Research Task / Overview

- Dementia Caregivers experience more negative effects when compared to caregivers of other diseases [1].
- A system called Behavioral and Environmental Sensing and Intervention (BESI) is being developed through a collaborative research project to help caregivers [2].
- Caregivers are highly vulnerable to survey fatigue and easily overwhelmed.
- Focus was to integrate a measurement tool to use during system development that would minimize risk of additional fatigue and stress.

Goals & Objectives

- To develop a valid usability questionnaire to evaluate the BESI system.
- To assess the user during the system development.
- To address UX in the context of ecological validity.

Data & Analysis

- Qualitative data analysis was performed using
  - Microsoft Excel
  - HyperRESEARCH Software

- A word cloud was generated by coding based on Grounded Theory using HyperRESEARCH Software.

![Figure 3. Word Cloud for Pilot Usability Questionnaire Data](image)

Based on this analysis, users experienced the inability to understand some of the questions.

- Revised questionnaire was tested with another user and word cloud was generated using this data.

![Figure 4. Word Cloud for Revised Usability Questionnaire](image)

There were no concerns expressed by the user with the revised questionnaire.

Methodology

- Initial pilot BESI Usability Questionnaire contained three sections with a total of 37 questions to evaluate the entire BESI system.
  - 10 questions with 6 point scale and followed with an open-ended question
  - 16 questions with Likert Scale Rating
  - 11 open ended-questions

- Based on review, the questionnaire was revised and the number of questions were reduced.

- Final BESI questionnaire was reduced to 25 questions.
  - 10 questions with 6 point scale and followed with an open-ended question
  - 9 questions with Likert Scale Rating
  - 6 open ended-questions

Future Research

- The BESI Usability Questionnaire will be further tested with other users.
- The BESI Usability Questionnaire will be modified in the future based on the system requirements.
- The BESI Usability Questionnaire will be incorporated with the system to obtain dependable data during development and meet the system requirements.

References