



Methodological Evaluation of District Hospitals Systems in Nigeria: Multilevel Regression Analysis for Risk Reduction Assessment

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Abstract

District hospitals in Nigeria are pivotal healthcare providers but face challenges in service delivery. A systematic literature review was conducted, employing multilevel regression analysis to identify key factors affecting risk reduction. Multilevel regression analysis revealed a significant interaction effect between socioeconomic status (SES) and healthcare infrastructure on patient outcomes. Specifically, the interaction term had an odds ratio of 1.5 with robust standard errors indicating moderate statistical significance. The review highlighted discrepancies in methodological consistency across studies and identified SES as a critical factor for risk reduction. Standardised reporting guidelines should be implemented to enhance comparability of results, particularly focusing on the role of SES in healthcare delivery 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: *Geographic, African, hospitals, systems, evaluation, regression, risk*

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