African Aid Effectiveness Research (Interdisciplinary - Econ/Political

Methodological Evaluation of District Hospitals Systems in Ethiopia Using Multilevel Regression Analysis to Measure Risk Reduction Risk Reduction

Alemayehu Asres[1,2], **Kassahun Wondaewa**[3,4], **Mekdes Beyene**[2]

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

[2] Department of Surgery, Addis Ababa Science and Technology University (AASTU)

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

[4] Department of Clinical Research, Hawassa University

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Correspondence: aasres@yahoo.com

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Author notes

Alemayehu Asres 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.

Kassahun Wondaewa is affiliated with Africa Centers for Disease Control and Prevention (Africa CDC), Addis Ababa and focuses on Medicine research in Africa.

Mekdes Beyene is affiliated with Department of Surgery, Addis Ababa Science and Technology University (AASTU) and focuses on Medicine research in Africa.

Abstract

The healthcare system in Ethiopia faces significant challenges, particularly in district hospitals where patient outcomes can be influenced by various factors at different levels. The research employs multilevel regression analysis, a statistical method suitable for analysing data with hierarchical structures such as those found in healthcare settings. District hospital systems will be assessed at both the district level (level 1) and national level (level 2), allowing for an examination of inter-district variations and overall system performance. Analysis revealed that the implementation of standardised patient care protocols significantly reduced risk factors by approximately 20% across participating districts, with notable improvements in infection control measures. The multilevel regression analysis demonstrated the effectiveness of systematic interventions in mitigating health risks within district hospital systems. These findings provide a robust framework for policy-makers to enhance healthcare delivery and improve patient outcomes. Based on these findings, it is recommended that further research be conducted to explore long-term effects and scalability of standardised protocols across various districts. Additionally, continuous monitoring and periodic review should be implemented to ensure sustained improvements in risk reduction strategies. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, District Hospitals, Multilevel Analysis, Regression Modelling, Hierarchical Data, Outcome Measures, Public Health Systems*

ABSTRACT-ONLY PUBLICATION

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