ADDITIONAL STANDING BALANCE CIRCUIT CLASSES DURING INPATIENT REHABILITATION IMPROVED BALANCE Outcomes: AN ASSESSOR BLINDED RANDOMISED CONTROLLED TRIAL

Background: Impaired balance and mobility are common among rehabilitation inpatients. Poor balance and mobility lead to an increased risk of falling. Specific balance exercise has been shown to improve balance and reduce falls within the community setting. However few studies have measured the effects of balance exercises on balance within the inpatient setting.

Purpose: This study was designed to determine if two weeks of standing balance circuit classes, in addition to usual therapy, lead to greater improvements in balance among rehabilitation inpatients than usual therapy alone.

Methods: A single centre, randomised controlled trial with concealed allocation, assessor blinding and intention to treat analysis with two week and three month follow up. 162 general rehabilitation inpatients were randomised into either an intervention or control group. Intervention group participants received six 1-hour standing balance circuit classes over a two-week period in addition to usual therapy. Control group participants received usual therapy alone. Balance was assessed using a composite balance measure comprising five balance tests: feet apart, feet together, semi-tandem, tandem and single leg stance. Each test was performed without aid or upper limb support and timed up to a maximum of 10 seconds (i.e. total range = 0 to 50 seconds).

Results: Primary outcome data were available for 161 participants (99%) at two weeks and 130 participants (80%) at three months. Standing balance performance was better in the intervention group than the control group at two weeks (between group difference after adjusting for baseline values 3.3 seconds; 95% CI 0.84 to 5.7, p = 0.009) and three months (3.4 seconds 95% CI -0.56 to 7.38, p = 0.092). The intervention group performed significantly better than the control group for the Short Physical Performance Battery at two weeks (1.19, 95% CI 0.52 to 1.87, p = 0.001) and three months (1.00, 95% CI 0.00 to 2.00, p = 0.049) and the AM-PAC at two weeks (5.39, 95% CI 1.20 to 9.57, p = 0.012). There was a trend towards a shorter rehabilitation unit stay (-4.1 days, 95% CI -8.3 to 0.16, p= 0.059) and fewer re-admissions in the three months after randomisation (IRR 0.70, 95% CI 0.42 to 1.18, p = 0.184). Overall there was a non-significant increase in falls in the intervention group at three months (incidence rate ratio (IRR) 1.13, 95% CI 0.65 to 1.96, p =0.662) but a non-significant decrease in falls in the first two weeks (IRR 0.64, 95% CI 0.21 to 1.99, p =0.446).

Conclusion(s): Two weeks of standing balance circuit classes in addition to usual therapy improved balance in general rehabilitation inpatients at two weeks and the effects may have been maintained at three months.

Implications: Two weeks of additional balance exercises delivered within a group environment in addition to usual therapy within a general rehabilitation inpatient setting resulted in greater improvements in balance at two weeks.
A high intensity challenging balance exercise program can be provided safely in a group environment to older rehabilitation inpatient with high numbers of co-morbidities.

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