Digital Health Platforms for Tuberculosis Screening in Nairobi Slums: Development and Impact

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Abstract

Nairobi slums face significant health challenges, including tuberculosis (TB), a major cause of mortality in sub-Saharan Africa. A mixed-methods approach was employed, integrating surveys, focus groups, and machine learning algorithms for data analysis. The platform detected a higher proportion (30%) of active TB cases compared to conventional methods within the study population. Digital health platforms showed promise in enhancing TB screening accessibility and efficiency in Nairobi slums. Further validation is required, followed by implementation in broader populations to inform policy. digital health, tuberculosis, Nairobi slums, machine learning, screening access Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African Geography, Tuberculosis Screening, Digital Health, Mobile Apps, Community Engagement, Data Analytics, Geographic Information Systems*

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