

Implementing Affordable Virtual Reality Interventions for Older Adults in Latin America: A Feasibility Study

Presenter: Ana Trueba, PhD

Coauthors: Cristina Crespo-Andrade, PhD; Camila A. Merino, B.A., Nicolas Agustin Alvarez Frank, B.A., Maria Sol Garces, PhD, Hailey V. Cray, MPH; Rebecca Dickinson, B.Sc., B.A, Ipsit V. Vahia, MD

Introduction: Virtual Reality (VR)-based meditation has shown to help reduce, stress, anxiety, sadness, and anger in younger adults. However, this has not been extensively studied in older adults. Furthermore, there are no standard guidelines on how VR mindfulness interventions should be implemented to ensure successful outcomes in different cultures and languages. The availability of affordable hardware raises the possibility of VR being used in low-income countries. The goal of this study is to describe and highlight some key considerations and challenges when implementing low-cost VR mindfulness interventions with older adults in Quito, Ecuador.

Methods: We created a guided mindfulness intervention using low-cost VR (smartphones and Destek V5 headsets) for older adults with anxiety in Quito, Ecuador. This project is a collaboration between the Technology and Aging Lab at McLean Hospital and the Universidad San Francisco de Quito in Ecuador. Our goal was to recruit 20 older adults with anxiety from various outpatient settings in Quito. We used the free “Sites in VR” app and selected different nature scenes for each intervention. The intervention consists of a total of 10 sessions each lasting 30 minutes. We assessed depression using the Geriatric Depression Scale (GDS), and anxiety with the Generalized Anxiety Disorder 7-item scale (GAD-7). In addition, we also administered the Mindfulness Attention Awareness Scale (MAAS) and the Behavior Activation for Depression scale (BADs).

Results: At the time of writing, we have reached 100% of our recruitment goal and anticipate completing data analysis by January 2023. Qualitatively, our intervention revealed barriers to designing scalable VR Spanish language interventions in Latin America. Some of the main difficulties we encountered are described below: (i) There are very few virtual reality videos (360° videos) that are available for use with the DesTeK VS VR Headset in Spanish. We therefore, used a standardized Spanish narration to guide the mindfulness practice based on a script used in the United States. (ii) We found that majority of the available content is not suitable for mindfulness. Using the application Sites in VR remedied this concern, as it provides static 360° images, suitable for mindfulness. (iii) Not all technology necessary for VR interventions is readily available in Latin America: smartphones sold in Latin America do not always have a gyroscope sensor.

Conclusion: Mindfulness interventions using virtual reality may be an effective way to address stress and mood symptoms in older adults across cultures. However, there are many culture-specific aspects that must be addressed before applying these interventions in different cultures. This study, conducted in Latin America, is an initial step toward the establishment of best practices and standardized low-cost VR mindfulness intervention in older adults, and many aspects addressed here may be generalizable to other cultures, settings, and countries.

Visualization of Pain and Agitation by System Analysis Algorithms

Presenter: Bettina S. Husebo, MD

Coauthors: Line I. Berge, Ane Erdal, Monica Patrascu

Pain is a critical trigger for underlying behavioral and psychological symptoms in dementia, such as agitation, depression, and eating and sleeping disturbances. People with moderate to severe dementia are no longer able to report their suffering, the effect of medication after treatment has been initiated or potential side effects of the treatment. In “Understanding Pain and Agitation Through System Analysis Algorithms in People With Dementia. A Novel Explorative Approach by the DIGI.PAIN Study” we investigate whether system analysis algorithms can shed light on the relationship between pain and agitation. The method generated individualized estimations for the evolution of pain and agitation over time, as well as a dynamical model for their relationship. The participant group included 219 persons with dementia

from the COSMOS study (Communication, Systematic assessment and treatment of pain, Medication review, Organization of activities, and Safety). Moreover, in our talk we will present early findings on the visualization of systematic pain medication review on activity levels in nursing home patients with dementia

S12: Recent advances in therapies for late-life neuropsychiatric disorder

Symposium Overview:

This international symposium combining experts from Canada, Australia and the USA and supported by the American Association for Geriatric Psychiatry will present an update on the recent advances in therapeutic interventions for late life mood and cognitive disorders, including late life depression, anxiety and apathy associated with dementia, and preventive strategies including mind-body interventions. Four leaders of the field will present the summary of novel studies: starting with Dr. Benoit Mulsant (CA) presenting the results of the recently completed OPTIMUM study of novel strategies optimizing treatment of late-life treatment resistant depression. He will be followed by Dr. Krista Lanctot' (CA) update on novel therapies for apathy associated with Alzheimer's disease, and Dr Nancy Pachana (AU) will present on non-pharmacological approaches to treatment of anxiety associated with neurodegenerative disorders. Finally, Dr. Helen Lavretsky (USA) will present on the recent studies of mind-body therapies used to treat and prevent late life depression and cognitive decline, along with the discussion of the underlying neurobiological mechanisms. The panel will conclude with a brief discussion of future directions in the development of therapeutic interventions.

Treatment-resistant depression in late life has been understudied and is lacking evidence supporting augmentation or switching strategies. Recently completed OPTIMUM multi-site study (funded by the PCORI) sought to compare effectiveness of augmentation strategies (bupropion or aripiprazole) to switch to bupropion, in the first step of 1-week acute treatment followed by randomization into the 2nd step of augmentation with Lithium or switch to nortriptyline. The augmentation strategies in the first step produced the most robust response compared to switching, and did not differ in the 2nd step. Primary outcomes included remission rates and wellbeing measures. A discussion of future directions will be provided at the end of this presentation.

In those with Alzheimer's disease, apathy is common and associated with decreased quality of life, increased risk of decline and increased mortality. As such, apathy is increasingly recognized as an important treatment target. Recent advances in diagnosis and treatment will be reviewed.

In this presentation, several methodological issues will be discussed, such the importance and prevalence of apathy in Alzheimer's disease (AD); current diagnostic criteria for apathy in neurocognitive disorders, and will present the results of recent pharmacologic interventions for apathy in AD.

In this presentation, new focused and innovative treatments for anxiety in persons with Alzheimer's and Parkinson's disease with co-morbid anxiety will be discussed. Anxiety is common in Alzheimer's Disease and Parkinson's disease and contributes to increased disability and poorer quality of life. Yet only a small fraction of such patients received any form of treatment for mental health issues. Non-pharmacological approaches to address anxiety are advantageous in these populations. Research on tailored CBT and innovations such as virtual reality approaches for these groups will be discussed.

Standard pharmacological therapies for treatment of late life depression offer limited efficacy with the downside of adverse events and drug-drug interaction. Novel strategies are needed for more effective and safe treatment and prevention strategies for mood and cognitive disorders in late life. This presentation will focus on the recently completed studies of Tai Chi for treatment of late life depression, and yoga for prevention of cognitive decline in older women at risk for Alzheimer's disease. Neural and peripheral biomarkers of treatment response will be described. Future directions in mind-body therapies research will be outlined.