COGNITIVE STIMULATION: DOES VIRTUAL REALITY ENHANCE PATIENTS' ENGAGEMENT DURING SESSION?

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1. INTRODUCTION

Virtual Reality (VR) has emerged as a promising tool for cognitive stimulation in patients with cognitive impairment, including those with Mild Cognitive Impairment (MCI) and dementia; the same applies to traditional cognitive stimulation platforms[(1)]. However, the literature reveals certain issues regarding the acceptance of VR in terms of tolerability among patients, as some may experience dizziness, visual disturbances, nausea or disorientation [(2)(3)]. Our pilot study wants to shed light on the aspects of tolerability and involvement in patients undergoing VR-based rehabilitation.

2. OBJECTIVES

Comparison between a VR-based cognitive stimulation intervention and a traditional cognitive stimulation platform, in terms of:

1. (Emotional) envolvement
2. Tolerability
3. Acceptance

3. METHODS

A randomized clinical trial was conducted involving patients diagnosed with MCI or mild dementia, randomly assigned to two groups: one group participated in VR-based cognitive stimulation sessions (45 minutes, once a week for 8 weeks), while the other group used a traditional cognitive stimulation platform. Cognitive assessments were conducted using standardized scales, and quality of life was measured through validated questionnaires.

4. RESULTS

- VR Patients → increased concentration, motivation and engagement, with higher scores on quality of life questionnaires.
- Non-VR Patients → more modest and less significant improvements.

Specifically, all patients who underwent cognitive stimulation through VR expressed satisfaction and motivation and they successfully accepted the intervention; moreover, none of them exhibited any side effects.

Through VR It is possibile to create sessions in which patients are fully immersed in a nearly ecological environment, which leads to increased enthusiasm and participation.

Certainly further research must be conducted to determine if the use of VR is more appropriate for specific patient populations compared to others. In other words, we have to consider the individual variability in response to VR training and create standardized guidelines for its application in clinical practice.

5. CONCLUSIONS

Virtual Reality (VR) enhances patient engagement within the environment by providing clinicians with unexplored rehabilitative opportunities. The interactive aspect and the mindset reminescent of video games elevate motivation and facilitate the recruitment of cognitive resources. It also can elicit bodily responces, and this resultis in a high degree of ecological validity that bring therapeutic and rehabilitative sessions closer to those of the real world.

Riferimenti

1) Hee Tae Shin, Dae Yul Kim, Cho Rong Bae (et al.). Immersive virtual reality instrumental activities daily living training for mild dementia: a feasibility study. Annals of Palliative Medicine 2023; 12(2): 280-290.

2) Hwang J., Lee S. The effect of virtual reality program on the cognitive function and balance of the people with mild cognitive impairment. J Phys Ther Sci. 2017 Aug; 29(8):1283-1286.

3) Ling-Chun Huang, Yuan-Han Yang. The Long-term Effects of Immersive Virtual Reality Reminescence in People With Dementia: Longitudinal Observational Study. JMIR Serious Games 2022; 10(3):e36720.

4) Kim H., Jung J., Lee S. Apllication of Virtual Reality in the Rehabilitation of Mild Cognitive Impairment: A Systematic Review and Meta-Analysis. Vision (Basel). 2022 Nov 18; 6(4).