

Submit Grant Proposal | VR@Illinois

Submitted by:

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1. Name

Rosalba Hernandez

2. Email

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3. Your Status

Faculty

4. Your Department

School of Social Work

5. Provide a brief summary of the VR/AR project that would be funded by this grant proposal

Hemodialysis (HD) is a taxing procedure with extensive illness burden and arduous self-care demands. As such, more than 30% of HD patients experience elevated symptoms of depression—and, research shows that comorbid depression is associated with adverse kidney disease outcomes, greater risk of hospitalization, and decreased survival rates. Current interventions to treat depressive symptoms in HD patients are resource intensive, infrequently administered, and often involve delivery of psychotherapy by highly-trained clinicians via multiple face-to-face communications. There remains a critical scientific gap for easily disseminatable and efficient strategies to improve emotional well-being profiles of HD patients in the U.S. and around the world. My team and I have previously worked with the UIUC Virtual Reality (VR) Lab—with Killivalavan Solai and Drew Fast, specifically—in designing a VR application that immerses HD patients into a fictitious lifelike environment, to deliver a 12-15 minute mindfulness/meditation exercise in an effort to boost emotional well-being in patients with comorbid depression. Currently, we are conducting Phase I testing to establish initial safety of our VR platform in HD patients to ensure no harmful side effects are evident during short-term immersion in the virtual world such as severe dizziness or motion sickness. The experience is intended to slowly acclimate participants to the virtual environment, by seating participants in a virtual living room where they follow imagery and instructions presented on a flat screen TV. Participants are then transported to a garden beside a calming stream where they engage in a 12-minute guided meditation. To-date, we have tested the experience in 6 HD patients who reported that the VR environment was enjoyable and did not present any safety concern; we are still recruiting participants for additional testing. We are requesting additional funds to extend our work and add the following elements to our VR application: (1) availability in the Spanish language—we will translate all audio/video files into Spanish for monolingual Hispanic/Latino adults on HD treatment, and (2) bonus scenery—where,

participants can choose between 2-3 different environmental settings for their meditation practice. These small additions to our current VR application will allow us to expand to racial/ethnic minorities who experience renal-related health disparities—with, the incorporation of tailoring and increased end-user options.

6. How much funding are you requesting?

\$4,975

7. Provide a brief preliminary budget of how the funds would be used

- Professional translation of all materials (e.g., videos/audio) into the Spanish language (\$725) - Addition of distinct environmental setting with built-in intractability (\$4,250)

8. Describe the anticipated outcomes of your project.

- Evidence of app safety and feasibility in dialysis patients of Hispanic/Latino heritage as delivered in the Spanish language. - Data informing preference of environmental setting for meditation activities—i.e., most popular setting for the meditation practice (e.g., garden vs. beach). - Evidence to solicit federal funding to address rising health disparities in Hispanic/Latino adults with end-stage renal disease.

9. What is the proposed timeline for your VR project?

October 2019-April 2020

10. Additional information

None.