African Medical Laboratory Immunology

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

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Abstract

Rural clinics in Senegal face challenges in delivering consistent clinical outcomes due to resource limitations and varying service quality. Multilevel logistic regression models were employed to analyse data from rural clinics in Senegal, accounting for hierarchical structures within the data. The multilevel model revealed significant differences in clinical outcomes between clinics with varying levels of investment and staffing. Multilevel regression analysis provides a robust method for assessing clinical performance in resource-limited settings like rural Senegalese clinics. Further research should validate these findings across different regions to ensure the applicability of this methodology. multilevel regression, rural clinic, clinical outcomes, Senegal Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, Senegal, Multilevel analysis, Logistic regression, Clustered data, Methodology, Clinical outcomes*

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