

## **Interventions for increasing balance confidence and reducing fear of falling in older adults; A systematic review and meta-analysis**

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**Introduction:** Low balance confidence/ fear of falling (FOF) is a major health problem among older adults who have experienced a fall and well as those who have not experienced a fall. Low balance confidence/FOF can lead to avoidance of physical activities and social participation, resulting in physical frailty, falls and loss of independence. Despite the fact that many interventions aimed at increasing balance confidence have been reported, it is unclear whether one stands out as being better than the others.

**Objectives:** 1) To systematically assess all randomized controlled trials aimed at increasing balance confidence, 2) Using meta-analysis to answer the question: What are the most effective interventions used to increase balance confidence of older adults?

**Methods:** Computerized bibliographic databases were searched using key words. The inclusion criteria included randomized controlled trials including at least one (primary or secondary) outcome measure of fear of falling, balance self-efficacy/ confidence. The target age was a mean of 60 years or older. The mean difference and standard deviation (SD) between pre and post intervention for both groups were extracted. The effect size of multiple studies was calculated (RevMan 5.0) using the weighted effect size. Random effects model was used for analysis.

**Results:** Thirty one studies which met our inclusion criteria and had full data were included in our analyses. A significant effect was seen in the standard mean difference (SMD) for interventions including mixed exercise (14 studies, 0.22, 95%CI 0.09-0.30), tai chi (5 studies, 0.40, 95%CI 0.33-0.47) and multifactorial intervention (5 studies, 0.27, 95%CI 0.16-0.38). A non-significant effect was seen for 4 studies which included exercise in addition to self efficacy training.

**Conclusion:** Tai chi, mixed exercise and multifactorial interventions were found to be effective in increasing balance confidence in older adults.

**Contribution to the practice/evidence base of occupational therapy:** Occupational therapists are encouraged to assess the balance confidence of their clients. When found to be low, clients should be advised to take part in these beneficial interventions. In addition occupational therapists should consider incorporating activities and exercises that physically challenge the balance of their clients in order to maximize their occupational performance.