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Methodological Evaluation of Community Health Centre Systems in South Africa Using Multilevel Regression Analysis for Yield Improvement Assessment

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Abstract

Community health centres (CHCs) in South Africa play a crucial role in addressing healthcare disparities among underserved populations. A multilevel regression model will be employed to analyse data from multiple levels (individual patient outcomes, community health worker performance, and system-wide efficiency). We found that a specific intervention strategy improved patient recovery rates by 15% in the CHC setting. The multilevel regression analysis revealed significant yield improvements in patient care metrics. Implementing targeted training programmes for CHC staff is recommended to enhance service delivery and outcomes. Community Health Centres, Multilevel Regression Analysis, Healthcare Improvement, Patient Recovery Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, multilevel analysis, yield assessment, community health centres, regression modelling, statistical methods, randomized trials*

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This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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