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Trends on the Application of Serious Games to Neuropsychological Evaluation:
A Scoping Review

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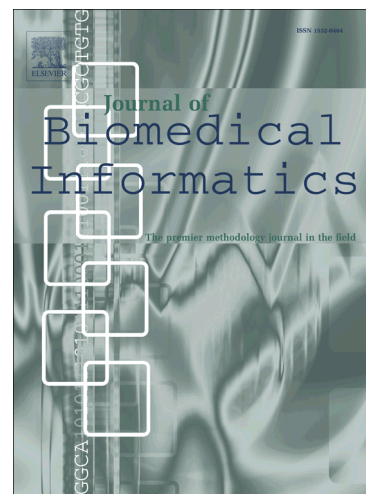
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Trends on the Application of Serious Games to Neuropsychological Evaluation: A Scoping Review

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Abstract

Background: The dramatic technological advances witnessed in recent years have resulted in a great opportunity for changing the way neuropsychological evaluations may be performed in clinical practice. Particularly, serious games have been posed as the cornerstone of this still incipient paradigm-shift, as they have characteristics that make them especially advantageous in trying to overcome limitations associated with traditional pen-and-paper based neuropsychological tests: they can be easily administered and they can feature complex environments for the evaluation of neuropsychological constructs that are difficult to evaluate through traditional tests. The objective of this study was to conduct a scoping literature review in order to map rapidly the key concepts underpinning this research area during the last 25 years on the use of serious games for neuropsychological evaluation.

Methods: MEDLINE, PsycINFO, Scopus and IEEE Xplore databases were systematically searched. The main eligibility criteria were to select studies published in a peer-reviewed journal; written in English; published in the last 25 years; focused on the human population, and classified in the neuropsychological field. Moreover, to avoid risk of bias, studies were selected by consensus of experts, focusing primarily in psychometric properties. Therefore, selected studies were analyzed in accordance with a set of dimensions of analysis commonly used for evaluating neuropsychological tests.

Results: After applying the selected search strategy, 57 studies—including 54 serious games—met our selection criteria. The selected studies deal with visuospatial capabilities, memory, attention, executive functions, and complex neuropsychological constructs such as Mild Cognitive Impairment (MCI). Results show that the implementation of serious

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