

Assessing the acceptability and feasibility of digitalising community health workers in Uganda

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The Electronic Community Health Information System showcases significant improvements in child health outcomes and paves the way for the expansion of digital health initiatives in resource-limited environments

Introduction

In 2019, the Ministry of Health launched the community health roadmap, outlining priority needs for Uganda’s community health programme. In a significant move towards digital transformation, the Ministry of Health partnered with Malaria Consortium and Medic, a technology-focused organisation, to begin digitalising the country’s integrated community case management (iCCM) programme in 2020 through the introduction of the Electronic Community Health Information System (eCHIS), as well as the development of a stock monitoring module. This study aimed to evaluate the acceptability, feasibility and impact of the eCHIS on improving child health outcomes.

Methods

- We used a quasi-experimental design to evaluate how integrating digital tools into community health workers’ (CHWs) tasks affects health outcomes for children under five. It covered 20 health facilities in Buikwe (intervention district) and compared them with 20 in Kayunga (control district). Data analysis was performed using STATA 12.
- Comparative baseline and endline surveys were conducted using cross-sectional cluster randomised control trials (cRCT) with passive surveillance. This period was divided into the pre-intervention (April – November 2021) and intervention (December 2021 – March 2022) phases.
- Additionally, 141 village health teams (VHTs) were randomly chosen to assess the feasibility and acceptability of the eCHIS tool through questionnaires that focused on their use of the tool and adherence to child treatment guidelines for accurate diagnosis and treatment.

Results

Quantitative

- Malaria-related hospital admissions for children under five in Buikwe district fell significantly from 16 to 13 percent ($p < 0.001$). In contrast, in Kayunga district, the decrease was minimal and not significant, from 16 to 15 percent ($p = 0.098$).
- In Buikwe district, the combined outpatient department (OPD) attendance for malaria, diarrhoea and pneumonia among children under five decreased significantly from 46 to 32 percent ($p < 0.001$), while in Kayunga district, the decrease was not significant, from 47 to 46 percent ($p = 0.073$).
- Malaria mortality rates among children under five calculated per 100,000 population per year decreased significantly in Buikwe district, from 71.7 to 59.5 deaths ($p < 0.001$), while in Kayunga district, the decline was minimal, from 76.1 to 73.1 deaths ($p < 0.001$).

Qualitative

- Scientific point comparisons show high acceptability and practicality, as 97 percent of users confirm that the eCHIS saves time and facilitates accurate diagnosis and treatment.
- Additionally, 99 percent endorse the use of the eCHIS tool.

Conclusion

We anticipate that the implementation of the eCHIS app in Buikwe district played a crucial role in facilitating service availability within the community and, subsequently, decreased the burden on health facilities. This study underscores the capability of the eCHIS to transform community health practices. It also provides insights on improved outcomes for child health and sets the stage for digital health initiatives that are scalable in environments with limited resources.

Figure 1. Map showing study districts Buikwe and Kayunga

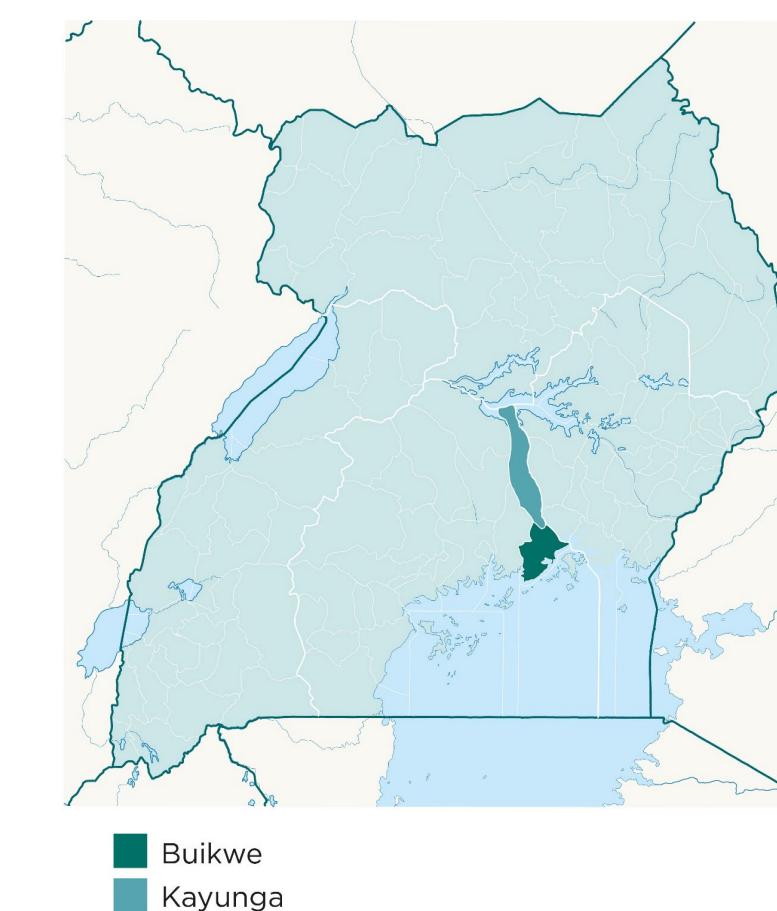


Figure 2. Proportion of admissions due to malaria among children under five

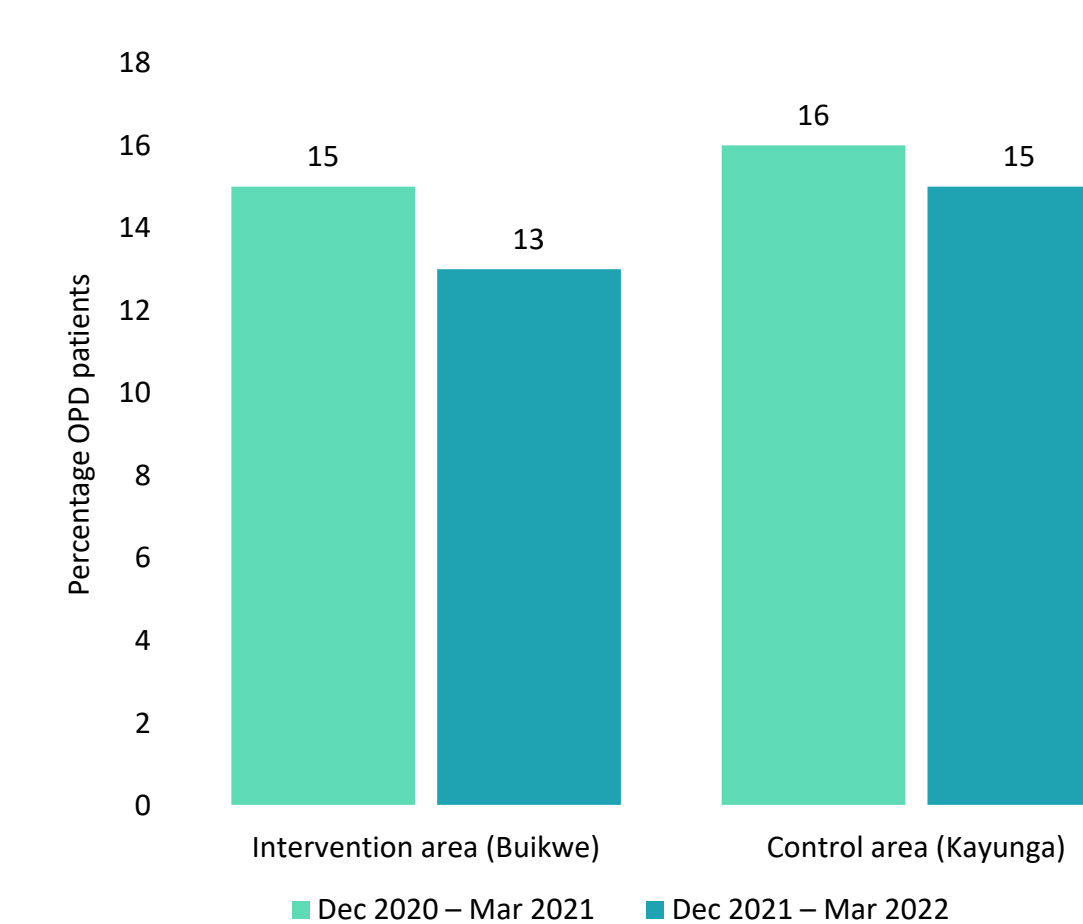


Figure 3. Proportion of admissions due to malaria among children under five

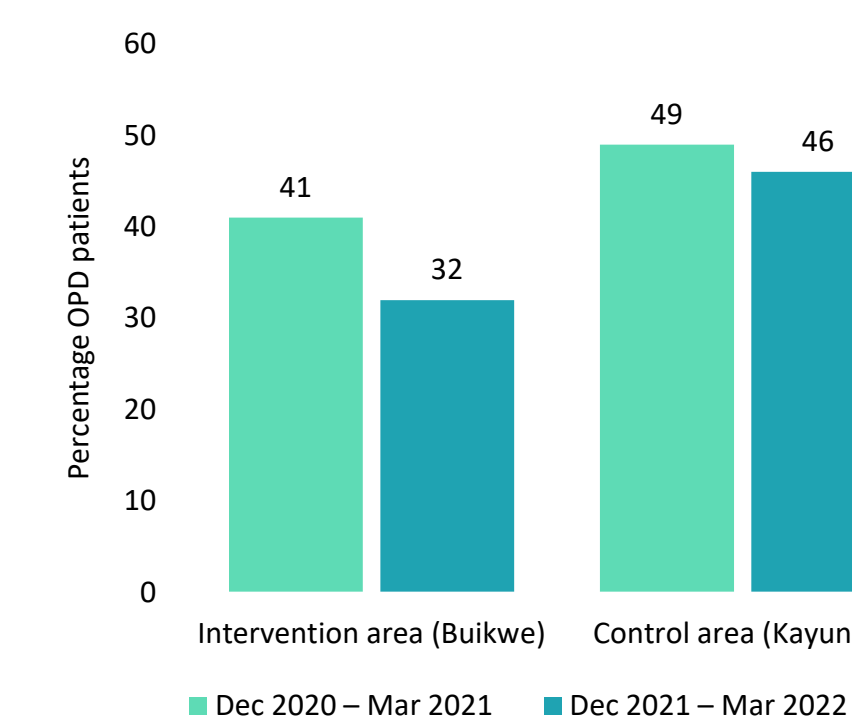


Figure 4. Deaths among children under five due to malaria per 100,000 population per year

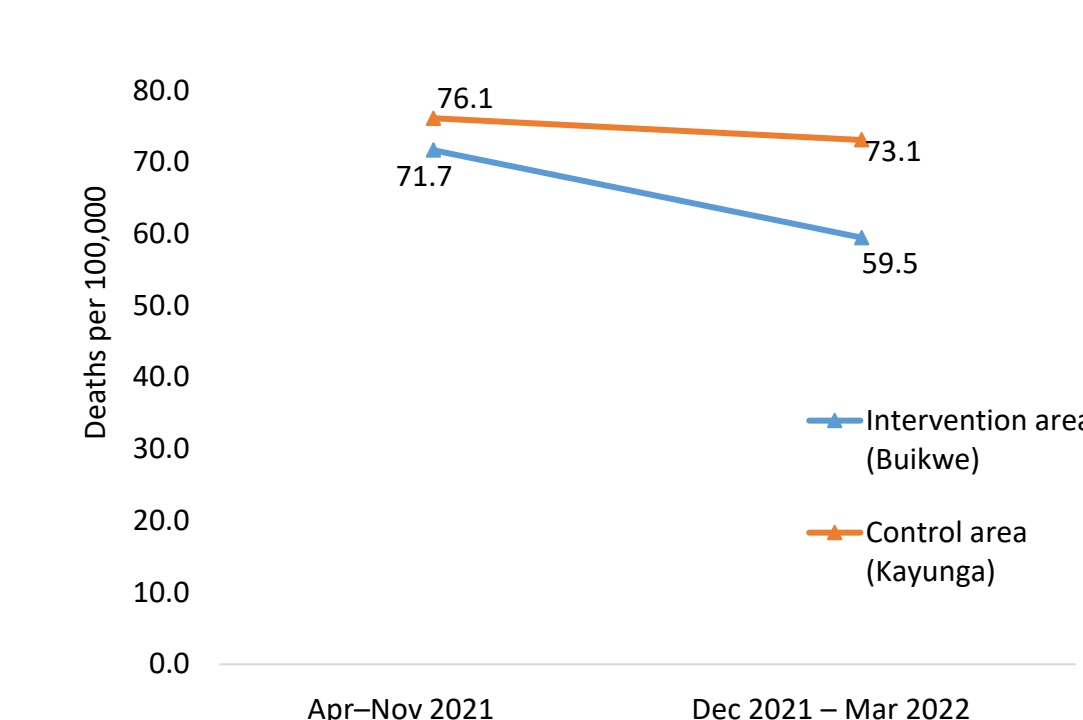
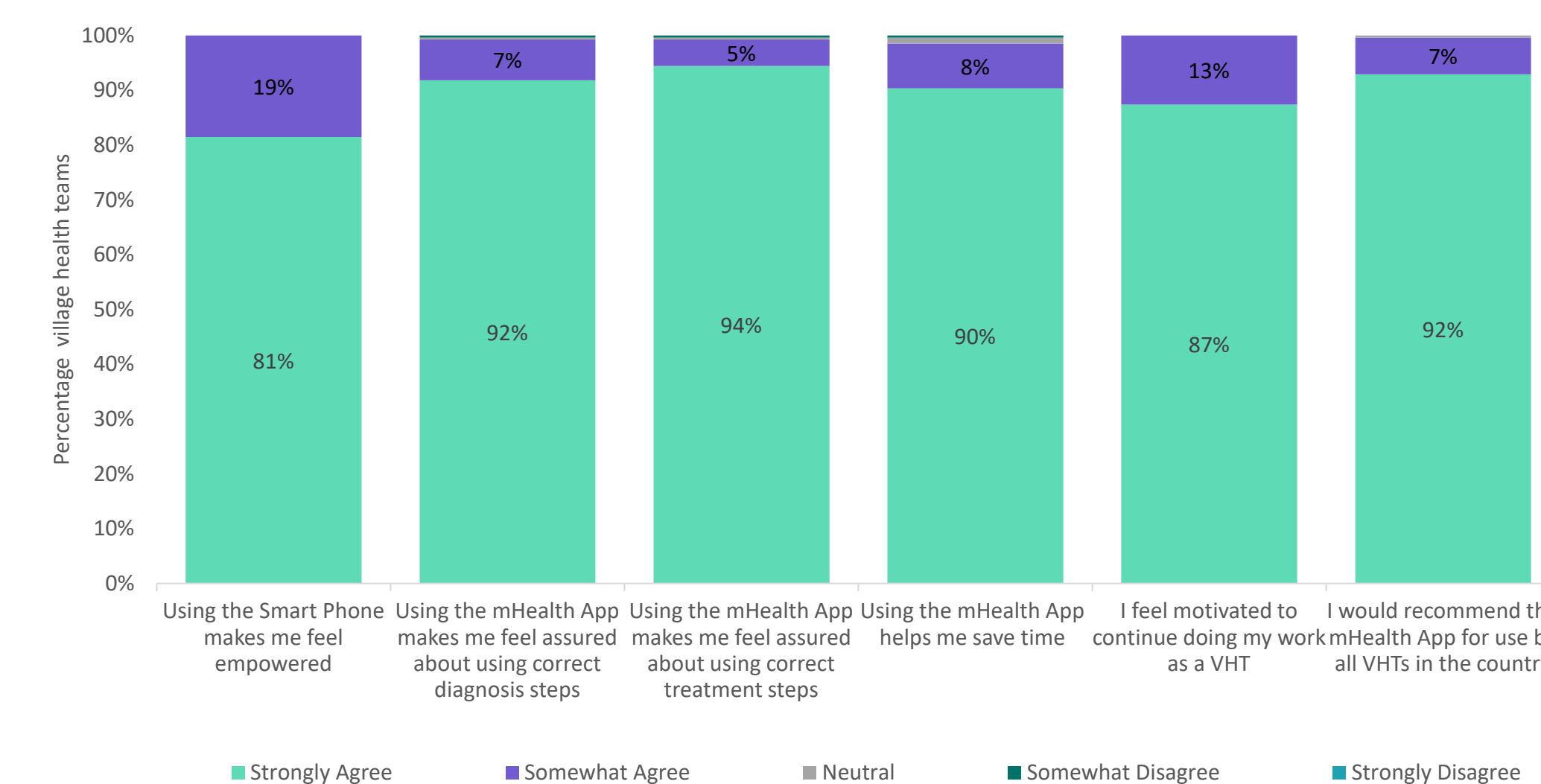


Figure 5. Village health team perceptions on using smart phones and the eCHIS app



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