African Molecular Biology (Core Life Science)

Bayesian Hierarchical Model for Evaluating Clinical Outcomes Across Ghanaian Rural Health Clinics Systems,

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Abstract

Ghanaian rural health clinics have faced challenges in consistently achieving optimal clinical outcomes. A Bayesian hierarchical model was employed to synthesize clinical outcome data from multiple rural health clinics in Ghana. The model accounts for clinic-specific variability while providing robust estimates of overall performance across different settings. The analysis revealed significant clinic-to-clinic variation in patient recovery rates, with some clinics achieving recovery proportions exceeding 80% compared to the national average. The Bayesian hierarchical model effectively highlighted these differences and provided a nuanced understanding of clinical outcomes within Ghanaian rural health systems. Health policymakers should prioritise interventions that address the lower performing clinics, leveraging the insights from this study to improve resource allocation and patient care strategies. Bayesian Hierarchical Model, Clinical Outcomes, Rural Health Clinics, Ghana Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Bayesian, Hierarchical, Model, Ghana, Outcomes, Rural*

ABSTRACT-ONLY PUBLICATION

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