



Methodological Assessment of District Hospital Systems in Senegal: Quasi-Experimental Design for Adoption Rate Measurement,

Issa Sène^{1,2}, Mohammed Ndiaye^{1,3}, Aliou Diop^{3,4}, Sabrina Niang⁵

¹ Université Gaston Berger (UGB), Saint-Louis

² Department of Clinical Research, Institut Pasteur de Dakar

³ Department of Surgery, Institut Pasteur de Dakar

⁴ Université Alioune Diop de Bambey (UADB)

⁵ Institut Pasteur de Dakar

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Correspondence: isne@yahoo.com

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Author notes

Issa Sène is affiliated with Université Gaston Berger (UGB), Saint-Louis and focuses on Medicine research in Africa. Mohammed Ndiaye is affiliated with Université Gaston Berger (UGB), Saint-Louis and focuses on Medicine research in Africa.

Aliou Diop is affiliated with Université Alioune Diop de Bambey (UADB) and focuses on Medicine research in Africa. Sabrina Niang is affiliated with Institut Pasteur de Dakar and focuses on Medicine research in Africa.

Abstract

District hospitals in Senegal have been identified as critical nodes for healthcare delivery due to their geographical proximity to rural populations. A quasi-experimental design was employed, utilising regression analysis to model adoption rates as a function of various factors including funding levels and staff training initiatives. Robust standard errors were applied to account for the uncertainty inherent in observational studies. The study identified a significant increase in diagnostic technology adoption rates from baseline to follow-up periods, with an estimated coefficient of adoption rate change at $\beta = 0.45 \pm 0.12$ (95% CI: [0.21, 0.69]). The quasi-experimental design demonstrated the effectiveness of targeted interventions in enhancing diagnostic technology uptake within district hospital systems. Further research should explore the long-term sustainability and scalability of these intervention strategies to ensure widespread impact.

Keywords: *Geographic, Senegalese, healthcare, diffusion, methodology, evaluation, delivery*

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