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Evaluation of the Leprosy Control Program at Sanggeng Health Center and Pasir Putih Health Center Manokwari Regency in 2024

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A B S T R A C T

This study aims to evaluate the implementation of leprosy control programs at the Sanggeng Health Center and Pasir Putih Health Center. This study uses a qualitative approach with a case study design. Data collection techniques with in-depth interviews and participatory observations. The data was analyzed thematically. The results of the study show that the leprosy control program in Manokwari Regency still faces various obstacles in input aspects, such as limited health workers, lack of training, and manual recording. The implementation of the program has been adaptive to local conditions, but there are still challenges in access to services, early detection, and distribution of drugs. The output of the program is found in cases and a good recovery rate. It is necessary to strengthen education, digitize the reporting system, and develop psychosocial support services to increase the effectiveness and sustainability of the program.

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INTRODUCTION

Leprosy is a disease of global concern because of its significant impact, both clinically and socially. The World Health Organization (WHO) reports,shows that there are additional new cases of almost 200,000 cases every year. Indonesia is ranked third in the world for the highest number of new leprosy cases, after India and Brazil, where Indonesia contributes around 71.9% of cases in the world(WHO, 2023).

The 2023 Leprosy Disease Program achievement report shows that the number of leprosy cases in Indonesia has reached 14,376 new cases. It is known that there are 11 provinces consisting of 124 districts and cities that have not eliminated leprosy. The number of leprosy cases in Papua ProvinceWest Java, based on the third quarter report of 2024, is ranked fifth with the highest prevalence of 4.27 compared to the national figure of 0.67 with a total of 18,770 cases.(Ministry of Health, 2024).

Based on data from the West Papua Health Service (2023), the prevalence of leprosy in Manokwari Regency is above the national elimination threshold, which is 1 case per 10,000 population. Structural barriers such as difficult access to health services, drug distributionUneven distribution, and stigma against leprosy sufferers slow down efforts to eliminate the disease. Challenging geographic conditions, with many remote areas, further complicate early detection and timely treatment efforts.(Ministry of Health, 2024).

Leprosy cases in Manokwari Regency from 2019 to 2024 have increased from 258 cases in 2019 to 518 cases in 2024. The rate of discovery of new leprosy cases in Manokwari Regency has decreased every year, where in 2024 the number of leprosy case discoveries was 88.56 with the number of new cases being 162 cases. The proportion of wet leprosy cases in Manokwari Regency has decreased from 82% in 2019 to 52% in 2023, but has increased again to 65% in 2024. The cure rate for wet leprosy has decreased in 2024 by 8.4%, while the cure rate for dry leprosy has also decreased every year, where in 2024 it only reached 34.6%(Manokwari Health Office, 2024).

Various efforts have been made to overcome this disease, the burden of leprosy and its transmission rate are still high, with new cases still being found with level 2 disabilities. This condition shows that early detection and clinical management have not been running optimally, so that patients often get the right treatment too late. Stigma and discrimination against leprosy sufferers are still strong in society, which prevents them from seeking early treatment and undergoing optimal therapy.(Kalengkongan, 2021). The main risk factors for leprosy include gender, education level, occupation, household contact with sufferers, and high residential density.(Kora et al, 2010).

Research in Salvador, Brazil, shows that although new cases of leprosy have declined, there are still pockets of high endemicity, such as those found where leprosy incidence rates remain high in children under 15 years, indicating active transmission in the community.(Moreira et al., 2014). Studies in various countries have shown that in addition to human-to-human transmission, there is a possible role for animal reservoirs in the spread of leprosy, such as armadillos in America and red squirrels in England.(Ploemacher et al., 2020).

Conditions in Indonesia, several studies show that the health information system is still an obstacle in controlling leprosy, with many cases not being recorded properly due to limited resources and rotation of health workers. The implementation of a digital monitoring system based on e-leprosy has shown positive results in increasing treatment compliance and case recording, as implemented in several health centers in Pekalongan.(Rachmani et al., 2019; Rachmani et al, 2020). National policies also support the importance of system-based evaluation. The gap between policy and implementation in the field is often a major obstacle.(Ministry of Health, 2020).

A study states that strengthening health information systems and training health workers plays an important role in increasing the effectiveness of leprosy control programs. Other studies have shown that the strategy of administering single-dose Rifampicin chemoprophylaxis as an effort to prevent leprosy has been tested in various countries and has been proven to reduce the risk of leprosy transmission.(Barth-Jaeggi et al, 2016). Furthermore, a retrospective epidemiological study in China highlighted that delayed diagnosis remains a major challenge in leprosy control.(Li Mingma et al., 2022).

The evaluation approach to leprosy control programs can be carried out using input, process and output models.(Kasim et al., 2018; Rahman et al, 2016; Rehatalanit, 2021).

Other studies have shown that methods of measuring leprosy endemicity and burden still vary globally, requiring a standard approach to the classification and monitoring of leprosy epidemiology at national and subnational levels.(Ogunsumi et al., 2021). A classification system that combines indicators such as new case detection rates, child cases, and the proportion of second-degree disabilities can provide a more comprehensive picture of the burden of disease in a region. Another study highlighted the importance of evaluating the implementation of technology-based health systems, which can help optimize real-time patient data collection and monitoring.(Blok et al, 2015). Spatial-based epidemiological analysis can be used to understand leprosy distribution patterns and target more effective interventions.(Li Mingma et al., 2022).

Social and cultural factors also play a role in the spread and control of leprosy. Studies show that social stigma and lack of public understanding are still obstacles to leprosy elimination.(Ketut Swastika et al., 2024). The role of health workers in providing education and supporting ongoing treatment is crucial in increasing patient compliance.(Yuniarasari, 2014). Evaluation of the leprosy elimination program in coastal areas shows that limited human resources and funds are the main obstacles to effective program implementation.(Soulissa et al., 2024).

THEORETICAL REVIEW

Table 1. Meta Synthesis (Review of Previous Research)

No.	Category	Previous Researchers	Key Findings	Synthesis in Research Context
1	Human Resources	(Kalengkongan , 2021; Rahman et al, 2016; Soulissa et al., 2024)	Limited health workers who are trained in leprosy services and still have other duties.	It is necessary to evaluate the readiness of health workers in Manokwari and the effectiveness of leprosy training.
2	Availabilit y MDT Drugs & Logistics	(Rahman et al, 2016; Rohmat, 2020)	Distribution of MDT drugs is often suboptimal, stocks are often limited.	AnalyzeHow is the MDT distribution system in Manokwari and the obstacles faced?
3	Service Accessibility	(Soulissa et al., 2024; Kalengkongan , 2021)	Geographical barriers and social stigma reduce patient access to leprosy services.	Reviewbarriers to access in Manokwari both in terms of geography and social aspects
4	Extension Program	(Kalengkongan , 2021; Soulissa et al., 2024)	Effective outreach can increase public awareness and reduce stigma.	Assessing the effectiveness of extension programs in Manokwari and the most impactful methods.

The difference between this research and previous research is in the study, where this research study is broader, covering the evaluation of input, process and output using a qualitative case study design method.

Frame of Mind

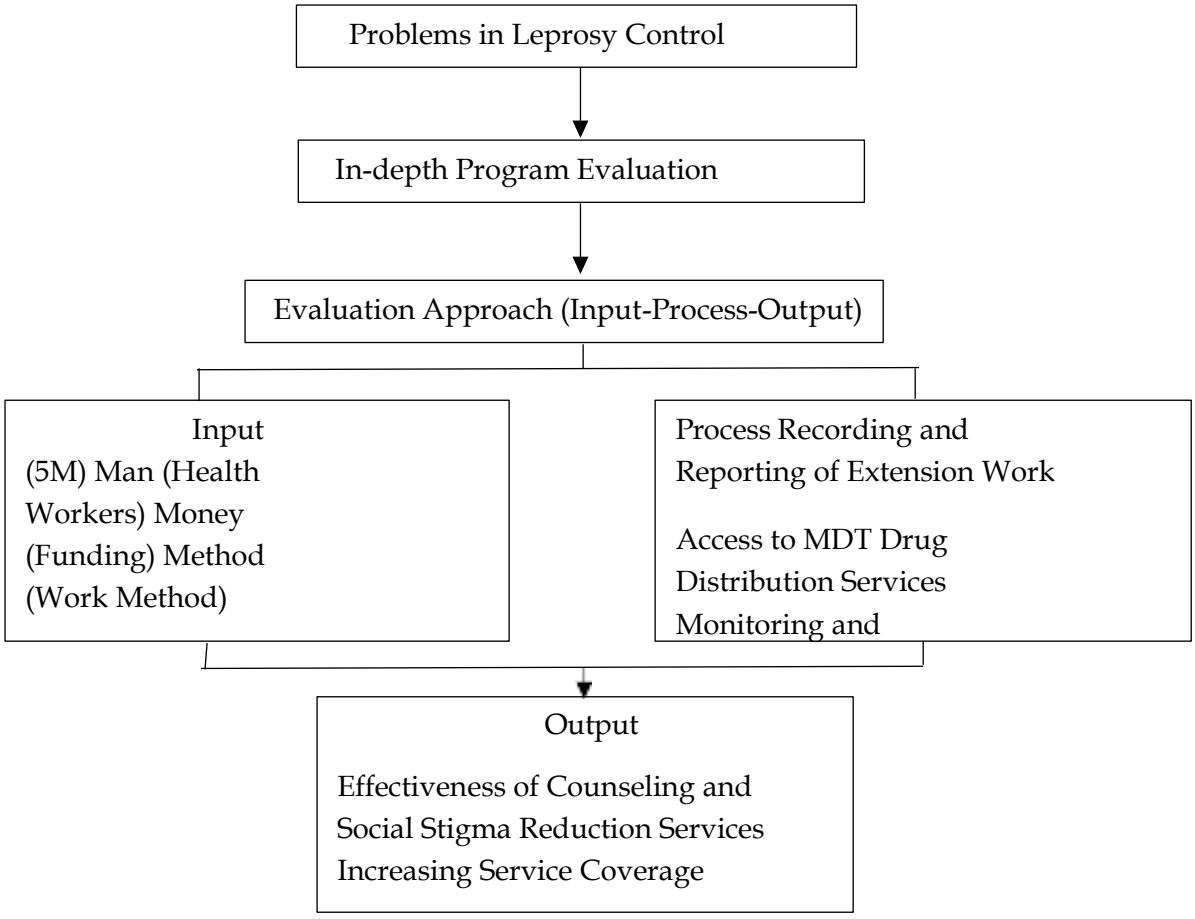

Figure 1. Conceptual Framework

METHODOLOGY

This study uses a qualitative research type with a case study approach. Case studies are approaches that delve into a particular event, individual, group, organization, or situation in a real-life context, in order to understand the various aspects and dynamics involved in them (Ellinger & McWhorter, 2016; Mtisi, 2022) Data were collected through in-depth interviews with data observation and triangulation of sources and data. The data were analyzed with Miles & Huberman analysis and thematic (Nowell, L. S., Norris, J. M., White, D. E., & Moules, 2017). The informants were 11 people who were taken using the purposive sampling technique.

RESEARCH RESULTS

Input Themes in the Leprosy Control Program

Human Resource

The availability and capacity of human resources are one of the main challenges in implementing the leprosy control program in Manokwari Regency. The following is an excerpt from an interview with an informant regarding human resources:

"*But what has happened in the field so far, when the old manager left, he left nothing behind.*"–I1

"*Because so far I have never received any special leprosy training.*"–I5

"*I usually come and meet directly with the Head of the Health Center to convey this because there are very few young people who are managing the leprosy program here, Sir...*"–I1

Interpretation of the informant's statement is a condition that indicates that the regeneration of program management personnel has not been carried out systematically. New officers often do not receive special training on leprosy, so they have to learn independently or rely on limited information from colleagues. In addition, communication between health center officers and the Health Office is considered ineffective and tends to be informal. Coordination is not carried out routinely and still relies on individual initiative. Limited technical skills are an obstacle in efforts to detect early and monitor patient treatment. On the other hand, the personnel available in the field generally overlap with several programs, so they cannot focus fully on leprosy control.

Budget (Money)

One form of funding support in the implementation of the leprosy control program in Manokwari Regency is through the Health Operational Assistance Fund (BOK). This fund is used as the main source in supporting operational activities, especially for patient home visit activities. The following is an excerpt from an interview with an informant regarding the budget:

"*Yes, so far, for BOK funds, there has been transportation to make home visits to each patient.*" – I4

"*Yes, yesterday my planning was even though it was budget efficient.*" – I1

"*...ifnever to set aside a little budget for this case then to expect elimination will be far from expectations... we see the mapping of this case, this is almost 500 cases per day, yes, that is not a small thing but even so there has been no touch from the local government at all for this case...*"–I1

The interpretation of the informant's statement is that the BOK funds are used to support operational activities such as home visits to leprosy patients. This indicates minimal support from the funding side, especially in the form of transportation which is essential for case tracking activities, treatment supervision, and patient and family education. However, the use of these funds seems to be limited to the transportation aspect only, so it does not cover other needs such asprocurement of personal protective equipment, drug logistics, officer training, and communication, information, and education (KIE) media.

The conditions conveyed by several informants expressed disappointment.and informants' concerns about the absence of special allocations from local and provincial governments for leprosy programs, despite the high number of cases. The term "nothing has been touched" reflects the lack of policy and budget intervention from higher authorities, as well as the weak institutional commitment to eliminating this disease that has a high social burden and stigma.

These results indicate that the implementation of the leprosy control program in Manokwari still relies on limited general funding (BOK), and is not

supported by comprehensive and structured budget planning from the local government. These limitations have an impact on the achievement of services and case handling that are not yet optimal, and raise doubts about the achievement of the leprosy elimination target set nationally.

Method

The following is an excerpt from an interview with an informant regarding the method:

"As a cadre, I help the community by informing or giving notices if there is a leprosy meeting." –I6

"Make a schedule for all villages and schools within a year." –I2

"This will hamper especially in the reporting recording system later and how to handle especially for new patients so we are honestly very overwhelmed." –I1

"Every fifth of the month, they should send a report to the Health Service, but sometimes I as the program manager at the Health Service take the initiative more often." –I1

"The recording system is working well." –I2

"We usually write down the names of those we visit, then report to the officer. Sometimes we fill out a form if given, then hand it in when there is an activity." –I6

"Yes, it's manual. For the time being, the health center is still using it manually." –I2

Interpretation of the informant's statement, namely that the recording and reporting of leprosy cases in health centers are mostly still done manually using cohort books. This was acknowledged by various informants, including officers and cadres. Officers stated that the manual recording system was quite difficult, especially when handling new patients. Program managers also complained about the low level of compliance in sending reports from health centers to the health office, even though they had been reminded through various communication platforms. On the other hand, several informants stated that the recording had gone well even though it was still manual. Cadres also reported data manually, both through paper records and direct communication. Regarding digital applications, the SIPK (Leprosy Disease Information System) has not been fully used directly at the health center level.

Materials

In the material section it states that storage of leprosy drugs is done through one door. The following is an excerpt from an interview with an informant regarding the material:

"We store it through one door, which is the pharmacy, so that the medicine is stored at a sufficient room temperature." –I2

"We store our packaged medicines in the health center pharmacy in the medicine warehouse, if it is facilitated with a regulated temperature, then the medicine is safe." –I3

"I think there is no problem with storage because it is stored in the health center's pharmacy warehouse... it meets the standard for using AC." –I5

The interpretation of the informant's statement is that storage of leprosy drugs is carried out through one door, namely the pharmacy or pharmaceutical warehouse at the health center, and has met storage standards such as appropriate room temperature.

Machine

The following is an excerpt from an interview with an informant regarding the machine:

"Because for the Health Center itself, they have not inputted it directly into the application. Because of Leprosy, it has the SIPK application." –I1

"If the reporting system is, we only do it by word of mouth with the sub-district head, ma'am. Usually we just call the sub-district head." –I7

"Until now, it cannot be given to the health centers. So the health centers are still filling the cohorts, later I will take the cohorts and I will input them one by one into SIPK."–I1

Interpretation of informant statements shows that supporting facilities in the form of digitalization systems or integrated applications such as SIPK have not been fully implemented at the health center level, so that the reporting process is not yet efficient.

Theme of the Leprosy Control Program Implementation Process

In the process of leprosy control, there are several findings. Here are the results of the interview:

"Sometimes transportation, ma'am. If it rains or the roads are damaged, it's difficult to get there." – I6

"Patients mostly complain about transportation to the staff.." –I2

".. the difficulties faced by patients are due to transportation costs, so most of them are unable to come..." –I3

"Most of the time, for the non-compliant patients, sometimes on Saturdays we come for home visits to look for them." –I3

"as nurses we do home visits" –I4

In addition, a sensitive approach to the psychological condition of the family is also carried out to avoid stigma. Indications of early detection also arise from direct observation in social interactions, as told by the following informant:

"Then I got this, I said, 'Oh really?', but I thought because I often went to the market and there was a woman, she couldn't walk." –I9

"There for home visits."–I2

This case shows that the community can recognize advanced symptoms (impaired mobility) that can be associated with leprosy, even though they are not necessarily identified clinically early.

The request for drugs starts from the health center to the Health Office through a disposition submission. After the disposition is issued, the health center takes the drugs directly to the pharmacy warehouse.

"We, the program managers, came directly to the health service, from the health service they gave us a disposition to go to the pharmacy warehouse to pick up the MDT drugs directly."–I2

"For leprosy drug managers at health centers, we make a request to the health service to get a disposition... from the pharmacy warehouse which responds by providing us with the drug."–I3

This shows that the distribution is active, meaning that the health centers collect the drugs themselves, not sent automatically from the office. One of the major challenges is that the health centers have not used the SIPK application-based reporting system. Many still use manual cohort books. As a result, the

Health Office must be proactive in collecting reports in order to update drug supply data.

"My recording system so far, every 3 months I will go down to pick up trees at the Health Center and I will work on it every day, I will input them one by one into the SIPK application myself." –I1

"For health centers in remote areas, I usually ask them to take a photo of their cohort book, then I input it and I always demand that they send the monthly report before the 5th of the current month." –I6

"Yes, it's manual. For the time being, the Health Center is still manual. The recording has been going well and the monitoring is every three months." –I2

Data shows that leprosy program recording and reporting are still fragmented. The use of the SIPK application is limited to the Health Office, while the Health Centers still record manually. This indicates a gap in technology capacity and human resources at the basic service level. The reporting process is still very dependent on the individual initiative of service officers, who must manually input data and correct errors. This mechanism is prone to delays, data inaccuracies, and large additional workloads at the service level. The absence of an integrated reporting system at the Health Centers has the potential to reduce efficiency and accuracy in monitoring leprosy cases.

Challenges in the leprosy control program in the research area are divided into several aspects, including socio-cultural, geographical, logistical, human resources (HR) aspects, as well as weaknesses in recording and reporting the program. Stigma against leprosy is a major barrier. The community still considers leprosy as a cursed disease or the result of black magic. This causes sufferers to be ashamed, afraid of being ostracized, or even rejecting the diagnosis. Remote areas, poor road conditions, and lack of transportation are major obstacles for patients to access health services.

The recording and reporting system still relies on manual methods with limited human resources. The double workload of health workers means that recording is not optimal. However, there are tracking initiatives through home visits and active coordination from the health office to reach all health centers periodically. The integration between manual recording and verification through control cards shows a spirit of evaluation, although its implementation is still limited. Overall, the implementation of the leprosy program has been carried out with an adaptive approach to local conditions, but requires systemic strengthening through digitalization of reporting, increasing human resource capacity, and developing a more formal and integrated psychosocial support system.

Output Themes From Leprosy Control Program

In the output there are four sub-themes, namely the effectiveness of counseling, compliance with taking medication, increasing service coverage and patient compliance, and reducing stigma. Here is an excerpt from the interview:

"Counseling is very important, ma'am. Because many people don't understand. After the counseling, people start to understand, they are not as afraid as before." –I6

"At first they were indifferent, but if it was explained properly, they started to open up. Especially if there were examples of people who had recovered." –I6

"Yes, the biggest impact of us providing counseling is that... they understand that getting themselves checked is actually more important, finally they realize and understand, they bring themselves to be checked." –I4

Interpretation of the informant's statement is that counseling is an effective educational tool in changing people's perceptions and behavior towards leprosy. Fears that previously arose due to stigma or misconceptions can be reduced with a clear, empathetic, and evidence-based communication approach. The presence of figures of leprosy survivors who have recovered has also been proven to strengthen counseling messages because they present real examples that build public trust. The effectiveness of counseling is also seen from the increasing initiative of the community to come to the health center themselves without having to be directed.

Several informants stated that patient compliance with treatment greatly influences the success of leprosy therapy. Despite challenges, some patients still show a strong will to complete treatment because they consider family responsibilities and understand the importance of treatment.

The output stage in the evaluation of the leprosy control program in Manokwari Regency includes four main sub-themes: effectiveness of counseling, medication adherence, increasing service coverage and patient adherence, and reducing stigma. Counseling has proven to be an effective educational strategy in increasing public understanding of leprosy. Information delivered clearly, empathetically, and based on evidence has succeeded in changing negative public perceptions. People who were previously afraid or misunderstood began to open up and actively conduct self-examinations, especially when counseling was accompanied by real examples of survivors who had recovered and educational media such as leaflets. This independent awareness shows the success of counseling in encouraging sustainable healthy behavior.

Patient compliance in taking medication is a crucial aspect in the success of leprosy therapy. Findings show that some patients show a high commitment to treatment, driven by medical understanding and social responsibility as family caregivers. However, there are still patients who underestimate early symptoms and ignore treatment, so a continuous educational approach is still needed. Health workers emphasize the importance of the 5T principle (right patient, drug, dose, route, and time) and therapeutic communication in encouraging compliance.

DISCUSSION

Input Into Leprosy Control Program

In terms of human resources, leprosy officers who handle the program still have multiple duties and have not received special leprosy training. This results in limited technical knowledge and low motivation in implementing the program. This finding is in line with the results of research by Tami (2019) which states that low motivation of officers is often caused by excessive workload due to multiple duties and a lack of understanding of the main tasks and functions (tupoksi) as leprosy officers. This condition is further exacerbated by the

unpreparedness of new officers who do not yet understand the program flow comprehensively, as also found in Safitri's research.(2020)and Soulissa(2024).

Money aspect (funding), program implementation is also constrained by the lack of special budget allocation for leprosy. In this study, informants said that important activities such as counseling, home visits, household contact tracing, and patient monitoring could not be carried out optimally due to limited funds. The lack of budget also resulted in the failure to implement training for officers and community empowerment activities. This is supported by Soulissa(2024)which states that the limitations of the General Allocation Fund (GAF) and Health Operational Assistance (HOA) have made the leprosy program not run according to standard operating procedures (SOP). As also explained in the Kalengkongan study(2021), the success of program implementation is highly dependent on policy synergy and adequate budget allocation.

In terms of method, this study found that home visits have not been routinely conducted for patients who do not come to pick up their medication. In fact, this activity is very important to monitor the continuity of treatment and prevent treatment defaults that can increase the risk of resistance and disability. These results are reinforced by Safitri's findings.(2020)which emphasizes that the failure to carry out home visits is a major factor in the failure of early detection and prevention of disability. The unpreparedness of the program in conducting active case finding is also a weakness in efforts to eliminate leprosy, as also found in Rokhmah's research.(2020).

The material aspect (facilities and infrastructure) at Pasir Putih Health Center also does not support the optimization of the implementation of the leprosy program. Tools for clinical diagnosis are still very limited, only relying on cotton and monofilament without being supported by laboratory examinations or other supporting technologies. The absence of digital applications for contact tracing or patient monitoring also shows the weakness of the technology-based recording and reporting system (machine). In fact, according to Safitri(2020), the absence of a dedicated application for tracing families and close contacts is one of the major weaknesses in the national leprosy control system.

In terms of stakeholders and cross-sectoral collaboration, this study shows that there has been no collaboration between health centers and villages or community leaders to support leprosy programs. In fact, an intersectoral collaboration approach is very important in community-based programs. Soulissa(2024)emphasized the importance of cooperation between health centers and various parties to achieve program success. The absence of special cadres for leprosy is also a weakness in the community empowerment strategy which should be an important pillar in eliminating leprosy.

Finally, the stigma factor is still a significant challenge. The community still considers leprosy as a curse or a serious infectious disease, which causes patients to be reluctant to seek treatment or be open about their condition. This study noted that stigma has an impact on delays in patients coming for treatment and fear of officers in handling severe leprosy cases. This is similar to the results

of Tami's research(2019)and Safitri(2020), which states that social stigma is a major obstacle to early detection and treatment of leprosy cases.

Overall, the results of this study indicate that the implementation of the leprosy control program at Pasir Putih Health Center still faces various challenges both internally and externally. Although there is agreement with several previous studies, the conditions found indicate the urgency of the need for officer training, strengthening cross-sector coordination, increasing special budget allocations, and developing a community-based approach to support the success of complete leprosy elimination.

Leprosy Control Program Implementation Process

The implementation of the leprosy control program in Manokwari Regency shows that although the operational structure is in place, the success of the program is still greatly influenced by challenges in the stages of the implementation process. This study identified six main aspects that describe the dynamics of program implementation, namely service access, early detection, drug distribution, recording and reporting, and patient psychological support. These findings are consistent with the results of previous studies that show the importance of planning, coordination, implementation, and the active role of health workers and community support in the success of the leprosy control program.(Rahman et al, 2016; Kalengkongan, 2021; Soulissa et al., 2024).

Access to leprosy services remains a major obstacle, especially due to difficult geographical conditions, lack of transportation infrastructure, and economic constraints of the community. This is in line with the findings of Kalengkongan(2021)which confirms that geographical factors in West Papua are one of the main obstacles in health service coverage. As an adaptive response, the strategy of /home visits/ by officers and the involvement of cadres in the community have been implemented locally, although they have not been part of a systematic policy. The lack of integration of this approach indicates that local innovations have not been formally integrated into the program structure.

Early detection of leprosy cases is highly dependent on social initiatives from cadres and observations from the surrounding community. The detection process is still informal and not based on standards or /screening algorithms/ causing inequality and subjectivity. However, family involvement and community awareness make important contributions in reducing stigma and supporting patient openness to treatment.(Rahman et al, 2016; Kalengkongan, 2021; Soulissa et al., 2024). This emphasizes the need to develop a standardized and integrated early detection system in the program.

Drug distribution through Pasir Putih Health Center is based on a structured procedural system with a single-door system mechanism. However, the use of the digital application of the Leprosy Program Information System (/SIPK/) is not optimal and the drug needs estimation system is still weak, causing stock imbalances and drug expiration. Field officers show flexibility by delivering drugs directly to patients' homes in response to geographical barriers, reflecting local adaptation but also indicating weaknesses in the official

system.(Kalengkongan, 2021). Strengthening technology-based drug distribution and HR training is essential to increase efficiency.

Psychological support during the long-term treatment of leprosy is crucial for the success of therapy. Research has shown that support comes primarily from cadres, families, and communities through an empathetic interpersonal approach. However, there is no formal psychological counseling service integrated into the program, indicating an urgent need to establish a health facility-based mental support system to help patients overcome stigma and improve treatment adherence.(Rahman et al, 2016; Kalengkongan, 2021; Soulissa et al., 2024).

Recording and reporting of leprosy cases is still dominated by manual methods with a high workload on health workers, thus slowing down the documentation process and program evaluation. Although there are reporting initiatives through home visits and monitoring of patient control cards, this system has not been digitized and does not have a cross-data verification mechanism. The combination of manual recording and active tracking shows local commitment, but effectiveness and sustainability still need to be improved by implementing an integrated digital information system.(Mulyadi, 2017; Kalengkongan, 2021).

Overall, the implementation of the leprosy control program showed strong contextual adaptation, but systemic weaknesses such as lack of digitalization, low human resource capacity, and the lack of integration of formal psychosocial support were obstacles to achieving optimal results. This is in line with the WHO Health System Strengthening framework which emphasizes the importance of strengthening the six pillars of the health system, including effective information systems, workforce, and service delivery (WHO, 2019). Strengthening these pillars must be the main focus of future interventions so that the program runs optimally and leprosy elimination is achieved sustainably.

The success of the program is highly dependent on the synergy of planning variables, coordination, health worker capacity, and community support. Imbalance in one aspect can reduce the effectiveness of the program as a whole. Therefore, it is necessary to strengthen cross-sector coordination, increase human resource capacity, digitize recording and reporting, and develop systematic and integrated psychosocial support to encourage the achievement of optimal results in leprosy control and elimination in Manokwari Regency.

Output From Leprosy Control Program

The output stage in the implementation of the leprosy control program in Manokwari Regency showed a real impact on community understanding, patient compliance, and service coverage. The results of this study indicate that direct counseling, both through home visits and at integrated health post activities, is quite effective in increasing community knowledge about leprosy. Communities that previously had a wrong understanding and were full of stigma began to accept information more openly. Several informants even stated that they only learned about the early symptoms of leprosy, the types of

treatment, and that leprosy can be cured after participating in counseling conducted by officers.

The effectiveness of counseling conducted face-to-face has proven to be more memorable in the minds of the community, especially when accompanied by supporting media such as leaflets and testimonials from survivors. However, the results of this study also found that not all health workers have sufficient capacity to deliver leprosy material comprehensively. Lack of training and the unavailability of visual aids are obstacles in themselves. This was also seen in interviews with health center informants who stated that counseling was still carried out on a limited basis, only during home visits, and was not supported by adequate educational media.

These results strengthen the findings of Kalengkongan(2021), which shows that the success of the implementation of the leprosy program has not been maximized if it is not supported by good planning and stakeholder involvement at the sub-district level. In the program evaluation on Mahangetang Island, only 49.39% of the program coverage was achieved. This study also shows that the success of the program still faces challenges in the aspect of cross-sector coordination. Counseling and outreach activities are often only carried out by health center officers without the active involvement of the village government or sub-district officials.

Other findings in this study indicate that most patients showed compliance in taking MDT drugs, especially because of encouragement from health workers who provided routine assistance. However, there were also cases of patients who stopped treatment because they felt they had recovered. This shows the importance of ongoing education and monitoring by cadres. This study is in line with the findings of Rustam Muh Azhri(2018)which emphasizes the influence of the role of health workers on patient compliance in undergoing therapy.

Community acceptance of the program, it can be seen that most people feel helped and satisfied with the services provided. However, challenges still arise, especially for people who work as farmers and cannot always be present when activities are carried out. This situation was also found in Soulissa's research(2024)and Rahman(2016), where community attendance in program activities is highly dependent on their daily activities. Nevertheless, health workers continue to demonstrate their commitment to providing optimal services, which are recognized and appreciated by the community.

The results of this study also confirm that the stigma against leprosy sufferers still exists, although it is starting to decrease. Some patients still hide their illness from their surroundings because they are afraid of being ostracized. Therefore, counseling is not only important to increase knowledge, but must also be directed to build social acceptance of leprosy sufferers. Research by Bujawati et al.(2015)shows that positive perceptions of leprosy can be achieved if the community is given sufficient education. In the context of this study, a community-based approach through the involvement of cadres and community leaders is a potential strategy to reduce stigma gradually.

CONCLUSION

1. The leprosy control program still faces challenges in the input aspect, including: limited and unprepared human resources, minimal training and regeneration of managers, funding that relies on BOK without special budget support, manual recording and reporting, and less than optimal use of digital systems. IEC facilities are still limited. Drug storage is in accordance with standards.
2. The implementation of the leprosy control program has been running with an operational structure that is adaptive to local conditions. However, it is still faced with challenges in access to services, early detection that has not been standardized, uneven distribution of drugs, limited manual recording systems, and the unavailability of formal psychosocial support. Home visit strategies and the role of cadres have not been integrated systematically.
3. The output of the leprosy control program is quite good. The increase in the number of case findings is driven by active counseling, the role of cadres, and public awareness to check themselves. The cure rate is quite high in patients who are compliant with treatment, supported by monitoring by health workers and family support. However, there are still patients who stop treatment early and cases of disability due to late detection.

RECOMMENDATIONS

a. Improving the quality of leprosy services through regular training, especially related to early detection, case management, and the use of leprosy information systems.
b. Develop a more efficient and integrated recording and reporting system, both manually and digitally, to ensure leprosy case data is more accurate and easy to analyze.
c. Conduct mapping and evaluation of operational constraints of the leprosy program so that health centers can gradually improve services without having to rely on large additional budgets.
d. Strengthening cross-sector coordination and vertical communication between health centers and the Health Office so that program interventions are more focused and sustainable.
e. Promote the implementation of community-based leprosy services and strengthen accessible referral systems, especially for areas with geographical barriers.

FURTHER STUDY

Research needs to be conducted using quantitative methods with larger samples or with a mixed method design. Because this research has shortcomings such as informant answers that are not in accordance with the actual facts

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