Evaluating the Quasi-Experimental Design of Community Health Centre Systems in South Africa: A Methodological Assessment

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Abstract

Community health centres (CHCs) in South Africa are crucial for improving healthcare access and outcomes, particularly in underserved areas. However, their effectiveness is often evaluated through observational studies or cross-sectional analyses, which may not fully capture the impact of interventions. The study employs a mixed-methods approach, combining quantitative data from administrative records with qualitative insights from focus group discussions. A multivariate regression model is employed to assess the impact of CHC interventions on health outcomes, accounting for baseline imbalances using propensity score matching. A significant proportion ($p < 0.05$) of patients reported improved access to healthcare services post-intervention, with a modest increase in preventive care utilization. The quasi-experimental design employed by CHCs in South Africa appears robust for measuring yield improvement but requires further methodological refinement to address potential biases. Future research should consider incorporating longitudinal data and more sophisticated statistical models to enhance the validity of yield assessments. Community Health Centres, Quasi-Experimental Design, Propensity Score Matching, Healthcare Access Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Community health centers, Health systems reform, Quasi-experimental design, Outcome evaluation, Randomized controlled trial, Public health interventions, Service delivery models*

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