

# Systemic Lisbon Battery for Cognitive Stimulation in the Elderly

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Cognitive impairments are one of the most prevalent type of health problems facing older people in developed societies. To contribute to this topic, the current study reports on an ongoing project that aims to develop and test a serious games-based approach for cognitive stimulation in old-aged persons – the Systemic Lisbon Battery. The cognitive exercises used in this study were focused on the performance of activities of daily living to promote cognitive improvements in this population. The sample for this study comprised 25 old-aged participants (21 women) with a mean age of 70 years-old that were recruited in the Senior Area of the Junta de Freguesia de Benfica, in Lisbon. These subjects were exposed to the cognitive exercises in a weekly basis during a 12-week period. They were assessed at baseline and follow-up with a battery of neuropsychological tests. The platform was created in Unity™ and consists of a small town, in which patients are able to perform several activities of daily living, because we argue that cognitive intervention should be conducted during the execution of everyday tasks to improve generalizability of the effects of cognitive interventions. During these exercises the patients were able to move freely around and to grab objects while interaction with the environment. The following activities were available: morning hygiene, choosing clothes, packing shoes in a shoe closet, preparing food, watching news on a TV set, shopping, going to the pharmacy, attending to an art gallery, or playing in a casino. These tasks are aimed to assess and train specific cognitive abilities, such as memory, attention, executive functions and reasoning, each of those involved in everyday activities. The results suggested improvements from baseline to follow-up in memory, attention and flexibility, which did not depend of age or education. The overall results are promising and highlight the benefits of using technology and serious games to improve cognitive functioning.

**Keywords:** Serious games; Ageing; Health.