We Are Alfred:

Empathy Learned Through a Medical Education Virtual Reality Project

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Project primarily funded with federal funds from the National Library of Medicine, National Institutes of Health, under Cooperative Agreement UG4LM012347-01 with the University of Massachusetts, Worcester.

INTRODUCTION

- Those 65 years and older use more than 50% of health care resources.
- As the older population increases and lives longer, their health care utilization is predicted to increase dramatically.
- We have an obligation to train our future health care providers to work with older adults to augment optimal aging.
- Innovative learning modalities, such as virtual reality, enhance medical students' learning about older adult health care.
- **We Are Alfred (WAA) Virtual Reality Software (VRS)** provides such a platform teaching about macular degeneration & hearing loss while instilling empathy.

GOAL, OBJECTIVES, & BACKGROUND

Project Goal: To adopt technology that will teach UNECOM students to be empathic with older adults through experiencing the WAA-VRS developed by Embodied Labs, and familiarize medical students with information resources from the NIH/NLM related to older adult health.

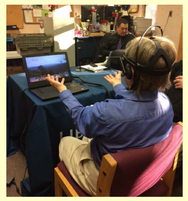
Project Objectives:
After completing the WAA-VRS assignment students will:
1. Exhibit increased understanding of what it feels like to have age-related limitations as measured by the pre and post assessment surveys.
2. Exhibit increased empathic attitudes towards older adults and additional skills such as patience and understanding as measured by the pre and post assessment surveys.
3. Demonstrate increased familiarity with health information resources related to older adults as measured by the survey.

Background:

Research during the past 10 years has revealed that empathy in osteopathic medical students and residents tends to erode during medical school and residency training [1]. The somewhat reductive process of learning the body's vital systems can distract students from a more holistic approach to their patients. Yet research findings in health professions training indicate that empathy and the ability to help other people are directly correlated, and ***empathy can lead to more positive clinical outcomes*** [2]. Treating the constellation of symptoms that patients, especially older patients, present with can be to the detriment to their healing process. Without an empathic understanding of what it feels like to be an older adult, students and residents often miss the significance of what the patient is experiencing. When those who are learning how to provide care to older adults either acquire feedback from older patients or personally experience the possible effects related to aging, the care provided is rated higher by older adults. In fact, older adults have a more positive treatment experience when they feel their physician's care is rooted in empathy [2].

METHODS

✓ **Research Design:**
Pre/Post Test Design is the preferred method to compare participant groups and measure the degree of change occurring as a result of an intervention.



✓ **Participants:**
First year medical students (N=178) were required to complete the 'We Are Alfred' VR module (7 min) and a pre and post assessment.
- 51% Female / 49% Male
- Average age: 25.4
- Age range: 21 - 44
- 63% from New England

✓ **Definition of Empathy:** Empathy in medical education and practice is attained when the student exhibits a) understanding of a patient's perspective with the intention to help them; and b) the ability to communicate that understanding to the patient in their clinical interactions [3].

✓ **Methods:**
- In December 2016, four VR stations were purchased and installed at the university library in which the students had 24/5 access and daytime hours on weekends.
- The project team as well as supporting staff were trained on how to facilitate the experience and troubleshoot problems.
- The technology was piloted with a student club, student library workers, and library staff.
- In January 2017, first year medical students were introduced to the experience in a geriatrics class led by the faculty member on the project team, followed by electronic sharing of assignment details and information resources.
- Students had a 10 week time frame to complete the assignment on their own time by March 31st.
- Students assumed the role of Alfred, a 74 y/o African American male with macular degeneration and hearing loss.
- A pre and post assessment survey were included in the VR experience for each student to complete.
- The survey and results were in a Google form set up by Embodied Labs.

✓ **Data Analysis:**
- Descriptive statistics were applied to finite questions on pre and post assessments, and content analysis on open ended answers.

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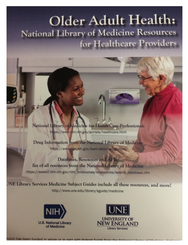
RESULTS & STUDENT REPRESENTATIVE COMMENTS

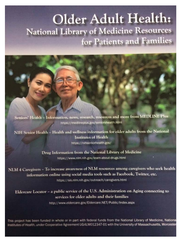
Data and comments from the pre and post assessments indicate the project succeeded in in its objectives. Descriptive data from the post-assessments showed:

- 92% agreed or strongly agreed that this experience helped them learn about empathy
- 88% agreed or strongly agreed that the experience helped them learn about macular degeneration from the patient's perspective
- 89% agreed or strongly agreed that the experience helped them learn about hearing loss from the patient's perspective
- 93% agreed or strongly agreed that curriculum that includes empathy training is important for their future career

Because individual students were not provided identifying codes for the pre and post assessments, there was no way to perform a paired t-test to test for significant change, as proposed in our original plan.

- *This was definitely a unique experience - I had no idea that sensory deficits of this proportion were actually fairly common in the aging population, and it has really opened my eyes to what elder individuals may be going through.*
- *This experience was truly eye-opening and I thoroughly enjoyed it.*
- *We're all, for the most part, healthy and capable 20 somethings with no sense of what it means to have macular degeneration or any other type of serious degenerative illness. I don't think this experience necessarily gives us the perfect foundation but what could? It's a great first step!*
- *I loved this experience because I think it's an incredible step forward to incorporating technology into our curriculum and creating a fundamental understanding of some of the symptoms our patients may be experiencing.*





CONCLUSIONS

- Virtual reality was deemed a successful medical education learning tool enhancing empathy for these medical students.
- Utilizing this technology to create an immersive case study taught these medical students about the aging experience, specifically in regards to what it is like to have macular degeneration and hearing loss from the first-person patient perspective.

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