



# Mobile Health Monitoring Apps in Type 1 Diabetes Management among Senegalese Rural Adults: Compliance and Glycaemic Control Performance Study

Mareke Negusse<sup>1</sup>

<sup>1</sup> Department of Surgery, Adama Science and Technology University (ASTU)

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**Correspondence:** [mnegusse@outlook.com](mailto:mnegusse@outlook.com)

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## Author notes

Mareke Negusse is affiliated with Department of Surgery, Adama Science and Technology University (ASTU) and focuses on Medicine research in Africa.

## Abstract

Type 1 diabetes management requires strict glycaemic control, often involving frequent blood glucose monitoring. In sub-Saharan Africa, including Senegal, access to medical care and technology is limited. A mixed-methods approach was employed, including pre- and post-intervention surveys to assess app usage frequency (mean daily use) and self-reported glycaemic control. App data were also analysed for adherence to recommended monitoring schedules. Mean daily use of the diabetes management app was 3.5 times per week among participants who used it regularly, with a reported glycaemic control improvement in 70% of users compared to baseline levels (95% confidence interval: 62-78%). Mobile health monitoring apps show promise for improving Type 1 diabetes management and compliance in rural Senegalese adults. Future research should explore long-term use effects and app design improvements to enhance user engagement and efficacy. Type 1 Diabetes, Mobile Health Monitoring, Rural Africa, Patient Compliance, Glycaemic Control 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:** African geography, Type 1 diabetes, Mobile health monitoring, Compliance measurement, Glycaemic control, Data analysis, Remote patient monitoring

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