



College of Applied Health Sciences

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

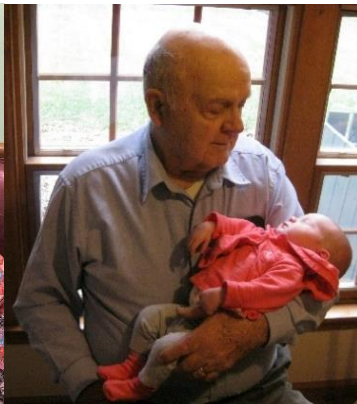
Human Factors & Aging LABORATORY

www.HFAging.org

CRIS/Illinois Collaboration

Travis Kadylak, PhD & Wendy Rogers, PhD

Update September 2021



Background of Project



Healthy-Aging Center

COLLEGE *of* APPLIED HEALTH SCIENCES
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Funding: Reducing Social Isolation Demonstration Project (10/1/19 -9/30/20; extended through 9/30/21) East Central Illinois Area Agency on Aging. Amy Brown (CRIS Healthy-Aging Center) & Wendy Rogers (Illinois) Co-Investigators

Community Academic Scholar Students:

Year 1: Maya Malecki

Year 2: Husna Hussaini

Overview/Method

Data Collection

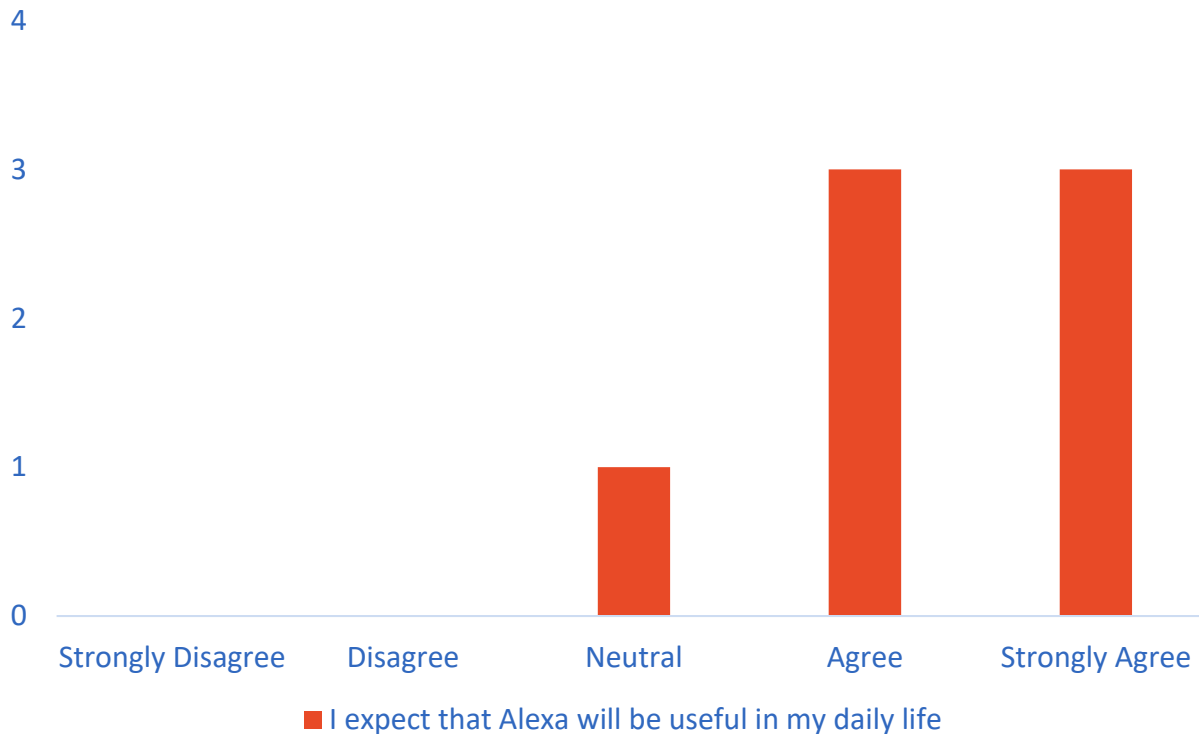
- **September 2020 – December 2020**
 - Baseline N = 7
 - 1-Month follow ups N = 6
 - 2-Month follow ups N = 4
 - Final Follow ups N = 3
- **Qualitative coding**
 - Initial follow up interview themes



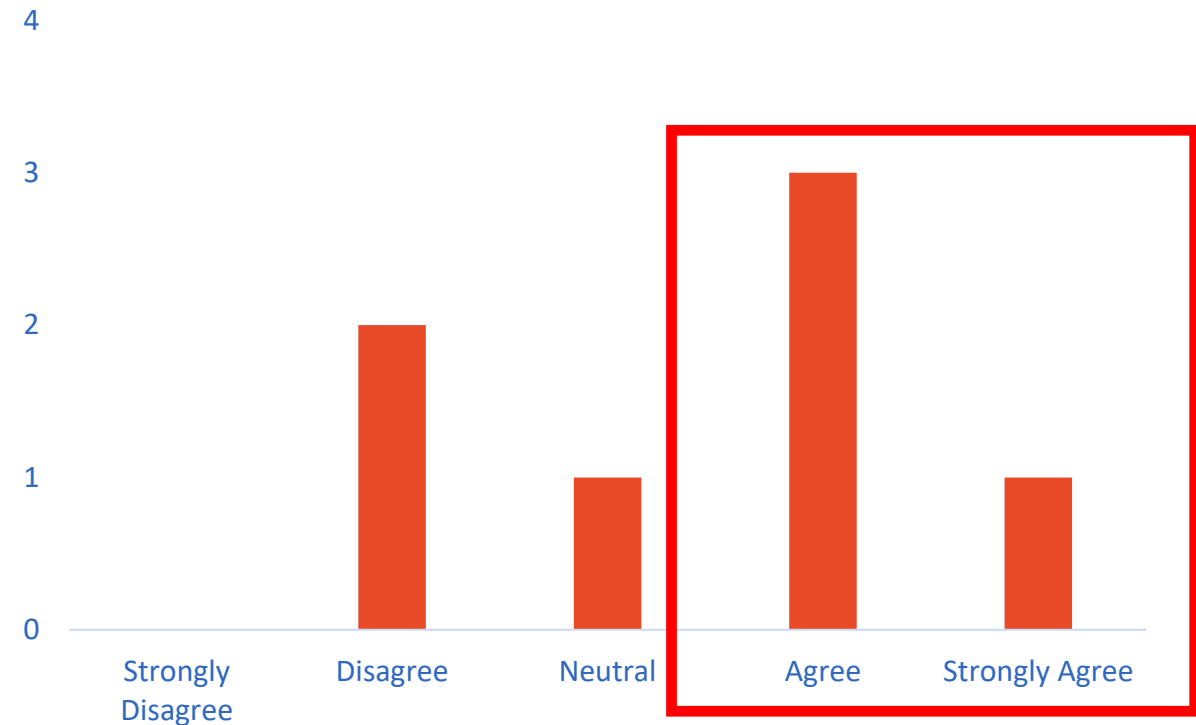


Quick look at first impressions (Baseline)

I expect that Alexa will be useful in my daily life



Need Technical/Instructional Support





1-Month Follow Up Interview Findings:

Identified Uses, Barriers/Challenges, Social Aspects, Desired Uses

Participants integrated Alexa into their daily lives in many ways

- Frequently use it for **music, weather, alarm clock, news, and playing games**

*Every morning, Monday through Friday we're up at 5 o'clock, so Alexa gets us up. She answers questions. Obviously, she's great for **telling jokes**. She plays music. We do that quite frequently. We use her **every day for the alarm** and except of course, on the weekends. **We play a lot to play music**, things like that, so we probably interact with her just get about every day*

Seeking for both general information and health information

Desired Future Uses

Emergent Themes

- Contacting family (especially video calling those out-of-state) with Alexa
 - Participants desired to make phone calls and video-conference calls
 - Highlights need for Alexa phone call/video conference instructional guide
- Lack of **awareness/access** to other things
 - **Desired Alexa recommendations** for usable skills/apps:
 - Media such as **books, games, movies**
 - Physicians and **healthcare professionals in the area / nutrition tracking**

“I was maintaining my diet with the salt, that's been a problem. Do you think Alex could help with that?”

Alexa Social Companionship / Loneliness

Participants anthropomorphized their Echo Show device/Alexa

- Participants routinely referred to their device as “her” and “she”
- Described that interacting with their device provided a sense of companionship
 - This was especially common for widowed or single participants

*“I’m rarely feeling alone, but if I got a little lonesome, I can ask her some stuff and she’s here. **It’s as if she knows me**” (Baseline)*

*“I don’t want everybody to know that I don’t know something, but I don’t mind Alexa. **She seems like my friend**” (T3)*

Challenges

Emergent Themes

- **Command Phrasing** and Knowing the Correct Keywords

“We have to be careful of how we ask things or say things, we have to stop and think about it so that she receives it the right way”

“Learning to ask the question appropriately, but no, I have a real difficulty in using it.”

- Restricted Content / need for **subscription services** (e.g., music)

*“I think the things that the challenges we run into really have to do with music, and I have to do with rights, **and that's not her**, that's just how things are set up.”*

Instructional Support Material Feedback



Emergent Themes

- Participants found the instructional manuals **easy to use** and provided helpful information/**perceived as useful**

*“It's very **useful**, especially when I sit down and I go through it and I say, Wow”*

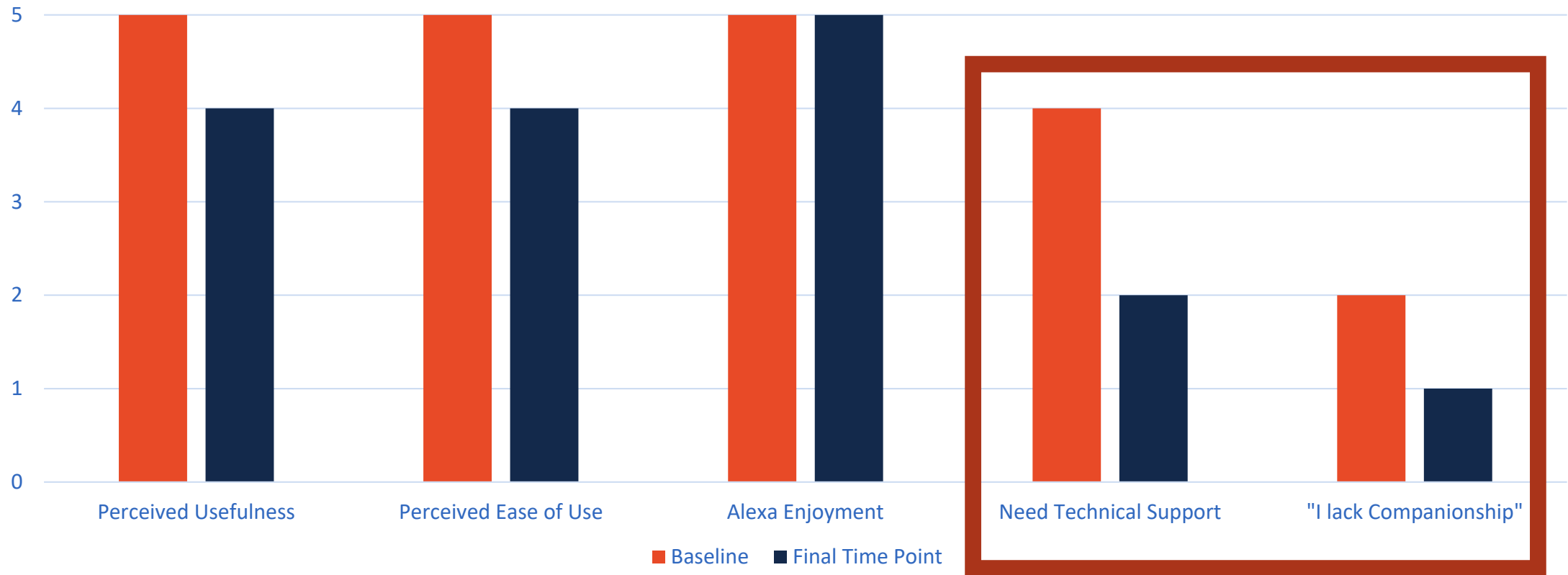
- Participants were **open to multiple forms of instructions** and in some cases preferred **reinforcing** formats
 - Written, in-person, and videos
 - Used the instructions for diverse purposes – including to upload/share photos
 - Some participants preferred video instructions
 - Allowed them to see/conceptualize how to interact with their Echo Show device
- Helped some participants feel more **independent**
- Desired uses and challenges we identified informed the development of additional instructional materials



Case Study Examples

884-AB

Summary of Measures Throughout Study



884-AB

Age at Baseline	Sex	Residential Status	Health Status
72	Female	<ul style="list-style-type: none">Lives alone in independent living facilityHousing community specifically designed for seniors	<ul style="list-style-type: none">Diagnosed with arthritis, cataracts, heart condition, and diabetes/high blood sugar



Challenges:

- Worried she might break the device by using incorrect command phrasing**

- “But I got a thing about if I say something and screw it up, and you really can't mess it up on that if you ask a question, you can't miss it up by asking questions, so I'm learning how to deal with it”*

Instructional Support:

- Occasionally uses written instructional manuals but does not understand every section
 - Did not know what “loading” means so she skipped this section in setup
- By final time point, she rated manuals 5/5 on both ease of use and usefulness**
- Did not seem to engage with videos despite requesting video content

What we learned:

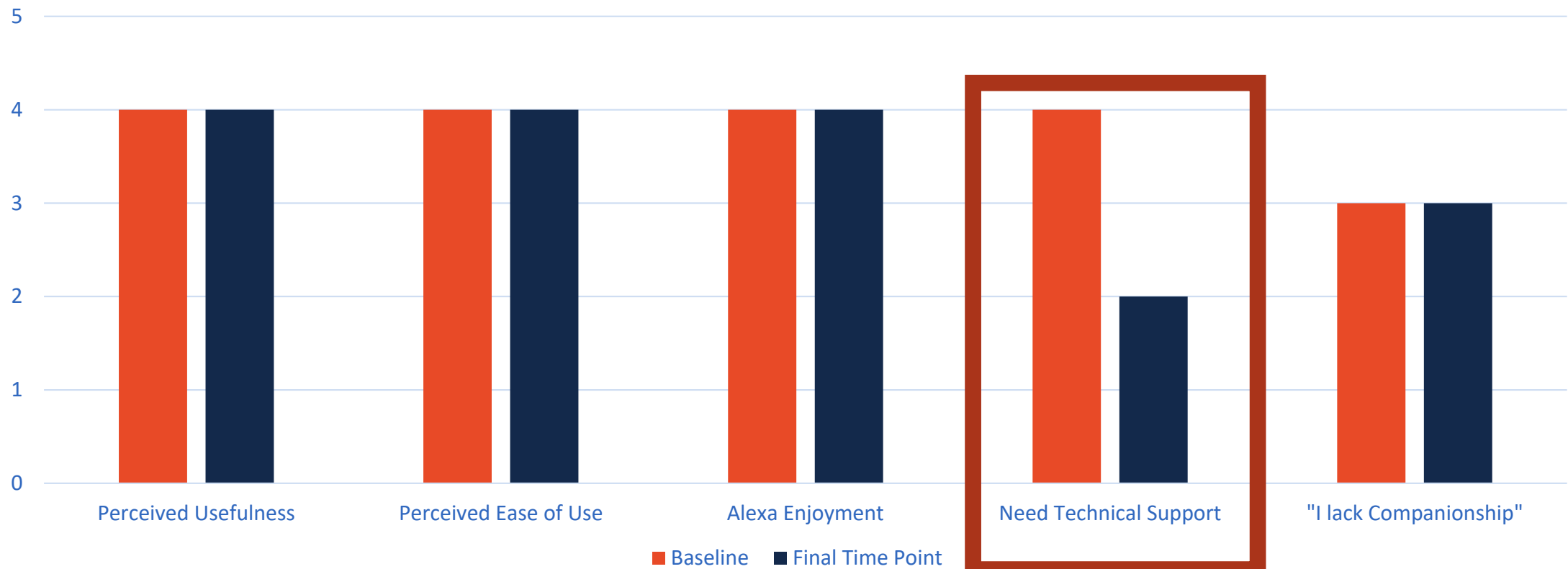
- Used device for health information seeking & nutritional planning and tracking
 - Specifically helpful for learning carbohydrate contents in bread & pasta as a diabetic
 - “Instead of going to the store, standing there forever reading a package, I wanna know before I get there.”*

Often expressed finding comfort in Alexa’s presence

- “Some things you just wanna ask a question and get an answer **without anybody else thinking that ‘why she ask that question? Don’t she know that?’** I don’t want everybody to know that I might not know something, but I don’t mind Alexa. **She seems like my friend.**”*
- “It’s like having somebody else in the apartment with you. Very comforting sometimes. Not a body, but you know, a voice. Something that has wisdom.”*

315-MB

Summary of Measures throughout study



315-MB

Age at Baseline	Sex	Residential Status	Health Status
77	Female	<ul style="list-style-type: none">Lives alone in independent living facilityHousing community specifically designed for seniors	<ul style="list-style-type: none">uses lift chair sometimesDiagnosed with cataracts, heart condition, and hypertension/high blood pressureDiagnosed with osteoporosis during study timeline



- **Challenges:**
 - **Initially feared breaking Alexa by asking questions she did not know how to answer**
 - *“I just have to take my time and try and do some work, I think I would... I surprise myself.”*
- **Instructional Support:**
- **Rated instructional YouTube videos 4/5 on usefulness & 5/5 on ease of use**
 - **Thinks video are straightforward**
- Has skimmed written instructional manuals but plans to read again more in-depth
 - 5/5 on usefulness and 5/5 on ease of use
- **What we learned:**
 - ***Used the device for health information seeking and diet recommendations for family and self***
 - *“I struggle in maintaining my diet with the salt, that's been a problem. Do you think Alexa could help with that?”*
 - *“for health questions I have, because I have a sister who has Alzheimer's, but she also has heart problems and they've done some testing and stuff, but they told them No surgery, she's not a candidate for having surgery, health problems, which is the same thing that I have that first, I guess it's a lot worse, but that wasn't explained to me, and so I just asked [Alexa] questions, about different conditions that would require her not to be eligible for surgery.”*

Current Status & Next Steps

DHAs offer great promise for supporting/engaging older adults

We are finalizing data analysis and writing a technical report and a journal article

Planning a larger study focused on older adults with mobility disabilities

Interested in continuing collaboration with CRIS

Recruitment opportunities with CRIS and ECIAAA