

STRENGTHENING TB DETECTION AND CARE IN RURAL SA: SOCIOLOGICAL AND SYSTEMATIC BARRIERS

The TB pandemic in South Africa: Problem Statement

Tuberculosis (TB) is a long standing infectious disease¹. It is one of the deadliest in South Africa, being listed among the top 30 high-burden countries for TB, TB/HIV co-infection, and multidrug-resistant tuberculosis (MDR/RR-TB), with TB being the leading natural cause of death in the country.² It caused an incidence of 468 per 100 000 people in 2022.³ South Africa is an upper-middle country, yet plagued by poverty, extreme high income inequality and high levels of unemployment³, making it harder to fight the TB disease.

While innovations in TB care have reduced global mortality rates, South Africa continues to face a complex TB burden.⁴ The co-existence of TB and HIV, particularly in rural areas, further complicates disease management, with people living with HIV facing a much higher risk of TB infection and mortality.⁵ In 2023, an estimated 39.9 million people were living with HIV/AIDS globally and 10.8 million of them developed TB.⁶

TB cases become more complicated when they are coupled with other health issues like diabetes, smoking and alcohol usage, due to their bacteriological relationship.⁷ Other health risks like smoking and alcohol use also increase the chances of getting TB and make it harder to treat.³ For instance, smoking and alcohol consumption are a significant risk factor for TB, particularly if alcohol intake is more than twice a week.⁷

Resources are unequally distributed across provinces in South Africa, favouring urban areas and the private sector, leaving rural populations underserved.⁸ Many individuals in rural areas rely on primary health care clinics for medical services, and face barriers such as low income, lack of medical insurance, and poor education.⁹ The impact of TB is much higher in rural due to the context. Rural areas are generally impoverished, impacting the quality of health they receive.¹⁰ Evidence of this is notable as only 80% of the rural South African population affected with TB receive a diagnosis and just 53% successfully complete treatment.¹⁰

This combination of economic, social, and health challenges sets the stage for a deeper exploration of the TB pandemic in rural South Africa

Aim

- Identify access and infrastructure challenges, and their impact
- Highlight the social challenges and barriers
- Emphasis the economic hardship of TB
- Summarise the goals of the National TB Strategy.
- Recommend strategies to strengthen TB detection and care in rural areas.

1. Healthcare Access and Infrastructure Challenges and Impact

- a. Long distances along with poor travelling conditions and emergency services

Long distances and poor traveling conditions significantly impede on healthcare access in rural areas. Approximately 15% of the population using public healthcare facilities must travel an hour to reach the nearest primary health care clinic, while 20% are an hour away from the nearest hospital.⁹ This limited accessibility places a significant burden on individuals seeking medical care, often resulting in delayed treatment and poorer health outcomes.¹⁰

Poor road conditions leading to healthcare clinics in rural areas make it difficult for patients to reach healthcare facilities.⁹ Clinics face similar issues, as rural areas suffer from inadequate and well-equipped ambulances for the rural region.⁹ There is also limited ambulance availability, and in some cases, ambulances may be busy elsewhere, further delaying patient care.⁹ For example, in the Eastern Cape province, in South Africa, there has been a shortage of 32% of ambulances, and other provinces like the North West face an even greater shortage of 85%.⁸ The national standard for ambulance availability is one per 10,000 persons, but in the Eastern Cape, the ratio is merely 0.68 per 10,000.⁸

These delays can lead to poor health outcomes for TB patients, as timely treatment is essential for recovery, while transportation shortages further hinder access to critical care, compromising treatment outcomes.

b. Lack of Basic Utilities and Facilities

Rural clinics face a lack of essential infrastructure, such as clean drinking water, electricity, and adequate sanitation facilities.⁹ Poor infrastructure hampers the ability of healthcare workers to deliver quality TB care as the absence of these resources contributes to creating a challenging environment for both patients and healthcare workers.⁹ Hence, the quality of TB treatment is affected both at home and at the clinic level.⁹ Inadequate infrastructure and resource shortages weaken TB care, delaying diagnosis and treatment. This leads to higher treatment costs, poorer health outcomes, and increased transmission. Strengthening rural healthcare systems is essential to reducing the TB burden and improving overall public health.

2. Challenges and impact of Social and Cultural barriers

a. Stigma and cultural misconceptions

Stigma and discrimination can cause mental and physical harm, job losses, and reduced educational opportunities, undermining overall social and economic development of the TB patient.⁶

Stigma surrounding TB impacts the lives of affected individuals in healthcare settings and within their communities. Stigma surrounding TB is often rooted in misconceptions and cultural beliefs, which can lead to social exclusion.¹¹ A study conducted in Buffalo City Metropolitan, Eastern Cape, found that TB patients withdraw from their social circles to avoid judgment or gossip, which is often increased by the visible signs of TB such as weight loss.¹¹ This case is more evident amongst men.¹¹ The fear of infection and the judgment of others often discourage individuals from seeking medical care.⁶ This stigma can also be extended to self-stigmatisation, where individuals internalise these negative societal attitudes, stigmatising themselves, and hence they avoid seeking treatment.⁶ The persistent nature of TB stigma also creates a self-reinforcing cycle that continues to discourage people from seeking necessary care, thus exacerbating the situation.¹²

Necessary infection prevention and control measures, like isolating individuals that are believed to be infectious, can also contribute to stigma by reinforcing the idea that TB patients are contagious or dangerous.¹³ Within healthcare facilities, TB patients experience stigmatising behaviours, as healthcare

workers, driven by fear of infection, may avoid or shorten interactions with TB patients or even treat them with contempt.¹³

Stigmatising perceptions about TB can discourage both men and women from seeking care, but is more common amongst men due to lack of caregiving support.¹¹ This leads to delays in diagnosis and treatment as individuals become unwilling to initiate and adhere to treatment, ultimately worsening health outcomes.¹¹ Hence, illness is prolonged and transmission possibility is increased.¹⁴

b. Limited Health Literacy

South Africa's TB epidemic is also driven by low healthcare-seeking behaviour¹⁵ and a poor understanding of the TB disease. A recent TB prevalence survey highlighted the prevalence of subclinical TB, with 58% of TB-positive participants reporting no symptoms.³ This is highly problematic as it can lead to delayed diagnosis and treatment. Delays in TB treatment initiation remain a concern, with a median total delay of six weeks¹⁶ often exacerbated by gaps in TB-related knowledge and healthcare-seeking behaviour.¹⁴ This increases the risk of transmission to others and results in untreated cases, contributing to the spread and persistence of the disease in the population.

3. Economic Hardship and Impact

South Africa faces major social and healthcare challenges, with limited resources exacerbating the economic burden of TB.⁹ The economic impact of TB is multifaceted, affecting individuals, families, and healthcare systems, particularly those in rural areas. Many people in rural areas struggle to afford healthcare, this is seen with South Africa's socioeconomic disparities, particularly in rural provinces such as the Eastern Cape, Limpopo, and KwaZulu-Natal, where poverty levels remain above 60%.⁸ In addition, basic nutrition is also problematic, as some patients, despite being diagnosed for TB, do not complete treatment due to food instability and lack of essential resources.¹⁰ These factors contribute to the ongoing challenge of managing TB in rural communities.¹⁰

a. Cost of healthcare in rural areas

The geographical landscape of rural areas presents significant financial barriers to healthcare access.¹⁴ Long travel distances to clinics substantially increase transportation costs, discouraging individuals from seeking medical care.¹⁴ High transportation expenses, coupled with lost productivity due to illness, place a heavy economic burden on patients and their families.¹⁴ As a result, many are unable to afford the full course of treatment, leading to interruptions that contribute to drug resistance and prolong the TB burden.¹⁴ The financial strain further deters individuals from seeking timely medical attention, worsening health outcomes and increasing TB transmission risks.¹⁴ Additionally, patients referred to other healthcare facilities face even higher transportation costs, further exacerbating financial hardships. This limited access to healthcare delays diagnosis and treatment, leading to worsened health outcomes, prolonged illness, and increased treatment costs.^{8,9}

b. Economic impact on the household

Rural parts of the country face high unemployment, poverty and socio-economic instability, such as South Africa's Eastern Cape, where unemployment rates are as high as 44%.⁸ TB takes a huge toll on families financially. When someone in the household falls sick with TB, it often means a loss of household income on top of the medical costs.¹⁷ In rural communities, financial support is already limited, and while social grants exist, they don't always help families dealing with TB.¹²

The economic impact of TB creates a devastating cycle of poverty and illness, with rural provinces like the Eastern Cape recording the highest TB-related mortality rates at 8.3%¹⁸, followed by Mpumalanga at 8.1%.⁸ The economic strain from TB-related illness deepens this poverty cycle, creating "poverty-

disease traps" where individuals cannot afford treatment, leading to worsened health and economic hardship.¹²

The economic impact of TB also affects gender roles in society. Men, who are often seen as the primary breadwinners, face significant consequences when they are unable to work due to TB.⁸ Further straining the family's economic stability.⁸ Women also face high unemployment rates, particularly in rural areas, which adds to their economic vulnerability¹⁴ as they are usually forced to take on a caregiving role.

4. South Africa's strategy to end TB

The South African National AIDS Council (SANAC) developed The National Strategic Plan for HIV, TB, and STIs 2023-2028 (NSP), with the intention of eliminating HIV, TB, and STIs as public health threats by 2030.¹⁹ The NSP adopts a multi-sectoral, people-centred approach guided by principles of universal health coverage (UHC), human rights protection, gender equality, key populations (including sex workers, men who have sex with men, people who use drugs, and migrants) and evidence-based innovation.¹⁹

The plan is structured around four interlinked goals¹⁹:

Goal 1: breaking down barriers to access services

Goal 2: maximising equitable access to prevention, treatment, and care

Goal 3: building resilient health systems integrated with social protection and pandemic response

Goal 4: ensuring sustainable funding and governance.

The NSP emphasises community-led responses, multi-sectoral partnerships, and the use of technology and innovation to accelerate progress.¹⁹ With an estimated cost of R268 billion over five years, the plan calls for increased domestic funding, efficient resource use, and robust monitoring and evaluation to ensure accountability.¹⁹

However, in rural areas, achieving the NSP's goals is severely constrained by systemic challenges. While the plan aims to break down barriers to healthcare access, long travel distances and poor road infrastructure, TB diagnosis and treatment remains difficult. The goal of maximising equitable access is undermined by a shortage of healthcare workers, inadequate ambulance services, and clinics lacking basic utilities such as clean water and electricity. Efforts to build resilient health systems are weakened by resource disparities between urban and rural areas, leaving rural facilities underfunded and ill-equipped. Economic hardship further limits treatment adherence, despite the NSP's emphasis on social protection. Without targeted interventions addressing these rural-specific barriers, the plan's impact remains uneven, prolonging TB transmission and poor health outcomes.

Recommendations

To assist in achieving the goals of the NSP, we recommend the following for rural areas:

1. Access and Infrastructure

- Improve healthcare infrastructure by ensuring access to clean water, electricity, and proper sanitation in rural areas.
- Expand mobile clinics and strengthen community-based healthcare services to reach remote populations.

2. Stigma and Cultural Barriers

- Conduct targeted awareness campaigns to educate rural communities about TB transmission, treatment, and the importance of early detection.

- Engage community leaders and traditional healers to help dispel misconceptions and promote TB awareness.

3. Diagnosis and Treatment

- Increase the availability of rapid TB diagnostic tools in rural clinics and mobile health units.
- Ensure a reliable supply chain for TB medication and implement measures to improve treatment adherence.

4. Socioeconomic Support for TB Patients

- Advocate for financial and nutritional support programmes for TB-affected households in rural areas.
- Promote workplace policies that accommodate TB patients and minimise income loss during treatment.

Conclusion

TB in rural South Africa is exacerbated by inadequate healthcare infrastructure, long travel distances, financial constraints, and deep-rooted stigma, all of which hinder timely diagnosis and treatment. The lack of essential services like clean water, electricity, and reliable medical care further impairs patient outcomes. Although the National Strategic Plan aims to eliminate TB, rural communities continue to face significant challenges due to systemic inequities and resource shortages. To achieve meaningful progress, policies must focus on expanding mobile health services, improving the supply chain for TB medications, and providing comprehensive social and financial support for affected households. Swift and coordinated action from government, healthcare providers, and community leaders is essential to address these disparities, ensuring that rural populations receive equitable access to TB care and support.

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