



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

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Abstract

Urban primary care networks (PCNs) in Kenya are underutilized, leading to suboptimal clinical outcomes for patients. Multilevel regression analysis was employed to assess the influence of PCN structure, patient demographics, and healthcare provider practices on clinical outcomes in Kenya's urban primary care settings. Data were collected from a representative sample of patients across six major cities over two years. Analysis revealed significant variation in clinical outcomes across different PCNs, with some achieving better results than others. For instance, PCN X reported an improvement rate of 15% in patient recovery compared to the baseline. The multilevel regression analysis confirmed that PCN structure and practices significantly influence clinical outcomes, providing evidence for system improvements. Future interventions should focus on optimising PCN design and training healthcare providers to enhance their effectiveness. Urban primary care networks, Multilevel regression analysis, Clinical outcomes, Kenya Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Kenya, Primary Care Networks, Multilevel Analysis, Regression Models, Geographic Information Systems, Spatial Analysis, Community Health Services

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