African Endocrine Surgery

Multilevel Regression Analysis to Evaluate and Enhance Community Health Centre Systems in South Africa: A Yield Improvement Study

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Published: 28 November 2006 | **Received:** 01 September 2006 | **Accepted:** 05 November 2006

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DOI: 10.5281/zenodo.18822419

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Abstract

Community health centres in South Africa face challenges in delivering consistent healthcare services, leading to inefficiencies and suboptimal patient outcomes. A multilevel regression model was employed to analyse data from South African community health centres, accounting for both individual-level (e.g., patient demographics) and organisational-level factors (e.g., staffing levels). The multilevel analysis revealed significant improvements in service delivery efficiency when adjusting for contextual variables. Multilevel regression analysis is a robust method to assess yield improvement in community health centre systems, facilitating targeted interventions and policy recommendations. Implementing data-driven strategies based on the findings can enhance operational effectiveness and patient care outcomes. Community Health Centres, Multilevel Regression Analysis, Yield Improvement, South Africa Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\rightarrow} p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, regression analysis, multilevel modelling, community health centers, resource allocation, outcome evaluation, yield improvement*

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