



Methodological Evaluation of Rural Clinics Systems in Senegal Using Quasi-Experimental Design for Clinical Outcome Measurement

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Abstract

Rural clinics in Senegal face challenges in delivering consistent clinical outcomes due to resource limitations and infrastructure deficiencies. A mixed-methods approach was employed, combining quantitative data from clinical outcome measures with qualitative insights from focus group discussions among healthcare providers. The study utilised a difference-in-differences (DID) quasi-experimental design to compare outcomes between clinics before and after the introduction of quality improvement interventions. Data analysis revealed a significant reduction in surgical complications by 25% post-intervention, with a statistically significant $\delta = -0.45 \pm 0.12$ (95% CI: [-0.73, -0.16]) in logistic regression models assessing complication rates. The quasi-experimental design successfully highlighted improvements in clinical outcomes following quality improvement initiatives, providing robust evidence for the effectiveness of targeted interventions in rural Senegalese settings. Further studies should explore long-term sustainability and scalability of these interventions to ensure sustained benefits across different rural clinics in Senegal. Rural Clinics, Quasi-Experimental Design, Clinical Outcomes, Quality Improvement

Keywords: *Sub-Saharan, Senegalese, quasi-experimental, healthcare delivery, outcome measurement, resource assessment, intervention evaluation*

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