



Methodological Evaluation of District Hospitals Systems in Nigeria: Multilevel Regression Analysis for Measuring Adoption Rates

Chinedu Nwachukwu¹, Osita Ezeanolue²

¹ Department of Clinical Research, University of Jos

² University of Jos

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Correspondence: cnwachukwu@aol.com

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Author notes

Chinedu Nwachukwu is affiliated with Department of Clinical Research, University of Jos and focuses on Medicine research in Africa.

Osita Ezeanolue is affiliated with University of Jos and focuses on Medicine research in Africa.

Abstract

Nigeria's healthcare system faces significant challenges in service provision across its diverse geographical regions. District hospitals serve as critical nodes within this network but often operate under limited resources and inadequate support systems. A multilevel regression analysis was employed to assess the factors influencing the adoption rate of these guidelines. The model incorporates both individual-level (staff characteristics) and organisational-level (hospital infrastructure) predictors. The analysis revealed that staff education levels significantly impacted the adoption rates, with a 20% increase in educational attainment linked to a 15% higher likelihood of guideline adherence, indicating a positive effect of training on practice implementation. This study underscores the importance of ongoing professional development for healthcare workers and highlights the need for supportive hospital environments to foster better adherence to recommended medical practices. Healthcare administrators should prioritise staff education programmes and enhance infrastructure to support best-practice adoption within district hospitals. Additionally, regular audits of compliance with guidelines are essential for continuous improvement. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_p$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, multilevel, regression, healthcare, diffusion, evaluation, geography*

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