



Multilevel Regression Analysis to Evaluate Clinical Outcomes in Rural Clinics of Senegal: A Methodological Assessment

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Abstract

The healthcare landscape in rural Senegal is complex, with varying quality of care across different clinics. Understanding and improving clinical outcomes requires a robust methodological approach. Multilevel regression models were employed to analyse data from multiple sources including patient records and clinic assessments. The model accounts for both individual patient characteristics and clinic-level variables. The results indicate that clinic infrastructure significantly influences clinical outcomes, with a R^2 of 0.45 indicating substantial explanatory power. Multilevel regression analysis provides valuable insights into the effectiveness of rural clinics in Senegal, highlighting the importance of clinic facilities and resources on patient health outcomes. Future research should consider longitudinal data to track changes over time and incorporate additional factors such as community access and healthcare policies.

Keywords: *Sub-Saharan, rural health, multilevel modelling, cluster analysis, outcome measurement, randomized controlled trials, data quality assessment*

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