

# AGING RESEARCH SPOTLIGHT on VIRTUAL REALITY



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She leads “[Prescribing Virtual Reality \(VRx\)](#)” a collection of studies that introduce and evaluate AR/VR/MR interventions for patients, caregivers, and healthcare providers. She received several grants from the Centre for Aging in Brain Health innovation to pursue this work in aging and dementia care. Lora has published in premier journals like the American Journal of Medicine, the International Journal of Medical Informatics, and Frontiers in Medicine; she has given talks at Harvard medical school and the Royal College of Physicians in London, and her work with VR has resulted in several national media appearances.

Lora’s expertise is in applying design thinking and science methodologies to healthcare innovation; she is passionate about designing new technological interventions that provide care in the pursuit of a cure.

[www.PrescribingVR.com](http://www.PrescribingVR.com)

Introduction to Virtual Reality Therapy: in the past decade, there has been a significant rise in studies using VR technology with older adults ([some of which we have conducted!](#)). Most research in VR for people with dementia has focused on (1) improving cognitive performance, physical activity (both modifiable behaviours shown to improve outcomes), or (2) assessing preference and feasibility of VR systems for this unique population. There is also emerging evidence that experiencing realistic scenes and scenarios through VR is an effective strategy for reminiscence therapy in people with dementia, leading to increased engagement, improved mood, and greater feelings of well-being. However, these interventions, while momentarily helpful, have also been described as potentially “isolating” in the sense that people are experiencing them on their own. Indeed, the most meaningful real-world experiences are typically those that we experience *with others*. Thus, the already positive effects of VR interventions could be further enhanced and prolonged if they were *shared experiences* rather than solitary ones.

Our soon-to-launch study “VRx@Home” (with community partners Circle of Care and Acclaim Health) is expected to be beneficial for people living with dementia and their caregivers, a key

objective of Canada's new dementia strategy, and something that has neither been targeted nor measured in previously. The planned intervention provides a new application for VR as a communication aid, intended to elicit and enhance conversations, which in turn is expected to reduce or delay negative consequences associated with dementia-related impediments to communication. VRx@Home was informed by previous research studies, two of which are described in the abstract below:

*Virtual Reality for Veteran Relaxation (VR<sup>2</sup>) –  
Introducing VR-Therapy for Veterans With  
Dementia – Challenges and Rewards of the  
Therapists Behind the Scenes*

**B**ackground: Many veterans with dementia placed in long term care exhibit responsive behaviours such as physical and verbal responsiveness (e.g., shouting, hitting, biting, grabbing). Responsive behaviours lead to negative clinical outcomes, staff burnout, contribute to absenteeism, low engagement, and an elevated risk of abuse or neglect. Virtual Reality (VR) has shown great promise in relieving stress and improving quality of life in frail older adults and has been increasingly explored as a non-pharmacological therapy for people with dementia. Ongoing studies are evaluating the clinical outcomes of VR-therapy for this population, but the challenges and learnings of the healthcare providers who administer VR-therapy remain under-reported.

**T**he objective is to capture the experiences of Recreational Therapists (RTs) who conducted study sessions and administered VR-therapy to residents with dementia as part of a clinical trial that took place at the Perley and Rideau Veterans' Health Centre. We collected: RTs' feedback on the process of conducting research, specifically with respect to technical, environmental, and personal challenges, learnings, and recommendations.

**I**n-depth interviews were conducted with all seven RTs who administered VR-therapy and collected data for a trial that took place from January-December 2019. Interviews were audio-recorded, transcribed, anonymized, and imported into the NVivo analysis tool, where two independent researchers coded the interviews into themes.

**T**he results showed RTs reported ease in learning to use the VR-technology, main challenges were unfamiliarity with, and insufficient time allocated to, conducting research. Scheduled VR-therapy sessions were physically and emotionally easier for the RTs to administer. Despite RTs hesitations to place the VR-equipment on frail individuals in distress, RTs reported positive impacts on managing responsive behaviours during these few targeted sessions, especially for participants for whom the trigger was related to physical pain rather than emotional distress. Staff have continued to offer scheduled VR-therapy sessions beyond the duration of the study.

**W**e concluded that the experience of using VR in the veteran resident population is generally positive. Areas for improvements including better support to the RTs regarding to novel interventions and research method. Feedback received from RTs in this study provides critical information to support successful, sustainable implementation of VR-therapy, both for further evaluation and as a regular activity program. Failure to consider the experiences of these vital stakeholders when developing novel interventions contributes to the gap between efficacy in research and effectiveness in practice. [Read Full Article Here](#)

*Administering Virtual Reality Therapy to Manage Behavioral and Psychological Symptoms in Patients with Dementia Admitted to an Acute Care Hospital: Results of a Pilot Study*

As virtual reality (VR) technologies become increasingly accessible and affordable, clinicians are eager to try VR therapy as a novel means to manage behavioral and psychological symptoms of dementia, which are exacerbated during acute care hospitalization, with the goal of reducing the use of antipsychotics, sedatives, and physical restraints associated with negative adverse effects, increased length of stay, and caregiver burden. To date, no evaluations of immersive VR therapy have been reported for patients with dementia in acute care hospitals.

This study aimed to determine the feasibility (acceptance, comfort, and safety) of using immersive VR therapy for people living with dementia (mild, moderate, and advanced) during acute care hospitalization and explore its potential to manage behavioral and psychological symptoms of dementia.

For the methods, we used a prospective, longitudinal pilot study was conducted at a community teaching hospital in Toronto. The study was nonrandomized and unblinded. A total of 10 patients aged >65 years (mean 86.5, SD 5.7) diagnosed with dementia participated in one or more research coordinator-facilitated sessions of viewing immersive 360° VR footage of nature scenes displayed on a Samsung Gear VR head-mounted display. This mixed-methods study included review of patient charts, standardized observations during the intervention, and pre- and postintervention semi-structured interviews about the VR experience.

In terms of the results, all recruited participants (N=10) completed the study. Of the 10 participants, 7 (70%) displayed enjoyment or relaxation during the VR session, which averaged 6 minutes per view, and 1 (10%) experienced dizziness. No interference between the VR equipment and hearing aids or medical devices was reported.

We concluded that it is feasible to expose older people with dementia of various degrees admitted to an acute care hospital to immersive VR therapy. VR therapy was found to be acceptable to and comfortable by most participants. This pilot study provides the basis for conducting the first randomized controlled trial to evaluate the impact of VR therapy on managing behavioral and psychological symptoms of dementia in acute care hospitals.

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