



Multilevel Regression Analysis to Evaluate Clinical Outcomes in Emergency Care Units Across Tanzania: A Methodological Assessment

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Abstract

This research focuses on evaluating clinical outcomes in emergency care units across Tanzania by conducting a methodological assessment. Multilevel regression analysis was employed to assess clinical outcomes in emergency care units across Tanzania. The study utilised data from multiple levels including individual patient records, unit-specific characteristics, and broader healthcare system factors. Findings indicate a significant positive relationship between the level of medical training provided at the unit level and improved patient recovery rates ($p < 0.05$). The multilevel regression analysis revealed that integrating higher levels of specialized medical care within emergency units significantly enhances clinical outcomes. Recommendation is for healthcare administrators to prioritise investment in training programmes for medical personnel and infrastructure improvements in emergency care units to improve patient recovery rates. Treatment effect was estimated with $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Tanzania, Emergency Care, Multilevel Regression, Hierarchical Analysis, Methodology, Data Quality, Clinical Outcomes

ABSTRACT-ONLY PUBLICATION

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