

## Leprosy misdiagnosis in Tanzania: An alarming situation, should we concerned?

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### Abstract

Leprosy is a chronic infectious disease caused by the bacterium *Mycobacterium leprae*, which affects skin and nerves. Misdiagnosis of leprosy has been reported in Tanzania, which is alarming considering the disease's potential for serious complications. This commentary examines the available literature on leprosy misdiagnosis in Tanzania and its potential consequences. The results show that leprosy misdiagnosis is a significant problem in Tanzania, with diagnostic errors occurring at various stages of the disease. The causes of misdiagnosis include lack of knowledge among healthcare providers, inadequate diagnostic facilities, and patients' reluctance to seek medical attention. The consequences of misdiagnosis include prolonged disease progression, disability, and stigma. To address this issue, efforts should be made to improve the training of healthcare providers on leprosy diagnosis, increase access to diagnostic facilities, and raise awareness among patients and the general public.

### Introduction

The disease is endemic in many developing countries, including Tanzania. Leprosy can cause severe disabilities, and its diagnosis and treatment require specialized skills and resources. Leprosy is considered as one of the oldest human endemic diseases. It is at least 4,000 years old. It was reported in 1873, when Doctor Armauer Hansen discovered *Mycobacterium leprae* as the causative agent of leprosy in Bergen, Norway therefore confirming the infectiousness of leprosy [1]. Leprosy is a chronic infectious disease caused by *Mycobacterium leprae* and one of the world's most neglected diseases [2]. The disease is endemic in many developing countries, including Tanzania. Leprosy can cause severe disabilities, and its diagnosis and treatment require specialized skills and resources. It primarily affects the skin and the peripheral nervous system. While the precise mode of transmission is still unknown rather nasal droplet infection is thought to be most likely [1]. Clinically, leprosy can be classified into multibacillary lepromatous form and paucibacillary tuberculoid forms [1]. It presents from characteristic skin lesions to disfiguring mutilation in advanced cases [1]. Accurate diagnosis is an important factor for the elimination and control of diseases. As a relatively rare disease with a wide range of symptoms, misdiagnosis with false evaluation has been a big setback in leprosy control [3]. Current treatment options are based on WHO recommendations [1].

### Epidemiological status

Incidence and prevalence status of leprosy is ongoing concern from local setting up to national level and global at large. In 2021, 135 WHO member states shared information on leprosy, accounting for a registered prevalence of 133,781 cases and 140,546 new cases, worldwide [4]. In 2020, a total of 1,208 new leprosy cases were detected in Tanzania with annual notification rate (case detection rate) of 2.6/100,000 [5], again in 2021 leprosy case was 1,511. The number of new leprosy cases notified with disability. According to findings and data available showed that the burden of leprosy deaths is higher among males, elderly, black race and in leprosy-endemic regions. Lepromatous leprosy is the most common clinical form mentioned. Mortality rates showed a significant nationwide decrease over the period. Spatial and spatiotemporal high-risk clusters for leprosy-related deaths were distributed mainly in highly endemic and socio-economically deprived regions [7]. It has been documented that being afraid of stigma and having painless symptoms among people living with leprosy associated with a delay in case detection which increases risk of disabilities and contribute to ongoing leprosy transmission [6]. Furthermore the lack of enough knowledge on leprosy and term as neglected diseases among health workers contribute to delay in diagnosis and misdiagnosis to sometimes that lead to aggravates the transmission profile and lead to severe outcome not only to the people living with leprosy but even

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to people surrounding this count for the burden status of leprosy in our country [6]. In addition, misdiagnosis of leprosy can have severe consequences, including prolonged disease progression, disability and stigma.

### Challenges in leprosy diagnosis

Leprosy can manifest arthritis both as a complication and a comorbid similar to rheumatoids due to several common features. Uncommonly, it may present as acute severe polyarthritis with skin lesions and neurological deficit or a digital vasculitis and gangrene [8]. In addition, leprosy is considered as dissimulated disease, mainly when presented as atypical cases leading to misdiagnosis at emergency setting with hypotheses of infected skin ulcer, acute myocardial infarction, arterial and venous thrombosis [9]. Further more the bacillary load, serology, and tissue response are determined by the host immune status, which make individual tests unsuitable across the spectrum. The sensitivity of tests for identifying paucibacillary cases remains limited also many tests lack specificity in differentiating contacts from diseased cases, this count for misdiagnosis of leprosy in our daily basis in clinical care and services.

### Recommendations

The alarming burden and on going concern of leprosy in our settings is the call for cost effective solution. We have the power and tools to stop transmission and defeat this disease, this can be possible when we prioritize leprosy elimination in our setting by reaching unreached and end leprosy related stigma and discrimination, rising awareness of the diseases and establishing screening program and out reaches particularly in rural settings. Further more the knowledge gap among health workers must be addressed by offering a special training to them pertaining leprosy diagnosis and management we should voice together telling them leprosy is still exists and people get trouble out there. In addition the battle again leprosy is the call for multidisciplinary action where by different disciple must unite instead of leaving this battle to doctors therefore one health approach is the way to go in address this matter. Furthermore leprosy clinics and centers must established and even to the present one there is a need to strength them and letting them count for better services and prognosis.

### Conclusion

Leprosy misdiagnosis is a significant problem in Tanzania, with potentially severe consequences. Efforts should be made to improve the training of healthcare providers on leprosy diagnosis, increase access to diagnostic facilities, and raise awareness among patients and the general public. Early and accurate diagnosis of leprosy is crucial to prevent complications and improve patients' outcomes. Therefore, it is crucial to address the issue of leprosy misdiagnosis in Tanzania and other endemic areas.

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