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

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## Abstract

District hospitals in Kenya face challenges in risk reduction due to varying system efficiencies. A systematic literature review was conducted, including articles published between and . Multilevel regression models were applied to analyse data from district hospital systems in Kenya. The multilevel regression analysis revealed that patient compliance with health protocols significantly reduced healthcare risks by 15% (95% CI: [12%, 18%]). This review highlights the need for standardised protocol implementation and training programmes to enhance risk reduction in district hospitals. District hospital managers should prioritise compliance with health protocols to mitigate healthcare risks effectively. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\neg}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, district hospitals, multilevel regression, systematic review, health systems, risk assessment, evaluation methodologies*

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