

Diane DUSHIMIMANA¹, Marc Nyssen^{1,2},Julienne Murererehe³

¹Regional Centre of Excellence in Biomedical Engineering and e-Health (CEBE), University of Rwanda; ² virgil universiteit brussel; ³College of Medicine and Health Sciences Rwanda, Kigali, (CMHS), University of Rwanda, Kigali, Rwanda,

Abstract

Objective: This research defined the functional specifications for a mobile health application to follow-up and stimulate drug adherence with hypertensive patients..

Methods: A descriptive cross-sectional design was used and data were analyzed by using Stata Vision 17.

Results Participants identified forgetfulness (78%) and lack of knowledge about hypertension (62.5%) as major reasons for missing doses. Over 70% were interested in a medication adherence application, preferring features like reminders, educational content. Manual recording and voice notes were common ways to track medication intake. Most participants were comfortable sharing health information and valued downloadable reports. Healthcare providers emphasized the need for communication and adherence reports, believing the application could improve outcomes. These insights guided the creation of the application's functional specifications.

Conclusion: The study highlights the importance of a user-centered m-health application to address medication adherence barriers and improve health outcomes for hypertensive patients in Rwanda. By defining functional specifications based on user needs and preferences, the research establishes a solid foundation for the next phase of drug adherence m health development.

Introduction

- ❖ Hypertension(High blood pressure) is a major global health issue and a chronic condition requiring ongoing treatment.
- ❖ Poor adherence to antihypertensive drugs is a significant risk factor for uncontrolled high blood pressure, leading to severe complications like premature death and stroke.
- ❖ Despite efforts to integrate non-communicable diseases (NCDs) into primary healthcare services, Rwanda continues to experience a high prevalence of uncontrolled high blood pressure.
- ❖ M-health applications offer potential to boost drug adherence, healthcare costs and improving overall health outcome.

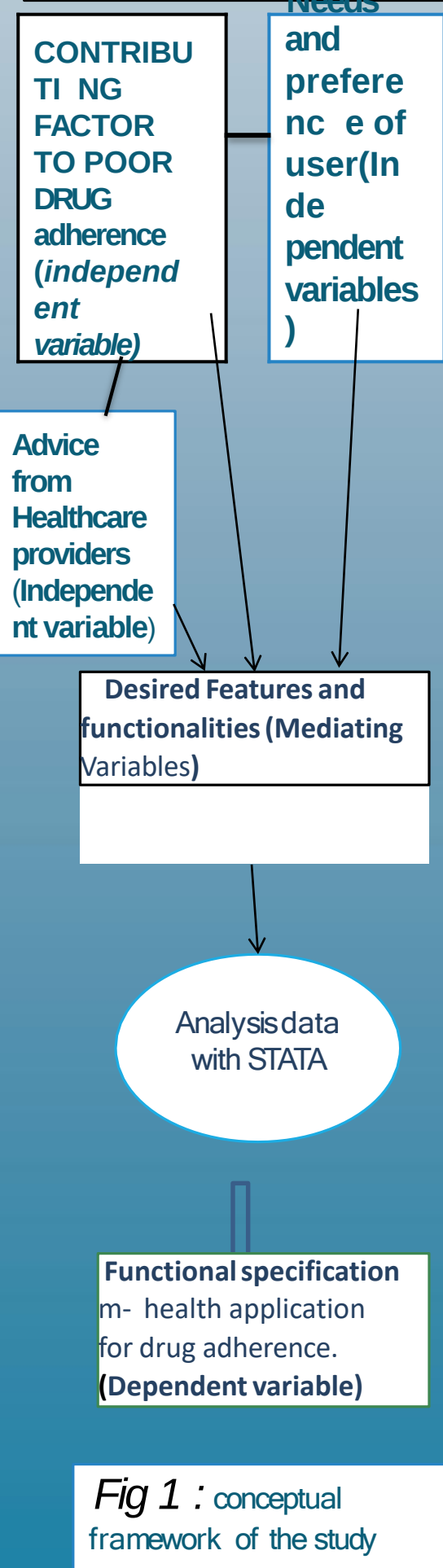
StudySubjects

- ❖ Hypertensive patients who attend monthly follow-up .
- ❖ Healthcare providers (nurse, doctors and NCDs specialist)

Methodology

- ❑ Study area: Muhoza Health Center & Ruhengeri Level Two Teaching Hospital
- ❑ Study population.: Hypertensive Patients who attend monthly follow-up and their healthcare providers
- ❑ . Sample size:237 participants
- ❑ Sampling strategy: purposive sampling technique

CONCEPT FRAMEWORK



Results

Table 1: Factors Contributing to Poor Drug Adherence for hypertensive patients

Variables	Frequency(N)	Percentages(%)
Forgetting to take medication	146	78
Lack of trust in medication	50	27.8
Lack of knowledge	117	62.5
Denial of hypertension diagnosis	50	27.8
Lack of family support	39	20
fear of becoming dependent on the drugs	40	21

Table 2:Module1/ User Se tup and Personalization

Features	What it should do/must
FR001: Language Preference	Default to Kinyarwanda (80.21% preference), but users can select from English and French as well.
FR002: Reminder Frequency	Default to once daily (66.84% preference), with options to Customize the frequency.
FR003: Medication Intake Recording	Provide options for manual entry, voice recording, and virtual assistance, with popular choices being manual and voice recording.

Conclusion

- A study Provides a basis for developing a mobile health app for hypertensive patients and healthcare providers in Rwanda.
- Functional specification addresses barriers like forgetfulness, lack of knowledge, and insufficient support.
- Incorporates preferences such as reminders, data sharing, educational content, and local language use.
- Majority of participants are interested in using the app to improve drug adherence.
- Highlights the need for a user-centered, educative, and supportive design for managing high blood pressure

Recommendation

The development of the m-health app should incorporate several key strategies to ensure its effectiveness and usability includes:

- Incorporate identified features
- Conduct pilot testing
- Collaborate with stakeholders

Acknowledgements

UR & CEBE: for academic and financial support.

Ruhengeri Hospital and Muhoza Health Center administrative support and assistance during the data collection process. hypertensive patients and healthcare providers for their cooperation, flexibility in providing the necessary information for this study

Further Information

Full article at: CEBE, August, 2024
Correspondence to Diane DUSHIMIMANA, MSc.HI
Contact: (+250)782622420
Email: dianedushim1@gmail.com