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Methodological Evaluation of Urban Primary Care Networks in Kenya: Multilevel Regression Analysis for Clinical Outcomes Assessment

Owino Onyango[1,2], **Muthoni Mburu**[3]

[1] Department of Surgery, University of Nairobi

[2] Department of Pediatrics, Kenyatta University

[3] Department of Epidemiology, University of Nairobi

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Correspondence: oonyango@hotmail.com

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Author notes

Owino Onyango is affiliated with Department of Surgery, University of Nairobi and focuses on Medicine research in Africa.

Muthoni Mburu is affiliated with Department of Epidemiology, University of Nairobi and focuses on Medicine research in Africa.

Abstract

Urban primary care networks in Kenya are pivotal for providing accessible healthcare services to a growing urban population. However, their effectiveness and efficiency require methodological evaluation. A mixed-methods approach combining quantitative data from network performance metrics with qualitative insights from healthcare providers was employed. Multilevel regression models were used to analyse hierarchical data structures, including individual patient-level and network-level variables. The multilevel regression analysis revealed that patient satisfaction improved by 15% in networks implementing telemedicine services compared to those without, suggesting a significant positive impact on clinical outcomes. This study provides evidence for the efficacy of certain interventions within urban primary care networks and highlights the importance of integrating innovative technologies like telemedicine in healthcare delivery systems. Future research should explore scalability of these findings across different regions and assess long-term sustainability and cost-effectiveness of implemented solutions. Urban Primary Care Networks, Multilevel Regression Analysis, Telemedicine, Clinical Outcomes Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Kenya, Urbanization, Primary Care, Networks, Multilevel, Regression, Evaluation, Community Health*