

# Manuals in Supporting Technology Use For Older Adults

Eldrick Surheyao

Department of Kinesiology and Community Health, College of Applied Health Sciences, University of Illinois-Urbana-Champaign

## INTRODUCTION

There are more opportunities than ever for older adults, or other individuals managing chronic diseases or disabilities, to maintain independent lifestyles with the aid of technology.

The prevalence of health-related mobile applications (also referred to as apps), and wearable technology are on the rise due to their potential uses in healthcare for aging populations. However, there are some important causes for concern:

- Older adults may be less likely than younger populations to use the provided technology, such as mobile apps, continuously and effectively.
- Developers of technology often fail to include intuitive instructional materials to be used as an aid in the adoption of new technologies, as well as a reference to address any technical issues that the average user may encounter.

There is a need for developers of such technologies to pair their products with thorough and effective instructional materials, such as physical or digital manuals or guides. These instructional materials are intended to:

- Decrease cognitive load for the user.
- Promote successful adoption and continuous use in populations that benefit from these technologies the most.

## AIM

My main contributions were to aid in the development of instructional materials for the mobile app MEDSRem, which is being developed by the Human Factors & Aging Lab as a digital therapeutic to help users manage their hypertension with prescribed medications, as well to track their blood pressure.



Source: AARP

## METHODS

### Literature Search:

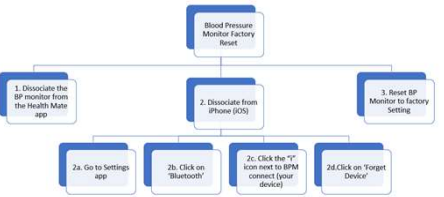
By searching key words into the University's library database, we were able to:

- Find recent and relevant research related to aging, healthcare, and technology.
- Compile research papers to be cited in future or in-progress literature.

### Task Analysis:

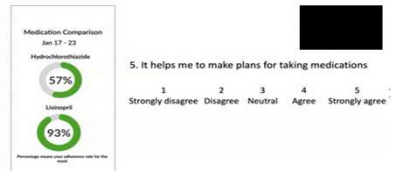
- Task analysis uses the hierarchal organization of tasks, with large task being on a higher level, and sub-processes and steps represented below to decompose the needed flow of actions.

An example of a task analysis for instructions on how to do a factory reset on a blood pressure monitor:



### User Testing:

- Interviews were held for older adults and healthcare providers to give feedback about the app and its features. The instructions team has been studying the interviews and taking note of ease-of-use for various areas.
- The instructions team is preparing to test our manuals with older adult participants who will onboard onto the app, using the manuals as guidance so we can observe and determine strengths and weaknesses.



## APPLICATION

While many older adults seek and embrace new technology, they generally have more difficulty than younger adults in purchasing, utilizing, and troubleshooting new devices, (Izadi-Avanji et al., 2021). For this reason, while developing MEDSRem instructional materials, we kept the general older population in mind.



Source: NPR

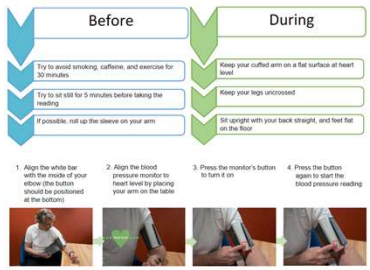
### MEDSRem Onboarding Manual:

This guide was developed to provide the older adult user with the step-by-step instructions for onboarding which includes:

- Signing up and connecting their Apple ID
- Creating a profile
- Selecting prescribed medications
- Selecting a time to take each medication and an activity to pair it with (e.g., 8am, Breakfast)

### Blood Pressure Monitor Daily Guide:

This guide was developed to provide the user with step-by-step instructions concerning the daily use of the Blood Pressure monitor and the associated applications.



### MEDSRem Daily Guide:

This guide was developed to provide the user with step-by-step instructions concerning the daily use of the MEDSRem app.

## DISCUSSION

There are many challenges associated with creating and preserving accurate and useful instructional materials. The two most challenging:

- It often takes multiple drafts of each manual or guide to ensure clarity succinctness for the average user. We must always keep in mind the goal of decreasing the cognitive load, the amount of working memory being applied at any time (Branaghan et al., 2021).
- Every software update released by either the MEDSRem developers or of the operating system means a potential need for revision of some or even all of the instructional materials.

This can be tedious and frustrating. Fortunately, data gathered while testing earlier versions can and should be referenced, when relevant, while revising the materials.

## REFERENCES

Al-Saleh, S., Lee, J. K., Rogers, W. A., & Insel, K. C. (2022). Translation of a Successful Behavioral Intervention to a Digital Therapeutic Self-Management System for Older Adults. *Ergonomics in Design*.

Branaghan, R. J., O'Brian, J. S., Hildebrand, E. A., & Foster, L. B. (2021). *Human factors regulations for medical devices*. Humanizing Healthcare: Human Factors for Medical Device Design, 201–225.

Izadi-Avanji, F. S., Rahemi, Z., Adib-Hajbaghery, M., & Yazdani-Darki, M. (2021). Factors Influencing Use of Technology in Older Adults' Daily Life. *International Archives of Health Sciences*, 8 (3), 190-195.

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