

Tech Trio

<https://trellukan.github.io/hci/>

Project Description:

There is currently a lack of tools and resources available for dementia caregivers to effectively monitor, understand, and cope with changes in their patients. Therefore, we are designing a smartphone app that will make it easier for dementia caregivers to interact with their patients while providing them with a variety of new resources and methods that may ease the stress of caregiving and provide better help to the patient. By increasing the availability of resources to caregivers, we are also indirectly helping dementia patients and giving them a better quality of life.

Personas:

Stay-at-home Sheila

Name: Sheila
Gender: Female
Age: 63
Education: Master's Degree
Occupation: Stay at home mom
Marital Status: Married
Location: Northeast



"I wish there were more resources, understanding, and awareness about being a caregiver. Caregivers, unless they are hired which they are usually not, have a stressful job and it probably takes life off that person - like years off their life."

Background/Motivations

Sheila's husband was diagnosed with early onset dementia two years ago. She has no background in caregiving but she was the only one that could take care of her husband. She used to work part-time but her husband's health started demanding more care. Caregiving has been a trial-and-error process for her. Since she is not trained, she's not sure how well she's taking care of her husband. Her daily routine requires her to take care of her husband first before taking care of herself. Her physical and emotional health has declined after starting to caregiver. She spends most of her time at home because she cannot leave her husband. Sheila is pretty tech-savvy so she uses her Nest cameras to watch over her husband while she's away.

Challenges with Caregiving

- No community support
- Lack of resources to learn more about dementia
- Difficulty communicating with her husband

Needs

- Easier way to store her husband's medical information and history
- Easier way to help husband's memory
- Easier way to keep track of her husband's needs and schedule (i.e. when to take medicine)

In Sheila's Words

"A typical interaction is I will be trying to give instructions and him not comprehending. It gets frustrating because he won't listen. He doesn't want to view himself as incapable."

"Time, date, where they are, what's happening are things [dementia patient] tend to forget. If an app can help them with that, it would be perfect."

Happy-to-Help Hana

Name: Hana
Gender: Female
Age: 24
Education: Jefferson College of Nursing, BSN
Occupation: Nurse
Marital Status: Unmarried
Location: Philadelphia, PA



"I love being there for my patients, it reminds me of my family. It makes me happy to know I'm doing everything I can to make it easier for them."

Background/Motivations

Growing up, Hana's parents were always working and had little time to take care of the home and family. Hana was left to take care of her younger siblings as well as her aging grandfather from a young age. Caring for others became second-nature to Hana and she is always happy to be of service whenever she can be. She went to school for nursing and began working at Philadelphia Nursing Home after graduation. She empathizes with the families of dementia patients because she is reminded of her own grandfather. She cares for her patients as if they were her own family and is upset when patients' families neglect them. She understands that interacting with a dementia patient can be frustrating, but patients' conditions improve greatly when their families are active and present in their lives.

Challenges with Caregiving

- Seeing patients' families suffer from lack of resources and understanding of dementia
- On busy days, it gets hard to keep track of multiple patients
- With severe cases, the patient needs more specialized care that is beyond our scope

Needs

- Easier way to share patient information with other caregivers
- Easier way to keep track of multiple patients' schedules
- Easier way to monitor multiple patients' statuses, something that alerts me if something needs my attention

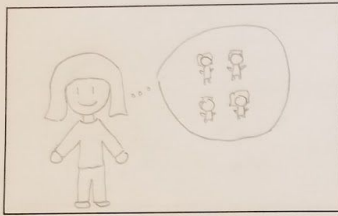
In Hana's Words

"Sometimes, patients need more specialized care than we can provide here at the nursing home, but families are resistant to seeking additional help. They rely on us for everything."

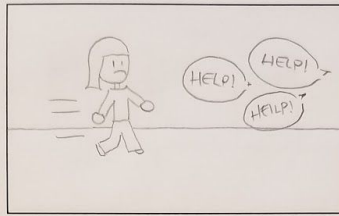
"I wish patients' families had more support outside of the hospital. Coping with a loved one developing dementia can be very stressful, especially when they don't have resources."

Storyboards:

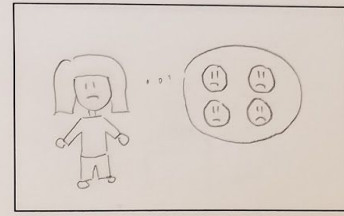
Hana



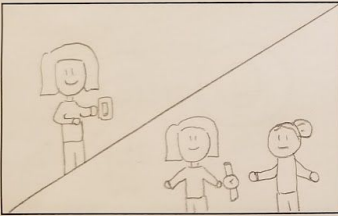
Hana cares for four different patients at Philadelphia Nursing Home.



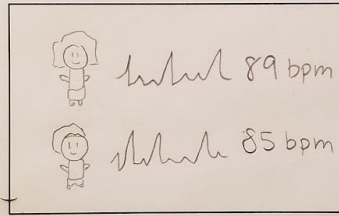
The nursing home is understaffed and Hana is constantly moving around the facility.



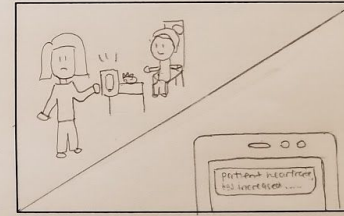
She gets worried whenever she is away from a patient and worries that something will go wrong in her absence.



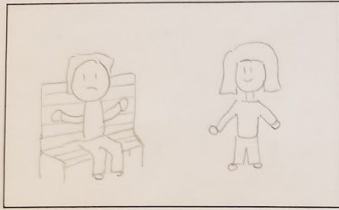
Hana downloads the app on her phone and syncs with a wearable device / smart watch that she gives to each of her patients.



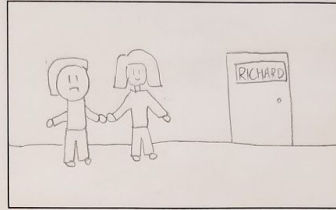
The device stays on her patients at all times and monitors their vitals and locations



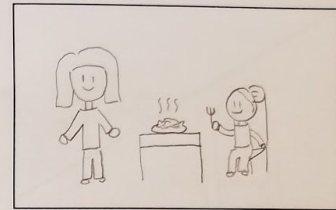
While Hana is feeding Charlotte in one room, her phone alerts her that Richard's heart rate is rapidly increasing.



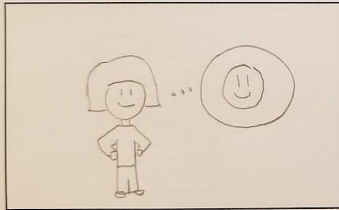
Hana rushes over to Richard who is sitting on a bench, panicking because he forgot where he was



Hana is able to calm Richard down and bring him back inside to his room.

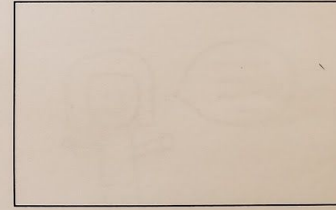


Hana returns to Charlotte to finish what she was doing

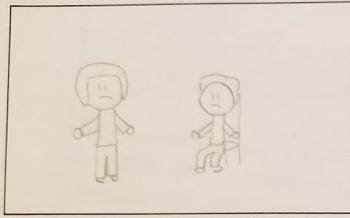


Now Hana doesn't have to worry about being away from her patients.

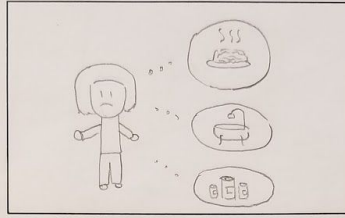




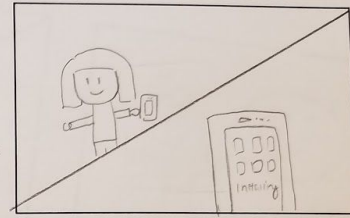
Sheila



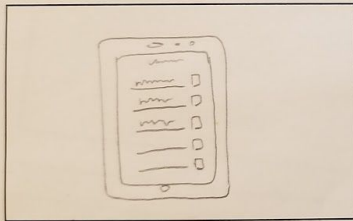
Sheila is an untrained caregiver taking care of her husband who has dementia at home



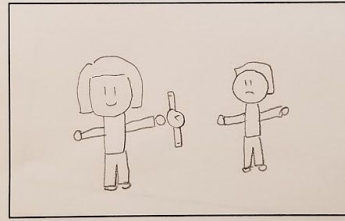
Sheila feels overwhelmed with all the things that need to be done daily to take care of her husband.



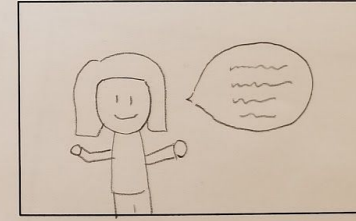
Sheila downloads the app.



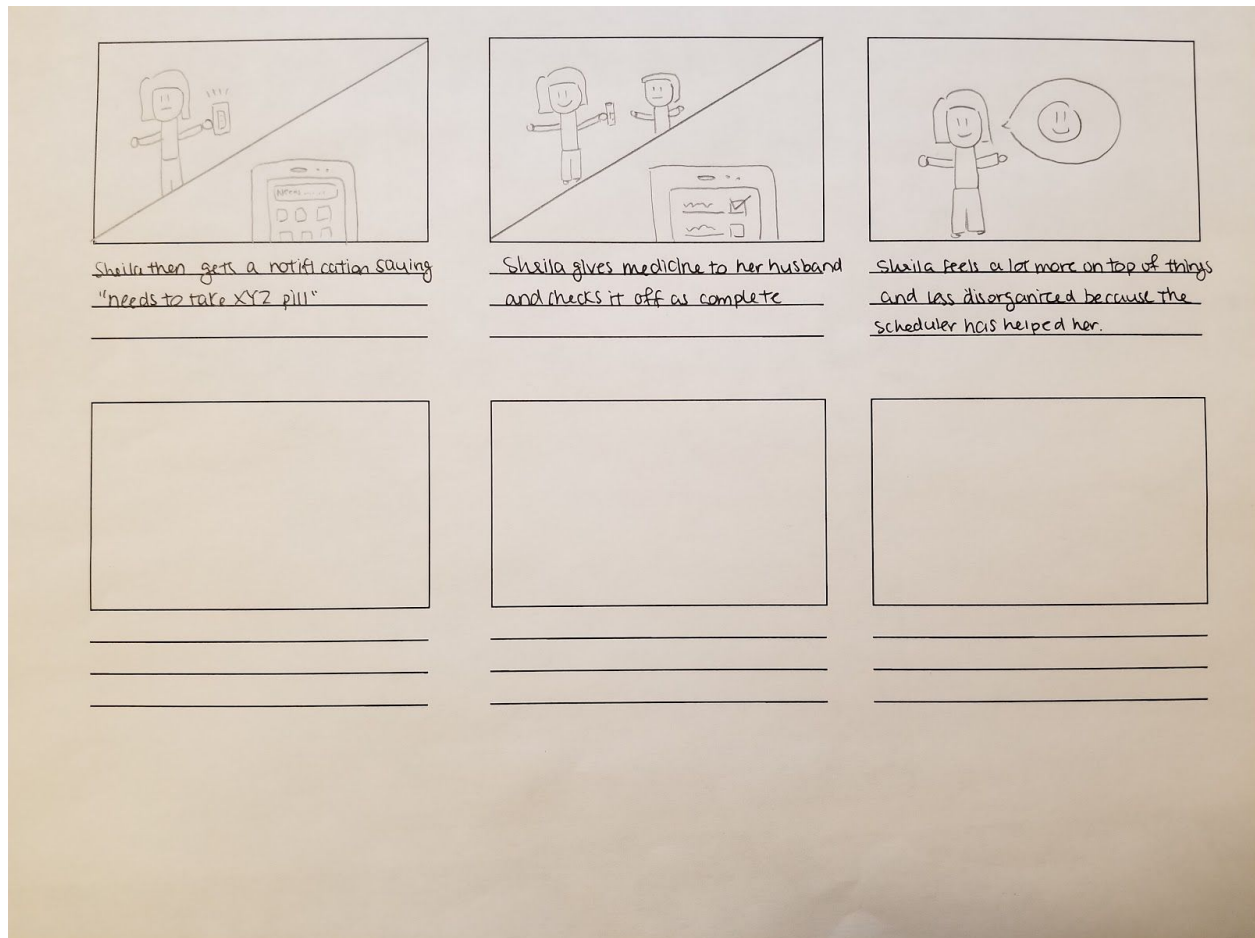
She adds her daily activities to the scheduler feature.



Sheila gives a smartwatch to her husband.



Sheila explains what a smartwatch is supposed to do.



Revised Problem Statement:

Caregiving for a dementia patient is a huge challenge for those who are dealing with the changes in behavior and lifestyle of patients. It is estimated that there are currently over 5 million people in the United States living with dementia, and 35% of caregivers have reported that their health has gotten worse as a result of caring for elderly dementia patients. Most often, caregivers can be frustrated and overwhelmed by the care required by their patients. There remains a lack of resources for caregivers to go to in order to learn more about their patients and the best tools and resources to help them. Many caregivers also lack the proper tools to monitor their patients, such as the performance of daily tasks like taking medication or eating meals on time. In order to provide patients with the best care possible, caregivers need access to a resource that they can consult with at any time that will help them with their everyday tasks while relieving them of stress and providing them with a sense of community.

Our solution is to create a mobile application that will address many of the issues faced by caregivers, such as stress and proper monitoring of patients. The mobile application will offer information about dementia care as well as tools for watching over and monitoring a patient's schedule. There will also be a community on the app that caregivers can turn to at any time for advice. Phones provide caregivers with the best access because they are small and portable and perfect for those who are engaged with day-to-day care. We will also introduce a smartwatch interface for dementia patients, so they won't be likely to lose this piece of technology and caregivers can still utilize the watch to monitor their patients. Dementia patients will also have an easier time viewing this information this way if they choose to interact with the watch. This watch will help the caregiver's job by assisting their patient in daily tasks like remember the time, date, scheduled events, important notes, and people. By increasing the availability of resources to caregivers and empowering dementia patients with some independence, we hope to facilitate the everyday hardships of caregiving for dementia patients.

Contributions:

Persona 1: Anchalee, reviewed by Kelly and Yuhui

Persona 2: Kelly, reviewed by Anchalee and Yuhui

Storyboards: Yuhui, reviewed by Anchalee and Kelly

Revised Problem Statement: Yuhui, reviewed by Kelly and Anchalee