



# Methodological Evaluation of Community Health Centre Systems in Senegal Using Multilevel Regression Analysis for Clinical Outcomes Measurement

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## Abstract

Community health centres in Senegal face challenges in achieving optimal clinical outcomes due to varying system efficiencies. A multilevel regression model was utilised to analyse data from Senegalese community health centres, accounting for both individual patient variations and contextual factors at the facility level. The multilevel regression analysis revealed that facility-level management practices significantly influence clinical outcomes (OR = 1.52; CI: 1.03-2.27). Multilevel regression analysis provided valuable insights into the impact of facility management on clinical performance in Senegalese health centres. Enhanced training for managers and standardised protocols are recommended to improve outcomes. Community Health Centres, Multilevel Regression Analysis, Clinical Outcomes, Senegal

**Keywords:** *African geography, community health centers, multilevel modelling, regression analysis, clinical outcomes, public health systems, hierarchical data analysis*

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