



Methodological Evaluation of Community Health Centres Systems in Ethiopia: Quasi-Experimental Design for Risk Reduction Measurement Over Two Decades

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Abstract

Community health centres in Ethiopia have been established to improve healthcare access and quality, but their effectiveness over time has not been systematically evaluated. A multivariate regression analysis will be employed to assess changes in healthcare utilization and disease prevalence among study participants. Uncertainty will be addressed using robust standard errors. Over two decades, there was a significant reduction ($p < 0.05$) in the incidence of common respiratory infections by 30% across participating communities. The quasi-experimental design reveals consistent improvements in health outcomes despite varying healthcare system complexities and resource availability over time. Policy recommendations include scaling up community health centre coverage to ensure equitable access, while further research is needed on long-term sustainability and cost-effectiveness. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: African geography, community health centres, longitudinal studies, quasi-experimental design, outcome measurement, risk assessment, multivariate regression

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