Bayesian Hierarchical Model for Evaluating Clinical Outcomes in Urban Primary Care Networks: A Meta-Analysis of Tanzanian Studies

Ngamatwa Mnyika[1,2]**, Yosefina Nkatha**[3]**, Kamuntu Msuya**[2,3]

[1] National Institute for Medical Research (NIMR)

[2] University of Dar es Salaam

[3] Tanzania Commission for Science and Technology (COSTECH)

Author notes

Ngamatwa Mnyika is affiliated with National Institute for Medical Research (NIMR) and focuses on Medicine research in Africa.

Yosefina Nkatha is affiliated with Tanzania Commission for Science and Technology (COSTECH) and focuses on Medicine research in Africa.

Kamuntu Msuya is affiliated with University of Dar es Salaam and focuses on Medicine research in Africa.

Abstract

Urban primary care networks in Tanzania have been established to improve healthcare access and quality. However, there is a need for methodological evaluation of these systems' effectiveness across various clinical outcomes. A Bayesian hierarchical model was employed to analyse data from multiple studies conducted by various researchers in Tanzania between and . This approach allows for the integration of diverse datasets while accounting for potential heterogeneity across sites. The analysis revealed a significant improvement in patient satisfaction scores with primary care services, indicating a positive impact on the quality of care provided. This study provides robust evidence supporting the effectiveness of urban primary care networks in Tanzania and highlights areas where further intervention may be necessary to enhance clinical outcomes. Health policymakers should prioritise resource allocation towards strengthening these networks to ensure equitable access to healthcare, particularly for underserved populations. Bayesian hierarchical model, urban primary care networks, Tanzanian studies, clinical outcomes, quality of care Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\rightarrow} p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, urbanization, primary care, Bayesian, hierarchical, evaluation, models*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge