Multilevel Regression Analysis to Evaluate Clinical Outcomes in Tanzanian District Hospitals Systems,

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Abstract

This study focuses on evaluating the clinical outcomes of district hospitals in Tanzania from to . Multilevel regression analysis was employed to assess clinical outcomes in district hospitals across Tanzania. The study analysed data from multiple levels including individual patient records and hospital-level administrative data. The regression model revealed that the presence of a skilled surgeon significantly improved surgical success rates by approximately 15% compared to facilities without such expertise, indicating a clear need for targeted training programmes in high-need areas. This study underscores the importance of specialized healthcare personnel and highlights the need for tailored interventions to enhance clinical outcomes in Tanzanian district hospitals. The findings suggest that investing in training and retaining skilled surgeons could lead to substantial improvements in surgical success rates, thereby improving patient care in district hospitals. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\ p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Tanzania, District Hospitals, Multilevel Regression, Clinical Outcomes, Health Systems, Hierarchical Analysis, Methodology*

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