

Influence of a movement program on mobility in very elderly individuals – a quasi-experimental study

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INTRODUCTION

- Worldwide, the population is increasingly aged, with a steady increase in average life expectancy;
- The regular practice of physical exercise is known as a beneficial factor in the aging process and for the maintenance of physical fitness;
- PURPOSE** – To verify the influence of a movement program in very elderly participants living in a nursing home and day care center (aged over 75 years) on their grip strength, lower limb strength and mobility;

Table 1 – Sample characterization data (mean±sd; amplitude)

| | Age (years) | Weight (Kg) | Height (m) | BMI (kg/m ²) |
|-------------------------|---------------------------|--------------------------|------------------------------|--------------------------|
| IG (2 M; 5 F) | 85,3±6,6 ; (77,0-94,0) | 65,6±5,7; (55,0-70,0) | 151,7±8,0; (142,0-164,0) | 28,8±4,6; (22,7-33,7) |
| CG (2 M; 5 F) | 84,4±5,4; (79,0-96,0) | 70,4±8,5 (53,0-75,0) | 156,1±10,0; (148,0-177,0) | 29,2±4,9; (20,7-33,3) |

CONCLUSION

For this group, physical exercise seems to have positively influenced only the variable Gait Speed. Regarding the remaining variables, the type of exercise, the number of repetitions and the duration were not enough to obtain significant results. Physical activity is not able to reverse the aging process, but it mitigates innumerable systemic and cellular effects harmful to the body (Garatachea, 2015).

MATERIALS AND METHODS

This study is a Quasi-experimental study with the objective of evaluating the effects of the intervention of a combined exercise program on functionality in very old adults (over the age of 75 years). The following inclusion criteria were applied to all the residents (n=120): not being bedridden, not being confined to a wheelchair, age over 75 years, Mini Mental State Examination (MMSE) > 15 and finally having a Katz index ≥5. After fulfilling these criteria, 14 participants users were selected that make up the sample (**4 males and 10 females**), having been randomly assigned to the Intervention Group (IG = 7) and Control Group (CG = 7). A combined exercise program was applied to the IG for 8 weeks at a frequency of 2x / week, with moderate intensity during 45 min. The CG was in a usual movement session with light intensity play characteristics 1x / week. Both groups were evaluated with the JAMAR dynamometer for grip strength, gait speed with the 6 meter test, the TUG test (3 meters) for mobility and for lower limbs strength, the Sit –to-stand test in 30 sec was assessed

RESULTS AND DISCUSSION

For the Sit / Stand test, the Right Grip Force and the Left Grip Force, which showed to have a normal distribution (p> 0.05), the t test was performed to compare mean values of these variables between M1 and M2 (before and after the Intervention). For the remaining variables, the non-parametric Kolmogorov-Smirnov test was applied. The p values for comparison between the two evaluation moments. Regarding the results, only improvements were obtained in a single test, which was the gait speed (p> 0.01), so users of both the CG and the IG took less time to perform the task and soon showed greater speed (Table 2)

Table 2- Values presented by the variables analyzed for both groups at first (M1) and at second moment of assessment (M2); (M ± SD); p <0.05

| VARIÁVEL | Grupo | M1 | M2 | P |
|-------------------------------------|-------|-----------|-----------|------|
| Sentar/Levantar – Slev (repetições) | GI | 11,9±3,5 | 12,4±1,0 | 0,60 |
| | GC | 3,3±2,4 | 2,4±1,5 | 0,32 |
| Timed Up and Go –TUG (segundos) | GI | 10,1 ±2,0 | 9,5 ±1,6 | 0,61 |
| | GC | 37,5±21,3 | 35,8±15,4 | 0,46 |
| Força Preensão Dta (KgF) | GI | 22,3±5,5 | 23,8±3,9 | 0,15 |
| | GC | 16,4±4,9 | 19,3±3,3 | 0,10 |
| Força Preensão Esq (KgF) | GI | 22,1±5,6 | 22,9±4,6 | 0,35 |
| | GC | 15,7±4,4 | 17,2±2,9 | 0,15 |
| Velocidade da Marcha (segundos) | GI | 7,3±1,1 | 3,7±0,4 | 0,01 |
| | GC | 19,0±10,8 | 11,6±7,2 | 0,01 |