



Methodological Evaluation of Community Health Centre Systems in Kenya Using Multilevel Regression Analysis to Measure Risk Reduction Efforts

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Abstract

Community health centers in Kenya are pivotal for delivering healthcare services to underserved populations. Despite their importance, there is a need for rigorous methodological evaluation of these systems to assess their effectiveness and identify areas for improvement. The review employs rigorous methodologies including quantitative synthesis of existing studies and critical appraisal of their design, data collection methods, and statistical analyses. Multilevel regression models are utilised to measure the impact of community health centers on reducing health risks at both individual and community levels. A key finding is that multilevel regression analysis reveals a significant reduction in risk factors such as malnutrition by 15% among children under five years old who have access to community health centre services, indicating the effectiveness of these centers in targeted interventions. This review underscores the importance of methodological rigor and standardised data collection in evaluating the impact of community health centers. The multilevel regression analysis provides a robust framework for understanding risk reduction efforts at various levels. Future research should prioritise the use of consistent methodologies to ensure comparability across studies, thereby enhancing the credibility and utility of findings regarding community health centre effectiveness. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health centers, multilevel analysis, public health systems, risk reduction, statistical methodologies, systematic review*

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