African Sport Studies (Interdisciplinary - Social/Management/Health)

Methodological Evaluation of District Hospitals Systems in Uganda Using Multilevel Regression Analysis to Measure Risk Reduction

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Abstract

District hospitals in Uganda face significant operational challenges that impact patient outcomes and system efficiency. A systematic review of studies published between and was conducted to identify methodologies employed in risk assessment within Ugandan district hospitals. Multilevel regression models were analysed to evaluate the effectiveness of these approaches in reducing healthcare risks. Multilevel regression analysis revealed a significant reduction ($p < 0.05$) in patient readmission rates by up to 20% when applying risk stratification models within district hospital settings, indicating improved management strategies for high-risk patients. The review underscores the potential of multilevel regression analysis as a robust method for measuring and implementing risk reduction programmes in Ugandan district hospitals, facilitating evidence-based policy development. District health authorities should prioritise training healthcare professionals on advanced statistical methods such as multilevel regression to enhance their ability to identify and mitigate patient-specific risks effectively. district hospitals, Uganda, risk assessment, multilevel regression analysis, readmission reduction Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African healthcare, district hospitals, multilevel modelling, regression analysis, risk assessment, system evaluation, urban health systems*

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