



Methodological Evaluation of Community Health Centre Systems in Tanzania: A Randomized Field Trial for Measuring Clinical Outcomes

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Abstract

Community health centres (CHCs) in Tanzania play a crucial role in providing primary healthcare services to underserved populations. However, their effectiveness and efficiency vary significantly across different regions. A randomized field trial design was employed to assess the performance of CHC systems. Data were collected through structured questionnaires administered to patients and staff over a period of two years, with statistical models accounting for potential confounders such as socio-economic status and geographic location. The analysis revealed that adherence rates improved by an average of 15% in CHCs where patient education interventions were implemented compared to those without these programmes. Furthermore, there was a significant reduction ($p < 0.05$) in treatment failure cases from baseline levels. This study provided valuable insights into the effectiveness of various intervention methods within Tanzania's CHC system, highlighting areas for improvement and suggesting potential policy recommendations. Enhanced patient education programmes should be integrated into routine healthcare practices to improve adherence rates. Additionally, further research is needed to identify cost-effective strategies that can sustainably enhance clinical outcomes in CHCs. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Randomization, Retrospective Analysis, Quality Assessment, Outcome Measurement, Primary Health Care, Blinding*

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