Risk Reduction in Community Health Centres Systems: A Multilevel Regression Analysis in Ethiopia

Tadesse Assegai[1,2]**, Yared Abebaw**[3,4]

[1] Department of Internal Medicine, Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa

[2] Department of Internal Medicine, Addis Ababa University

[3] Department of Surgery, Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa

[4] Addis Ababa University

Author notes

Tadesse Assegai is affiliated with Department of Internal Medicine, Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa and focuses on Medicine research in Africa.

Yared Abebaw is affiliated with Department of Surgery, Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa and focuses on Medicine research in Africa.

Abstract

This study addresses a current research gap in Medicine concerning Methodological evaluation of community health centres systems in Ethiopia: multilevel regression analysis for measuring risk reduction in Ethiopia. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Methodological evaluation of community health centres systems in Ethiopia: multilevel regression analysis for measuring risk reduction, Ethiopia, Africa, Medicine, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\neg}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, Community health centres, Multilevel analysis, Regression models, Risk factors, Public health systems, Statistical methods*

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