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Analysis of the Drug-Resistant Tuberculosis Patients Support Program in Palembang City

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ABSTRACT

Drug-resistant tuberculosis (DR-TB) is a major challenge in TB control in Indonesia. Palembang City recorded the highest cases of DR-TB in South Sumatra in 2023 with 96 cases and a treatment success rate of only 58.97%. Based on Presidential Regulation No. 67 of 2021, the community has an important role in TB control. The purpose of this research is to evaluate the responsiveness, accuracy, equity, and adequacy of the drug-resistant tuberculosis patient accompaniment program in achieving successful treatment in the Healthy Society Community of Sriwijaya City Palembang using the policy evaluation criteria of William Dunn (2003). This research method uses a qualitative research type with a descriptive design. Data collection through interviews, observations, and literature studies. The research results show that service adequacy has reached remote areas, but geographical barriers still exist. Access has been leveled out, but there are still gaps for mono-resistant patients. Program responsiveness is quite good, but coordination with the health department needs to be improved. In terms of accuracy, the ability to implement the program has been aligned with national policies. The conclusion of this study is that the TB patient mentoring program has been quite effective, but there are still obstacles to access and cross-sector collaboration.

Keywords *: Drug-Resistant Tuberculosis; patient Support; community*

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INTRODUCTION

Tuberculosis (TB) is one of the top ten causes of death worldwide and is the leading cause of death from infection In 2023, Indonesia reported 821,200 cases of TB, the highest number in recent years (1). Additionally, Indonesia ranks fifth highest for drug-resistant TB (DR-TB), which is a condition when TB bacteria do not respond to first-line drugs, requiring treatment with second-line drugs that are stronger and last longer (18–24 months) (2). Treating DR-TB is not only medically challenging but also impacts the psychosocial aspects of patients, such as anxiety, severe side effects, social stigma, and low support from the surrounding environment. This situation leads to a high rate of treatment discontinuation, partly due to inadequate support (3).

To support the elimination of TB by 2030, the government encourages the active role of communities in combating TB, as stipulated in Presidential Regulation Number 67 of 2021. In South Sumatra, the Sriwijaya Healthy Community is the only community-based TB RO support service provider. This program includes education, motivation, and psychosocial support from the time the patient is diagnosed. The city of Palembang itself recorded the highest number of TB cases in the province, which is 7,379 cases in 2023, with 96 of them being TB RO cases. However, the success rate of TB RO treatment in this city is still low, at 58.97%, far from the national target of 80% (4).

Despite these efforts, challenges persist limited patient understanding, medication side effects, stigma, and an insufficient number of trained supporters (especially MDR-TB survivors) continue to hinder program performance. The high workload among supporters further reduces service effectiveness. These barriers indicate that existing community support strategies may not yet be optimally designed to meet patient needs or ensure treatment completion (5).

Previous studies have largely described the importance of community involvement in TB control, but few have comprehensively evaluated how effectively community-based accompaniment programs operate and what factors limit their impact. Therefore, this study applies William Dunn's policy evaluation model covering responsiveness, accuracy, equity, and adequacy to assess the effectiveness of the MSS DR-TB patient support program in Palembang City. The findings are expected to identify critical gaps and provide actionable recommendations to strengthen DR-TB patient support toward achieving the national TB elimination target.

METHODS

This study employed a descriptive qualitative approach using the policy evaluation model of William N. Dunn (2003), which includes four evaluation criteria: responsiveness, accuracy, equity, and adequacy. Informants were selected through purposive sampling based on their relevance and knowledge of the DR-TB patient support program. A total of nine informants participated in the study, consisting of one TB program manager from the Health Office, one program manager from the MSS Community, one case manager, three patient companions, and three DR-TB patients receiving community support.

Data collection was conducted through in-depth interviews, observations, and document review using instruments such as interview guides, observation sheets, and voice recorders. Primary data were obtained from interviews, observations, and field documentation, while secondary data included program reports, technical guidelines, and related policy documents. Data analysis followed the interactive model of Miles and Huberman (1994), involving three main steps: data reduction, data display, and conclusion drawing/verification. Themes were categorized based on Dunn's four evaluation criteria to assess the effectiveness of the program in each dimension. To ensure data validity and credibility, the study applied several strategies: triangulation of sources and methods,

member checking by confirming findings with informants, and maintaining an audit trail of all research activities and documents.

RESULTS

Table 1
Respondent Characteristics

No	Informant Code	Gender	Last Education	Working Period	Informant Office
1.	Inf-1	Man	S2	25 years	Head of the P2P Sector of the Palembang City Health Office
2.	Inf-2	Man	Nursing Profession	5 years	Person in Charge of the Healthy Community Program Sriwijaya
3.	Inf-3	Woman	Pharmacy Profession	2 years	TB RO case manager
4.	Inf-4	Woman	Senior High School	2 years	Patient Supporter
5.	Inf-5	Woman	Senior High School	5 years	Patient Supporter
6.	Inf-6	Woman	Senior High School	1 years	Patient Supporter
7.	Inf-7	Laki-laki	Senior High School	-	Patient
8.	Inf-8	Woman	Primary School	-	Pasien
9.	Inf-9	Laki-laki	Primary School	-	Pasien

Source: Primary Data, 2025

Adequacy

Service Coverage

The DR-TB patient support program implemented by the Sriwijaya Healthy Community (MSS) has successfully reached most patients in Palembang, including those with limited

access to health facilities. Health workers and community supporters conduct home visits for patients unable to attend treatment centers.

> *"...bagi pasien-pasien yang tidak bisa datang, kader harus jemput bola. Kalau perlu, obatnya juga harus diantar ke rumah..." (inf-1)*

The main focus of the program remains within Palembang City, while patients from outside the city receive support limited to hospital visits.

> *"...pasien paling jauh tuh ada dari Lahat, Baturaja, Banyuasin... tapi kalau di luar Palembang cukup didampingi di RS aja..." (inf-3)*

Geographical barriers remain a challenge for some field workers who must travel through difficult terrain.

> *"...kalau lewat jembatan-jembatan menguji adrenalin... tapi tetap kita bantu pasien" (inf-6)*

Problem Resolution

Community-based accompaniment has proven effective in improving adherence and reducing treatment dropout.

> *"Sangat efektif lah... membantu kepatuhan pasien dalam minum obat sampai sembuh" (inf-1)*

Patients also felt more comfortable expressing concerns to their patient supporters than directly to doctors.

> *"...mereka lebih nyaman ngobrol sama PS ketimbang langsung ke dokter..." (inf-3)*

Continuous education and family engagement were key to achieving treatment completion.

> *"...kalau dia minum obat sampai selesai itu sudah tuntas... dukungan keluarga juga mendukung" (inf-4)*

However, patients with comorbidities such as kidney disease still faced challenges completing treatment.

> *"...ada satu pasien ibu meninggal karena lansia dan komplikasi ginjal..." (inf-5)*

Equity

Equal Access to Services

The support program promotes equal access for all DR-TB patients through intersectoral collaboration and home-based services when necessary.

> *"...kalau mereka tidak sanggup datang ke puskesmas, maka puskesmas akan siap datang melakukan kunjungan ke rumah" (inf-1)*

Support is provided without discrimination based on socioeconomic status or location.

> *"Udah bisa dipastiin semua pasien yang kita dampingi itu setara..." (inf-3)*

Educational activities are delivered through both face-to-face and online channels to ensure even information dissemination.

> *"...kita edukasi dari pamflet, dari HP kita share ke grup pasien..." (inf-4)*

Benefit Distribution

Program benefits were evenly distributed, reflected by a 90% treatment success rate in Palembang.

> *"...success rate kesembuhan di Palembang 90%, berarti program sudah berhasil..." (inf-2)*

Patient supporters also deliver medicines to those unable to visit health centers.

> *"...kalau mereka ga sempat ambil obat itu bisa menghubungi PS nanti dianter ke rumah..." (inf-3)*

However, mono-resistant TB patients do not receive the same financial support as DR-TB patients.

> *"...kasihan sama pasien yang monoresisten karena tidak ada enablernya, jadi kami sering bawa nutrisi..." (inf-6)*

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Responsiveness

Response Speed

Patient supporters respond quickly to patient complaints and coordinate with healthcare facilities when emergencies arise.

> *"...kalau pasien sesak napas, kita koordinasi langsung ke PJ TB..." (inf-3)*

They maintain 24-hour readiness to handle urgent cases.

> *"...walau tengah malam pasien telepon, kita harus tanggap langsung. Jadi kita ini dokter jaga 24 jam..." (inf-5)*

Patients confirmed that responses from companions were timely and reliable.

> *"Termasuk cepat lah... langsung ado tanggapan lumayan cepatlah dak pernah nunggu" (inf-7)*

Service Flexibility

The accompaniment process is flexible and adjusted to patient conditions, including through online consultations.

> *"Ohh bisa, kalau jauh gitu bisa video call ngga harus ke rumah..." (inf-5)*

If one supporter is unavailable, another team member or local health officer substitutes to ensure continuity.

> *"...misalkan PS berhalangan mendampingi maka akan dibackup sama MK atau PKM setempat..." (inf-2)*

Patient Satisfaction

Most patients expressed high satisfaction due to the consistent support and sense of being cared for.

> *"Puas dek, aspek yang paling diapresiasi itu konsultasi... sangat merasa didengar keluhan kito" (inf-7)*

Community monitoring data indicated approximately 97% satisfaction among assisted patients.

"Seberapa puas itu, mungkin sekitar 97% lah... dari segi materi, cara penyampaian, dan edukasi" (inf-8)

Accuracy

Compliance with SOP

Program implementation followed the Ministry of Health and Penabulu-STPI guidelines, supported by routine monthly reporting and evaluation.

"...biasanya itu dibuktikan dari pelaporan PS tiap bulan... kita lebih make pedoman berbasis komunitas Penabulu" (inf-2)

Minor adjustments were made in field practice while maintaining adherence to the main protocol.

"...apabila SOP sulit diterapkan, kita menyesuaikan dengan wilayah intervensi namun tetap sesuai panduan..." (inf-2)

Implementation Capacity

The MSS team demonstrated strong capacity, achieving recognition as the best Sub-Sub Recipient (SSR) in South Sumatra for three consecutive years.

"...kita itu 3 kali mendapatkan predikat terbaik sebagai SSR di Sumsel..." (inf-2)

Patient supporters were available around the clock and capable of handling both medical and psychosocial issues.

"...kalau komunikasi atau pendampingan kita siap 24 jam..." (inf-4)
"...pasien nggak mau minum obat karena mentalnya terganggu, tapi tetap kita edukasi sampai mau minum obat lagi..." (inf-6)

DISCUSSION

Adequacy

Service Coverage

The TB RO patient support program in Palembang has demonstrated adequate service coverage by reaching patients in both accessible and remote areas. Patient supporters (PS)

actively visit patients who face mobility or distance barriers, reflecting an effort to ensure inclusivity in care delivery. his finding aligns with previous studies (6) and (7), that emphasize the crucial role of community-based initiatives in extending TB care to hard-to-reach populations.

Despite the comprehensive coverage, geographical constraints and limited transportation infrastructure still present challenges, particularly for supporters serving remote or unsafe areas. These barriers underscore the importance of continuous innovation in service delivery, such as the integration of remote supervision through digital platforms. Overall, the program's coverage is considered adequate, as all TB RO patients within the intervention area receive community-based support, although sustained efforts are required to optimize accessibility for patients outside Palembang's urban scope.

Problem Resolution

The patient support program has been instrumental in ensuring treatment completion and minimizing treatment default among TB RO patients. Supporters play a vital role in improving adherence by providing education, emotional encouragement, and consistent monitoring throughout the long treatment period. This finding supports (8) and (5), who observed that consistent interaction and trust between patients and supporters enhance adherence.

The close relationship between patients and their supporters facilitates early problem-solving when medication side effects or logistical barriers arise, allowing for immediate coordination with healthcare professionals. Moreover, the program's effectiveness is strengthened by regular communication channels between patients, supporters, and hospitals, ensuring continuity of care.

Nevertheless, some patients with comorbidities or physical limitations still experience difficulties completing treatment, highlighting the need for specialized approaches such as integrating mental health and rehabilitation support within TB RO care.

In conclusion, the program demonstrates a high level of adequacy in resolving treatment-related problems, though future improvements should focus on high-risk patient groups requiring more intensive and multidisciplinary assistance.

Equity

Equal Access to Services

The TB RO patient support program in Palembang reflects a strong commitment to equitable access to health services across different socioeconomic and geographic backgrounds. Collaboration between the community, health facilities, and the Health Office ensures that patients whether treated at referral hospitals or primary healthcare centers receive the necessary medical and psychosocial assistance. This decentralized system aligns with the national strategy to strengthen community-based TB control, as emphasized in the Presidential Regulation No. 67 of 2021.

However, although access equality has improved, disparities remain for patients in peripheral areas or those without stable income, who may face challenges in transportation and regular follow-up visits. These findings reinforce the evidence by (9) that distance from health facilities significantly affects TB case detection and adherence. The use of hybrid communication models combining in-person visits with digital coordination through WhatsApp and online consultation illustrates an adaptive response to minimize inequality in service delivery (10).

In summary, the program demonstrates progress toward equitable access, but sustainability depends on strengthening local infrastructure and integrating social protection mechanisms to ensure that low-income or geographically isolated patients can continue their treatment without interruption.

Benefit Distribution

The distribution of benefits within the TB RO support program indicates both achievements and persistent inequities. On one hand, supporters provide comprehensive

assistance including health education, psychosocial counseling, and medication delivery, ensuring that most patients receive equal benefits from the program. This finding supports the results of (11), which highlight the importance of patient supporters in bridging gaps between patients and the health system.

However, structural inequities are still evident in financial support. Only TB RO patients receive monthly enabler funds (IDR 600,000) from the Global Fund, while mono-resistant TB patients despite facing similar treatment burdens do not. To mitigate this, the community organization has initiated nutritional aid for mono-resistant patients using local resources, although such efforts remain limited in scale. This imbalance reflects a broader policy gap in TB financing mechanisms that prioritize drug resistance categories rather than overall patient vulnerability.

Responsiveness

Response Speed

The TB RO patient support program in Palembang demonstrates a high level of responsiveness, particularly in handling emergency cases. Patient Supporters (PS) are always on standby and can be contacted at any time to provide assistance or coordinate with health facilities. This aligns with the findings, who noted that PS often report patients' conditions through WhatsApp to healthcare professionals at referral hospitals, ensuring that medical staff are aware of the patient's situation and can take timely action (13). Additionally, emphasize that collaboration between referral hospitals and community-based organizations is crucial in strengthening the continuity of care for TB RO patients, especially in cases requiring rapid response and coordinated treatment (14).

While this method allows for faster initial response, it also presents risks of reduced accuracy in assessing patient conditions. Thus, despite notable progress, the responsiveness system still requires additional human resources and structured referral mechanisms to ensure timely intervention for all cases.

Service Flexibility

Flexibility in service delivery emerges as one of the program's distinctive strengths. The MSS community and local health facilities have adjusted their operational schedules and communication methods to accommodate patient conditions. For instance, treatment monitoring and medication delivery are adapted to patients' work hours or mobility constraints, reflecting a patient-centered approach. Found that remote support can be conducted through the EMPATI Client application, which is specifically developed for TB RO patients to improve treatment adherence and monitor side effects using video observed treatment (VOT), where patients record themselves taking medication (14).

However, the extent of flexibility is still shaped by logistical and funding limitations. The reliance on short-term donor funding, such as the Global Fund, affects the consistency of flexible services like home-based drug delivery and nutritional support. Therefore, institutionalizing flexible service mechanisms through local government budgeting could strengthen program resilience and maintain continuity even beyond donor funding cycles.

Patient Satisfaction

Most patients reported high satisfaction with the TB RO support program, especially due to the consistent assistance from patient supporters (PS) in ensuring treatment adherence and preventing default. PS provided instrumental support such as helping patients register through hospital online systems (15). To monitor satisfaction, the community implemented the Community Based Monitoring and Feedback (CBMF) system, allowing patients to complete a satisfaction survey via barcode at health centers and referral hospitals. Based on interviews, satisfaction reached 97%, driven by effective communication, educational support, and financial aid. This aligns with Syapitri et al. (2021), who found that satisfaction (93%) was closely tied to service quality, including facilities, processes, and human resources (14).

Consequently, improving patient satisfaction requires strengthening intersectoral coordination between communities and primary health care centers, ensuring that service responsiveness is not limited by geography or funding boundaries.

Accuracy

Compliance with SOP

The TB RO patient support program in Palembang demonstrates a strong level of adherence to established Standard Operating Procedures (SOPs) from both the Ministry of Health and community-based organizations such as Penabulu-STPI. Monthly reporting, documentation of patient visits, and the consistent use of personal protective equipment (PPE) reflect institutionalized discipline among patient supporters (16). This compliance indicates the community's ability to operationalize national TB control policies at the grassroots level, bridging formal health systems and local realities.

However, adherence to SOPs is not merely procedural but also contextual. Field observations reveal that supporters occasionally adapt SOPs to respond to unforeseen patient conditions—such as conducting outdoor visits for patients with poor ventilation at home, or simplifying documentation during emergency follow-ups (17). These adaptive practices, while slightly deviating from the written SOPs, illustrate the supporters' situational judgment and highlight the need for flexible operational guidelines in community-based TB programs. This finding contributes to the growing discourse on the *contextual application* of SOPs, where strict compliance must be balanced with patient safety and service practicality.

Implementation Capacity

Implementation capacity represents one of the strongest aspects of the Palembang program. The MSS team has consistently achieved recognition as the best *Sub-Sub Recipient (SSR)* in South Sumatra for three consecutive years, with internal evaluations scoring service quality at an average of 4.5 out of 5. This reflects not only the competency of field

staff but also the effectiveness of internal supervision, data reporting, and coordination between community and health authorities (18). Beyond operational performance, the program has expanded its capacity to include psychosocial support addressing mental health issues such as stigma, depression, and treatment fatigue. This aligns who found that patient supporters play a key role in offering emotional and psychosocial support to TB RO patients (19).

Nevertheless, sustainability remains a concern. The heavy reliance on donor-funded programs like the Global Fund limits long-term capacity building, particularly in training and recruitment of new supporters. Institutionalizing these roles within local government structures could transform temporary program outputs into enduring public health infrastructure.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study show that the TB RO patient support program in Palembang has been effective in improving treatment adherence and continuity of care through community-based engagement. Guided by Dunn's policy evaluation model, the program demonstrates adequacy in service coverage, responsiveness to patient needs, and a strong level of accuracy in following standard operating procedures. Equity in access has generally been achieved, although some disparities remain in the distribution of program benefits, particularly between TB RO and mono-resistant patients. This research contributes new insights to Indonesia's TB policy context by highlighting how structured community involvement can bridge the gap between patients and the healthcare system, especially in areas where geographical and social barriers persist.

From a policy perspective, sustaining and scaling such community-based programs will require institutional integration of patient supporters within local health systems. Ensuring long-term funding and harmonizing benefit schemes across all TB categories are

essential to promote fairness and treatment completion. Strengthening the capacity of patient supporters through regular training in psychosocial support, data reporting, and digital tools will further enhance service quality. Moreover, integrating mental health and psychosocial components into TB management can help address emotional fatigue during prolonged treatment. The government and local health authorities should therefore view the TB RO patient support model not only as a complementary initiative but as an integral part of Indonesia's national TB elimination strategy.

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