



# Methodological Approaches to Studying Digital Health Integration in Senegalese Urban Obstetrics and Gynaecology

Aminata Diop<sup>1,2</sup>, Moussa Sarr<sup>1,3</sup>, Fatou Ndiaye<sup>3,4</sup>

<sup>1</sup> Cheikh Anta Diop University (UCAD), Dakar

<sup>2</sup> Department of Pediatrics, African Institute for Mathematical Sciences (AIMS) Senegal

<sup>3</sup> African Institute for Mathematical Sciences (AIMS) Senegal

<sup>4</sup> Université Gaston Berger (UGB), Saint-Louis

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**Correspondence:** [adiop@gmail.com](mailto:adiop@gmail.com)

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## Author notes

*Aminata Diop is affiliated with Cheikh Anta Diop University (UCAD), Dakar and focuses on Medicine research in Africa.*

*Moussa Sarr is affiliated with Cheikh Anta Diop University (UCAD), Dakar and focuses on Medicine research in Africa.*

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

## Abstract

The digitalisation of healthcare is advancing in urban Africa, but methodological approaches for studying its integration into specialised fields such as obstetrics and gynaecology are lacking. This gap hinders the generation of robust, context-specific evidence needed to inform practice and policy in settings like Senegal. This methodology article aims to present a structured framework for investigating the integration of digital health tools within urban Senegalese obstetrics and gynaecology services. It outlines adaptable methods for assessing adoption processes, clinical impacts, and the socio-technical factors influencing implementation. The proposed mixed-methods framework combines longitudinal observational studies, key informant interviews with healthcare providers and administrators, and structured patient surveys. It emphasises participatory design, involving local stakeholders in defining evaluation metrics. Data triangulation is central to validating findings across qualitative and quantitative strands. As a methodology article, it presents no empirical results. Instead, it details a structured approach, including the identification of key thematic analysis categories. A primary focus is the recurring theme of ‘workflow adaptation’ as a critical factor for successful digital tool integration. The outlined framework provides a systematic and culturally contextualised approach for studying digital health integration in urban African obstetric and gynaecological settings. It addresses the need for standardised yet flexible research strategies in this field. Researchers should employ this adaptable framework to generate comparative evidence. Future studies should prioritise co-design with end-users and incorporate economic evaluations to assess cost-effectiveness. Ethical review must consider digital data privacy within the local context. Digital health, methodology, obstetrics, gynaecology, Senegal, implementation science, mixed methods, urban health This article provides a novel methodological framework for researchers and programme evaluators investigating digital health integration in African specialist maternal healthcare.

**Keywords:** *Digital health, Medical informatics, Obstetrics and gynaecology, Sub-Saharan Africa, Implementation research, Mixed-methods, Telemedicine*





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