



A Systematic Review of Mobile Health Interventions for Tracking Multidrug-Resistant Tuberculosis Treatment Defaulters in Port Harcourt, Nigeria: An African Perspective, 2002

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Abstract

Multidrug-resistant tuberculosis (MDR-TB) is a major public health challenge in Nigeria, with treatment default driving ongoing transmission and resistance. Port Harcourt, a densely populated urban centre, faces specific difficulties in patient follow-up. Mobile health (mHealth) interventions may offer a solution for improving defaulter tracking within resource-constrained systems. This systematic review aimed to synthesise and critically appraise literature on the implementation and impact of mHealth interventions for tracking MDR-TB treatment defaulters in Port Harcourt, Nigeria. It sought to evaluate effectiveness, identify key operational features, and assess reported barriers and facilitators. A systematic search of multiple electronic databases was conducted following PRISMA guidelines. Included studies were peer-reviewed or grey literature reporting on mHealth interventions for MDR-TB defaulter tracing in Port Harcourt. Two reviewers independently screened studies. Data were extracted and synthesised narratively due to methodological heterogeneity. The search yielded a limited number of qualifying studies. The scant available evidence suggested a positive direction of effect, with mHealth systems associated with improved defaulter identification and re-engagement. A critical operational feature was the integration of the mHealth tool with existing community health worker networks to facilitate follow-up. No studies provided robust quantitative data on the proportion of defaulters successfully returned to care. Preliminary evidence indicates mHealth may strengthen MDR-TB defaulter tracking in Port Harcourt. However, the evidence base remains underdeveloped, lacking high-quality comparative studies measuring definitive health outcomes. More rigorous evaluation is required. Future initiatives should employ robust study designs with control groups and standardised outcome measures. Programmes must focus on sustainable integration into existing health

infrastructure and address contextual barriers such as network coverage and staff training. multidrug-resistant tuberculosis, mHealth, defaulter tracking, treatment adherence, Nigeria, systematic review. This review consolidates the limited evidence on mHealth for MDR-TB defaulter tracking in a specific Nigerian urban context, highlighting a significant evidence gap and providing direction for future research and programme implementation.

Keywords: *mHealth, multidrug-resistant tuberculosis, treatment defaulters, Sub-Saharan Africa, patient tracking, Port Harcourt, Nigeria*

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