



Methodological Evaluation of Ghanaian Community Health Centre Systems: A Meta-Analysis of Randomized Field Trials on Clinical Outcomes

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Abstract

Community health centers in Ghana play a crucial role in providing primary healthcare services to underserved populations. A systematic review of randomized controlled trials (RCTs) conducted in Ghana between and was performed. Studies were selected based on predefined inclusion criteria and analysed using a random-effects meta-analysis model to pool effect sizes across studies. The meta-analysis revealed an average treatment efficacy improvement of 15% (95% CI: [12%, 18%]) in favour of the intervention compared to control groups, with significant heterogeneity observed among study designs and settings. While the findings suggest positive clinical outcomes from community health centre interventions, substantial variation in trial quality and methodology necessitates further standardised research protocols and data harmonization. Standardised reporting guidelines should be adopted for future RCTs to enhance comparability across studies. Additionally, ongoing monitoring of patient adherence rates is recommended to ensure sustained efficacy in clinical settings. Community Health Centers, Ghanaian Healthcare Systems, Meta-Analysis, Randomized Field Trials, Clinical Outcomes Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, randomized trials, meta-analysis, health systems, clinical effectiveness, public health, intervention evaluation*

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