



Methodological Evaluation of Rural Clinics Systems in Nigeria: Multilevel Regression Analysis for Measuring Clinical Outcomes

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Published: 11 April 2012 | **Received:** 13 November 2011 | **Accepted:** 29 February 2012

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DOI: [10.5281/zenodo.18961122](https://doi.org/10.5281/zenodo.18961122)

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Abstract

Rural clinics in Nigeria face challenges in maintaining consistent clinical outcomes due to resource limitations. A multilevel regression model was employed, incorporating both clinic-level and patient-level data. The model accounts for clustering effects within clinics and between different regions to ensure robust estimates of the impact of various interventions on clinical outcomes. The multilevel regression analysis revealed that adequate staffing levels at clinics significantly improved patient recovery rates by 20% compared to clinics with insufficient staff, controlling for other covariates such as infrastructure quality and regional economic factors. This study underscores the importance of addressing human resource constraints in rural healthcare settings to enhance clinical outcomes. Policy makers should prioritise training programmes and recruitment efforts to increase the number of qualified healthcare professionals in rural clinics. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Nigeria, counselling, structural, modelling, resource, sustainability*

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