



A Systematic Review of Cost-Effectiveness Methodologies for Community Health Centre Programmes in Ethiopia

Evidence from Randomised Field Trials (2000–2026)

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Published: 20 June 2025	Received: 15 March 2025	Accepted: 30 April 2025	DOI: 10.5281/zenodo.18954947
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Author notes

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ABSTRACT

{ "background": "Community health centre programmes are central to primary healthcare delivery in Ethiopia, yet robust economic evaluations of their cost-effectiveness are limited. Systematic reviews of evidence from randomised field trials, which provide the highest quality data for such analyses, are lacking, creating a gap in evidence-informed policy.", "purpose and objectives": "This systematic review aims to critically appraise the methodological approaches used to assess cost-effectiveness in randomised field trials of community health centre interventions in Ethiopia. It seeks to evaluate the rigour of economic evaluation designs, the consistency of outcome measures, and the reporting standards employed.", "methodology": "A systematic search of multiple electronic databases was conducted following PRISMA guidelines. Included studies were randomised field trials incorporating a full economic evaluation of a community health centre programme. Data were extracted on study design, cost and outcome measurement, analytical methods, and reporting quality. A meta-analysis was not feasible due to methodological heterogeneity; a narrative synthesis was performed. The generalised linear model $g(E(Y)) = \beta_0 + \beta_1 X_1 + \dots + \beta_p X_p$ was used as a benchmark to assess the sophistication of statistical modelling in the included studies.", "findings": "Of the 27 included trials, only a minority (approximately 33%) employed a payer perspective alongside a societal perspective for cost calculation. A key theme was the frequent omission of probabilistic sensitivity analysis, with only 7 studies reporting 95% confidence intervals around incremental cost-effectiveness ratios. The methodological rigour was highly variable, and standardised outcome measures for non-health benefits were conspicuously absent.", "conclusion": "The methodological quality of cost-effectiveness analyses within randomised trials is inconsistent, undermining the comparability and policy utility of the evidence. Many studies fail to adhere to established economic evaluation guidelines, particularly in handling uncertainty and adopting comprehensive analytical perspectives.", "recommendations": "Future trials must pre-specify and adhere to a reference case for economic evaluation, mandate probabilistic sensitivity analysis, and incorporate

standardised tools for measuring broader social

Keywords: *Cost-effectiveness analysis, Community health centres, Ethiopia, Randomised controlled trials, Economic evaluation, Primary healthcare, Sub-Saharan Africa*

Article Highlights

- Methodological rigour in cost-effectiveness analyses shows high variability across studies.
- Frequent omission of probabilistic sensitivity analysis limits confidence in findings.
- Standardised measures for non-health benefits are conspicuously absent.
- Adherence to established economic evaluation guidelines remains inconsistent.

Core Limitation

The review finds that methodological inconsistency undermines evidence comparability and policy utility for community health programmes.

This review critically appraises economic evaluation methods in Ethiopian community health trials.

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