African Plastic and Reconstructive Surgery

Methodological Evaluation of Community Health Centre Systems in Uganda Using Multilevel Regression Analysis

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Abstract

Community health centres (CHCs) in Uganda play a critical role in the healthcare system, yet their effectiveness and efficiency are not well understood. Data from multiple studies conducted across different regions of Uganda were analysed. Multilevel regression models were employed to account for the hierarchical structure of data, with random intercepts at the CHC level to capture geographical variations in performance. Multilevel analysis revealed that implementing community health worker training programmes significantly increased patient satisfaction by 15% (95% CI: [8%, 23%]), indicating potential yield improvements in service delivery. This study provides robust evidence for the efficacy of targeted interventions to improve CHC performance and recommends further research into scalable solutions. Investment in community health worker training should be prioritised, along with continuous monitoring and feedback mechanisms to ensure sustained improvement. Community Health Centres, Multilevel Regression Analysis, Uganda Healthcare Systems Treatment effect was estimated with $text{ logit }(\pi)=beta 0+\vec{\beta} p X_{i}$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health centers, multilevel modelling, randomized controlled trials, statistical methods, systematic review, outcome measures*

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