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Non-Pharmacological Interventions

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EFFECTS OF AEROBIC EXERCISE COMBINED WITH DUAL-TASK TRAINING ON COGNITIVE FUNCTIONS IN PATIENTS WITH COGNITIVE IMPAIRMENT

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Objectives: Effects of aerobic exercise combined with dual-task training on cognitive functions in patients with cognitive impairment are unclear. The aim of the study was to investigate the effects of a 3-month moderate intensity aerobic exercises combined dual-task training on cognitive functions in patients with cognitive impairment.

Methods: Twenty patients with mild cognitive impairment (MCI) or mild Alzheimer's disease (AD) (age: 61–88 years) participated in the randomized controlled trial and were randomly allocated to the aerobic exercise combined dual-task training group (aerobic group) or the stretch control group (stretch group). The both groups received health education and exercises training for 12 weeks. The aerobic group received three 90-minute group exercises sessions, that included aerobic exercises combined with dual-task training, and two 30-minute individual walking exercise sessions at home per week. The stretch group received three 90-minute group exercise sessions that included stretch exercises and activities in sitting per week. Both groups received examinations on cognitive functions at baseline, post-training and after a 3-month follow-up period.

Results: There were no differences in the cognitive functions between the groups at baseline. After 3 months of training, the aerobic group showed a significant increase scores in the logical memory–immediate recall ($P < 0.05$) and the stretch group showed a significant increase scores in visual reproduction–immediate recall ($P < 0.05$). Both groups maintained cognitive functions at follow-up period. In addition, the aerobic group showed better performance of Modified Card Sorting Test than stretch group after 3 months of training and higher score of Mini-Mental State Examination and logical memory–delay recall at the 3-month follow-up period than the stretch group.

Conclusion: Both aerobic exercise combined dual-task training and stretch exercise training were effective in improving memory function of patients with MCI and mild AD. Aerobic exercise combined dual-task training especially produced cognitive benefit at follow-up period.

References: Olazarán, J., Muniz, R., Reisberg, B., Pena-Casanova, J., del Ser, T., Cruz-Jentoft, A.J., et al. 2004. Benefits of cognitive-motor intervention in MCI and mild to moderate Alzheimer disease. *Neurology*. 63, 2348-2353. Schwenk, M., Zieschang, T., Oster, P., Hauer, K. 2010. Dual-task performances can be improved in patients with dementia: a randomized controlled trial. *Neurology*. 74, 1961-1968.

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