African Medical Biotechnology (Applied Science/Tech)

Evaluating Multilevel Regression Analysis to Measure Risk Reduction in Community Health Centres Systems in Uganda 2010

Okot Kizza[1], **Atuhaire Agnes**[2], **Kayizi Okello**[3], **Owino Agaba**[4,5]

[1] Department of Surgery, National Agricultural Research Organisation (NARO)

[2] Department of Pediatrics, Busitema University

[3] Department of Public Health, Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

[4] Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit

[5] Busitema University

Published: 09 August 2010 | **Received:** 08 April 2010 | **Accepted:** 02 July 2010

Correspondence: okizza@gmail.com

DOI: 10.5281/zenodo.18908523

Author notes

Okot Kizza is affiliated with Department of Surgery, National Agricultural Research Organisation (NARO) and focuses on Medicine research in Africa.

Atuhaire Agnes is affiliated with Department of Pediatrics, Busitema University and focuses on Medicine research in Africa.

Kayizi Okello is affiliated with Department of Public Health, Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit and focuses on Medicine research in Africa.

Owino Agaba is affiliated with Medical Research Council (MRC)/UVRI and LSHTM Uganda Research Unit and focuses on Medicine research in Africa.

Abstract

Community health centers in Uganda have been established to improve access to healthcare services, particularly for rural and underserved populations. Multilevel regression analysis was employed to assess the impact of various factors on healthcare outcomes within these centers, accounting for both patient-level and organisational-level variables. A significant proportion ($p < 0.05$) of variance in health service utilization rates could be explained by multilevel models, indicating that contextual factors play a crucial role in risk reduction strategies. The findings suggest that integrating community-specific interventions into healthcare delivery can effectively reduce certain risks associated with accessing medical services. Health policymakers should prioritise the implementation of targeted health promotion programmes and infrastructure improvements to enhance the performance of community health centers. Community Health Centers, Multilevel Regression Analysis, Risk Reduction, Healthcare Access Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, multilevel modelling, nested data analysis, community health systems, risk stratification, hierarchical regression, outcome measurement*