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Effects of exercise on fall rate and functional mobility in individuals with dementia: a systematic review and meta-analysis

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Abstract

Dementia affects brain systems and impacts functional mobility skills which increase the risk of falls. Therefore, people with dementia are at high risks of falling, and the consequences of falls are usually more serious than healthy elderly. Therefore, how to improve functional mobility and decrease fall risk are crucial especially for people with dementia. Several studies have investigated the effects of exercise to improve functional mobility and to reduce fall risk in dementia. This review aimed to evaluate the evidence of exercise on functional mobility and fall rate in individuals with dementia.

Methods: Databases (MEDLINE, PubMed, Cochrane Library, Airiti Library and CINAHL) were searched from Jan, 2009 to May, 2019. Only randomized controlled trials (RCT) investigating the effect of exercise or physical activity in comparison to usual care in older adults with dementia were included. The PEDro score was used to assess the quality of the selected trials. The outcomes included incidence rate of falls and functional mobility, the timed-up and go test (TUG) and gait velocity. Studies without fall rate, TUG, or gait velocity as one of the outcomes and studies as the secondary analysis of RCT were excluded. Collected data were analyzed by Review Manager (5.3).

Results: Overall 522 subjects with dementia from four RCTs were included in this study. However, results show that exercise or physical activity led to nonsignificance in reducing fall rate (MD= 0.54, 95%CI=-0.53~1.6, p=0.32) and in improving the TUG (MD= 3.12, 95%CI=-2.85~9.10, p=0.31) and gait velocity (MD= -7.73, 95%CI=-29.98~14.52, p=0.5). Discussion and conclusion: According to the results of this meta-analysis and systematic review, exercise might not be able to significantly decrease the fall rate and improve functional mobility in people with dementia. A multitude of factors contribute to the increased fall rates and decreased functional mobility observed among older adults, which may also be true for elderly with dementia. Therefore, in addition to exercise, other training or strategy should be incorporated for improving fall risk and functional mobility.

Biography:

Wei-Han Weng is a certified physical therapist in Taiwan, and now doing postgraduate study in National Yang-Ming University.

Speaker Publications:

1."Functional mobility in individuals with dementia". Pg 20-40.
2. "Effects of exercise on fall rate: a systematic review and meta-analysis"; 20(3):342-51.
3. "Effects of exercise on fall rate and functional mobility in individuals with dementia: a systematic review and meta-analysis"; 2020.

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