



# Evaluating a Mobile Health Directly Observed Therapy Intervention for Tuberculosis Treatment Success in Nairobi's Informal Settlements: A Qualitative Study

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## Abstract

Tuberculosis remains a significant public health challenge in Kenya, with treatment adherence posing a particular difficulty in densely populated informal settlements. Directly observed therapy is a cornerstone of tuberculosis control, but traditional in-person observation is resource-intensive and challenging to sustain. This study aimed to explore the experiences and perceptions of patients and healthcare workers regarding a mobile health directly observed therapy intervention, to understand its perceived effect on treatment success in Nairobi's informal settlements. A qualitative descriptive study was conducted using semi-structured interviews. A purposive sample of 24 drug-sensitive tuberculosis patients who had completed treatment using the mobile health platform and 12 healthcare workers involved in the intervention were recruited from health facilities in three informal settlements in Nairobi. Data were analysed using thematic analysis. Four main themes were identified: enhanced accountability and support, reduced stigma and burden, technological and access barriers, and the importance of human connection. Patients reported the intervention reduced stigma, as they no longer required daily visits from a community health worker. However, inconsistent mobile network coverage was a frequently cited barrier to reliable video submission. The mobile health directly observed therapy intervention was perceived as a valuable tool that could support tuberculosis treatment adherence by mitigating stigma and logistical burdens. Its success is contingent on addressing technological access barriers and complementing, not replacing, supportive healthcare worker relationships. Programme implementers should ensure robust patient training on the mobile health platform

and consider hybrid models that combine digital observations with periodic in-person support. Policymakers should advocate for improved digital infrastructure in informal settlements to support such interventions. tuberculosis, mHealth, directly observed therapy, treatment adherence, qualitative research, Kenya, informal settlements This study provides in-depth evidence from a high-burden setting on the perceived utility and limitations of a mobile health directly observed therapy intervention, highlighting critical considerations for its implementation in resource-constrained environments.

**Keywords:** *mHealth, directly observed therapy, treatment adherence, informal settlements, sub-Saharan Africa, qualitative research, tuberculosis*

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