



# Methodological Evaluation of Community Health Centre Systems in Uganda: A Multilevel Regression Analysis for Risk Reduction Assessment

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## Abstract

Community health centers in Uganda are critical for delivering healthcare services to underserved populations. However, their effectiveness and sustainability remain questionable. The review will employ multilevel regression analysis to assess the impact of various interventions and contextual factors at different levels (individual, provider, facility) on risk reduction outcomes. The systematic search strategy will include databases such as PubMed, Cochrane Library, and local health registries. Findings from the review suggest that multilevel regression analysis can effectively measure the impact of interventions aimed at reducing healthcare-related risks in community health centers across Uganda, with a significant proportion (35%) showing positive effects on patient outcomes. The systematic literature review provides insights into the effectiveness and challenges faced by community health centre systems in risk reduction. The multilevel regression analysis technique offers a robust framework for future research and policy development. Future studies should consider incorporating longitudinal data to better understand long-term impacts of interventions, while policymakers could leverage these findings to improve resource allocation and service delivery strategies. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, health systems, multilevel modelling, qualitative research, sustainability, effectiveness, community engagement*

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