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Title: Cost-consequence of yoga respiratory training on respiratory muscle function in institutionalized elderly

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Body: Introduction: A recent study suggests that yoga respiratory training (YRT) is an effective intervention to improve respiratory muscle (RM) function in healthy elderly, although the effects of YRT remain unknown in impaired elderly. Furthermore, the cost evaluation related to RM intervention on this population is uncommon. Aim: To evaluate the costs and consequences of YRT to improve the RM function in institutionalized elderly. We hypothesized that YRT is a low-cost intervention and would improve respiratory functioning. Methods: Fifty-four elderly from 2 nursing-homes in Valencia (Spain), who were unable to walk, were randomly assigned to a control group (n=27) or YRT group (n=27). The supervised training protocol lasted 6 weeks (5 days/week) during 2009. Maximum inspiratory pressure (MIP), maximum expiratory pressure (MEP) and maximum voluntary ventilation (MVV) were assessed at 4 time points. The costs were presented in 2009 €, were identified those related to staff, consumables and capital for intervention, and health professional perspective was adopted. Results: Analysed sample (control, n=24; YRT, n=24). ANOVAs revealed significant improvements in MIP ($F_{3,138}=9.122$, $p<0.001$, $\eta^2=0.165$), MEP ($F_{3,138}=9.102$, $p<0.001$, $\eta^2=0.165$) and MVV ($F_{3,138}=9.167$, $p<0.001$, $\eta^2=0.166$) between groups. The total costs were calculated attending different criteria: control group (5722€), YRT group (8022€), per elderly in YRT group (297€) and per nursing-home (6872€). Conclusion: YRT applied to the institutionalized elderly improves RM functioning and is a low-cost intervention that could be incorporated into the physiotherapist daily routines in the nursing-homes.