

VIRTUAL REALITY-BASED CANCER TREATMENT DECISION AID

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December 20, 2023

Background

Challenge in Treatment Decision-Making:

- Specifically challenging for older adults with cancer ¹⁻².

Current Decision Aids Formats:

- Predominantly available in web and booklet formats ³⁻⁵.

Limited Utilization of Virtual and Augmented Reality

Virtual/augmented reality in decision aid

Examples:

- VR-based videos for advanced care viewing to aid in advanced care planning decision-making, such as life-sustaining treatment⁶.
- Breamy, an AR-based prototype that offers 3D visualizations of diverse oncoplastic procedures⁷.
- VR-enhanced radiology technology aimed at improving communication in colorectal cancer surgery⁸.

Project goals

Goal:

- Design a VR-based treatment decision-making aid to support older cancer patients in making well-informed decisions.

Expected Outcomes:

- Empower patients with the necessary knowledge for informed treatment decision-making.
- Enhance confidence in treatment decision-making.
- Mitigate decisional regret.
- Improve the overall quality of life during treatment.

Design Process

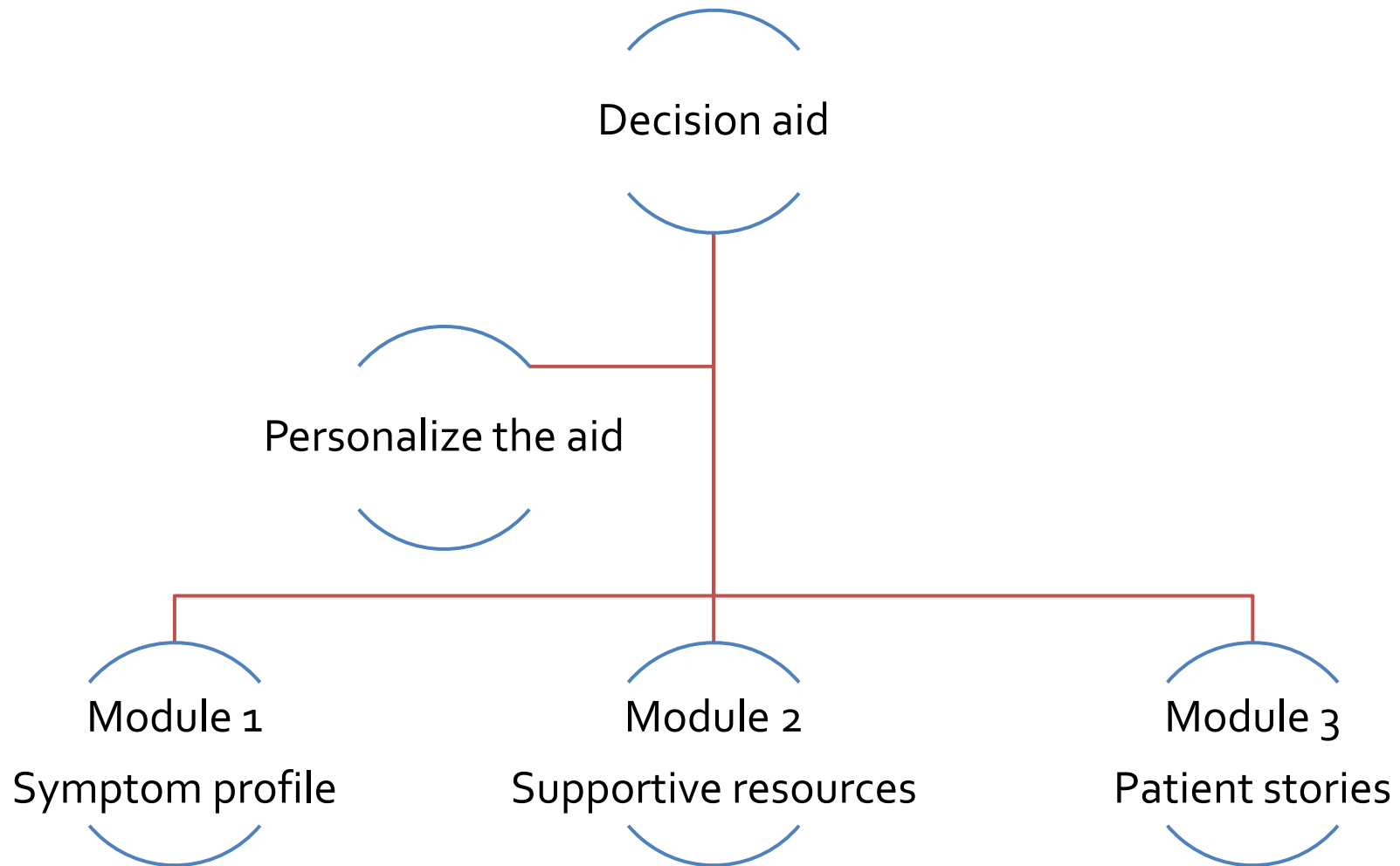
Preparation stage

- Dissertation work
- Clinical shadow and patient interview
- Collect resources from American Cancer Society

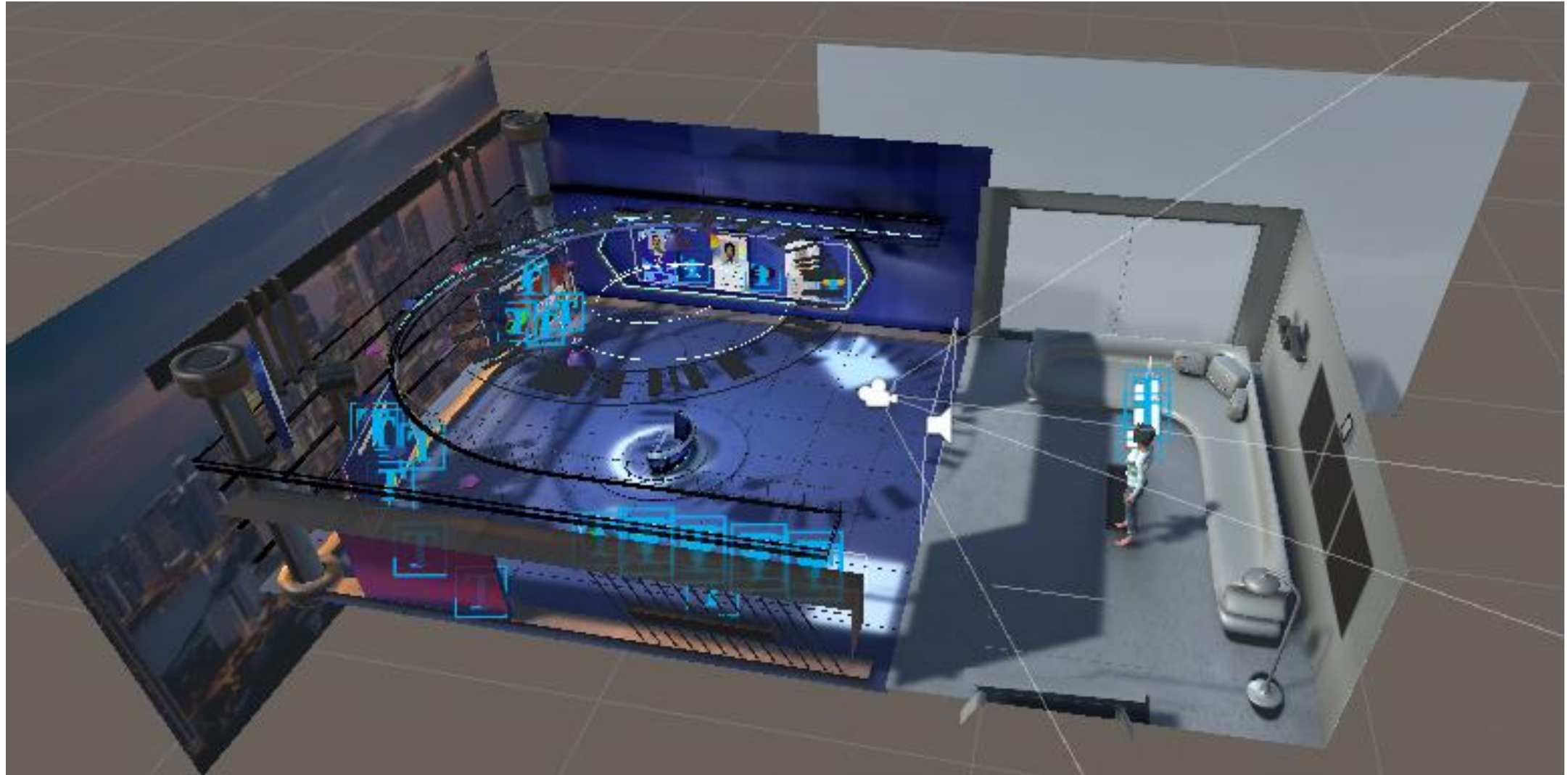
Design stage

- Tools: Unity, Blender, C#, Meta Quest 2 - Development Headset

Overview Design



Final product [Display room + Chat room]





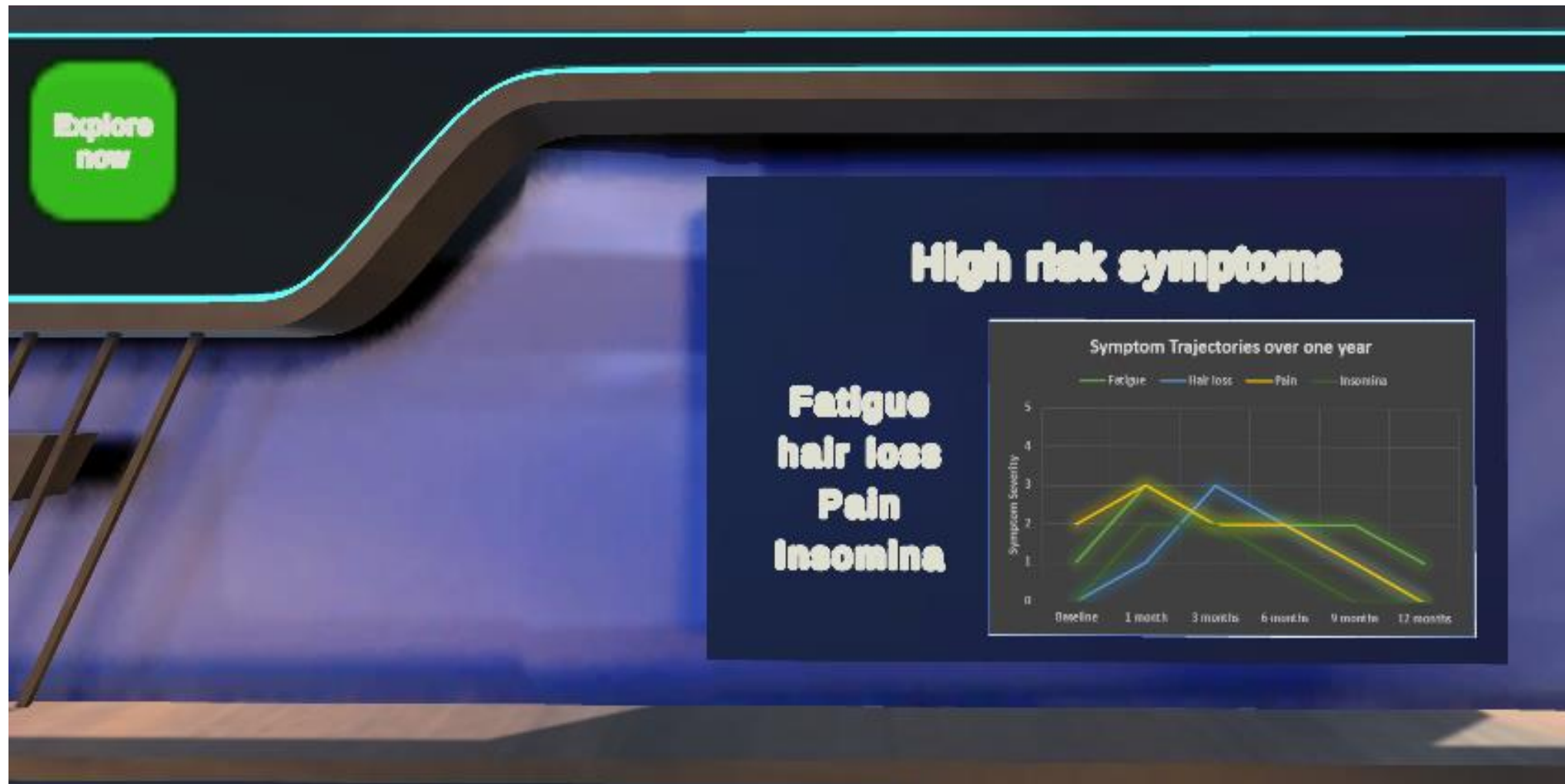
Display room



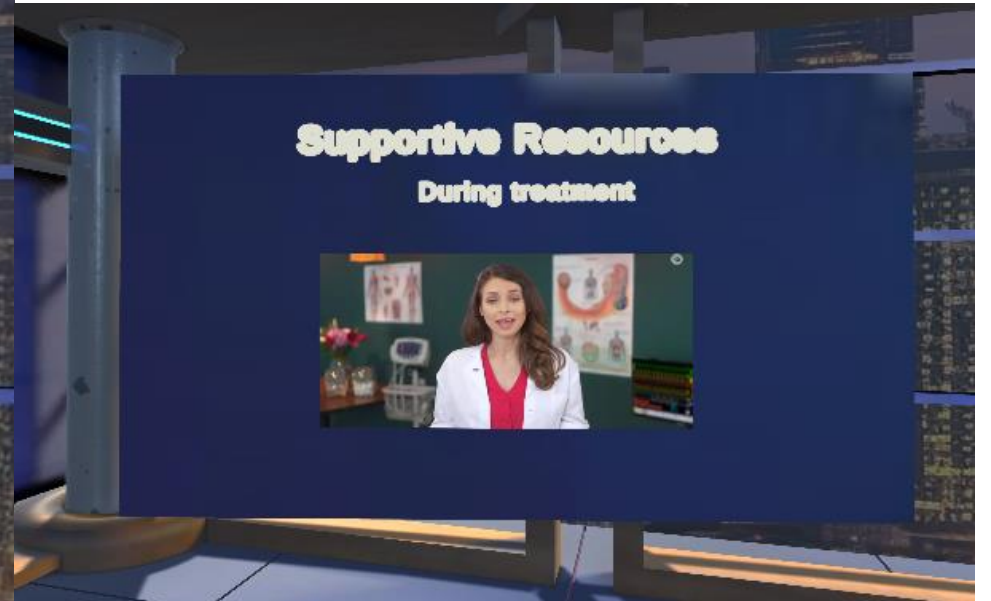
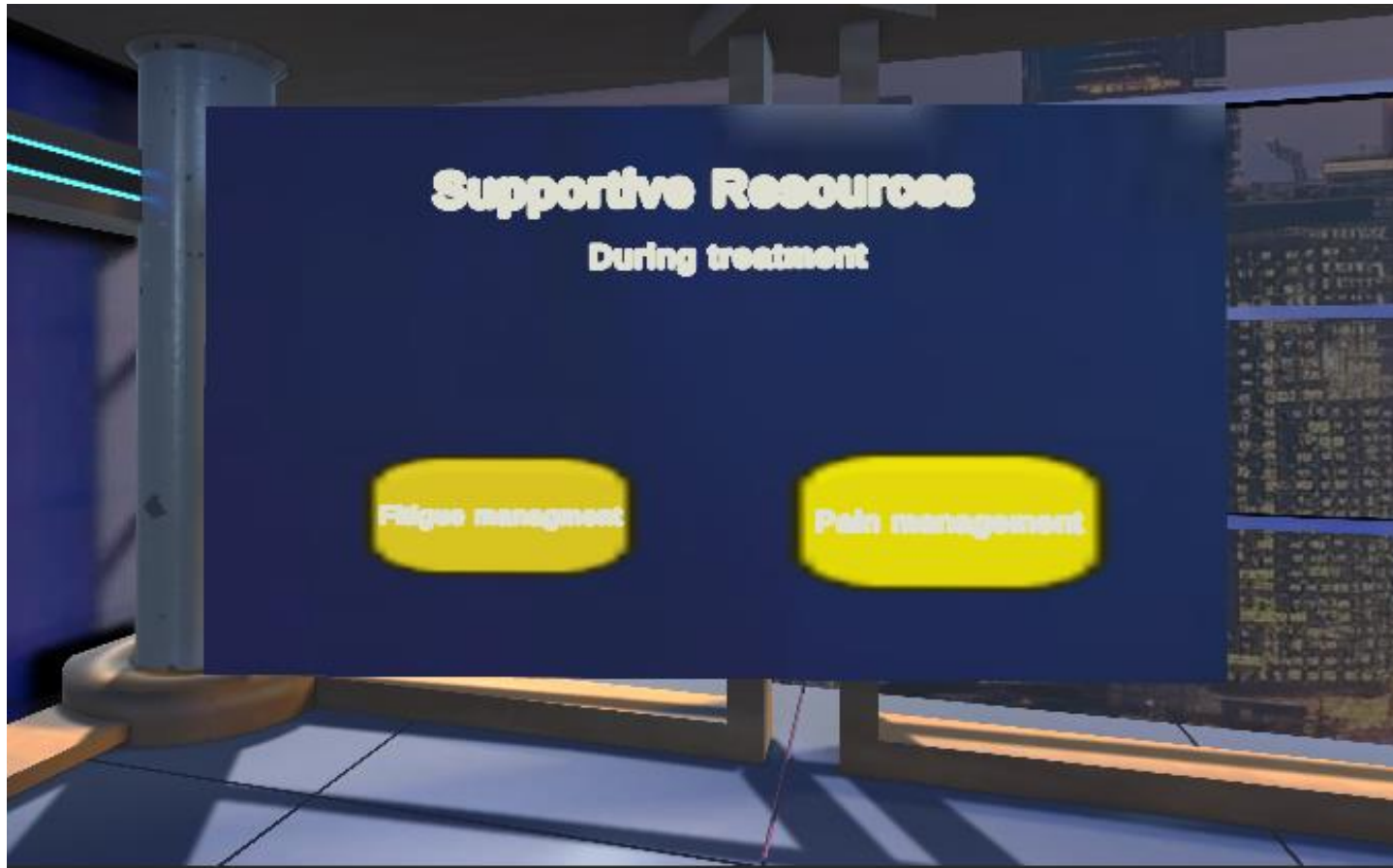
Personalize the treatment decision aid



Symptom profile module



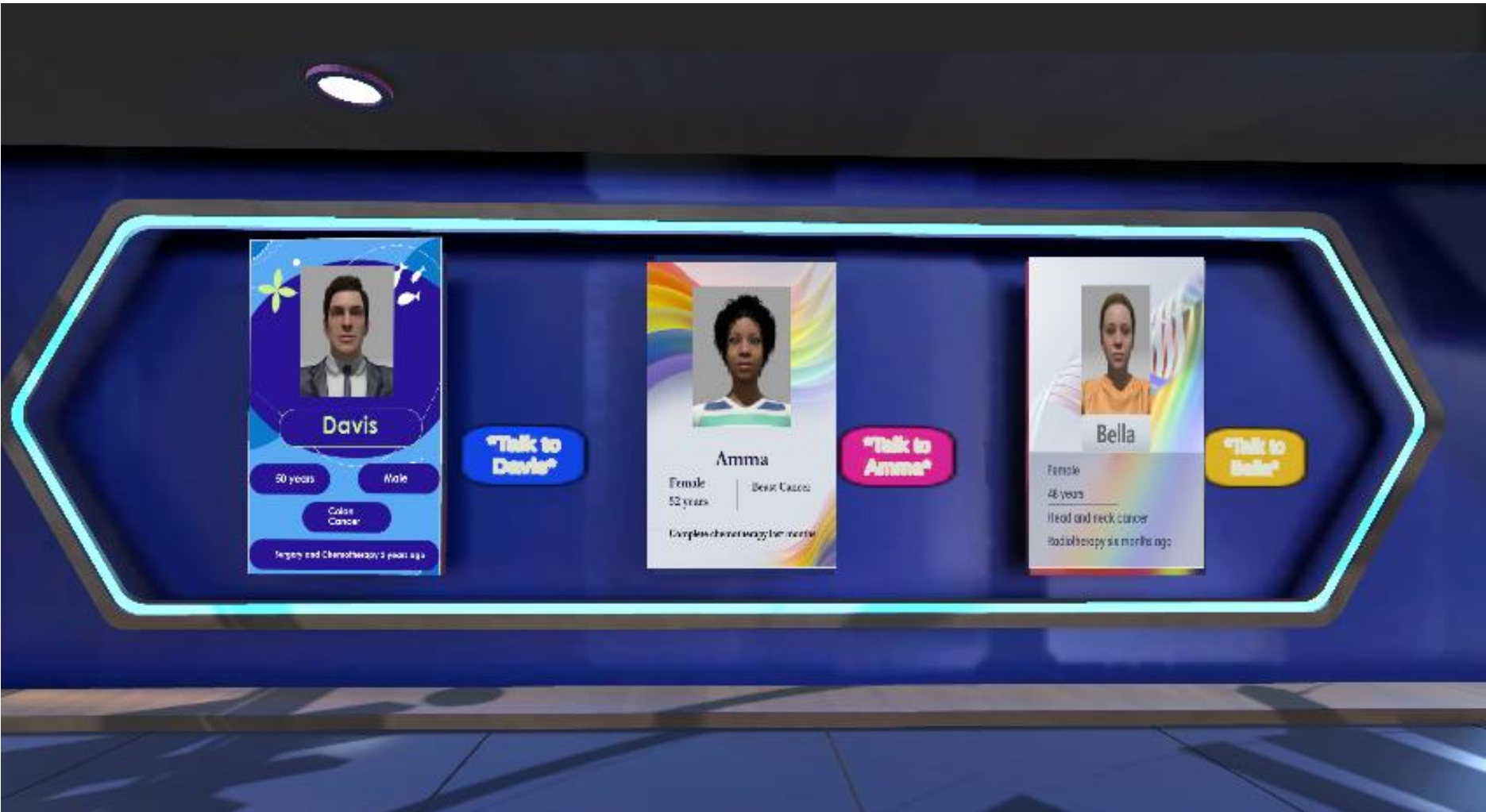
Supportive resources module (During treatment)



Supportive resources module (After treatment)



Patients' stories module – select the patient



Patients' stories module – enter the chat room



Patients' stories module – select story topics



Limitations and Future Work

Limitations

- Not specifically tailored for older adults
- Not fully personalized
- Only includes limited resources and story topics
- Users interact through controller (press or select)

Future Work

- Assess the acceptance of the aid among older adults
- Develop a prediction model based on a large dataset and integrate it into Unity
- Expand the collection of supportive resources and patient stories
- Implement voice input functionality to enhance user interaction

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THANK YOU

Comments and Questions