

Facilitators and Barriers to Older Adults' Use of Digital Home Assistants: Implications for Informatics

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Background

By 2040, it is projected that ~25% of the U.S. population will be 65+ (Vespa, 2018)

Digital home assistants (DHAs; e.g., Amazon Echo) and connected smart technologies have potential to support older adults, especially those with mobility disabilities, in their everyday life across a variety of important tasks (e.g., access to information, environmental control, health management, social communication).

Informatics researchers can provide value for older adults using DHAs.

- Identifying speech changes that can be indicative of cognitive changes (hence trigger intervention).
- Providing personalized support to improve their daily lives (e.g., social or physical activity recommendations, medication reminders)

Adoption of DHAs is contingent on the facilitators and barriers older adults experience when using these devices, such as their understanding of the type of data being collected and how it is stored

Research Goal:

Explore the **facilitators/barriers** (e.g., usefulness, privacy concerns) of DHAs and connected technologies **in the homes of older adults aging with mobility disabilities**.

- How do DHAs support environmental control, social engagement, entertainment, and health/wellness?
- Do perceptions of these smart technologies (e.g., usefulness, ease of use) change over time?
- What facilitating conditions (e.g., instructional materials, social support) support use of DHAs and connected environmental technologies (e.g., smart light, smart plug) by this population?

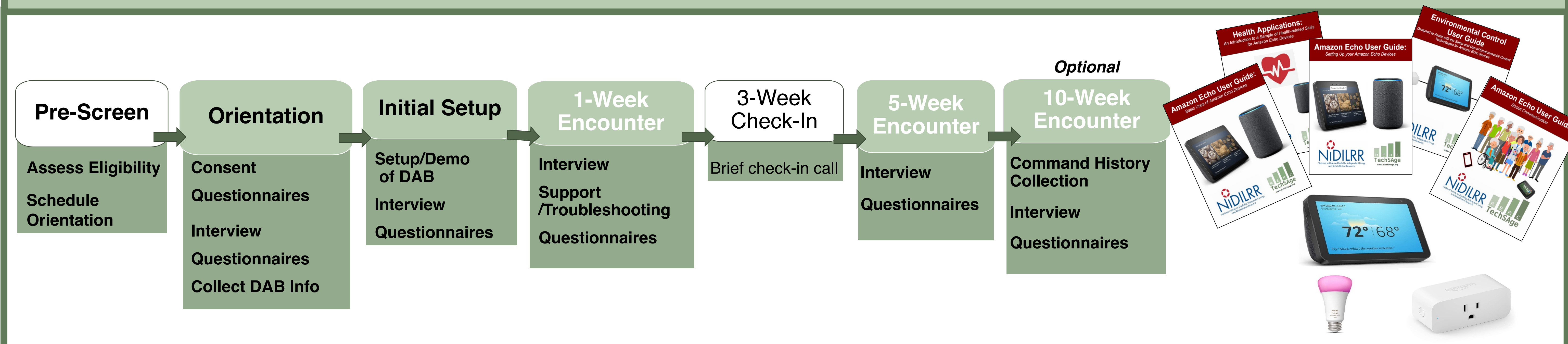
Participants

23 Participants have been enrolled
M = 82.7 years (SD = 6.42) Range = 61-91 years

Gender
12 Female, 11 Male

Education
4 Post-graduate; 11 Master's; 6 Bachelor's; 2 High school/GED

Method



Preliminary Results

Facilitators

Perceived Usefulness

"...for my cognitive dysfunction, what is becoming very **useful** is its **ability to give me alarms or tell me remind me of things**. And I just begun really using that."

Instructional Support

"... I read the manuals. The manuals that they put together are **really helpful** ... And **its big print and it's easy to understand** and it just tells you things you can do with it."

Ease of Use

"Because it is all **voice command** ... **So easy to use** ... if my command is wrong. I just reword it."

Barriers

Security Concerns

"**One of the reasons I've never worked with an Alexa before** is because I've heard all those horror stories about it **eavesdropping and people hacking it** ... that is why I've never wanted one... So I'm still in the back of my mind. **How safe is it?**"

Self-Efficacy

"My attitude toward technology is... **I will always get it wrong.**"

Privacy Concerns

"...I think there's a little a little **anxiety about privacy**. **What's being captured and what's being stored** and where is that information used."

Conclusions

Participants reported both facilitators and barriers to integrating DHAs into their home environment to support everyday activities.

Facilitators included perceptions that DHAs are useful and easy to use, especially with adequate instructional support.

Barriers were reported, such as privacy concerns which may inhibit use.

These findings provide insights for informatics researchers to consider ways to address these types of barriers to improve adoption for older adults, including those with disabilities.

- Training, education, transparency of security, privacy control

