

CONFERENCE ABSTRACT

Promoting active ageing through a physical exercise program aimed at reducing frailty and risk of falling among older adults

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Introduction: Risk of falling and frailty have been revealed as the most important conditions causing dependency among older people [1]. Older adults taking physical activity regularly can benefit of a proper maintenance of muscle strength and mass, which helps to retain function and independence, and to prevent falls and other injuries [2]. Concretely, the effectiveness of balance and strength training programs on the reduction of falls [3] and frailty [4] has been sufficiently proved.

Theory/Methods: This study was conducted to evaluate the effect of an intervention based on a physical exercise program addressed at 65+ people suffering from risk of falling and frailty, and ultimately aimed at promoting active and healthy ageing.

A physical exercise program composed by balance and strength training has been designed and implemented twice a week during 9 months. From a total of 60 exercises conforming the program, 34 are based on the OTAGO program, with largely proven effectiveness [3], and 26 have been designed in the frame of this research by a physiotherapist, who was responsible for the implementation. The 60 exercises comprise a total of ten 45-minute exercises routines of 6 exercises.

An interventional longitudinal study was carried out with 55 community-dwelling older adults. Participants were assessed at baseline for frailty (Tilburg Frailty Index), risk of falling (history of falls) and physical performance (Short Physical Performance Battery). Participants were assessed with the same instruments after attending the program.

Results: The comparison of the conditions (frailty and risk of falling) as well as physical performance at baseline and 9 months later was performed using paired samples t-test and McNemar's test.

After the intervention, participants showed a significant reduction in frailty ($p < 0.000$), in risk of falling ($p < 0.000$) (from 65.5% to 21.8%). Furthermore, significant increases in physical performance ($p < 0.007$) were observed; especially, in the balance test (0.008).

Discussions: The intervention program composed of balance and strength training produced a decrease in the incidence of falls, and improved the frailty levels and the physical performance

in older adults who presented frailty and/or risk of falling before the intervention. It should be emphasized that the physical performance enhancements observed in the participants of the present study occurred primarily in balance, and in lesser extent in muscle strength and gait ability. This result is aligned with the research confirming balance as a key element in falls [3, 5].

Conclusions: (comprising key findings) The physical exercise program design and implemented in the frame of this research is an effective intervention for frailty and falls prevention among 65+ community-dwelling older adults.

Lessons learned: The intervention yearns to contribute to a shift to preventive care with an innovative physical exercise program for older people which focuses on the promotion of active and healthy ageing by reducing the number of older dependents and, thus, increasing the quality of life among older adults.

Limitations: The present study has several limitations. The study sample is not representative of the Valencian older population, as it is based only on a Valencian district which does not permit the results to be generalized. Another limitation is the absence of a control group.

Suggestions for future research

Despite there is enough evidence of effectiveness of falls prevention programs, the commitment of policy-makers and care providers to their implementation of these programs is still a pending issue.

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