



Impact Analysis of Mobile Health Monitoring Systems on Maternal Health Metrics in East African Clinics, Gambia

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Abstract

Mobile health monitoring systems are increasingly being integrated into healthcare delivery in East Africa, aiming to improve maternal health outcomes. A mixed-methods approach was employed, including a pre-post design with baseline assessments followed by continuous data collection over six months. Data were analysed using regression models to assess changes in maternal health parameters. Mobile health monitoring systems showed an average improvement of 15% in blood pressure readings and a significant reduction ($p < 0.05$) in weight measurement variability among clinic patients, highlighting the system's effectiveness in real-world settings. The findings suggest that mobile health monitoring can significantly enhance maternal health metrics when integrated into routine care practices. Further research should explore long-term impact and scalability of these systems across different geographical regions and healthcare infrastructures. Mobile Health Monitoring, Maternal Health Metrics, East Africa, Regression Models Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{rVert}^2$, with performance evaluated using out-of-sample error.

Keywords: Sub-Saharan, Africa, MobiHealthNet, QualitativeResearch, Telemedicine, GeospatialAnalysis, Informatics

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