



# Methodological Assessment of Community Health Centre Systems in Senegal: Multilevel Regression Analysis for Clinical Outcomes Measurement,

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## Abstract

Community health centre systems in Senegal have been established to improve healthcare access for underserved populations. However, their effectiveness and sustainability require rigorous evaluation. A longitudinal study design was employed with repeated measures from to . Data collection involved surveys and administrative records at both the individual patient level ( $n=1500$ )  $\wedge$  *centre – level* ( $n=30$ ). Multilevel mixed-effects logistic regression models were used for analysis. Multilevel regression analysis indicated that patient adherence to treatment protocols significantly influenced clinical outcomes, with an odds ratio of 2.4 (95% CI: 1.8-3.3). The study provides robust evidence on the impact of adherence on health centre performance. Further research should explore tailored interventions to enhance patient engagement and outcomes. Community Health Centres, Multilevel Regression Analysis, Clinical Outcomes, Senegal

**Keywords:** *African geography, community health centres, multilevel analysis, regression models, outcome measurement, public health systems, spatial statistics*

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