



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

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Abstract

District hospitals in Senegal face challenges in providing effective healthcare services due to resource constraints and operational inefficiencies. The study will employ multilevel regression analysis to assess the impact of various contextual variables on healthcare outcomes at both individual patient levels (level 1) and hospital system levels (level 2). Analysis revealed significant associations between inadequate staffing ratios and poor patient satisfaction scores, indicating a need for targeted human resource management interventions. Multilevel regression analysis has provided valuable insights into the multifaceted challenges faced by district hospitals in Senegal, highlighting the importance of comprehensive system-level reforms. Immediate steps should include strengthening staffing policies and enhancing training programmes to improve service quality and patient outcomes. District Hospitals, Senegal, Multilevel Regression Analysis, Risk Reduction 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: Sub-Saharan, District Hospitals, Multilevel Modelling, Hierarchical Analysis, Regression, Evaluation, Resource Allocation

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