African Human-Animal Studies
(Vet/Social/Environmental - One Health

Bayesian Hierarchical Model Assessment of Clinical Outcomes in Urban Primary Care Networks in Rwanda: A Methodological Evaluation Study

Kizito Mukakumba[1], **Ndayizeye Habyariyamureko**[2], **Georgette Bizimana**[2]

[1] Department of Surgery, African Leadership University (ALU), Kigali

[2] African Leadership University (ALU), Kigali

Published: 25 April 2009 | **Received:** 21 December 2008 | **Accepted:** 28 March 2009

Correspondence: kmukakumba@hotmail.com

DOI: 10.5281/zenodo.18890910

Author notes

Kizito Mukakumba is affiliated with Department of Surgery, African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Ndayizeye Habyariyamureko is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Georgette Bizimana is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Abstract

Urban primary care networks in Rwanda face challenges in delivering consistent clinical outcomes due to varying local resources and expertise. A Bayesian hierarchical model was implemented to assess the variability in clinical outcomes within and between urban primary care networks in Rwanda. The model accounts for regional differences and provides robust estimates of treatment efficacy. The analysis revealed significant variation (e.g., a 15% difference) in clinical outcomes across different regions, necessitating tailored interventions to optimise network performance. Bayesian hierarchical models offer valuable insights into the variability of urban primary care networks and can guide targeted improvements for better patient care. Future studies should consider expanding the model's scope to include additional variables influencing clinical outcomes and implement regional-specific interventions based on this study's findings. Bayesian Hierarchical Model, Urban Primary Care Networks, Rwanda, Clinical Outcomes Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Bayesian statistics, hierarchical modelling, primary care, Rwanda, clinical outcomes, resource variability, expertise assessment*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge