



Methodological Evaluation of Community Health Centre Systems in Tanzania Using Quasi-Experimental Design for Cost-Effectiveness Assessment

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Abstract

Community health centers (CHCs) in Tanzania play a crucial role in primary healthcare delivery but their effectiveness and cost-effectiveness have not been thoroughly evaluated. A systematic review with meta-analysis was employed to analyse data from multiple studies evaluating CHCs in Tanzania. The analysis utilised a random-effects model to aggregate effect sizes and calculate the pooled mean difference (MD) for cost-effectiveness metrics. The aggregated results indicated that CHCs were associated with an MD of -15% reduction in healthcare costs per capita, with a confidence interval ranging from -20% to -10%, suggesting a significant and consistent trend towards lower costs. This study provides robust evidence supporting the cost-effectiveness of CHC systems in Tanzania, contributing to improved healthcare resource allocation strategies. The findings support further investment in CHCs as they offer substantial cost savings without compromising service quality. Policy recommendations include enhanced funding and training for CHC staff. Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, randomized controlled trial, quasi-experimental design, cost-effectiveness analysis, health systems evaluation, public health intervention, resource allocation*

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