Methodological Evaluation of Rural Clinics Systems in Nigeria Using Multilevel Regression Analysis for Clinical Outcomes Measurement

Olumide Ajayi[1,2]**, Precious Obinna**[2,3]**, Oluwatobiloba Ogunmola**[1,2]**, Chinedu Edeh**[3,4]

[1] University of Ibadan

[2] University of Calabar

[3] Agricultural Research Council of Nigeria (ARCN)

[4] Department of Pediatrics, National Institute for Medical Research (NIMR)

Correspondence: oajayi@outlook.com

Author notes

Olumide Ajayi is affiliated with University of Ibadan and focuses on Medicine research in Africa.
Precious Obinna is affiliated with University of Calabar and focuses on Medicine research in Africa.
Oluwatobiloba Ogunmola is affiliated with University of Calabar and focuses on Medicine research in Africa.
Chinedu Edeh is affiliated with Department of Pediatrics, National Institute for Medical Research (NIMR) and focuses on Medicine research in Africa.

Abstract

Rural clinics in Nigeria often face challenges in delivering consistent quality healthcare due to limited resources and infrastructure. The study employed a mixed-methods approach including surveys, observational data collection, and multilevel regression models to analyse system performance at both individual and organisational levels. Multilevel regression revealed that the presence of adequate training for healthcare providers significantly improved patient recovery rates by 15% (95% CI: [7%, 23%]) in clinics with improved systems compared to those without. The findings suggest a need for enhanced training programmes and resource allocation strategies to optimise rural clinic performance and enhance clinical outcomes. Policy recommendations include the implementation of continuous professional development initiatives for healthcare staff and increased investment in infrastructure improvements. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, rural health systems, multilevel modelling, randomized controlled trials, outcome measurement, qualitative methods, statistical analysis*

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