



## Combined physical and cognitive exercises impact on the power of slow brainwaves of elderly with mild cognitive commitment (MCC)

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Population aging is a global phenomenon, the passage from an aging state that is healthy to a process of loss of cognitive functions is mediated by the installation of a state of Mild Cognitive Commitment (MCC), which may or may not evolve into dementia. . In the early stages of dementia there is an increase in Theta activity and the more advanced stages there is an increase in Delta activity. The study verified the effect of the association of physical and cognitive stimuli on the power of Theta and Delta brain waves of elderly people with MCC. 18 elderly of both genders, aged over 60 years, diagnosed with CCL were divided into Control Group (CG, n=8); Experimental Group (GE, n=10). Brainwave power was determined via EEG with electrodes positioned according to the international 10/20 system. Asepsis of the checkpoints was performed with cotton and a 70° alcohol solution. For data collection, it was verified if the electrode impedance rate was below 20 (KΩ). Brain activity was monitored for 3 minutes to determine a baseline. The points of interest were points F7 which is related to visual and auditory working memory, selective and divided attention, F8 related to visual and spatial working memory, emotional processing and attention maintenance, and finally points P3 and P4 related to problem-solving, attention, and association, visual processing and non-verbal association. In addition to these, points A1 and A2 were used as a reference and another point as ground. The CG continued to attend memory training meetings. The GE went through training sessions that combined physical and cognitive exercises. Weekly 40-minute sessions were held for 7 weeks. Test T was used in all comparisons. It was found that the GC registered Theta increase in the parietal areas and Delta in both the parietal and frontal areas. The GE had a decrease in theta wave power in the parietal and frontal areas. None of the comparisons between groups proved to be statistically significant. It is concluded that the association of physical and cognitive stimuli applied in weekly sessions of 40 minutes for 7 weeks was not sufficient to produce statistically significant results. However, the observed results are qualitatively similar to those of other studies that indicate the efficiency of this type of training when used during longer intervention periods.

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