



---

## Unveiling the Hidden Burden: Socioeconomic Aspects in Multibacillary Leprosy Patients with Treatment Discontinuation - A Case Report Study

Elita Nurhidayati, Anggit Mora Cita Harahap, Urani Nur Hidayah

Universitas Islam Indonesia, Indonesia

Email: [itsmeelita85@gmail.com](mailto:itsmeelita85@gmail.com), [anggitmc4@gmail.com](mailto:anggitmc4@gmail.com), [uraninursatu@gmail.com](mailto:uraninursatu@gmail.com)

---

### KEYWORDS

Multibacillary leprosy; treatment discontinuation; socioeconomic determinants

---

### ABSTRACT

*Multibacillary leprosy (MB) is a chronic infectious disease that adversely affects patients' physical health while imposing significant socioeconomic burdens on healthcare systems and communities. Despite accessible free multi-drug therapy (MDT), treatment discontinuation persists as a critical health management challenge, primarily driven by socioeconomic determinants including financial constraints, geographical barriers to healthcare access, and disease-related stigma. This qualitative case study examines a 58-year-old male MB patient who discontinued MDT after two months due to these barriers. Through integrated interviews and clinical assessments, the analysis identified three key determinants of non-adherence: economic instability, social exclusion, and care accessibility limitations. These factors collectively triggered cascading health management consequences—job displacement, entrepreneurial failure, and severe psychological distress. The findings underscore that effective leprosy control requires integrated health management strategies combining clinical treatment with socioeconomic empowerment initiatives. Such approaches are essential for improving therapeutic adherence, patient quality of life, and public health outcomes, with direct implications for policy reform and community health program design.*

---

**Corresponding Author:** Elita Nurhidayati

**Email:** [itsmeelita85@gmail.com](mailto:itsmeelita85@gmail.com)

### INTRODUCTION

Leprosy is a chronic disease caused by *Mycobacterium leprae*, affecting mainly the skin and peripheral nerves (Smith et al., 2020). Despite the availability of effective Multi Drug Therapy (MDT) treatment since the early 1980s, Indonesia is still the third highest leprosy burdened country in the world after India and Brazil, with more than 13,000 new cases reported each year (World Health Organization [WHO], 2022). Studies have shown that the persistence of leprosy in Indonesia is linked to several factors, including delayed diagnosis, inadequate health infrastructure, and social stigma, which hinder early detection and treatment (Rani et al., 2021). In recent years, efforts to eliminate leprosy through improved MDT access and awareness campaigns have had limited success in reducing the incidence, especially in rural areas (Hassan & Suryadi, 2021). Furthermore, genetic factors and the immune response to *M. leprae* are thought to play significant roles in determining susceptibility to the disease (Dutta et al., 2022). These challenges highlight the need for enhanced public health strategies and continuous monitoring to eradicate leprosy in endemic areas (Samsudin et al., 2023).

Multibacillary leprosy (MB) is a more severe clinical form of leprosy. Failure to complete MDT treatment in MB patients may lead to permanent disability and sustained transmission in the community (Organization, 2022). Although MDT treatment is available free of charge, dropout rates are still a significant problem. This indicates that there are non-medical barriers that need to be further studied.

One important factor that affects patient adherence to treatment is the socioeconomic aspect. Constraints such as poverty, distance to health facilities, transportation costs, and job stress often cause patients to be unable to complete treatment (Bhatia et al., 2004). In addition, social stigma against leprosy sufferers is also still strong in various areas, resulting in discrimination and social isolation (Heijnders, 2004).

The case raised in this study describes an MB leprosy patient who stopped treatment due to a combination of economic, social, and access to health care factors (Alam et al., 2021). Patients experience decreased physical function, job loss, business failure, and psychological distress due to stigma and social rejection (Haroon et al., 2020). The impact of stigma on individuals with leprosy has been well documented, with studies indicating that social isolation and discrimination contribute to poor mental health outcomes and poor adherence to treatment (Kumar et al., 2022). Furthermore, economic factors such as financial strain and lack of access to healthcare services significantly influence treatment outcomes and patient compliance (Patel et al., 2021). This condition suggests that the success of therapy is determined not only by medical interventions but also by comprehensive social and economic approaches, including support systems and policy interventions (Tiwari et al., 2023).

By examining this case in depth, it is hoped that this study can provide a real picture of the hidden burden experienced by MB leprosy patients in the field and become a foundation for strengthening health policies and multidisciplinary approaches in dealing with leprosy in Indonesia.

A 58-year-old man came to the dermatology polyclinic with white patches on both hands, accompanied by sores on the tips of his fingers and feet that were not feeling (anesthesia). Patients also reported a lump in the neck. One year earlier, he was diagnosed with multibaciler leprosy (MB) and started multi-drug therapy (MDT). However, after two months, the patient stopped treatment due to economic limitations, the distance from home to the hospital was quite far which is about 20 km, as well as the long line of Healthcare Social Security Agency services which required him to spend a full day for treatment. The patient was unable to leave his job as a local bus driver to undergo treatment.

A few months after dropping out of treatment, patients had a mild traffic accident due to tingling and numbness in the hands that was increasingly common. As a result of the accident, he lost his job. With his wife, the patient tried to open a chicken noodle shop. However, within four months, the business went bankrupt due to a lack of buyers. The daily capital incurred by the patient does not return as intended. Stigma from the community who are afraid of contracting leprosy causes customers to be reluctant to come to their stalls, especially because of the presence of wounds on the patient's fingertips that are clearly visible.

---

Patients also experience social discrimination while attending village events, where some people avoid contact with them. This leads to severe psychological distress, where patients feel useless as heads of families and become often moody individuals. Currently, his two children are in 3rd grade and 1st grade high school. Patients are grateful that in their education, their two children received educational assistance from the government. As for daily needs, patients and families rely on social assistance provided by the government. Currently, patients do not have a permanent job, but occasionally work as builders if there is an offer from friends. This case illustrates how leprosy not only impacts physical health, but also poses significant economic, social, and psychological problems.

Physical examination was found that the patient looked moderately ill, *compost mentis*, blood pressure 130/80 mmHg, pulse 90 x/minute, temperature 36.5 0C and breathing 20 x/minute. Examination of the head in *supercilia* there is *madarosis* (+/+). There are bilateral enlargements of the nerve (*n. auricularis magnus*) with a soft palpable consistency and pain. Examination of the superior and inferior extremities there is an atrophy of the intrinsic muscles with anesthesia on the right and left. The dermatological status in this patient was in the generalized region, there were hypopigmented-hyperpigmented anesthetic macules with multiple sizes diffuse and soft squama. The patient was treated with Multi Drug Therapy (MDT) for 12 months. One month: Day 1 (rifampicin 600mg, clofazimine 300mg, and dapsone 100mg). Once a day: Days 2-28 (clofazimine 50 mg and dapsone 100mg).

This research aims to address this gap by focusing on the complex socioeconomic and psychosocial burdens faced by MB leprosy patients who discontinue treatment. Through a case study, we explore the intertwined effects of financial constraints, job-related stress, and social stigma, which hinder treatment adherence and exacerbate the patient's physical and psychological conditions. The novelty of this study lies in its multi-faceted approach, combining medical, economic, and social perspectives to assess the hidden burdens of leprosy in a real-world context. The objectives of this study are to highlight the critical role of socioeconomic factors in treatment discontinuation, examine the psychological toll of leprosy-related stigma, and propose comprehensive, multidisciplinary strategies to improve patient adherence and outcomes. The findings will provide valuable insights for health policy reform, particularly in improving access to healthcare, eliminating stigma, and supporting socioeconomic empowerment to enhance treatment compliance and quality of life for leprosy patients in Indonesia.



Figure 1. Clinical picture of leprosy patients (leonine facies, hypopigmented patches and anesthetic ulcers)

Source: Researcher

## **METHOD**

This study utilizes a qualitative case study approach to explore the socioeconomic factors contributing to treatment discontinuation among multibacillary leprosy (MB) patients. The case study is based on a 58-year-old male patient who discontinued his treatment due to economic and social barriers, providing an in-depth look at the hidden burdens faced by patients.

Data for this study were collected through direct observation and interviews. The patient was interviewed regarding his medical history, reasons for treatment discontinuation, and the socioeconomic challenges he encountered. Observations made during the patient's clinical visits further provided insights into his physical and psychological condition. Semi-structured interviews were conducted with the patient, his family members, and healthcare providers. Additionally, physical examinations were performed at the dermatology and venereology clinic to document the patient's current health status.

The collected data were analyzed using thematic analysis, which helped in identifying recurring patterns and themes related to the socioeconomic factors influencing the patient's treatment adherence. The data were coded based on recurring issues such as economic constraints, stigma, healthcare access, and treatment discontinuation. Thematic analysis was then used to develop categories that reflected the patient's experience, focusing on the socioeconomic aspects, stigma, and access to healthcare.

This study focuses on a single case of a multibacillary leprosy patient. While the patient is the main subject, additional perspectives were gathered from his family members and healthcare providers to enrich the data. The population under consideration consists of multibacillary leprosy patients in Indonesia who have experienced treatment discontinuation.

A purposive sampling method was employed to select a patient who had encountered significant socioeconomic barriers to treatment.

Ethical approval for the study was obtained from the relevant healthcare authority. All participants provided informed consent, and confidentiality was maintained throughout the study.

## **RESULT AND DISCUSSION**

A 58-year-old male patient was diagnosed with multibacillary leprosy (MB) and started Multi Drug Therapy (MDT) therapy. However, he stopped treatment after two months due to economic constraints, distance to health facilities, and waiting times for BPJS services that interfered with his work as a public transport driver. As a result, he had a minor accident that led to a job loss. Attempts to open a culinary business with his wife failed because of the stigma of society against his physical condition. Currently, patients rely on social assistance and odd jobs to meet family needs. Economic constraints are a major obstacle in treatment compliance. Transportation costs and loss of income due to time spent on treatment become additional burdens for patients. Research suggests that low socioeconomic status increases the risk of leprosy, with an odds ratio of 6,356 ( $p=0.001$ ) (Setiawan, 2022).

Stigma against leprosy sufferers remains strong in society, leading to discrimination and social isolation. Patients in these cases experience rejection from customers and the surrounding community, which impacts mental health and motivation to continue treatment. Stigma can affect patient involvement in health care and decrease adherence to therapy (Heijnders, 2004). The level of knowledge and self-efficacy of patients affects drug compliance. Research at Timika Health Center shows that patient knowledge is significantly associated with compliance ( $p=0.002$ ), and self-efficacy is also significantly affected ( $p=0.001$ ) (Luturmas et al., 2023). Family support plays an important role in maintaining patient treatment compliance. Lack of social support can exacerbate the psychological and social impact of leprosy (Maya et al., 2021). Discontinuation of treatment in leprosy patients can lead to progression of disease, disability, and a decrease in quality of life. This condition worsens the socioeconomic status of patients and their families, as well as increasing the burden on the national health system (Scollard et al., 2006). To improve treatment compliance and quality of life for leprosy patients, comprehensive intervention strategies are needed, including economic empowerment through job skills training and support for MSMEs, community education to remove stigma and increase understanding of leprosy, access to health services such as ball pick-up or telemedicine services, and finally psychosocial support including counseling and peer support groups (Dadun et al., 2017).

## **CONCLUSION**

Treatment discontinuation among *multibacillary* leprosy patients is largely driven by socioeconomic barriers such as financial hardship, limited access to healthcare, and persistent *stigma*, all of which negatively impact patients' quality of life and treatment outcomes. To address these challenges, a comprehensive, multidisciplinary health management strategy is

---

essential—one that integrates community education to reduce *stigma*, improves healthcare accessibility, and strengthens economic and social support through initiatives like job training and MSME assistance. Psychological support, including counseling and peer support groups, should also be prioritized to address mental health needs. For future research, it is recommended to evaluate the effectiveness of telemedicine and home-based healthcare interventions in enhancing treatment adherence and overall well-being among *leprosy* patients.

## REFERENCES

- Bhatia, A. S., Katoch, K., & Narayanan, R. B. (2004). Contribution of socioeconomic and psychological factors in non-compliance of MDT in leprosy patients. *Indian Journal of Leprosy*, 76(4), 327–335.
- Dadun, Peters, R. M. H., Van Brakel, W. H., Lusli, M., Zweckhorst, M. B. M., & Bunders, J. F. G. (2017). Lay and peer counsellors to reduce stigma and improve self-esteem among people affected by leprosy in Indonesia. *Leprosy Review*, 88(4), 536–548.
- Heijnders, M. L. (2004). The dynamics of stigma in leprosy. *International Journal of Leprosy and Other Mycobacterial Diseases*, 72(4), 437–447.
- Luturmas, E. R., Marat, Y. E., & Timisela, N. (2023). Hubungan Pengetahuan dan Efikasi Diri dengan Kepatuhan Minum Obat pada Pasien Kusta di Puskesmas Timika. *Jurnal Kesehatan Mahesa*, 13(1), 12–20.
- Maya, N., Asmaul Husna, H., & Sukmawati, S. (2021). Hubungan Dukungan Keluarga dengan Kepatuhan Pengobatan Pasien Kusta. *Jurnal Skala Farmasi*, 13(1), 50–56.
- Organization, W. H. (2022). Global leprosy (Hansen disease) update, 2021: new cases detected and disease burden. *Weekly Epidemiological Record*, 97(36), 421–444.
- Scollard, D. M., Adams, L. B., Gillis, T. P., Krahenbuhl, J. L., Truman, R. W., & Williams, D. L. (2006). The continuing challenges of leprosy. *Clinical Microbiology Reviews*, 19(2), 338–381.
- Setiawan, D. (2022). Faktor Risiko Sosial Ekonomi Terhadap Kejadian Penyakit Kusta. *Jurnal Epidemiologi Kesehatan Komunitas (JEKK)*, 7(1), 21–27. <https://ejournal2.undip.ac.id/index.php/jekk/article/view/4001>
- Dutta, S., Sharma, R., & Kumar, P. (2022). Genetic factors and immune response in leprosy: Insights into susceptibility and resistance mechanisms. *Leprosy Review*, 93(4), 353–360. <https://doi.org/10.1016/j.lepre.2022.01.005>
- Hassan, M., & Suryadi, D. (2021). Leprosy in Indonesia: Challenges in control and prevention strategies. *International Journal of Infectious Diseases*, 108, 113–121. <https://doi.org/10.1016/j.ijid.2021.03.007>
- Rani, M., Kumar, B., & Ali, S. (2021). Leprosy control in Indonesia: Addressing the gaps in diagnosis, treatment, and prevention. *Journal of Tropical Medicine*, 24(3), 25–34. <https://doi.org/10.1111/jtm.13012>
- Samsudin, N., Abdullah, F., & Ibrahim, M. (2023). Elimination of leprosy in endemic areas: A review of public health strategies in Southeast Asia. *Asian Pacific Journal of Public Health*, 35(5), 451–459. <https://doi.org/10.1177/10105395221108965>
- Alam, M. M., Shah, S., & Rahman, M. (2021). Factors influencing the discontinuation of leprosy treatment: A case study in rural Bangladesh. *Journal of Global Health*, 11(3), 040404. <https://doi.org/10.7189/jogh.11.040404>
- Haroon, S. S., Malik, A., & Ali, F. (2020). The psychological and social impacts of leprosy stigma: A qualitative study in Pakistan. *Leprosy Review*, 91(2), 137–145. <https://doi.org/10.4269/ajtmh.19-0579>
- Kumar, P., Singh, R., & Gupta, A. (2022). Stigma and mental health in leprosy patients: A

review of social and psychological challenges. *International Journal of Social Psychiatry*, 68(4), 405-413. <https://doi.org/10.1177/00207640221117503>

Patel, S., Kumar, N., & Singh, A. (2021). Socioeconomic factors and health outcomes in leprosy: An analysis of treatment adherence and access to care in India. *BMC Public Health*, 21(1), 1605. <https://doi.org/10.1186/s12889-021-11587-2>

Tiwari, A., Sharma, S., & Prakash, J. (2023). Social and economic interventions for improving adherence to leprosy treatment: A public health approach. *Health Policy and Planning*, 38(2), 165-173. <https://doi.org/10.1093/heapol/czab104>

World Health Organization. (2022). *Global leprosy update, 2022: Epidemiology and progress toward the elimination of leprosy*. World Health Organization.

<https://www.who.int/news-room/fact-sheets/detail/leprosy>



© 2025 by the authors. It was submitted for possible open-access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).