

A Systematic Review of the Difference-in-Differences Model for Methodological Evaluation of Risk Reduction in Tanzanian Community Health Centre Systems.

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ABSTRACT

Background: Community health centres are pivotal for public health delivery in Tanzania, yet rigorous methodological evaluations of their impact on health risk reduction are limited. The difference-in-differences (DiD) model is a prominent quasi-experimental technique for causal inference in such settings, but its application and methodological rigour in this specific context have not been systematically appraised.

Purpose and objectives: This systematic review aims to critically evaluate the application of the DiD model in assessing risk reduction outcomes within Tanzanian community health centre systems, focusing on its methodological execution, assumptions, and reporting standards.

Keywords: *difference-in-differences, community health centres, Sub-Saharan Africa, health systems evaluation, risk reduction, Tanzania, quasi-experimental design*

Article Highlights

- Systematic review finds frequent methodological omissions in DiD applications.
- Parallel trends assumption tested in only 33% of included studies.
- Key robustness checks and uncertainty measures are often unreported.
- Findings question reliability of evidence for health policy decisions.

Core Methodological Gap

The review identifies a critical shortfall in testing the parallel trends assumption and reporting statistical uncertainty, which are essential for validating the difference-in-differences model's causal claims.

This review underscores the need for enhanced methodological rigour in health systems evaluation.

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