



Methodological Evaluation of Community Health Centres Systems in South Africa: Multilevel Regression Analysis for Measuring Adoption Rates

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Abstract

Community health centres in South Africa have been established to improve access to healthcare services among underserved populations. A comprehensive meta-analysis was conducted using data from multiple studies. Multilevel regression models were employed to account for the hierarchical structure of data (e.g., centres nested within provinces). The estimated multilevel model revealed that provincial-level factors significantly influenced adoption rates, with a coefficient indicating an 8% increase in adoption probability per unit increase in provincial funding. This study provides robust evidence on the effectiveness of community health centre systems and highlights the importance of regional support for their successful implementation. Future research should consider longitudinal data to better understand dynamic changes in adoption rates over time, while policymakers can leverage these findings to allocate resources effectively. Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, health systems, multilevel modelling, randomized controlled trials, intervention effectiveness, qualitative synthesis, geographical variation*

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