



Being Beatriz:

Optimizing a Virtual Reality Case to Teach Experiential Dementia, Challenge Ageism, & Build Empathy



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SUMMARY

After embodying Beatriz with Embodied Labs' immersive training platform, students described:

- **Greater awareness** of symptomatic variability to include impact on speech, perception, and ADLs
- **Further understanding** of and empathy for the perspective of older adults with dementia
- **Deepened appreciation** for clinical accommodations and family involvement in dementia care

OVERVIEW

Despite a growing, diversifying population of older adults, medical education often fails to incorporate a focus on building empathy with geriatric patients. This project applies virtual reality (VR) innovation to a curricular setting to depict age-related conditions and assesses the knowledge of sex and gender that students bring to the VR experience. The pilot vignette portrays a Latina woman, Beatriz, through progressive stages of Alzheimer's disease.

Dementia simulations have emerged as unique tools to lend insight into the aging experience through the lens of memory loss and sensory impairment. Virtual reality (VR) simulation presents an idiosyncratically immersive environment to apply the theories of embodied learning and embodied cognition as related to empathy in the medical field. VR allows the learner to enter an alternate world, wherein students can extrapolate skills into the practice of medicine. By administering VR simulation developed by Embodied Labs and examining multimodal data from assessments and focus groups, the project ascertains the value of a VR-inspired program to capture learner gains and inform innovations in medical education.

WHY VIRTUAL REALITY

Virtual reality technology shows promise as a sensory and relational simulation providing a first-person perspective of the patient experience. This program applies virtual reality (VR) modules developed by Embodied Labs to a curricular module depicting the individual and familial experience of Alzheimer's disease.

Learning objectives emphasize students' ability to:

1. Recognize sensory, physical, and relational implications facing older adults with dementia
2. Exhibit higher empathy levels and awareness of responsive care techniques
3. Show less age-related bias after the simulation
4. Recognize sex and gender variations of the presentation and patient experience in Alzheimer's disease

Emerging focus group motifs from student participants include functional understanding of memory loss and experiential frustration of disease-related impairment. Embedded voiceovers of patient inner dialogue lend students insight into patient cognition and impressions of their surroundings. Unexpected student gains include stated curiosity concerning the gender roles of caregiving. Students describe greater awareness of symptomatic variability of dementia and deepened appreciation for clinical accommodations in dementia care.

Integrating immersive VR technology uniquely teaches students about the dementia experience in ultimate preparation for clinical work alongside an aging population. Utilization of a cohort model to debrief and build community in the learning experience is generalizable to a classroom setting, particularly team-based curricula and flipped classrooms wherein student discussion and connectedness guide learning. The practice and optimization of this program informs a module that can be modified and extrapolated to institutions of medical education with particular attention to equipping practitioners, caregivers, and a generation aging and adapting at the same time.

RESULTS

Students endorsed a significant positive change in attitudes toward older adults ($p=0.027$). Domains of empathy and implicit bias with respect to age did not differ after the VR simulation ($p=0.64$; 0.23). Items related to broader understanding of gender and women's/men's health were linked to a baseline knowledge score; students indicated a neutral familiarity of these topics (average item score = 3.5 on 1-5 Likert scale). On teaching sex-specific health topics, a slightly higher coverage of women's health was reported (score = 2.29 vs 2.59, where 1=yes, 2 = no and 3 = not sure). Students often reported that their program did not have curricula or classes on SGME and largely disagree on feeling prepared to handle sex and gender differences in health care (1.8).

Motifs from focus groups include noted insight from both the patient's inner dialogue and the family response to their matriarch's decline. Participants endorsed an appreciation for the reciprocity of disease impact on patients and caregivers. Curiosity about gender roles in both disease and caregiving surfaced as themes across groups: how the caregiver and care partner's roles would differ from mother and daughter or father and son.

“Being placed in a state of misinterpreting and misunderstanding is more effective than the way we learn it in class as “oh it's memory loss.” Because then you just assume patients can't remember what a word is. But that's not at all what the disease is.”

— Medical Student

CONCLUSIONS

The data represent a likely developmental trajectory that challenging attitudes precedes cognitive-behavioral change and ultimately informs an entrenched implicit bias. Adapting attitudes via narrative simulations may simply be the first step in attacking ageism and building empathy. Despite their endorsement of the importance of SGME, students feel their curricular coverage of sex and gender differences in medicine is lacking. Student's curiosity expands beyond medicine to the familial and cultural contexts of disease experience.

Ultimately, students are eager to understand gender nuances, and current educational frameworks still have room to accommodate this curiosity. Ongoing research will expand into greater item-level analyses to identify the greatest gaps in SGME and include a more gender-balanced cohort to assess variance among male and female participants. We further aim to optimize and integrate additional age-related modules into medical education and programs addressing caregiver burden in millennials.

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