Bayesian Hierarchical Model for Measuring Clinical Outcomes in Urban Primary Care Networks in Ghana

Kofi Mensah[1]

[1] Noguchi Memorial Institute for Medical Research

Author notes

Kofi Mensah is affiliated with Noguchi Memorial Institute for Medical Research and focuses on Medicine research in Africa.

Abstract

This study focuses on evaluating urban primary care networks in Ghana from to , aiming to improve clinical outcomes through methodological advancements. A Bayesian hierarchical model was employed to analyse clinical outcomes across different primary care networks in Ghana. The model accounts for within-network variation as well as network differences, allowing for accurate estimation of network-level effects on patient outcomes. The analysis revealed significant heterogeneity among urban primary care networks in terms of the proportion of patients achieving their health targets (25% vs. 30%). The Bayesian hierarchical model provided a robust framework to understand and improve clinical outcomes in Ghanaian primary care settings. Future research should validate these findings through larger, more diverse datasets and explore the impact of specific interventions on network-level performance. Bayesian Hierarchical Model, Primary Care Networks, Clinical Outcomes, Ghana Treatment effect was estimated with $text\{logit\}(\pi) = beta\, 0 + \beta^{\rightarrow}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Primary Care, Ghanaian, Hierarchical Modelling, Bayesian, Quantitative Analysis, Methodology*

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