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Multilevel Regression Analysis to Evaluate and Optimise Community Health Centre Systems in Senegal

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Abstract

This study examines the performance of community health centres in Senegal by evaluating their effectiveness through a multilevel regression analysis. A multilevel regression analysis was employed to evaluate the performance of community health centres across different levels. The model accounts for both individual-level (e.g., patient feedback) and organisational-level (e.g., resource allocation) factors. The analysis revealed a significant positive relationship between adequate staffing levels and improved patient satisfaction scores, indicating that increasing staff could enhance service quality and efficiency. This study provides insights into the optimal configuration of community health centres in Senegal by identifying key performance indicators. The findings suggest that an improvement in staffing ratios can lead to better outcomes for patients. Based on the findings, it is recommended that policymakers prioritise enhancing the number of healthcare professionals within community health centres to improve service quality and patient care efficacy. Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta \vec{} \; p \; X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Africa, CommunityHealthCentres, Systems, MultilevelRegression, MethodologicalEvaluation, TheoreticalFramework*