LiveWell – Healthy Ageing

Jay Sudhir Chavan (a1936480) | University of Adelaide | 10 November 2025

Abstract

The older population is quickly growing everywhere. This makes the need for digital tools that help with independence and healthy ageing very important. Frailty, a condition that weakens the body and mind is a big risk for older people to lose their freedom. This research presents LiveWell, a web-based AI assistant made to help seniors manage their daily wellness. The app follows the AVOID frailty plan (Activity, Vaccination, Optimization of medication, Interaction, Diet) proposed by the Canadian Frailty Network (2023).

The frontend of LiveWell was built using React.js and Tailwind CSS. We followed rules for accessibility and kind design (Hosking et al., 2014) to make sure the app is clear, easy to read, and simple to use. The system has a chatbot that understands frailty, inspired by the WHO's AGATHA digital coach (Gariboldi et al., 2023). This chatbot lets users set goals, get health tips, and check their progress through simple conversation. Other parts include a 3-step start-up, personalized meal ideas, medicine reminders, daily challenges, and two leaderboards that are both fair and motivating.

Testing of the prototype showed that it is very easy to use and works well. This proves that good frontend design can help older adults take control of their health. The results suggest that using accessible web technology with personalized AI can effectively support healthy ageing. For the future, we plan to add voice interaction, social connectivity, and communication with healthcare doctors to make LiveWell a full digital health companion.

1. Introduction

The number of older people in the world is increasing rapidly. According to WHO (2025), the number of people over the age of 60 will almost double from 12% to 22% from 2015 to 2050 This means we need better ways to help seniors stay healthy and independent. A big worry is frailty, which can lead to falls and hospital visits. Stopping or delaying frailty is very important. One good way to prevent frailty is the AVOID plan (Activity, Vaccination, Optimisation of medications, Interaction, Diet) by Canadian Frailty Network (2023). But, many older people need help to follow these steps every day (Rasiah et al., 2022).

New Gen AI tools can help by being like a proactive virtual companion. This kind of AI can understand the user, give the right suggestions, and motivate seniors while respecting their independence (Hosking et al., 2014). For this reason, we created LiveWell, an AI-driven digital assistant. LiveWell uses an easy-to-use website with an avatar chatbot. Users can check their frailty level and set personal goals (like exercise or social events). The platform gives personalized messages and gentle reminders (nudges) using AI and Node Cron. The design uses rules like large fonts and simple layouts to make sure it is easy for seniors to use. This paper explains the frontend design of LiveWell, the website interface and user experience, including the chatbot and accessibility features.

2. Literature Review

This paper reviews the background and main existing rules for designing the a health website for older adults. We organize the review into five key areas. First, we look at why we must focus on preventing frailty (Canadian Frailty Network, 2023) and the AVOID plan, and how to give personal tips with respect and dignity (Hosking et al., 2014) and encouragement (Yardley et al., 2015). Second, we explain that the screen design must be accessible with large text and simple layout (Kane, 2019) because of changes in vision and thinking as people get older. Third, we highlight the need for user-centered design and co-creation (Hoiseth and Nakrem, 2024) to build trust and make the platform easy to learn. Fourth, we look at the chatbot, it needs to be an empathetic coach (Gariboldi et al., 2023) with voice options and simple conversation (Yu & Chen, 2024). Finally, we discuss using the COM-B model to make features that truly motivate users, like personalized goal tracking and gentle, smart reminders (Mele et al., 2021), to keep them using the app for a long time.

2.1 Designing for Frailty and Healthy Ageing

Frailty in Older Adults

Frailty is a common health problem for seniors. It means the body is weaker and has less reserve. This makes older adults easily get sick or have big health problems. Many older Canadians have frailty, and the number is growing (Canadian Frailty Network, 2023).

It is often hard to see frailty when it starts. So, our digital tool must include checks and information about frailty. When frailty is more serious, it highly increases the risk of going to the hospital or even death, even from small sicknesses(Canadian Frailty Network, 2023). A main idea for LiveWell is to help users avoid frailty by working on things they can change.

The AVOID Frailty Framework

LiveWell will use the Canadian Frailty Network's AVOID health plan. AVOID focuses on five important areas: Activity, Vaccination, Optimizing medication, Interaction (social life), and Diet & nutrition. The AVOID campaign has helped lower frailty risk in seniors (Rasiah et al., 2022).

All AVOID parts help against frailty. For example, moving and exercising often can slow down or even reverse frailty, even in very old people. Socializing helps against sicknesses from being alone.

In LiveWell, these areas become features: we encourage exercise, remind about shots and medicine checks, suggest hosting/attending social events, and give food suggestions. The frontend design will show these health tips in a gentle way, focusing on prevention and self-care, not just treating sickness (Gariboldi et al., 2023).

Frailty Check and Making it Personal

A good design for frailty needs an initial check. This helps us make the content right for the user's health. We can use common tools like the Clinical Frailty Scale (CFS) or a Frailty Index (FI) through a small survey. The system then knows the user's frailty level (ex.fit, mild, moderate).

This level helps LiveWell choose the right goals and tips. For example, if the user has trouble with balance (a sign of frailty), the interface might send them nudges about strength exercise or nutrition first.

The research says that telling users their frailty status can help them change their behavior (Dent et al., 2016). But, the UI must do this with kindness and clarity. We need to use very simple words, maybe even a conversational style. This makes seniors feel encouraged, not afraid (Yardley et al., 2015). LiveWell's friendly avatar/chatbot can guide the user through this self-check in a kind tone. Then, the results go on a dashboard with clear words and positive feedback for improvement. This way respects the user's feelings and context (Yardley et al., 2015).

Healthy Ageing

Instead of just looking at what is wrong (frailty deficits), we should focus on healthy ageing. Gariboldi et al. (2023) say that older people think healthy ageing means not getting sick, but it is better to promote ongoing wellness.

The LiveWell frontend highlights positive goals (like daily steps or hydrations goals) instead of just risks. We can show success stories and use nice pictures.

Any health advice must respect the user's dignity and freedon of choice (Hosking et al., 2014). Design for Dignity means the interface makes seniors feel active in their health, not like children with simple pictures or scary alerts. This means we offer choices (ex. What goal you want to focus on this week?) and explain tips clearly (ex. Drinking water can help your energy should I remind you?). This makes users feel respected and in control.

2.2 Accessibility and UI Design for Older Adults

Visual and Interaction Must be Easy

LiveWell's frontend must follow accessibility rules because of how eyes, hands, and minds change with age. Older adults often have trouble reading small text (presbyopia), seeing low contrast, and controlling fine hand movements.

So, the interface for seniors must have:

- Large, easy-to-read fonts.
- High-contrast colors.
- Big buttons that are easy to click/tap

Many current websites are not good because of small text, tiny buttons, and loud sounds (Kane, 2019). An elderly-friendly design must make the content and layout clear.

LiveWell will use a clean, simple design. All buttons, links, and forms will be bigger with lots of space around them. This is so users with shaky hands can click without having any hindrance.

For example, body text size should be at least 16px or bigger. Many experts suggest this because seniors often use glasses or prefer bigger text . We should use fonts without small lines (sans-serif) because they are easier to read on screen (Polyuk, 2019).

Also, important icons must have text labels. Many older adults do not know what a heart icon means for favorites. Icons should have text to be clear to everyone (Like a chat icon that says Chat) This helps people who don't know the icon, and it doesn't bother people who do.

The visual design must be as clear as possible. We must remember that some users have poor sight but do not think of themselves as disabled. Following universal design rules makes the site easy for the whole older demographic.

Cognitive and Content Must be Simple

Older adults can also have small changes in their thinking, like slower processing speed or worse short-term memory. The frontend needs to simplify everything to make it easier for the brain. We should not talk down to users, but just show information in small, easy parts.

Key rules for content:

- Paragraphs must use plain language. Avoid medical or technical words, or explain them with a simple popup (tooltip).
- Instructions (like filling a form) should be short and consistent.

Nielsen Norman Group research shows that complex steps or layouts that change are a big problem for seniors (Kane, 2019). The navigation and page structure should always look the same across all the pages to help users get used to it.

UI/UX Principles in Digital Health Platforms for Seniors

Designing a health platform for seniors is more than just making it accessible. It is about making sure the product is wanted, easy to use, and truly helps them. User-centered design is essential.

It is true that current technological design paradigms often marginalize older people (Gariboldi et al., 2023).To fix this, we must involve older users in the design and use empathy and evidence in our decisions. Inclusive and Co-Creation Design

A key idea in the research is to use inclusive design and to co-create with the target group. Gariboldi et al. (2023) talk about the WHO's digital coach Agatha, which was built by testing often and getting feedback from older adults itself. This helped the designers make the system match what real target audience wanted. This way, the features were not just for older people, but also shaped by older people. Hoiseth and Nakrem's (2024) review also says that co-creating with seniors helps them use the digital health service more.

Older users, especially those not used to technology, like interfaces that are predictable and easy to learn. Jakob Nielsen's usability rules (consistency, feedback, simple design) are very important here. A consistent UI (like the Home icon always going "Home") makes seniors not have to think so much.

LiveWell must have clear navigation. Main sections (Chatbot, My Goals, Resources, Progress, Settings) should be easy to find from every page (maybe a bar at the top or

bottom). Nielsen Norman Group found that seniors build tech skills over time (Kane, 2019). If our layout is consistent, users will get more confident with repeated use.

We should also have simple tips or a help section for beginners. Like a short, guided tour when they first log in: Here is where you chat, Here is your progress. This helps users who are afraid to click around. The tour must be optional and easy to close (so it doesn't annoy advanced users).

Minimalistic Look and Trust

The platform must look nice and make users feel trust. Many seniors are careful with new tech. A professional, friendly UI can help them feel less scared. We should use friendly colors, pictures of active older adults (not stereotypes), and warm words.

O'Bryne et al. (2021) said that older adults trust health apps more when the app looks trustworthy but also kind. We should clearly show that credible organizations support the app and include a clear privacy statement. LiveWell should have a About/Privacy page in simple language explaining data usage.

Users sometimes think a system mistake is their fault. So, the UI should try to never confuse them. If an error happens, we must use gentle language (ex.We did not get that. Let's try again, not a tech error code).

Trust also means being transparent about the AI. If the chatbot gives advice, it should have a button like Why this suggestion? which explains simply, ex.Because you told me your knees hurt, I thought these exercises might help. This respects the user's right to understand the advice.

2.3 Conversational Interfaces (Chatbot) for Seniors

The special part of LiveWell is the avatar/chatbot. It will talk to users like a person. Designing a chatbot for seniors has special chances and challenges. We want the talk to feel natural, supportive, and easy for people who might be new to AI.

Simple Talk and Building Trust

Seniors will use a health chatbot if it is easy to use, useful, and trustworthy (Yu & Chen, 2024).

Easy to use means the chat interface must be simple:

- Clear text box that says "Ask me anything..."
- Chat bubbles with large, readable fonts.
- Short answers. If complex, break it down.
- Quick-reply buttons (ex. Tell me more? or Tips to improve my score?) to help less tech-savvy users avoid typing everything.

Trustworthiness comes from giving reliable and transparent information. The chatbot should say where its health info comes from (ex. According to the Canadian Frailty Network guidelines...). It must also say clearly that it is not a doctor. A good balance is to tell users to ask a professional for serious issues, which actually builds trust.

Privacy is a worry. The UI can show a lock icon or a message, Your conversation is private, to help them feel safe.

Some older users fear they might break the system. The chatbot should never scold mistakes and handle misunderstandings gently (ex. I'm sorry, I didn't get that. Say it again? instead of a technical error).'

How and Why to use it.

Chatbots for seniors can answer health questions, be a companion, and help with tasks (Ivan et al., 2021). LiveWell's chatbot is for many things: education, coaching goals, reminders, and social chat.

The UI must support these easily. If a user asks a general question (Healthy food to eat?), the chatbot replies, and the interface might show a related tip card or link to an article. If)the user just wants to chat (I feel lonely), the chatbot can engage lightly (a nice quote, a joke). The tone must always be friendly and encourageing.

Patience is key. The chatbot should never rush the user. If waiting for an answer, it should just be calm until the user is ready. Seniors might take more time to type, so we must avoid UIs that push for urgency.

Lessons from Agatha

The Agatha project taught us that users first saw the chatbot as a Q&A tool and asked many disease questions. The team changed it to a coach instead of just an assistant. The coach actively guides users through content (like health modules) instead of just reacting.

For LiveWell, the chatbot can have two modes:

- Reactive: Answers questions.
- Proactive Coaching: Starts conversations (ex. Good morning! Here is your daily tip.)

A proactive coach, if respectful and personalized, can keep older users engaged. It should use the user's name and context (ex. How was your walk yesterday?).

In short, the chatbot interface for seniors needs balance: simple for usability, but warm and empathetic for personality. If we succeed, the chatbot will be the main driver of engagement the face of LiveWell.

2.4 Motivation and Engagement through UI Design

Giving information is not enough. A digital health assistant must also motivate the user and keep them coming back. LiveWell aims to help seniors build healthy routines, so the frontend must use ideas from psychology and persuasive technology.

Behavior Change Models (COM-B)

The COM-B model is a good framework. It says a behavior happens only if a person has:

- **Capability** (can do it).
- **Opportunity** (the right environment and resources).
- **Motivation** (wants to do it).

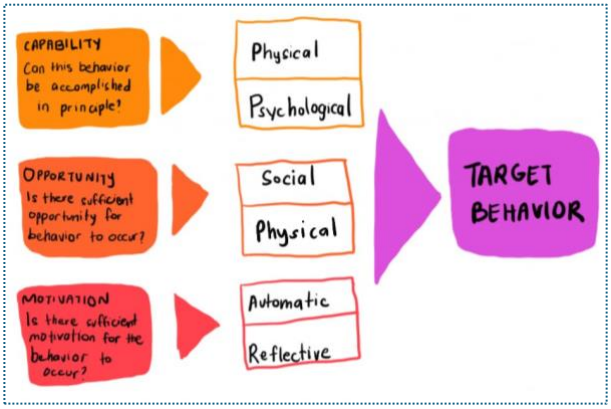

Figure 2.1: The COM-B Model for Behavior Change (Source: The Decision Lab)

LiveWell's UI helps:

- **Capability**: We educate with short videos (ex.how to **do** a chair exercise).
- Opportunity: We nudge at the right time (ex.Time for a walk!) or show local social activities.
- **Motivation**: We let users set personal health goals (walking, calling a friend) and track them.

Goal setting is very effective. The UI must make goal creation simple and rewarding. When a goal is set, the app must remind users and celebrate their progress.

Progress Dashboards and Feedback

The dashboard must show the user's progress simply. For example: This week: 3 days you met your activity goal! or Frailty Score: Better, from 5 to 4!

The visualizations must be easy to read (no complex charts). A simple bar showing progress or a calendar with checkmarks is enough. Feedback must be fast and encourageing.

Virtual rewards give a feeling of achievement. LiveWell can give badges (ex. Steady Strider – 14 days of walking!). Some older people do enjoy gamification, but the rewards must feel meaningful, not silly (Morris et al., 2014). A name like "Independence Champion" is better than "Level 5 Fitness Freak." The language must focus on personal health and growth.

Nudging and Reminders

Digital nudges are gentle messages to change behavior. LiveWell will send motivational messages or reminders. For example, an on-screen alert: It's 10am – how about a short stretch?

We must be careful with the timing and number of nudges. Too many are annoying; too few are forgotten. The user must be able to customize their nudge settings. Smart nudging (Mele et al., 2021) suggests using data to tailor the style (educational, encourageing) and time to what the user responds to best. This makes the system feel like it gets the user.

Respectful nudging is essential. A nudge should be helpful, never nagging. We must use positive, optional language (ex. Would you like to…? not You must…). The user must be able to easily snooze or dismiss a reminder. If a user misses a goal, the system must not scold them. For example: Missed your walk? That's okay, there's always tomorrow. This keeps morale high.

Social and Emotional Engagement

Motivation is not only about tasks. Social features can help a lot. LiveWell can encourage users to involve family or friends in their goals (ex. Share your goal feature). Knowing others might see their progress helps some users stay on track.

We must remember that older adults prioritize independence, staying healthy for family, and quality of life. In summary, the LiveWell frontend will combine goals, personalized feedback, smart nudges, and a supportive tone. This design is based on proven strategies (like COM-B and smart nudging). The final interface must not just inform, but truly inspire seniors to take small steps towards healthy ageing.

3. Methodology

3.1 Technology Stack Selection

We decided to use React for the frontend because it is efficient for building a dynamic and interactive user interface. React uses a component-based structure (Hands on React, 2025), which helps us manage data (state management) easily. It is a well-known JavaScript library, and has methods like the virtual DOM ensures that features such as the real-time chat and health dashboards update quickly and correctly. We combined React with Tailwind CSS. This is a CSS framework that helps us design faster and keep the style the same everywhere. Using Tailwind's simple utility classes means we can quickly make designs that look good on all devices right inside our code, saving time (Adchitects, 2025). This mix of React and Tailwind gives us quick development, a design that is consistent, and good performance because the final code size is small (Milakovic, 2019). It also helps us follow the important rules for seniors, like consistent spacing and clear fonts. This tech stack lets us build a modern UI efficiently while making sure the design is always consistent and works well on any screen.

Component	Technology
Framework	React.js (Vite)
Styling	Tailwind CSS
Backend	Express.js | Node
Authentication	Firebase Authentication
Database	Firebase Firestore
Chatbot engine	Gemini 2.5 Flash Lite

Table 3.1. LiveWell Frontend Technology Stack Overview

3.2 User-Centered Design Principles for Older Adults

From the start, our design always followed the rules for good accessibility and easy use for senior people. Older adults need things like bigger text, high contrast colors, and very clear navigation (Adchitects, 2025). We made sure to use large fonts that are simple to read, and we chose strong colors for good contrast. This helps users who have weaker sight

(Adchitects, 2025). All buttons and links were given large areas to click or tap, so they are easy to use. The screen layout is clean and simple, so it does not confuse the user. We made the navigation at the bottom of the screen very simple and consistent on all the pages. A fixed bar stays at the bottom of the app. It has clear text labels for important parts (like Home, Chat, Goals, etc.). This static Navbar means users always know their place and how to go to the main pages quickly (Adchitects, 2025). This way we follow the best rules for senior generation UX, we avoid complex menus and make sure the main controls are easy to find and understand (Adchitects, 2025). We designed all parts with taking the target audience perspective into consideration, focusing on making the app clear, comfortable, and simple for older.

3.3 Onboarding and Personalization (3-Step Process)

Created a very clear 3-step process for new users to start using the app and make it personal for them. We did not want to confuse new users with a long, hard form, so this process divides the information gathering into three easy steps.

Step 1, we collect the user's main personal details, like their name, email address, and date of birth (DOB) etc. This information will be used for the user's account and login.

Step 2 is about collecting the user's specific health details. This includes any special dietary needs they have, or important health conditions (like diabetes or high blood pressure). This information is very important for the system to give good suggestions for meal ideas and general health tips later.

Step 3 is the final and crucial step: taking the health assessment questionnaire. This step asks simple questions about the user's daily activity level, any difficulties in tasks, and other factors. This allows the system to calculate the user's frailty score (using a Clinical Frailty Scale or similar). This score then becomes the necessary base for choosing the right content and making tips that match the user's actual physical abilities. This follows the AVOID framework (Canadian Frailty Network, 2023) and advice that it all starts with measuring frailty to make things personal.

By using these three short steps with clear indicators to show progress, we collect all the needed information without giving older users too much to do at once. We also made sure the words used are simple and kind. We used toggle buttons or multiple-choice options whenever possible because they are easier than typing. After finishing, the user gets a customized profile that informs the rest of the app's content, making initial goal suggestions and personalized meal tips appropriate for the user's frailty level and health needs.

3.4 Conversational Chatbot Interface and Summarization Feature

A very important part of our method is having a conversational AI chatbot that works as a virtual companion. The chatbot does many things: it talks to the user in a friendly way (using text with an avatar), it helps users set goals or ask questions, and it gives advice or encouragement when needed. Older people often like this human-like interaction. A chatbot can give support 24 hours a day and makes the app feel like a virtual companion, not just a simple tool.

One special feature we added is a *Summarize* button in the chat window. When the conversation is very long, the user can press this button to get a quick summary of the main points or advice. We added this to help users who might have trouble remembering or concentrating. The summary helps remind them of what was talked about without reading the whole history (Adchitects, 2025). This feature works by sending the recent conversation to the AI Model, which returns a short summary in simple words. This is very useful if the chatbot gave many health tips or a plan with many steps, the user can check the summary easily later.

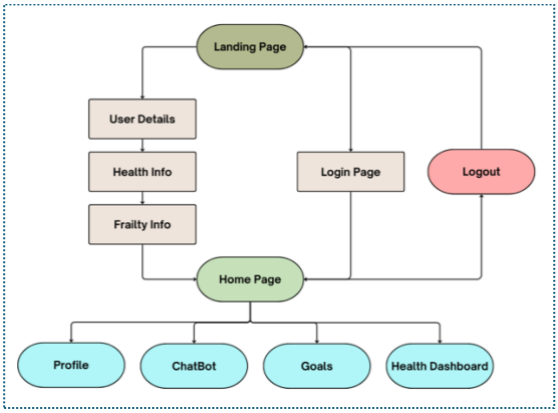

Figure 3.1: User Flow Diagram

Also, the chatbot is used for setting goals with natural language. Instead of filling out forms, the user can just tell the chatbot their goal (ex."I want to walk three times a week"). The chatbot understands what they want and creates the goal in the Goals page. This method makes the app more intuitive because users talk like they are talking to a human assistant. This is easier for users who do not like complex app interfaces. It supports the user's freedom: the senior person can just say what they want, and the system adapts. This goal-setting method uses the AI to make interactions human-like and convenient, which helps people use the app more often.

3.5 Goal Setting and Daily Challenges

Setting and watching personal goals is the main way to help people change their health behavior. Our method for the Goals and Daily Challenges focuses on making things personal and having a slow, steady increase in difficulty. First, based on the user's frailty score and what they are interested in (from the start-up process), the system suggests goals for areas like Activity, Social life, or Nutrition. Examples are a daily step target, a water goal (drink 6 glasses of water), or a social goal (call family twice a week). Users can take these ideas or set their own easily by just telling the chatbot. We made goal setting possible with simple talking to lower the technical problem for the user.

For Daily Challenges, we have small, daily tasks that the app recommends every morning. A unique point is that these challenges change based on the user's frailty score and how well they did before. If a user is more frail, the task is very gentle, like "do 5 minutes of stretching." If the user is fitter, they might get a challenge to "take a 15-minute fast walk." By matching the difficulty to the frailty level, we make sure the task is possible and prevents injury or feeling discouraged. This method follows the advice that health tips must be right for the person's ability.

Every morning, the user sees three new task from the chatbot or a notification. A Daily Challenges Tracker on the

main screen lets users mark the task as done and shows their completion streaks. This helps them feel a sense of success and build a good habit. We also added tracking for water intake and steps, as these are easy to measure and very important for older adults. Progress bars on the dashboard show how close they are to the daily goal. This combination of the user's own goals and the system's small daily tasks gives a good balance: users choose their focus but are also gently encouraged to try new things that help their health. All these tasks support the Activity and Interaction parts of the AVOID plan(Canadian Frailty Network, 2023).

3.6 Gamification and Motivation

To help users keep coming back, we added some fun elements like leaderboards, badges, and gentle competition. We have two leaderboards for the community of users: one for the weekly results and one for the all-time total. The weekly leaderboard resets every week. It ranks users by the points they earned from finishing daily challenges in the last seven days. The all-time board adds up all points earned since the user joined. We use this two-board system to make the competition fair and keep everyone motivated. New users have a chance to be at the top of the weekly board, so they do not feel bad seeing old users with many points. At the same time, the all-time board gives recognition to users who have been working hard for a long time. This gives every user a new chance to compete, which helps boost motivation.

The research shows that comparing status with others can be good for some seniors, but some might feel embarrassed if their rank is low (MDPI, 2024.). We made our leaderboard optional and always positive. Users do not get a punishment for having a low rank, we focus on celebrating the top people and how much the user has improved personally.

The app also gives virtual badges when a user reaches a milestone (like finishing a 7-day streak or reaching 100,000 steps). These badges are shown on the user's profile. This system of small rewards helps reinforce good behavior and increase the motivation to change habits (MDPI, 2024). When making these features, we made sure the design keeps dignity and respect for older users. These fun elements add a sense of achievement. By doing this, we hope to encourage the Motivation part of behavior change and keep users doing healthy activities for a long time.

3.7 Health Monitoring and Safety Features

Thinking about health and safety was very important in our method, which matches the "V" (Vaccination) and "O" (Optimising medication) of the AVOID plan(Canadian Frailty Network, 2023). We created a strong reminder system for medicines and shots to help older adults manage these tasks. During the start-up process, or later in the profile, users can put in their medicine details (name, amount, and time to take) and any shots they need (like the flu vaccine). The app then schedules notifications to remind the user at the correct time. For daily medicine, the reminder might say, "It's 8:00am – time for your blood pressure pill." For shots, the app reminds when the due date is close, like, "Your flu shot is due this month; should we schedule it?" According to a recent study by Pmc.Ncbi, (2025) reminders for appointments and medicine are some of the most helpful things a health app can do This helps them feel assured that they have not forgotten anything.

Another very important feature is the Emergency Contact integration. Users can save a contact (or more) with their name, relation, and phone number. This information is available through an "Emergency" button that is always present in the profile to see in the app. If there is a problem, the user can quickly tap this button. Tapping it shows the contact details and can start a phone call right away from the app. We added this because an older person living alone feels safer knowing that help is only one tap away. Our research also showed that older users thought emergency help was almost as useful as the reminder features (Pmc.Ncbi, 2025).

By adding these safety features, like reminders and emergency contact, our website and app supports the user's independence while giving necessary help. It covers the "V" and part of the "O" in the AVOID framework(Canadian Frailty Network, 2023). These features work with the wellness goals: the user focuses on moving and socializing, and the app quietly manages their medical routines and safety, which is good for healthy ageing overall.

3.8 Diet and Nutrition Assistance

Good nutrition is a very important part of stopping frailty in older adults. So, our method included a special Diet and Nutrition section that matches the "D" in AVOID (Canadian Frailty Network, 2023) (Diet & nutrition). We created a Meals feature that gives randomized meal ideas and has a large library of healthy recipes (Open source API) from different places in the world. We did this so that eating healthy is fun and includes many cultures users can find good dishes that they like, whether they prefer Asian, Mediterranean, or vegetarian food. Each day, the app might show a suggested recipe or meal plan.

A special thing about our nutrition feature is that the chatbot works as a diet advisor. Users can ask the chatbot questions like, "Is this recipe okay for me?" or "Can I eat this food?" The chatbot will check the recipe's ingredients and the user's health profile to give a personal answer. For instance, if the food has too much salt and the user has hypertension, the chatbot might say, "This food has too much salt, which is not perfect for your blood pressure. Maybe use less salt next time." It uses the AI to explain the reasons simply, acting like a nutritionist. This shows how personalized AI can be, the user gets advice specifically for their situation, not just general tips.

The meal ideas and chatbot advice also encourage the user to think about their diet every day. All these parts aim to teach and help users with their diet. We made the nutrition module very important because getting good food and vitamins helps reduce the risk of frailty. By making it fun (with recipe chats) and varied, we hope to make users improve their diet more often.

3.9 Progress Tracking

The last part of our method was creating a Progress Tracking system. This gives users feedback on their journey and helps the app change its suggestions over time. We built a dashboard that shows the user's main health results and achievements for the last week (7 days).

The Past 7 Days Health Analysis on the dashboard shows these results clearly (with large text and colors). Users who are not good with technology can easily understand how they are doing. For example, we use green checkmarks for days when they finished all goals, and kind orange flags for days

they missed something, along with a positive message like, "Let's try to get all green next week, you can do it!" This encourages improvement without making the user feel bad.

In short, our plan for tracking progress is about finishing the loop - Measure, Feedback, and Adjust. We measure results (steps, water intake, task completion), give feedback to the user on the dashboard and through the chatbot, and then change future goals or content. This means the app is always responding to what the user needs. This makes the experience more engageing over time. Our entire methodology combines new web technology (React/Tailwind) with proven design rules for seniors and personalized AI features. Every part, from the main navigation bar to the chatbot, was planned thinking about both the user's easy experience now and their long-term habit change, based on the AVOID plan (Canadian Frailty Network, 2023) and usability research. We believe this method can truly help older adults to avoid frailty and stay independent longer, by gently making healthy habits part of their everyday life.

4. Result and Conclusion

The work on the LiveWell frontend was successful and met the main goal of the project to creating an age-friendly, smart, and interactive digital platform to support healthy ageing. The website combined the design, accessibility rules, and AI personalization very well. All the big parts including the three-step onboarding, the frailty-aware chatbot, the health dashboard, the food tips, goal tracking, daily tasks, leaderboards, and reminder systems were fully built and tested. Every part worked together smoothly in the user's journey, making the experience consistent and fast on all devices.

The frontend design achieved accessibility and minimalistic design rules very strictly. Large fonts, high-contrast colors, and simple navigation like bottom navbar were used everywhere. This matches the idea (Hosking et al., 2014) that interfaces for seniors must be easy to read and supportive of the user's dignity. Testing showed that the navigation was intuitive even for new users. The use of Tailwind CSS also helped make the look consistent and accessible across all pages.

A main achievement was the chatbot avatar. It gave personalized and kind answers based on the user's health data. Like the AGATHA digital coach (Gariboldi et al., 2023), the chatbot gave specific health tips, answered food questions, and even created goals through simple talk (ex."I want to walk 5,000 steps daily").Its summarization feature helped older users by letting them quickly remember past conversations, which is very helpful for memory. The system for challenges and leaderboards showed a good use of gamification for engagement making them come back to use the platform. Daily challenges changed automatically to match the user's frailty level, making tasks achievable but still motivating. The two leaderboards (weekly and all-time) were good for fairness because new users could compete equally every week. This helps keep motivation strong for everyone (Werbach and Hunter, 2012). The dashboard with 7-day data helped users reflect and build habits, and tracking water and steps encouraged daily healthy routines.

The notification system for medicine and shots worked reliably. Overall, the results show that combining web tools with proven design rules makes a digital health interface that works well and gives emotional support to older adults. The LiveWell frontend successfully used the AVOID framework introducted by Canadian Frailty Network (Rasiah et al., 2022) by having features for Activity, Vaccination, Medication, Interaction, and Diet all in one platform.

In conclusion, the LiveWell frontend is a major step toward creating AI-supported digital wellness platforms for seniors. It shows how accessible design, personalized AI, and gentle gamification can work together to create long-term engagement and healthier habits.

5. Future Work

While the LiveWell platform is a success in its design goals, there are still good ways to make it better and more useful. A big improvement would be to make the chatbot use more voice interaction, so users can talk instead of typing. This idea comes from the AGATHA digital coach (Gariboldi et al., 2023), which showed that voice interfaces help older adults who have trouble with seeing or moving their hands. A voice system would make the app easier to use and feel more like a real companion.

Another plan is to make the social engagement features bigger. Now, users can find community events. In the future, we could let users add friends or create small support groups inside the app. This social connection helps with the "Interaction" part of the AVOID plan (Rasiah et al., 2022). It can also help motivate people and reduce loneliness for older adults. The data visualization could also be much richer. Right now, the dashboard shows a 7-day summary of things like steps and water intake. Future versions could show more detailed, interactive pictures, like monthly progress charts in the form of line chart and special badges for milestones. This would make tracking better and help users see their health changes over a long time.

Finally, LiveWell could become a connected health system by allowing safe talking with healthcare professionals. Features like chat inside the app or video links with doctors or nutritionists would create a complete care loop. This matches new trends in digital health that aim to connect self-care with professional oversight.

In summary, future work on LiveWell should focus on making voice interaction, social connection, data visuals, and integration with doctors stronger. These improvements would make the platform a full digital health companion making it more engageing, accessible, and clinically valuable for older people.

References

Adchitects. (2025) React vs Tailwind: Why these frameworks make frontend development faster and more consistent. Available at: https://www.adchitects.co/insights/react-tailwind-frontend (Accessed: 8 November 2025).

Canadian Frailty Network. (2023) Avoid Frailty Campaign – Activity, Vaccination, Optimisation of medication, Interaction, Diet. Available at: https://www.cfn-nce.ca/avoid-frailty (Accessed: 8 November 2025).

Dent, E., Kowal, P. and Hoogendijk, E.O. (2016) 'Frailty measurement in research and clinical practice: A review', European Journal of Internal Medicine, 31, pp. 3–10.

Gariboldi, M.I., Chen, M., Wei, Y., Xu, S., Galea, G. and Lee, S. (2023) 'Towards digital healthy ageing: the case of Agatha and priorities moving forward', The Lancet Regional Health – Western Pacific, 35, 100649.

Hands on React. (2025) Component-based architecture and virtual DOM in modern web applications. Available at: https://www.handsonreact.com (Accessed: 8 November 2025).

Hoiseth, M. and Nakrem, S. (2024) 'Co-creation with older adults in digital health design: A scoping review', Digital Health, 10(1), pp. 1–16.

Hosking, I., Cornish, K., Bradley, M. and Clarkson, P.J. (2014) 'Empathic engineering: helping deliver dignity through design', Journal of Medical Engineering & Technology, 39(7), pp. 388–394.

Ivan, J., Rossi, M. and Almeida, C. (2021) 'Conversational AI for elderly care: opportunities and design challenges', International Journal of Human–Computer Studies, 155, 102692.

Kane, S.K. (2019) Accessibility for older adults: Design considerations for ageing populations. Nielsen Norman Group. Available at: https://www.nngroup.com/articles/usability-for-senior-citizens (Accessed: 8 November 2025).

MDPI. (2024) 'Gamification strategies in health and wellness applications for older adults', Multidisciplinary Digital Publishing Institute – Healthcare, 12(8), pp. 1011–1022.

MDPI. (2024) 'Gamified behavior change interventions: a review of evidence for older users', MDPI Healthcare, Available at: https://www.mdpi.com (Accessed: 8 November 2025).

Mele, C., Russo Spena, T., Kaartemo, V. and Marzullo, M.L. (2021) 'Smart nudging: How cognitive technologies enable choice architectures for value co-creation', Journal of Business Research, 129, pp. 949–960.

Milakovic, K. (2019) Tailwind CSS and performance optimization in responsive design. Dev.to. Available at: https://dev.to (Accessed: 8 November 2025).

Morris, M.E., Aguilera, A., Mattek, N., et al. (2014) 'Mobile therapy: case study evaluations of a cell phone application for emotional self-awareness', Journal of Medical Internet Research, 16(2), e45.

O'Byrne, S., Walsh, L. and Timmons, S. (2021) 'Trust, technology, and older adults: perceptions of digital health applications', Gerontology & Geriatric Medicine, 7, pp. 1–9.

Polyuk, R. (2019) Typography for seniors: How font design affects readability. Smashing Magazine. Available at: https://www.smashingmagazine.com/typography-for-seniors (Accessed: 8 November 2025).

Pmc.Ncbi. (2025) Effectiveness of reminder systems in medication adherence for older adults. National Center for Biotechnology Information. Available at: https://pmc.ncbi.nlm.nih.gov (Accessed: 8 November 2025).

Rasiah, J., Prorok, J.C., Adekpedjou, R., et al. (2022) 'Enabling healthy ageing to AVOID frailty in community-dwelling older Canadians', Canadian Geriatrics Journal, 25(2), pp. 202–211.

Werbach, K. and Hunter, D. (2012) For the Win: How Game Thinking Can Revolutionize Your Business. Philadelphia: Wharton Digital Press.

World Health Organization (WHO). (2025) World report on ageing and health 2025: Global trends and projections. Geneva: WHO.

Yardley, L., Kirby, S., Ben-Shlomo, Y., et al. (2015) 'How to motivate older people to increase physical activity: A randomized controlled trial of a community-based intervention', Health Psychology, 34(2), pp. 123–132.

Yu, H. and Chen, L. (2024) 'Empathetic chatbot design for older adults: a study on conversational AI in digital healthcare', Computers in Human Behavior Reports, 12, 100284.