Evaluating a Mobile Phone-Based Directly Observed Therapy (mDOT) Platform for Multi-Drug Resistant Tuberculosis in Khayelitsha, South Africa: A Short Report on Patient Adherence

Jean-Baptiste Ndayishimiye[1]

[1] Department of Public Health, Centre National de Recherche en Sciences de l'Education (CNRSE)

Correspondence: jndayishimiye@gmail.com

Author notes

Jean-Baptiste Ndayishimiye is affiliated with Department of Public Health, Centre National de Recherche en Sciences de l'Education (CNRSE) and focuses on Medicine research in Africa.

Abstract

Multi-drug resistant tuberculosis (MDR-TB) treatment requires prolonged, complex regimens with significant side-effects, making adherence a critical challenge. Conventional directly observed therapy (DOT) is resource-intensive and burdensome for patients. Mobile health (mHealth) interventions, such as mobile phone-based DOT (mDOT), offer a potential alternative in high-burden, resource-limited settings. This short report evaluated patient adherence outcomes from a pilot mDOT platform for MDR-TB patients in Khayelitsha, South Africa. A descriptive analysis used routine programme data from the pilot. Participants used provided mobile phones to record and submit video doses of medication intake. Adherence was measured as the proportion of expected video doses successfully submitted. Patient demographic and treatment data were analysed descriptively. Preliminary data from a subset of patients indicated a high rate of adherence, with a median video dose submission rate of 94%. Patient feedback suggested the platform was generally acceptable and reduced the time and cost burden of travel to clinic-based DOT. The mDOT platform demonstrated feasibility and was associated with high levels of recorded adherence in this pilot. It presents a promising tool to support MDR-TB treatment in this setting. Further rigorous evaluation, including comparative studies and analysis of treatment outcomes, is required. Programme expansion should consider sustainable funding for data costs and address technological literacy barriers among some patient groups. tuberculosis, multi-drug resistant, mHealth, telemedicine, treatment adherence, South Africa This report provides early, real-world data on the implementation of an mDOT platform for MDR-TB care in a high-burden South African setting.

Keywords: *Directly Observed Therapy, Multi-Drug Resistant Tuberculosis, mHealth, Patient Adherence, Sub-Saharan Africa*

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