Mini Project 1 – Research

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User research and persona creation

Conduct user research

Methods to gather insights into the target user needs:

The research about the target user needs will be done by secondary research as passive observation of existing data online. This will involve online research on chronic illness, analyzing online discussions , product reviews and existing solutions to identify common pains and challenges.

Understanding the target user

To understand the target user needs I first identify the individuals who would benefits from the Health companion app-- people with chronic diseases that have to take daily medications and follow up on doctors appointments , I will try to identify the common disabilities and impairments that people with chronic conditions live with to make sure that the app is accessible and easy to use by the people who would need it the most. Additionally, I will consider how these factors should be integrated into the UI/UX design of the app.

If the app proves effective for users managing long-term medication, I will assume that its features will also be beneficial for those with short-term medication needs.

Research goals:

- Find what are the most prevalent chronic conditions in Canada
- Which conditions require doctors' appointments & medications
- What are the symptoms associated with these conditions could impact the accessibility of the app.

Online Discussions

I will observe user discussions on platforms such as Reddit. I will focus on seeking target user pains and motivation and how they each other advise on tackling the discussed pain points. The primary sources of discussion will be subreddits communities where the target audience might be active.

Reddit communities that I will observe to find insights about the pains and motivations of the target users:

https://www.reddit.com/r/chronicpain/
https://www.reddit.com/r/chronicillness

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https://www.reddit.com/r/medications
https://www.reddit.com/r/HeartDisease/
https://www.reddit.com/r/osteoporosis/
https://www.reddit.com/r/diabetes/

Research goals:

- From the top 3 disabilities identified, I seek to answer the question: how can my app cater to their needs accessible and useful.

Competition and other solution reviews

I will also seek out similar app available as well as other form of solutions to track medication and doctors' appointments and observe the user reviews to gather the pains the common users complain about in the reviews.

I will be looking for trends in positive feedback about features or UI details as well to learn what the users find helpful.

Observing the other available solution will help to understand the gaps in the current available options.

I will look at websites like Amazon, Yelp, or Trustpilot where I could examine complete reviews from users.

Research goals :

- Find the current solutions people are using
- Find how the health companion app can fill the gap these solutions have.

Research results:

Identifying Target User:

While the average age of Canadians is 41.3 years, the growth of the number of people aged 65 and older increased by 3.4% in 2024. "According to the latest population projections (M1 medium-growth scenario), Canadians aged 65 and older are the group expected to increase at the fastest

pace almost every year until the projections end in 2073." [1] . In a report from CPCSSN(Canadian primary care sentinel surveillance network) where the most represented age group was 40-64 years old, the most common chronic conditions among adults are (in order of prevalence) : Dyslipidemia , Depression, Obesity, Hypertension, Diabetes, Osteoarthritis, Chronic Kidney Disease, Chronic Obstructive Pulmonary Disease, Dementia, Epilepsy and Parkinson's Disease. "Amongst adults,

females have notably higher prevalence of depression, osteoarthritis, and chronic kidney disease. whereas males have notably higher prevalence of dyslipidemia, hypertension, and diabetes." [2]

 I will consider people suffering from cardiovascular diseases as target users since Dyslipidemia, the most prevalent chronic condition listed for the Canadian average age, is a factor of cardiovascular disease. "Dyslipidemia can increase the risk of cardiovascular diseases, such as coronary artery disease, peripheral artery disease, stroke, and heart failure, by promoting atherosclerosis and its complications." [3]

The most prevalent chronic diseases among Canadians of 65 year old and more are(in order or prevalence) : Hypertension, Periodontal disease, Osteoarthritis, Ischemic heart disease, Diabetes, Osteoporosis, Cancer, Chronic obstructive pulmonary disease (COPD) , Asthma and Mood & anxiety disorders. [4]

To analyse the symptoms and challenges faces by people suffering from chronic diseases, I will focus on the three most prevalent and the diseases that are common to the two groups: cardiovascular disease , diabetes and Osteoporosis.

Another target user that I have found are caregivers. One in five adults will become a caregiver at some point in their lives, and caregivers themselves can become patients if the stress of caregiving takes a toll on their well-being . Caregivers often carry a mental load and have a significant amount of work to do in order to keep their family members healthy. One of the objectives of the companion app is help alleviate a part of this burden. [5]

Making the app accessible to the target users:

People who live with cardiovascular disease and diabetes do have to take a set of daily medication that could be hard to manage daily. [6] The health companion app could be helpful in managing these various medications. It is essential that the app is easy to use on a daily basis, as individuals with heart disease and diabetes often experience significant fatigue. [7] [8] The app must be intuitive. Logging appointments or medication must be fast. Individuals with osteoporosis also need to take medications and supplements, for which they would require reminders. [9]

Osteoporosis is often associated with joint stiffness and pain from the result of fractures or from Rheumatoid arthritis , which is often a leading cause of osteoporosis. [9] [10]. Joint pain and Stiffness can cause problems when interacting with a UI that has small buttons.

People who live with diabetes can suffer from blurry vision [11] Which can cause text and buttons to be hard to see and interact with. They may also struggle with Neuropathy [12] which causes numbness of the hands and fingers makes smaller buttons hard to interact with.

Chronic condition	Pains	Solution
Heart disease	Fatigue	• Simple Interface. • Linear layout. • Navigation with limited steps
Diabetes	Neuropathy Blurry vision	• Large buttons and text. • Use combination of color and shapes for buttons. • High contrast UI • Different color family groups on components close to each other
Osteoporosis	Joint pain & Stiffness	• Large buttons. • Simple gestures.
Caregivers	Fatigue	• Simple Interface. • Intuitive Setup. • Limited steps for navigation

This article gives advise on how people with low vision see color and how to use color contrast to help people with low vision navigate their space. The advises will be followed when designing the UI of the application. [13] Only one color of the family of Navy blue, brown and Black will be next to each other. The same follows for the family Blue, green and purple and the family pink, yellow and pale green.

Online Discussions

Motivations & Pains:

People who live with chronic disease often are more prone to develop depression and anxiety [14]. The health professionals can also have access to a report on the mood of the users, letting them take a more holistic approach to their health care.

People living with chronic illness have expressed the desire to feel in charge even if they are suffering from something they cannot control and not feel like a burden. Taking command of their medication and appointment schedule can help foster that sense of empowerment. A more consistent routine in managing medications could not only improve their health but also reduce anxiety, potentially enabling those who struggle to maintain a job to feel more confident in their ability to do so.

Many people struggle with recalling if they have taken their medication, many being anxious about missed doses or accidental double dosing. Some users shared difficulties with taking their pills on time and developing a healthy habit of taking them. The health companion app can help build consistency and take away some of the anxiety related to pill reminders.

Many individuals with chronic illnesses find it difficult to manage multiple medical appointments as well as daily responsibilities. Some people express frustration and exhaustion from balancing work, physical therapy, doctor visits, and personal life. Having the health professional information and the next appointment information in a one reference point can help simplify the process of taking the appointments.

Members of the communities have complained about short consultation time as well. Producing reports can shorten this part of the process, leaving the patient more time to talk about their symptoms and worries.

Competition and other solution reviews :

Pill organizers are a common solution for people who take daily medication. One of the drawbacks is that pill organizers are often filled week to week. For people suffering from fatigue, this could be problematic because the day of the refill might fall on a day where they cannot do it and miss doses. Caregivers might not be available on that day to refill the pill organizer either. 31-day organizers do exist, but some people found that the small compartments were hard to fill.

Another drawback of the pill organizer is the number of compartments per day , if some pills need to be taken at certain intervals and the pill organizer does not have enough different compartment , it can lead to interactions between the medication. The health companion timing offers a solution that is precise to avoid this problem.

A solution that people use is to set alarms on their phones. Unfortunately, this alarm is only a reminder and there is no log kept providing to the health professional. People are already using calendars to keep track of appointment. The integration with our app will be easy and will not create an additional burden for these users.

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