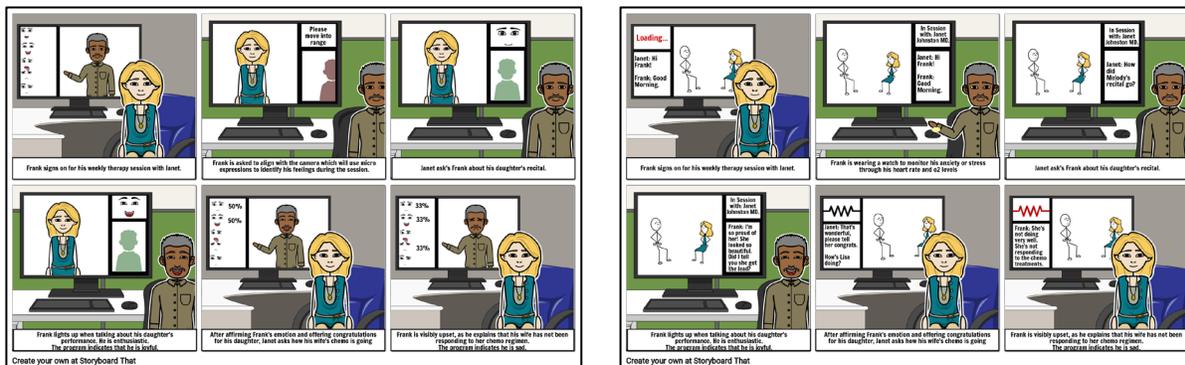


Safety Net

Veteran healthcare is a major concern facing the nation today with about 20 veterans dying by suicide each day. While mental health care is provided in VA facilities across the nation, many factors prevent Veterans from seeking the care they need. By reducing the top sources of friction Veterans experience in seeking care, we hope to maximize the resources available and ultimately lower the rate of Veteran suicide in the United States. In order to meet this lofty goal, this project focused topic of how we might create a web-based application that delivers mental health care to Veterans who may not have physical access to resources, while still maintaining the safe-guards established by in-person clinical therapy sessions.

To best determine this, we needed to communicate with both Veterans and mental health providers to ensure that the needs of both groups could be met within a digital space. This meant conducting formal interviews with mental health providers, gathering information not only about their process, but also the legal requirements for therapeutic interactions. Because the topic of mental health is very sensitive, interviews were not the most appropriate form of research for the Veteran population. In this case, anonymous surveys were friendlier and provided specific information as to the forms of communication veterans preferred, as well as the reasons seeking treatment might be difficult for them. Ultimately, the [research](#) indicated a large gap between the needs of the two participant groups, with therapists wanting the information they could gather from non-verbal cues during in person interactions and the Veteran population valuing the ability to remain anonymous and seek counseling remotely.

This dichotomy of needs led us to narrow the scope of the project, focusing on how might interpret emotional changes, in a therapeutic setting, through various modes of communication. At this point, an exploration of available technology and physiological expressions of emotions, led to several ideation concepts attempting to bridge the gap. After looking at our early story boards and updating them to focus on an online experience via both self-reporting and the computer aided reporting of emotions, we went back and reviewed our initial interviews to select and improve upon the scenario which best met the needs of both user groups.

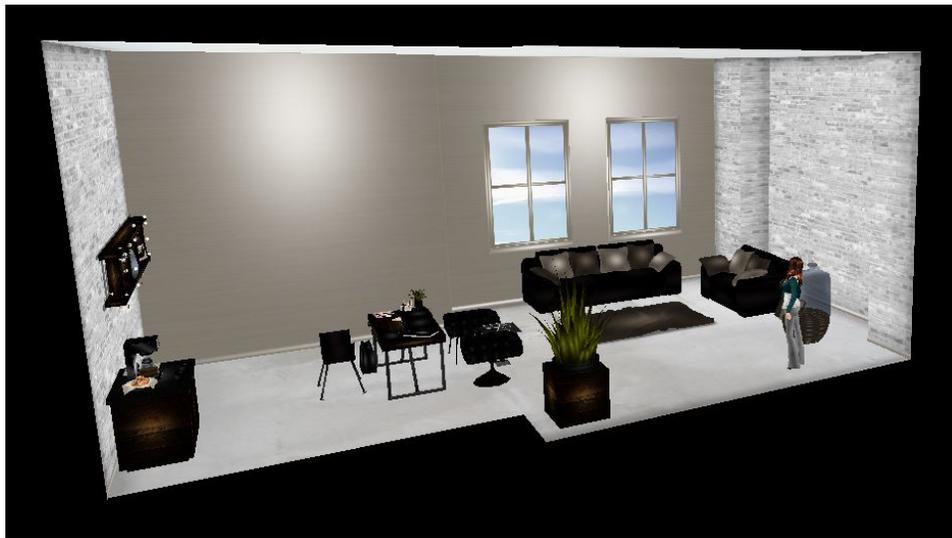


While our first two story boards required a video connection for communication, the third story board provided more anonymity for the Veteran user group that indicated the preference of text. In this case, by making use of 3D avatars, stylistic choices provided additional input for the therapist, while at the same time limiting the intrusiveness of the interaction for the Veterans. This accompanied by the text and physiological data (provided via a smart watch) allowed for information that could typically be witnessed by the therapist in fact to face interactions – such as heart rate, temperature, and overall

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stress level – to still be conveyed giving the therapist important insight into the client’s emotional state at the time of interaction.

For the [experience prototype study](#), we built a therapeutic space on a 3D digital chat platform called IMVU. Based on our research, similar platforms such as second life had previously been used for therapeutic interactions, so we wanted to see what that would look and feel like with participants. The space we built mirrored that of the therapeutic office we interviewed one of the mental health professionals in, having both an office area, as well as a slightly separated seating area. Once the space was built, we took the chat room public within the platform, and waited for guests to arrive, to see how they interacted in the space.



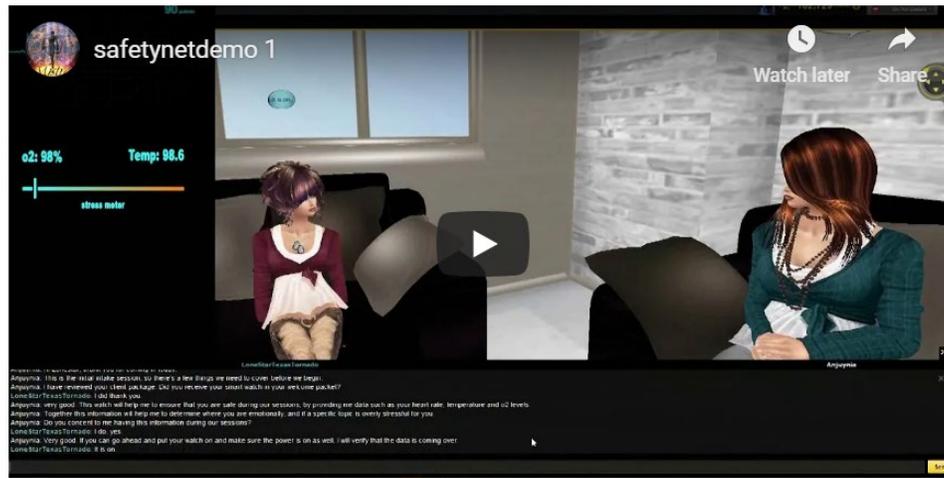
Most of those, though not all, who entered the room did so in a human form and chose to sit within the seating area, while a few entered as furrys or other non-human representations or remained standing in the door way where they loaded in. We also found that most interacted with the stand-in therapist avatar. Because of the sensitive nature of the topic, we did not role play as the therapist, but rather asked participants questions about the space, the platform, and what changes would make them more comfortable. From these discussions we learned that while the room was light and airy, some found it to be too clinical and sterile, while one objected to the lightness that the majority enjoyed.

Over all, the participants believed that the aesthetic of the room matched the purpose; one participant even suggested that the scene be changeable to reflect certain situations or client preferences, which we found fascinating idea with significance for future ideations. As far as the platform, most users were content with the click to move functionality, and felt that free movement (like in Second Life) was too burdensome for a platform designed for therapeutic purposes. The felt the optional additions of voice and video would be beneficial as well – if all parties were in agreement.

The formal interviews along with the information gathered during our experience prototype informed the final concept shown in our video demo, which was created using a combination of the IMVU platform from the experience prototype and mock-up representations of the physiological data. This data, after further consideration was upgraded to include data analysis of the discussion, using typing speed as well as emotional words to provide a word cloud with prominent emotional topics, as

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well as an analysis of the heart rate, o2 level, and temperature, to provide an over-all stress level so that the therapist would have additional knowledge through interpretation of the raw data in real time.



In this [demonstration](#), the therapist (Anjuynia) is conducting an intake interview session with a new client (LoneStarTexasTornado). The client is an Army Veteran who has previously been diagnosed with PTSD and had been set up with weekly appointments at her local VA. Unfortunately, local in her case is relative as the VA is an hour away from her work. This means that she was missing at least 3 hours of work a week between her appointment time and drive time, putting strain on her co-workers, and ultimately forcing her to cancel many of her appointments and drop to a single monthly visit with a mental health provider.

Luckily, LoneStarTexasTornado has been selected for a new VA Safety Net trial, for online therapeutic treatment. In this program, LoneStarTexasTornado is able to meet anonymously with a therapist and receive weekly sessions at a mutually scheduled time. To help compensate for the non-verbal cues lost in the absence of traditional face-to-face therapeutic interactions, LoneStarTexasTornado received a smartwatch device that helps (along with the software) to provide her therapist with critical information to her emotional and physiological state during their sessions, ensuring that the interaction is safe and that LoneStarTexasTornado has the proper care.

By meeting with Anjuynia online through SafetyNet, LoneStarTexasTornado is able to meet more frequently and miss less work, allowing her to better support her co-workers, while making her own mental health a priority!

This portion of safety net, focused solely on the interaction between the client and the mental health professional should include a 3d environment with customizable avatars, optional video and voice inputs, as well as biometric and linguistic integration and analysis. Our role is to make up for the lack of subtle cues experienced in face to face communication, and provide similar insights that could be made in a traditional environment. Emphasis should therefore be on the transmission of emotion based data from the client to the mental health professional in such a way that the mental health professional can focus on the client – and not on processing the raw data, in order to glean important insights into the client's emotional state.

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Two important considerations not within the scope of this initial project include: what to do in a situation where a client's emotional state has escalated to a dangerous situation and how to protect the privacy of both the client and the mental health professional on a web based platform. These considerations will be critical to making this platform feasible for use. The legal implications of storing data, as well as various state regulations on the use of web technologies in therapy will also need to be researched and accounted for in the final product.

Safety Net in combination with clinical health care professionals and networks has a large potential to expand on current tele health usage and increase access to mental health care for those that need it most. The ability to mitigate informational losses while transitioning from face to face communication to a form of communication where clients feel more at ease and able to express their feelings will open opportunities and lessen the obstacles that currently prevent Veterans from seeking or continuing with mental health care. Ultimately, we believe that receiving timely and consistent care, through the use of specialized tele therapy, will reduce the number of Veteran suicides currently seen in the United States.

Project Milestones @: threefourteen.website/category/atcm-4337