INSPIRATORY MUSCLE TRAINING FOR IMPROVING INSPIRATORY MUSCLE STRENGTH AND FUNCTIONAL CAPACITY IN OLDER ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction The ageing process can result in the decrease of respiratory muscle strength and consequently increased work of breathing and associated breathlessness during activities of daily living in older adults. This systematic review and meta-analysis aims to determine the effects of inspiratory muscle training (IMT) in healthy older adults given that reduced respiratory muscle strength is associated with a decline in pulmonary function, reduced physical performance, and constitutes an independent risk factor for myocardial infarction and cardiovascular mortality.

Methods A systematic literature search was conducted across four databases (Medline/Pubmed, Web of Science, Cochrane Library and CINAHL) using a search strategy consisting of both MeSH and text words including older adults, inspiratory muscle training, and functional capacity. The eligibility criteria for selecting studies involved controlled trials investigating IMT via resistive or threshold loading in older adults (>60 years) without a long-term condition. Meta-analyses were performed for maximal inspiratory pressure (PI_{max}) and six-minute walk distance (6MWD) using a random-effects model with change scores to obtain effect sizes reported as standard mean differences. Pearson's correlation analysis was performed to determine the association between baseline PI_{max} and change in PI_{max} following IMT within included studies.

Results Seven studies provided mean change scores for inspiratory muscle strength and 3 studies for functional capacity. A significant improvement was found for PI_{max} following training (n=7, 3.03 [2.44, 3.61], p≤0.00001) but not for 6MWD (n=3, 2.42 [-1.28, 6.12], p=0.20; figure 1). The average increase in PI_{max} was 26.3±4.9 cmH_2O within the experimental groups compared to a non-significant average change of 3.7± 4.1 cmH_2O within the control groups. There was no significant correlation between baseline PI_{max} and post-intervention change in PI_{max} values (n=7, r=0.342, p=0.453).

Discussion This study suggests that IMT is beneficial in terms of improving inspiratory muscle strength in older adults without a long-term condition. IMT was also found to be beneficial in older adults regardless of their initial degree of inspiratory muscle weakness. Further research is required to investigate the effect of IMT on functional capacity and quality of life in older adults.

## INTERNET USAGE AND INTERVENTION DELIVERY PREFERENCES IN THE PULMONARY REHABILITATION POPULATION

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Introduction Due to COVID-19, conventional Pulmonary Rehabilitation (PR) has adapted to a home-based paper and telephone alternative. Web-based PR is available and has the potential to be an effective alternative to conventional PR.[1] However, recent research suggests that patients are unable or unwilling to access it.[2] The aim of the study was to explore internet usage and rehabilitation delivery preferences for those referred to PR.

Methods A survey was conducted between May and August 2020. Information collected included: demographics, qualifications, device ownership, internet hours per week, PR delivery preference and barriers to PR.

Results 89 responses were received from patients (Mean [SD] age 69 [10.5] years, 51 (57.3%) female). 68 (76.4%) reported having internet capable devices (Smartphone 50.6%, PC/Laptop 47.2%, Tablet 36.0%). 67 (75.3%) used the internet weekly. 50 (56.2%) responders used the internet regularly (>1 hour/week) and 26 (29.2%) very regularly (>10 hours/week). There was a weak correlation between age group and hours
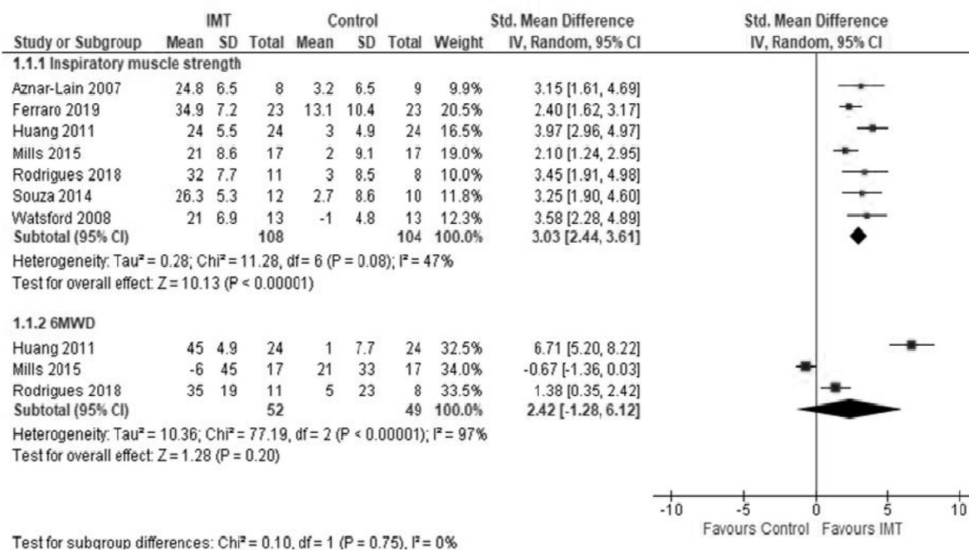
Abstract P79 Figure 1 Mean difference (95% CI) from baseline of the effect of inspiratory muscle training on inspiratory muscle strength (measured by maximal inspiratory pressure; n=7) and six-minute walk test distance (n=3) compared to control