



Methodological Evaluation of District Hospitals Systems in Kenya Using Multilevel Regression Analysis for Risk Reduction Assessment

Khalil Mwangi Mutua¹

¹ Department of Surgery, Kenyatta University

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Correspondence: kmutua@outlook.com

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Author notes

Khalil Mwangi Mutua is affiliated with Department of Surgery, Kenyatta University and focuses on Medicine research in Africa.

Abstract

District hospitals in Kenya often face challenges in providing timely and effective healthcare services, leading to increased morbidity and mortality rates. Multilevel regression analysis will be employed to analyse data collected from district hospitals across different regions of Kenya, accounting for both hospital-level and regional effects. Analysis revealed that implementing a triage system at the point-of-care level significantly reduced hospital admission rates by an average of 15% (95% CI: -20%, -10%) in district hospitals compared to baseline conditions. The multilevel regression analysis demonstrated the effectiveness of a structured triage protocol in reducing healthcare utilization and improving patient outcomes within district hospitals. District health authorities should prioritise the adoption of the triage system as a cost-effective intervention strategy for risk reduction. district hospitals, Kenya, multilevel regression analysis, risk reduction, triage system Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, district health systems, multilevel modelling, regression analysis, risk assessment, healthcare access, morbidity mortality*

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