmonary TB?
2. What do you think / about the source of funding for implementing the pulmonary TB program?
3. What do you think / about the funds coming from the Global Fund?
4. What do you think / about the facilities and infrastructure in implementing the pulmonary TB control program?
5. How about the supply of Anti-Tuberculosis Medicine?
6. How is the cross-sector cooperation in supporting the implementation of the pulmonary TB control program?
7. What is the role of the health office in overcoming the problem of pulmonary TB?
8. How is the training provided to TB officers?
9. How is the recording and reporting of the pulmonary TB control program?
10. What is the monitoring and evaluation system you / do in the pulmonary TB control program?
11. When the District Health Office. Deli Serdang created and implemented an MDR TB control program with the DOTS Plus Strategy?
12. How is the development of human resources in tackling MDR TB?
13. How is the cooperation between the Health Office and related agencies with MDR TB?
14. How is the funding for MDR TB control?
15. How is the flow of examination for MDR-TB patients?
16. What is the appropriate case-finding strategy for MDR TB?
17. Are MDR-TB patients on treatment monitored by PMO?
18. How is the availability of second-line OAT and facilities and infrastructure in tackling MDR TB?
19. How is the success that has been obtained? Are there any obstacles or constraints in overcoming MDR TB?
20. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?

Thanks for your time and opinion!

I. STRUCTURED INTERVIEW GUIDELINES (In-dept interview) FOR THE PERSON IN CHARGE OF THE PMDT HOSPITAL TB PROGRAM

1. What do you think about the facilities and infrastructure needed in the pulmonary TB program?
2. What about the source of funding in the pulmonary TB control program?
3. Concerning the TB control program's implementation, what are the obstacles that are often encountered?
4. What strategies are used to overcome these constraints?
5. In case finding
    a. How is the implementation of a pulmonary TB case finding conducted at the Puskesmas?
    b. Have pulmonary TB cases been found door-to-door to residents' homes?
    c. Has the case finding reached the target, and how many targets?
6. In the examination of BTA (+)
    a. How do you check BTA (+)?
    b. After the results come from the PRM, what do you / do in diagnosing the sufferer?
7. Related to counseling
    a. Who does education?
    b. How is tuberculosis education carried out?
    c. How many times was there a frequency of outreach?
8. What is the flow of examination for pulmonary TB patients at this puskesmas?
9. What is the diagnostic procedure for pulmonary TB?
10. What about the time it takes to make a diagnosis of pulmonary TB?
11. How many people are responsible for pulmonary tuberculosis, and what are their jobs?
12. Have you received/received any training in TB control programs?
13. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?

Thanks for your time and opinion!

J. STRUCTURED INTERVIEW GUIDELINES (In-dept interview) FOR THE PERSON IN CHARGE OF THE TB PROGRAM IN PRIVATE HOSPITALS / CLINICS

1. What do you think about the facilities and infrastructure needed in the pulmonary TB program?
2. What about the source of funding in the pulmonary TB control program?
3. Concerning the TB control program's implementation, what are the obstacles that are often encountered?
4. What strategies are used to overcome these constraints?
5. In case finding
    a. How is the implementation of a pulmonary TB case finding conducted at the Puskesmas?
    b. Have pulmonary TB cases been found door-to-door to residents' homes?
    c. Has the case finding reached the target, and how many targets?
6. In the examination of BTA (+)
    a. How do you check BTA (+)?
    b. After the results come from the PRM, what do you / do in diagnosing the sufferer?
7. Related to counseling
    a. Who does education?
    b. How is tuberculosis education carried out?
    c. How many times was there a frequency of outreach?
8. What is the flow of examination for pulmonary TB patients at this puskesmas?
9. What is the diagnostic procedure for pulmonary TB?
10. What about the time it takes to make a diagnosis of pulmonary TB?
11. How many people are responsible for pulmonary tuberculosis, and what are their jobs?
12. Have you received/received any training in TB control programs?

Thanks for your time and opinion!

K. GUIDELINES FOR STRUCTURED INTERVIEW (In-depth interview) FOR THE PERSON IN CHARGE OF THE TB PUSKESMAS PROGRAM

1. What do you think about the facilities and infrastructure needed in the pulmonary TB program?
2. What about the source of funding in the pulmonary TB control program?
3. Concerning the TB control program's implementation, what are the obstacles that are often encountered?
4. What strategies are used to overcome these constraints?
5. In case finding
    a. How is the implementation of pulmonary TB case finding conducted at the Puskesmas?
    b. Have pulmonary TB cases been found door-to-door to residents' homes?
    c. Has the case finding reached the target, and how many targets?
6. In the examination of BTA (+)
    a. How do you check BTA (+)?
    b. After the results come from the PRM, what do you / do in diagnosing the sufferer?
7. Related to counseling
    a. Who does the education?
    b. How is tuberculosis education carried out?
    c. How many times was there a frequency of outreach?
8. What is the flow of examination for pulmonary TB patients at this puskesmas?
9. What is the diagnostic procedure for pulmonary TB?
10. What about the time it takes to make a diagnosis of pulmonary TB?
11. How many people are responsible for pulmonary tuberculosis, and what are their jobs?
12. Have you received/received any training in TB control programs?
13. What is your main function in the MDR TB control program?
14. Is there any training provided to officers?
15. How is the collaboration done by puskesmas in overcoming MDR TB?
16. How is the funding to tackle MDR TB?
17. Are patients on MDR TB treatment monitored by PMO?
18. How is the correct case finding of MDR TB?
19. How is the availability of second-line OAT and facilities and infrastructure in tackling MDR TB?
20. How is treatment monitoring carried out?
21. How has the success been obtained, are there any obstacles to overcoming MDR TB?
22. What steps were taken to overcome these obstacles or constraints?
23. Is it possible to refuse to continue treatment when the patient seems unlikely to adhere to the prescribed treatment? What happens if the patient is non-adherent?
24. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?

Thanks for your time and opinion!

L. IN-DEPT INTERVIEW GUIDELINES FOR TB SURVIVORS

1. When you went to the puskesmas, did any staff explain what pulmonary tuberculosis is and how to cure it?
2. In your opinion, how are the services provided by health workers at this puskesmas?
3. In your opinion, are the results of the diagnosis made by the Puskesmas fast?
4. How did you start with pulmonary TB treatment at the puskesmas?
5. Has the officer ever provided counseling on pulmonary TB?
6. In your opinion, are the results of the diagnosis made by the Puskesmas fast?
7. How long was your MDR TB treatment at that time?
8. Who provided assistance to pay for your treatment?
9. How much do you have to pay per month for your MDR TB treatment?
10. In your opinion, what are your success factors / in undergoing MDR TB treatment?
11. In your opinion, what obstacles do you experience in getting TB treatment regularly until it is over?
12. What support do MDR TB patients get from TB control programs? Is there any transport/nutrition assistance?

Thanks for your time and opinion!

FOCUS GROUP DISCUSSION GUIDE

A. Demography

No.	Initials	Age	Gender	Education	Institution	Position
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

B. General Situation and Understanding of MDR TB

1. What do you think about the source of funding for the pulmonary TB program?
2. What do you think about the facilities and infrastructure in implementing the pulmonary TB program?
3. How is the collaboration carried out by the puskesmas to overcome the problem of pulmonary tuberculosis?
4. What do you think of the diagnostic procedure for pulmonary TB?
5. Related to training, have any officers been trained?
6. How long will it take to be diagnosed (in weeks, clinic visits)?
7. How much should the patient pay for the test? Are there any additional costs associated with the test? What about medical expenses?
8. How many times do patients have to go to the hospital/health service until they receive their final diagnosis?
9. What information do you provide about MDR TB and care from health care providers?
10. What is the MDR TB referral flow in your area?
11. What is the flow of MDR TB handling in your area?
12. What is the role of the case manager in the TB program. Is his presence essential?
13. What is the system for recording and reporting TB cases in your area?
14. What is the role of private clinics / private practicing doctors in the National TB program? Is there a system that has been built in terms of recording and reporting?
15. Are there adequate capacity and good quality MDR TB diagnosis and treatment services? If not, are there options to fill the gap?

16. Is the flow of recording, reporting, and mentoring MDR TB patients by case managers, PS, PE, and cadres running well?
17. Is the referral flow to guide MDR TB patients in the community going well? What do you think?
18. What do you think are the problems related to poor treatment outcomes at the district/city level?
19. What are the problems with MDR TB in terms of various factors and how to overcome them?
20. What are the roles and ways of working between case managers, peer educators/cadres, patient supporters, and other stakeholders in hospitals and other health facilities?
21. What type of support is provided to MDR TB patients during treatment (e.g., social assistance, financial motivation, food packages)?

Thanks for your time and opinion!

Appendix 5

Quantitative Questionnaires

QUANTITATIVE RESEARCH EVALUATION OF MDR TB CASE MANAGEMENT TOOLS

2019

INFORMED CONSENT

Research Title

Case Management Evaluation Research MDR TB (Drug-Resistant Tuberculosis)

Introduction

Good morning, my name is (_____). I work for the Trisakti University Jakarta Medical Faculty Research Council and PR TB 'Aisyiah. We are currently researching drug-resistant tuberculosis (MDR TB) case management. This study will better understand how most people understand what MDR TB is, how to seek help from health workers when experiencing symptoms of MDR TB, and how it is implemented. MDR TB case management program in 10 cities in Indonesia. This information will help PR TB 'Aisyiyah in particular, and the government generally improves the delivery of better services.

This document I hold is a consent form. We ask for your consent to participate as a provider of information in this research. Feel free to ask any questions at any time. If there are any words you don't understand, please ask me.

Your role in this research

We chose you to provide information because of (1) your experience and knowledge in the TB/MDR TB control program (2) You are a person living in the area we selected as the research location. You will be a source of information in this research. If you are willing, I will give you a question using the question guide we have prepared. The interview will take approximately 45-60 minutes. This question guide contains questions about you, about your knowledge about TB/MDR TB, how the TB program is implemented in your area, what is the role of the government in this and what is the government's policy in the TB program, and what is your role in TB case management in the regions. You. If you don't like it, you may not answer this question.

After Research

The research team will record the answers to all those who are willing to become sources of information. However, we will keep confidential records of personal information for all who participated in this study.

Possible Risks and Benefits of Following this research

Risks: Some questions may be uncomfortable, and you can refuse to answer questions.

Advantage

Participation in this research is free of charge. To replace your used time, we provide transport replacement. Your participation in this research can assist the government in improving TB programs in Indonesia.

Confidentiality

We do not record your name or anything else that identifies you. We will keep your information specifically and keep it confidential.

Participation

You are free to choose whether to participate or not, and it does not matter if you choose not to participate. You can stop answering at any time, and you can refuse to answer questions.

Your rights

DRF FK Trisakti University permitted us to conduct this research. You may have questions about your rights in this study. If you need to ask, please contact me:

Name: …… Phone: …… ..…

If you have any questions regarding this research, you can ask the Principal Researcher:

Dr. dr. Husnun Amalia, Sp. Hp: 08161307391

Participation Agreement

I understand what it says about the TB-RO (Drug-Resistant Tuberculosis) Case Management Evaluation Research study, and if I participated. I understand what my rights are and what risks I am facing. I have time to ask. I understand that I participate in my own will. I understand that I can stop participating at any time.

Have all your questions been answered? (CIRCLE)

- □ Yes
- □ No.

Do you agree to join this research?

- □ Yes
- □ No.

As already mentioned, your views / opinions are very important. We will write down everything you say, but since we cannot speak while taking notes, so, so as not to lose information, we will record our speech so that we can write it down later. These recordings will be used only for the purpose of enabling us to better understand your opinion. This recording will not be played back for anything else. The interview will take approximately 1 hour.

Do we get approval to record?

- □ Yes
- □ No.

Interviewer Signature: _____

Date: _____

Informant / Respondent Signature: _____

Date: _____

AGREEMENT TO BE RESPONDENT OF THE RESEARCH EVALUATION OF MDR TB CASE MANAGEMENT

Trisakti Faculty of Medicine Research Council 2019

The undersigned below	:
Name (initials)	:
Age	:
Profession/Occupation	:
Address	:

Stating truthfully that after getting an explanation of the research and understanding the researcher's information, and knowing the purpose and benefits, I hereby voluntarily become a respondent in this study.
Thus, this statement is made truthfully and with full awareness and without coercion from any party.

……., …… .2019
Respondent

(……)

RESEARCH QUESTIONNAIRE
DRUG RESISTANT TB CASE MANAGEMENT EVALUATION

Trisakti Faculty of Medicine Research Council 2019

INSTRUCTIONS

1. Read carefully each question and each alternative answer that is given.
2. Select an alternative answer that suits you best and put a tick (√) on the one that you think is correct
3. Make sure all questions are answered completely and until finished.

Day / date of interview: ……. /… ../… ../ 2019

RESPONDENT ADDRESS		
1	District/City	
2	Kecamatan	
3	Kelurahan	
4	RT/RW	

A. CHARACTERISTICS OF RESPONDENTS

NO	QUESTION	ANSWER
1	Respondent's name / initials	
2	ID No	1. Have :…… 2. Don't have
3	Age/Date of Birth	……years/ ……
4	Gender	1. Male 2. Female
5	Marriage Status	1. Single 2. Married 3. Divorced/Widow
6	Education	1. Not going to school 2. Did not complete elementary school 3. Graduated from elementary school 4. Graduated from junior high school 5. Graduated from high school 6. Graduated from College
7	Occupation	1. Not working 2. Labor 3. Farmers / fishermen 4. Private employees 5. PNS / TNI / POLRI 6. Self Employed/businessman 7. Others …… ..
8	Monthly Income	1. <UMR (Rp……..,-/month) 2. >UMR (Rp……..,-/month) 3. Don't Have

B. HISTORY OF MDR TB DIAGNOSIS AND TREATMENT

NO	QUESTION	ANSWER
1.	When were you diagnosed with MDR TB?	Date/month/year……/……/……..
2.	The place was diagnosed with MDR-TB	1. Hospital 2. Puskesmas 3. Private doctor
3.	After you were diagnosed with MDR TB, did you start therapy right away?	1. Yes, go to question no. 4 2. No, state the reason? (go to question C.1)

4.	When was the first time you were treated for MDR-TB?	Date/month/year ……./……/……
5.	State your status in the category of MDR TB treatment cure success * * see description below	1. Success / recover 2. Failed 3. Disconnect treatment 4. Complete 5. Not evaluated 6. On Treatment
6.	Have you been hospitalized before starting MDR-TB treatment? (In the past month)	1. Yes 2. No
7.	How long have you been treated for MDR TB?	..... month
8.	As long as you seek treatment if ever dropped out of treatment?	1. Yes, how long: …… .. 2. No.
9.	During your treatment, have you not been taking medication (at least one day)?	1. Yes 2. No (go to question 11)
10.	Why did you stop taking medication / drop out of treatment?	1. Side effects occur 2. Lack of information from officers 3. There is a change in how to take medicine 4. Others please specify ……
11.	Have you experienced any side effects from MDR TB medicines?	1. Yes 2. No (go to question C 1.)
12.	If yes, when did you first experience side effects?	Date/month/year ……./……/……
13.	Mention any side effects you have (can be more than 1)	1. Nausea 2. Dizziness 3. Itchy skin 4. Diarrhea 5. Tingling 6. Joint / muscle pain 7. Impaired vision 8. Hearing loss 9. Yellow skin 10. The chest feels hot 11. peeling skin 12. Depression 13. Hallucinations, specify…… 14. Others, specify …… ..….

14.	Do you know how many MDR TB drugs you took?	1. Yes 2. No
15.	State the name of the drug, dosage and how to drink it?	1. Mention the name of the drug name
16.	Where do you take medicine?	1. Puskesmas 2. Hospital 3. Home 4. Other….

Note:

1. **Success** is a patient who has completed 9-11 months of short-term treatment and is cured
2. **Failure** is if the patient is on medication, there is a change in the BTA to be positive, but there are serious side effects or resistance to second-line OAT.
3. **Completed** is that the patient completed treatment according to the duration of treatment but there is no evidence that he is cured or failed
4. **Dropouts** are patients who stop treatment for 2 consecutive months or more.
5. Not evaluated are patients who have changed treatment but the outcome of treatment is unknown.
6. **The treatment initiation interval** is the difference between the date of diagnosis and the first date of short-term TB-RO treatment

C. RISK FACTORS

NO	QUESTION	ANSWER
1.	Do you drink alcohol?	1. Yes 2. No
2.	Where have you had TB infection?	1. Lungs (pulmonary) 2.Outside the lungs (extra-pulmonary) 3. Don't know
3.	Have you previously had contact with someone with MDR TB?	1. Yes 2. No 3. Don’t know
4.	Have you previously had lung infections (other than TB)?	1. Yes 2. No 3. Don’t know

5.	Do you have HIV / AIDS?	1. Yes 2. No
6.	Did you suffer from Diabetes mellitus before being diagnosed with RO TB?	1. Yes 2. No
7.	Are you drugs user?	1. Yes 2. No
8.	Have you ever been detained/imprisoned by Police?	1. Yes, how long…… 2. No

D. KNOWLEDGE ABOUT MDR TB

NO	QUESTION	ANSWER
1	TB disease is caused by germs	1. True 2. False 3. Don't know
2	The main symptom of TB disease is a cough for more than 2 weeks	1. True 2. False 3. Don't know
3	TB disease can be transmitted from TB patients to people around them if not treated immediately	1. True 2. False 3. Don't know
5	People who don't regularly take TB drugs can get MDR-TB	1. True 2. False 3. Don't know
6	MDR-TB is the impact of treatment non-compliance in TB category I	1. True 2. False 3. Don't know
7	TB patients will be declared MDR through follow-up examinations (Molecular Rapid Test)	1. True 2. False 3. Don't know
8	MDR-TB patients will undergo long treatment and large amounts of drugs	1. True 2. False 3. Don't know
9	MDR-TB patients are required to take medication every day according to the program.	1. True 2. False 3. Don't know
10	MDR-TB patients need to use personal protective equipment (masks) because it can infect their family and people around them.	1. True 2. False 3. Don't know

E. DISTANCE / ACCESS TO HEALTH CENTER (Puskesmas / Hospital)

NO	QUESTION	ANSWER
1.	Where do you take MDR TB drugs	1. Hospital, State: …… . 2. Puskesmas State: …… .. 3. Others ……
2.	Are the places mentioned above (Puskesmas / Hospital) easy to reach?	1. No. 2. Yes (go directly to question no. 4)
3.	Is this a barrier for you to take the drug?	1. Yes 2. No
4.	Is there any transportation that can be used from where you live to the place mentioned above?	1. Yes (go directly to question F.1) 2. Nothing
5.	Is this a barrier for you to take the drug?	1. Yes 2. No

F. MDR TB DRUGS AVAILABILITY

NO	QUESTION	ANSWER
1	Is MDR TB drug in health services always available?	1. Yes (go directly to question 3) 2. No.
2	If you don't get TB medicine at the health service you usually visit, will you look elsewhere?	1. Yes, Where :…… 2. No.
3	What is the quality (packaging, shape and color) of RO TB drugs that you get from your place of treatment?	1. Good 2. Bad
4	Do you pay attention to the expiration date of any TB drugs you receive?	1. Yes 2. No

G. PROVISION OF INFORMATION FROM OFFICERS

NO	QUESTION	ANSWER
1	During your treatment, did you get information about TB from health workers	1. Yes 2. No
2	Have you ever received information about the length of treatment you have to undergo during TB treatment?	1. Yes 2. No

3	Do officers provide information that TB patients can transmit the disease?	1. Yes 2. No
4	Have you ever received information about the patient's recovery during TB treatment?	1. Yes 2. No
5	Are the staff friendly / friendly to serve you during the medical examination?	1. Yes 2. No
6	Does the officer give encouragement / motivation to you to get well soon?	1. Yes 2. No
7	Did the officer provide an explanation about the importance of undergoing regular treatment to completion?	1. Yes 2. No
8	Did the officers listen to your every complaint regarding drug use?	1. Yes 2. No (go to question no. 10)
9	Does the officer record all complaints related to drug use?	1. Yes 2. No
10	Do health workers help resolve complaints related to drug use?	1. Yes 2. No
11	Does the officer provide an explanation regarding the rules for taking medicine including the number of pills swallowed, the method, and the schedule for taking the medicine?	1. Yes 2. No
12	Does the officer provide an explanation regarding the risks / complications if you do not undergo complete treatment?	1. Yes 2. No
13	Does the staff provide information on the symptoms of possible side effects and how to deal with them?	1. Yes 2. No
14	Do health workers provide health education to TB patient’s families?	1. Yes 2. No

H. SUPERVISOR FOR ADMINISTERING MEDICATION (PMO)

NO	QUESTION	ANSWER
1	Do you have a Drug Administration (PMO)?	1. Yes 2. No
2	Who is your PMO?	1. Family members

		2. Close relatives 3. Health workers 4. PS 5. Cadres 6. Others ...
3	If your PMO is a member of your family, who are the members of the family?	1. Father 2. Mother 3. Little brother/sister 4. Brother/sister 5. Husband 6. Wife 7. Others ……
4	Does your PMO always remind you to take medicine?	1. Yes, Where? …… 2. No. 3. Sometimes
5	Does your PMO always provide encouragement / motivation for regular treatment?	1. Yes 2. No

I. THE ROLE OF PATIENT SUPPORTERS / PEER EDUCATORS / CADRE

NO	QUESTION	ANSWER
1	Do you have patient supporter/ peer educators / cadres?	1. Yes 2. No (go directly to Question J. 1)
2	During your treatment, did you get information about TB from patient supporter / peer educators / cadres?	1. Yes 2. No
3	Have you ever received information about the length of treatment you have to undergo during TB treatment?	1. Yes 2. No
4	Have you ever received assistance during TB treatment from patient supporters / peer educators / cadres?	1. Yes, often 2. No. 3. Sometimes
5	Do patient supporter / peer educators / cadres accompany you every day?	1. Yes 2. No. Mention how many times a week …… ..
6	Are patient supporters / peer educators / cadres welcoming / friendly to serve you?	1. Yes 2. No
7	Do patient supporters / peer educators / cadres encourage / motivate you to get well soon?	1. Yes 2. No

8	Did patient supporters / peer educators / cadres explain the importance of undergoing regular treatment to completion?	1. Yes 2. No
9	Do peer educators / cadres listen to your every complaint and help resolve them?	1. Yes 2. No
10	Do patient supporters / peer educators / cadres provide health education to families with TB?	1. Yes 2. No
11	Are side effects evaluated daily?	1. Yes 2. No
12	Is there a special form to report the side effects of MDR TB drugs?	1. Yes 2. No
13	In your opinion, are patient supporters / peer educators / cadres always ready to help or carry out their duties properly?	1. Yes 2. No

J. ENVIRONMENT SANITATION

NO	QUESTION	ANSWER
1	Is the type of floor you are using waterproof (Cement, Tile, Ceramic)?	1. Yes 2. No
2	Does every room in your house have a window?	1. Yes 2. No
3	Is your house dark during the day without lighting such as lights?	1. Yes 2. No
4	Does your house have other ventilation besides windows?	1. Yes 2. No
5	Have your house cleaned every day?	1. Yes 2. No
6	Do you have clean water facilities?	1. Yes 2. No

K. SOCIAL ECONOMIC

NO	QUESTION	ANSWER
1	Does your income meet your daily needs?	1. Yes 2. No
2	Do you work with a monthly salary ?	1. Yes 2. No

3	Did you receive transportation money from the TB control program?	1. Yes 2. No
4	Do you get nutritional support (food / milk / etc)	1. Yes 2. No

L. STIGMA

NO	QUESTION	ANSWER
1.	Have you ever felt excluded from your family / closest people because you suffer from MDR TB?	1. Yes 2. No
2.	Have you ever felt ostracized from the environment because you have MDR TB?	1. Yes 2. No
3.	Have you ever felt excluded from your work environment because you have MDR TB?	1. Yes 2. No
4.	Have you ever been dismissed from work because you had MDR TB?	1. Yes 2. No
5.	Have you ever been refused work after your status with MDR TB was discovered by your prospective leadership?	1. Yes 2. No