

Cognition, Dementia, and Intervention

A.P. VICENTIN, A.C. BONILHA, S. ANDREONI, C. LAMOTH, L.R. RAMOS. *Computer-based intervention effects on cognitive functions in older population: Cohort study in São Paulo – Brazil. Gerontechnology 2018;17(Suppl):75s; <https://doi.org/10.4017/gt.2018.17.s.075.00>*

Purpose Independence and functionality can be affected by the decline in cognitive functions during normal aging¹. As we know, technology is an important tool to approach health in different perspectives. In recent years, many studies have used the personal computer as a tool to promote cognitive stimulation for elderly individuals^{2,3}, i.e., activities that aim to increase general cognitive functioning – without emphasizing a specific cognitive domain – and in general embedded in a social context with a group setting⁴. In the present study, the aim is to analyze the effectiveness of a combined computer-based and physical activity program in the prevention of cognitive loss in community-dwelling elderly individuals from Vila Clementino, São Paulo, Brazil.

Method A controlled intervention study, nested within a cohort population. Based on the application of the Clinical Dementia Rating (CDR), individuals with 0 and 0.5 score without depression symptoms were included and allocated to the Intervention Group (IG) and Control Group (CG). From 112 participants neuropsychological tests were administered before and after the intervention: Montreal Cognitive Assessment (MoCA), Mini-Mental Status Exam (MMSE), list of words, verbal fluency and an evaluation of independence in daily life (BOMFAQ). The IG (N=56) attended the intervention twice a week for a total of 34 meetings, for 80-minutes each (20min physical activity, 40min computer-based stimulation, and 20min discussion about the workshop experience). During this period, the control group (N = 56) was not contacted.

Results & Discussion During the intervention we had five losses (3 in the IG and 2 the CG) and the final IG composed of 53 participants (40 women; 13 men), mean age of 76.3 ± 6.8 years, 43 (81.1%) with more than 8 years of education. 54 participated in the CG, (46 women; 8 men), mean age of 75.3 ± 7.2 years, 42 (77.8%) with more than 8 years of formal education. The intention to treat analyses demonstrated a significant difference after the intervention for the MoCA with an average increase of 1.23 points from baseline for the IG (p=0.012; 95%; CI 0.282; 2.187). Secondary analysis considering participation (number of attendances in the intervention) showed a significant difference for the MoCA - increases of 0.074 points on average for each session/participation (p<0.001; 95%; CI 0.038; 0.111) and for the MMSE - increases of 0.029 points on average for each session/participation (p=0.022; 95%; CI 0.004; 0.054), both for the IG. There were no statistical differences in the other variables (word list, evocation, verbal fluency and ADL). The results showed: (1) A combined computer-based and physical activity program has the potential to improve general cognition in independent elderly individuals but the results are not significant for specific cognitive domains and for independence in daily life; and (2) This kind of preventive program can be structured to be applied in the primary health care system.

References

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Keywords: normal aging, cognitive function, combined cognitive, physical intervention

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