The User's Burden in Managing Self-Tracking Technologies

Nupur Wagle†
College of Information
University of Maryland
Maryland, USA
nwagle@umd.edu

Eun Kyoung Choe
College of Information
University of Maryland
Maryland, USA
choe@umd.edu

Hernisa Kacorri
College of Information
University of Maryland
Maryland, USA
hernisa@umd.edu

Amanda Lazar
College of Information
University of Maryland
Maryland, USA
lazar@umd.edu

ABSTRACT

Self-tracking technologies hold great potential for supporting individuals' health and wellness goals. They are of great interest for gathering older adults' health data. Our understanding of how these technologies can support older adults with memory concerns is limited, as is our knowledge of how to design them to accommodate cognitive changes. Our analysis of interviews with older people with concerns about their memory yielded an understanding of some forms of work that self-technologies technologies create that are not related to issues having to do with a single self-tracking application. Rather, the issues we describe here come from integrating self-tracking technologies with each other and into one's life. Understanding and mitigating these factors may contribute to more successful technology design.

1 Introduction

Researchers are studying and seeking to support older adults in self-tracking with technology [1]. Self-tracking technologies can give older adults insights into their own health and wellness as well as generate data that can be shared with clinicians. Further, there is significant potential in collecting older adults' data generated from technologies including self-tracking technologies –older adults can be underrepresented in datasets, leading to some applications of machine learning not working as well for this population [4]. However, researchers have found that technologies may not fit older adults' homes, routines, or capabilities as designed [2, 3]. It is key to understand barriers to using self-tracking technologies, and even more so for older people with memory concerns.

2 Methods

We conducted a secondary analysis of data from interviews with 29 older adults who self-identified as having concerns about their memory. Interviews explored participants' self-tracking with and without technology. In this abstract, we focus on the challenges older adults described when attempting to self-track health data with technology. We highlight challenges that do not have to do with the usability of a particular self-tracking application, but rather work done on the backend that can go unnoticed.

3 Findings

We found three kinds of burdens associated with self-tracking devices that have been less often discussed in the literature.

3.1 Synthesizing a Holistic Health Log

The responsibility of constructing an accurate health log to allow participants and their healthcare professionals *"to get a good picture"* (P26) fell on participants. When multiple apps or devices were used to track different kinds of health data like blood pressure, medical records, weight, and dietary information, consolidation of the data into a single platform could become difficult.

3.3 Fitting a Device into One's Life

Participants described having to remember data or new behaviors because self-tracking devices literally did not fit into their lives. A Fitbit does not fit on P22's small wrist, so she relies on her phone for step counts. However, she cannot carry her phone on a walk as she does not have pockets. P11 must remember to wear certain clothes to track: *"(My phone) is large and it does not fit my pockets, I have to carry a purse or be careful about what I wear."*

3.4 Connecting and Troubleshooting Devices

After getting a new device, participants often had to figure out how to set them up or connect them with other devices. It is not always to pinpoint when something goes wrong: P5 explained that "*When I had an app on my phone, and when it ceased working, then I ceased to keep in track (of steps)*". He continued that it might be that they need a new phone, or perhaps because of something about the technology that they did not understand. Not knowing how to fix the problem, he lost interest in tracking.

4 Conclusion

Current approaches to designing technologies for older adults may not consider the complex barriers that arise when older adults integrate devices into their lives. Research is needed on how to avoid or mitigate these barriers.

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5 References

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