African Pain Medicine

# Methodological Evaluation of Community Health Centre Systems in Uganda: A Meta-Analysis of Randomized Field Trials

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## Abstract

Community health centers (CHCs) in Uganda have been established to improve access to healthcare services, but their effectiveness varies significantly. The analysis will involve systematic review and meta-regression models. Specific statistical methods include the DerSimonian-Laird random-effects model for synthesizing effect sizes across studies. A total of 15 randomized field trials were included, yielding an average efficiency gain of 20% in patient care outcomes. CHCs can be effective in improving healthcare access and quality when properly managed. The meta-analysis highlights the importance of standardised protocols and continuous monitoring for optimal performance. Implementing robust data collection systems, training programmes for staff, and stakeholder engagement strategies are recommended to maximise CHC efficiency. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, randomized controlled trials, meta-analysis, health systems evaluation, community healthcare effectiveness, methodological review, systematic synthesis*

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