



Bayesian Hierarchical Model Evaluation of Maternal Care Facilities in Tanzania: An Assessment of Clinical Outcomes in African Contexts,

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Abstract

Maternal care facilities in Tanzania have been under scrutiny for their effectiveness in improving clinical outcomes among newborns and mothers. A Bayesian hierarchical model will be employed to assess the impact of maternal care facilities on clinical outcomes in Tanzania. The model accounts for variability across different clinics and incorporates prior knowledge about maternal health practices. The model revealed significant heterogeneity in clinical outcomes among different maternal care facilities, with some showing marked improvement over others. Bayesian hierarchical models provide a robust framework to evaluate the effectiveness of maternal care systems. The findings highlight the need for targeted interventions and resource allocation within Tanzania's healthcare system. Policy-makers should prioritise the enhancement of care quality in facilities with suboptimal outcomes, using the identified regional strengths as benchmarks for improvement. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords:

African,

Geographic

Terms:

Sub-Saharan

Methodological

Bayesian,

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Terms:

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Outcome, Performance, Quality, Assessment, Randomization

Terms:

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