Convergent validation of a virtual reality-based street crossing with neuropsychological tests in neglected and non-neglected stroke patients

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ABSTRACT

Unilateral spatial neglect is one of the most common and disabling impairments of stroke. The assessment of this deficit is carried out with paper and pencil tasks that can lack correspondence to everyday activities. Virtual reality can recreate realistic but safe environments that allow the therapists to study how the patients would react in real life situations. This paper presents a virtual street-crossing system that immerses the participants in a recreated street where they are asked to navigate safely. The presented study with chronic stroke patients showed remarkable correlations of the performing variables of the system with standard cognitive scales, which suggests that virtual reality systems can evidence alterations in cognitive skills, such as neglect.