Advancing reminiscence therapy through virtual reality application to promote social con-nectedness of persons with Dementia.

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Purpose This project aims at developing an innovative, non-traditional framework prototype to improve the implementation of reminiscence therapy for persons with dementia (PWD) through customizable, immersive and interactive virtual reality (VR) experiences. Reminiscence therapy is a multi-sensory treatment that uses a combination of sight, touch, taste, smell and sound to help PWD remember events, people and places from their past lives (Woods et al., 2018). Engaging PWD to VR environments can help them recall memories that can reduce their risk of social isolation and enable them to become more connected to the present (Klein et al., 2018). The purpose of the study is to understand the effects of VR over traditional forms of reminiscence therapy to help PWD recall memories from the past into present awareness. **Method** We propose a framework for creating immersive and interactive virtual reminiscence experiences to facilitate the dementia care and management of behaviours and psychological symptoms of dementia (BPSD). The framework will be modular and will support immersive VR using standalone VR head-mounted displays to provide users freedom of movement. At the same time, non-immersive VR will be developed using monitors, television, or projectors to visualize and engage with the content without the need of wearing any device. The evaluation of virtual reminiscence therapy will be conducted using data analytics and physiological measures including facial and eye tracking technology using video-recording to provide quantifiable metrics for evaluation of intervention. Additionally, clinical data on patients who have had the prototype intervention will be assessed to examine the relationship with de-creasing agitation and other BPSD following intervention. Documented incidents of BPSD and medication usage pre and post intervention with reminiscence therapy will be examined through chart review using the usability testing evaluation form. **Results and Discussion** The project expects to facilitate the complementary utilization of pharmacological and non-pharmacological interventions for dementia care. Precisely, this project will aim at adopting a proactive approach to optimizing the increased usage of reminiscence intervention as an evidence-based, nonpharmacological measure to promote PWD's social connectedness. Reminiscing about memories can positively impact PWD by empowering an increased self-confidence in their strengths and capabilities. It will also provide PWD with the opportunity to explore with their caregivers about what holds meaning for them (Klein et al., 2018). At the present, mostly conventional, analog media is being used for reminiscence intervention (Woods et al., 2018). Enriching the traditional form of reminiscence therapy with VR can empower the caregivers to customize individualized virtual reminiscence experiences, which is expected to help PWD with maintaining and preserving their personal identity during disease progression and challenging circumstances associated with BPSD. Reminiscence therapy improves the health and well-being of PWD by providing relief from boredom and symptoms of depression while reducing agitation and maintaining personal identity (Lazar et al., 2014). Literature suggests that technology can enrich traditional reminiscence therapy, foster therapeutic conversations and support positive interactions between caregivers and PWD (Lazar et al., 2014). Exposing PWD to VR environments have shown positive benefits, where the new stimulation provided by VR tours helped them tap into old memories (Manera et al., 2016). This study intends to advance the potential of this technological innovation.

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