African Sleep Medicine

Methodological Evaluation of Community Health Centre Systems in Uganda Using Time-Series Forecasting Models for Clinical Outcome Assessment

Abduke Kisivi[1], **Chewance Mwesiga**[1], **Davida Kiwanuka**[2,3], **Basilina Obinna**[4]

[1] Kyambogo University, Kampala

[2] Department of Pediatrics, Makerere University, Kampala

[3] Uganda National Council for Science and Technology (UNCST)

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

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Correspondence: akisivi@yahoo.com

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Author notes

Abduke Kisivi is affiliated with Kyambogo University, Kampala and focuses on Medicine research in Africa.

Chewance Mwesiga is affiliated with Kyambogo University, Kampala and focuses on Medicine research in Africa.

Davida Kiwanuka is affiliated with Department of Pediatrics, Makerere University, Kampala and focuses on Medicine research in Africa.

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

Abstract

Community health centers in Uganda face challenges in delivering consistent clinical outcomes due to variability in service delivery. A comprehensive meta-analysis was conducted, incorporating data from multiple studies on community health centers in Uganda. Time-series forecasting models were applied to predict and analyse clinical outcomes over a period of at least one year. The analysis revealed an average forecast accuracy rate of 75% for future clinical outcome assessments using the proposed time-series model, with confidence intervals indicating robust standard error values. This study highlights the potential of time-series forecasting models in enhancing clinical outcome assessment within community health centers in Uganda. Further research should focus on validating these findings through randomized controlled trials and exploring integration of machine learning algorithms for improved prediction accuracy. Community Health Centers, Time-Series Forecasting, Clinical Outcomes, Meta-Analysis, Uganda Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Socioeconomic, factorial, meta-analysis, forecasting, model, community healthcare*

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