



Methodological Evaluation of Community Health Centre Systems in South Africa Using Difference-in-Differences for Clinical Outcomes Assessment

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Abstract

Community health centers (CHCs) play a crucial role in healthcare delivery in South Africa, particularly in underserved areas. However, their effectiveness in improving clinical outcomes remains under scrutiny. The DiD model was applied to analyse changes in health indicators before and after the implementation of new CHC policies. Data from a longitudinal study conducted in six randomly selected districts were used, with an emphasis on measuring differences between treatment and control groups over time. A significant improvement in patient recovery rates (72%) was observed within the treated districts compared to the control districts, indicating the effectiveness of CHC interventions. The DiD model demonstrated its utility for evaluating clinical outcomes at CHCs in South Africa. The findings suggest that targeted policy adjustments can further enhance service delivery and health outcomes. Future research should focus on replicating these results across more districts to validate the DiD method's reliability and generalizability. 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: *African geography, clinical effectiveness, difference-in-differences, health system evaluation, intervention analysis, longitudinal study, outcome assessment*

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