Study Handout

Study/Project Introduction:

Many individuals who require assistive technologies, such as glucose monitors, in their day to day life, often find that off-the-shelf devices offer limited or no ability to personalize for supporting personal and social needs (e.g., personalizing how the device provides feedback during a work meeting versus when playing a sport). This results in these individuals either finding workarounds via do-it-yourself (DIY) approaches or occasionally not using assistive technologies for specific periods of time. Such measures however present concerns regarding potential adverse effects on the end-user's health.

Through this research, we aim to understand:

1. What types of personalizations individuals would like to incorporate into their assistive technology devices, such as glucose monitors
2. How people with diabetes, dieticians/certified diabetes educators, and product designers can collaborate to incorporate the end-users personalization preferences and social needs into their assistive technology devices in a safe and effective manner, and
3. What requirements or considerations are important from the perspective of dieticians/certified diabetes educators and product designers when personalizing such devices

Overall, we hope to use the results from your participation in this study to improve future assistive technologies.

The four primary questions we hope to understand through this study include:

1. Do individuals want to personalize their assistive technologies such as glucose monitors?
2. Why do individuals want to personalize assistive technologies,particularly glucose monitors?
3. How do individuals currently personalize their healthcare products, especially glucose monitors (if at all)? and
4. How might collaboration support the design of assistive technology such as glucose monitors?

Through these four questions, we hope to gain insight into:

1. What personalizations individuals prefer to incorporate into their designs,
2. How these personalizations can be incorporated into devices while maintaining their functional integrity, and

3. Where in the process stakeholders (particularly dieticians/certified diabetes educators and product designers) intervene to support the integration of these personalizations, while ensuring products are still safe, effective, and can be developed

What do we mean by personalization?

Assistive technologies provide many avenues by which they can be personalized to better suit their users needs and preferences in order to make them more comfortable and usable in more situations. These personalizations can occur in terms of the aesthetics of the device, the contexts in which it can be used, its form, or its functionality. Some examples of personalization include:

- Altering the visual appearance of a device
- Managing what or how much data a device records, stores, or visualizes
- Changing the placement of a device on the user's body
- Introducing new workflows for functionality (i.e. data transmission and receiving)

To see more particular examples of personalization in this context, please visit: *https://docs.google.com/document/d/1X3D8RxCcBXoYLgeUheVKDYYQITrcnCWmLKZEvWhcL3E/edit?usp=sharing*

How to Participate:

Who can participate:

1. People with diabetes: Participants must be 18 years of age or older, English-speaking, living with type 1 diabetes and have experience using off-the-shelf glucose monitors for at least 1 year. Participants must also either have fine motor skills or have access to an individual who can support the participant during the design task with cutting and craft-nature activities.
2. Dieticians or certified diabetes educators: Participants must be 18 years of age or older, English-speaking, dieticians or certified diabetes educators by profession or academics (faculty, staff, graduate students, senior undergraduate students) with experience working with type 1 diabetics for at least 1 year.
3. Product designers: Participants must be 18 years of age or older, English-speaking, product designers by profession or academics (faculty, staff, graduate students, senior undergraduate students) with experience in product design for at least 1 year. Ideally, participants are also working in product design within the medical field, or have prior experience designing medical devices.

Materials required to participate:

Participants will require a computer with a working camera and mic from which they can access Zoom to share audio and video.

Total Time Commitment (by participant group):

1. Participants with diabetes: 3.5 hours

2. Dieticians or certified diabetes educators: 2.5 hours
3. Product designers: 2.5 hours

Compensation and Materials We Will Provide:
People with diabetes will be provided with a kit that contains a variety of materials that they can engage with for the design task, as well as an activity booklet to guide their independent design process through a series of questions and prompts. They will be able to keep this kit of reusable items and art and craft materials as compensation for their timespend (approximately $50 CAD value). They will also receive a $50 CAD Amazon gift card.

Dieticians/certified diabetes educators and product designers will each be compensated with a $50 CAD Amazon gift card as compensation .

Study details (by participant group):

1. Participants with diabetes: This study will consist of 2 phases.

   Note: the design task phase of this study does contain craft-natured activities, and therefore, participants will be required to employ finer motor skills such as cutting and pasting paper-cutouts from templates. If participants themselves are unable to employ such abilities, they may have a friend or family member assist them with the physical aspects of the design task.

   Pre-Study Demographics Questionnaire, Pre-Study Discussion, and Moderated Design Task
   - A short questionnaire to be completed independently prior to the beginning of the study.This is about prior experiences with diabetes and glucose monitors.
   - A short discussion with the research team that will provide an introduction to the study, and allow the research team to become familiar with the participants experiences and thoughts towards their existing monitoring systems.
   - A design activity to be completed by following a provided activity booklet and kit of tangible components with which you'll be asked to prototype a personalized glucose monitor.
   - Expected to take 2 hours.

   Focus Group and Post-Study Discussion
   - A discussion with all study participants (people with diabetes, dieticians/certified diabetes educators, product designers) in which thoughts and feedback regarding patient designs will be shared by the other two participant groups.
   - Followed by a discussion regarding how participants envision collaboration taking place in this process.

- Expected to take 1.5 hours.

2. Dieticians or certified diabetes educators: This study will consist of 2 phases.

   Pre-Study Demographics Questionnaire and Design Briefing
   - A short questionnaire to be completed independently prior to the beginning of the study.
   - A discussion with the research team and product designers about the patient's designs in consideration with the device requirements.
   - Expected to take 1 hour.

   Focus Group and Post-Study Discussion
   - A discussion with all study participants (people with diabetes, dieticians/certified diabetes educators, product designers) in which thoughts and feedback regarding patient designs will be shared by the other two participant groups.
   - Followed by a discussion regarding how participants envision collaboration taking place in this process.
   - Expected to take 1.5 hours.

3. Product designers: This study will consist of 2 phases.
   Pre-Study Demographics Questionnaire and Design Briefing
   - A short questionnaire to be completed independently prior to the beginning of the study.
   - A discussion with the research team and dieticians/certified diabetes educators about the patient's designs in consideration with the device requirements.
   - Expected to take 1 hour.

   Focus Group and Post-Study Discussion
   - A discussion with all study participants (people with diabetes, dieticians/certified diabetes educators, product designers) in which thoughts and feedback regarding patient designs will be shared by the other two participant groups.
   - Followed by a discussion regarding how participants envision collaboration taking place in this process.
   - Expected to take 1.5 hours.