

## Home-fitness: physical exercise and elderly's quality of life.

A. FEDERICI, R. PALANCA

Department of Biomolecular Sciences, Università degli studi di Urbino Carlo Bo, ITALY

Published online: October 22, 2019

(Accepted for publication: October 15, 2019)

DOI:10.7752/jpes.2019.s5273

### Abstract:

The home-fitness project is addressed to the elderly and represents a valid alternative in those situations where it is difficult, or less appropriate, to carry out physical activity in conventional ways and places.

The interest in this group of people arises in consideration of the fact that Istat statistics predict that the elderly population in Italy will grow from 21.7% to 32.6% between 2015 and 2065. This indicates an increased life expectancy, but also the appearance of new needs for the whole society. Aware of the fact that the ageing process entails physiological, relational and many more changes, we will offer an alternative: the concept of active ageing will replace the outdated mentality of a sedentary old age, the conquest of the individual's total and partial autonomy making place. In this context, the physical education graduate has motor activity as a tool which, as demonstrated in literature, through studied programs can induce positive effects to the subjects' functional state. This is aimed to an operational proposal that presents exercises to do at home that need to be thought starting from a preventive evaluation (both objective and subjective) of the person when included in a personalized program. Therefore, the objective is to have the needs, will and wellbeing of the elderly that will follow the program developed for them at the center of the work.

**Keywords:** home-fitness, elderly, active aging, activity customization, prevention, autonomy.

### Introduction

The intense and rapid aging of the Italian population during the last century has profound implications for our society. Individuals aged 85 and over, which in 2015 represent 3.2% of the population, should be around 10.0% in 2065 (CENSIS - Centro Studi Investimenti Sociali). Based on the evolutionary tendencies of fertility, mortality and migratory movements, the propensity to the "inverted pyramid" of the age seems to be the most accredited indeed, with a progressive imbalance in favor of the older ages.

We could identify both positive and negative implications in this phenomenon. Firstly, the aging of the population is a success as it demonstrates a significant improvement in living conditions and health care. Secondly, it represents the dawn of new needs that society is not yet able to fulfill such as, for example, strong tensions for the health system and, more generally, for civil protection.

Based on their perception, a person defines themselves as elderly between the ages of 60 and 75. The WHO (World Health Organization) identifies four age levels: middle-aged (45-59 years), young-old (60-74 years), old (75-90 years) and oldest-old (over 90 years).

In light of the Italian demographic composition, it is necessary for the actors of the entire civil society to be aware of this change in order to make the most of all the opportunities and counteract the negative consequences. We therefore aim at a concept of active aging that is based on a real social, economic, cultural and spiritual participation of the elderly, who is led to redesign their post-work life and their spare time.

The determinants of active aging can be enclosed in three macro areas: physical activity, active lifestyle and positive health behavior. Graduates in physical education can interface in the three areas through the practice and teaching of physical education. We choose this tool as scientific evidence (Arem H. and al. (2015) indicates that the risk of mortality due to cardiovascular diseases or neoplasms, considered among the main causes of death, increases if the individual does not perform physical exercise. Furthermore, it has been demonstrated how subjects who support an expensive activity effectively have a lower risk of mortality (Gebel and alt., 2015). In light of these evidences, we choose training as it is a guarantee for the improvement of one's quality of life and of a healthy old age.

### Home-fitness

"It is not physiotherapy aimed at the sick to cure them, but it is a global intervention aimed at strengthening the motor function that the lack of use has minimized" (A.Federici and alt., 2006, Raiola et al., 2018, Raiola, 2017) Thanks to the scientific research that is demonstrating the value of physical movement, the mentality according to which motor activity represents a useful strategy to achieve a better quality of life of the person

1852-----

begins to spread among doctors. Considering physical exercise as a real therapy and as a tool for reintegrating the person in their social context, gives it a double meaning. The operational home-fitness proposal includes exercises to be performed at home, an initial evaluation of the applicability to each context and the packing of the operator's work bag which must contain all the useful tools.

Thanks to kinesiology, the operator is able to involve the subject in his own intellectual-cognitive, affective-emotional, physical-motor and social-relational sphere. The target of this work is represented by different categories of elderly:

- autonomous subjects, independent on economic, environmental grounds, etc, therefore able to face the activity in group or individually;
- frail subjects, which could be autonomous but due to family or environmental conditions, etc. need to carry out the activity at home, in groups with specific measures or individually;
- non-autonomous subjects, with motor incapacity and who need to maintain or recover their functional reserves.

The advantages of a job done in this way are the possibility of staying at home, a personalized program adapted to the needs of the subject with the choice of the most convenient time, the opportunity to carry out the activity in small groups of people and perhaps create a neighborhood network, safely under the supervision of the operator, thus improving the quality of life of the elderly, more independent, and their family members. The critical points are few and can be linked to possible distractions due to the domestic environment and the absence of a socialization in the case of individually taught lessons.

We can describe the home activity according to some basic principles:

- Continuity (in the weekly implementation)
- Progressiveness (in the difficulty of motor proposals)
- Awareness (of the use of one's body)
- Safety (during activities)

Having the opportunity to follow a tailor-made exercise program is the main aspiration of those who decide to practice physical activity in the gym, but also at home. "We can approach home-fitness at any age, always respecting our times and rhythms; it is a natural and effective way to eliminate tensions and live healthier." (A.Federici and alt., 2000)

## Methods

The first goal to achieve is that of body and motor awareness. Otherwise, the person will never be able to perceive the usefulness of some suggested precautions to be put in place in everyday life. The elderly must be re-educated to the knowledge of his own body scheme to be able to know how to place themselves in the three dimensions of space. An important element is the control of respiration which, performed widely and regularly, will increase the vitality of the individual, promoting the processes of oxygenation and the general metabolism of the organism.

In choosing the activities to be carried out with the elderly, the actual capabilities of the person must be assessed first in order to be able to propose a motivating activity and personalized programs. Exercises will be designed involving only the use of one's body, with or without small coded and non-coded tools, to be performed in the home environment. The operator can carry out a gradual and focused work together with the subject, which encompasses exercises of joint mobility, posture, breathing, balance, coordination, toning and strength. It will be important to foster communication, to aim at improving one's well-being, to carry out a constant practice and to understand the importance of physical activity as a form of prevention of physical, social and psychological pathologies.

The recommended frequency ranges from a minimum of 2 to a maximum of 5 sessions a week of the duration of 30–60 minutes. Both individual and group lessons can be proposed depending on the needs and possibilities of the subject. When proposing exercises for the elderly sudden increase in heart rate, pressure fluctuations, sudden movements, pain during and after the activity and sudden changes in rhythm and posture should be avoided. On the other hand, it is positive to have a rich and varied motor activity, which allows the subjects to experience their own body, respecting each person's time and ability, taking care of the playful aspect and socializing, stimulating cognitive activity, motivating the subject and applying new psycho-motor knowledge to the domestic life.

## Means

The main prerequisite for the subject participating in the home-fitness project is to be with their own body the main tool of all the work.

The exercises are characterized by a certain adaptation both to domestic spaces to carry out the activity in complete safety, and to the materials used. Chairs, sticks, blankets, towels, cushions, tennis balls, etc., become a real work tool for us. If the program is carried out in groups of 2/3/4 people, it is the operator's duty to communicate to the participants the most useful tools to bring for the next lesson. Otherwise, it will be useful to keep in the operator's bag: resistance bands, soft balls of various sizes, shaped balls of various sizes, soft balls, fit balls, wedge-shaped or cylindrical cushions, unstable tops of various kinds,

tools for passive exercise such as b-bike and so on. Therefore, with little investment compared to the activities of a classic gym, important margins of autonomy can be obtained, both in regards to the motor activity to be carried out, and in terms of expected results.

It is good practice to accompany the lesson with music, as it is known that listening to and playing melodies and sounds can influence the psycho-physical state and consequently have stimulating effects on the moods and emotions of the person. Music will be a good complement to achieve the objective of the lesson, if we consider among these the influence it has on the mood of the subject in addition to the performance of physical exercise.

The lesson lasts 1 hour and is organized in five macro-areas:

- Respiratory education and awareness of one's body
- Articular mobility
- Proprioception and balance
- Strengthening and stabilization of the musculature
- Relaxation and stretching

Once the data relating to the condition of the person has been collected and the objectives to be reached have been set, a program will have to be drawn up to be carried out with and without the operator. It is expected that synoptic tables will be used (A.Federici, M.Valentini and alt., 2006) – these are summary tables of the exercise where we find:

- Pictures of the exercise with arrows indicating the way it is carried out;
- The starting position with any necessary corrections;
- The description of how to perform the exercise;
- The volume indicating sets, repetitions and recovery to be performed;
- The usefulness of the exercise that allows to understand why that movement is congenial to one's condition.

These tables are useful both for the elderly who follows the program and who must perform, perhaps in the company of a family member, the exercises even in the absence of the operator, and for the operator, who can monitor the progress of the course undertaken by the person.

### Conclusion

"The supreme fruit of independence is freedom." This quote by Epicurus clearly explains how the ultimate goal of a motor activity program addressed to the elderly is the achievement of autonomy. This condition will allow the subject to be able to live their daily life in freedom, living their old age with dignity.

Thanks to a home-fitness program, new friendships could arise with the attribution of a role in a changed social context. The elderly could return to having self-esteem, a positive image of their person and consequently a better mental health: they will love taking care of themselves and therefore will enjoy an increased psycho-physical well-being. A person with these perspectives does not isolate themselves, manages to move better, risks fewer falls, fractures or accidents, thus gaining and maintaining their independence.

### Bibliography

- A. Federici, R. Dardanello, M. Valentini (2006), Home – fitness, ginnastica a domicilio per la terza età. Editrice Montefeltro, pp 39-49.
- A. Federici, M. Valentini, C. Tonnini Cardinali (2000), Sportivamente anziano. Editrice Montefeltro, pp 63-74.
- A. Federici, R. Dardanello, M. Valentini (2006), Home – fitness, ginnastica a domicilio per la terza età. Editrice Montefeltro, pp 155-160.
- Arem H., Moore S., Patel A., Hartge P, Berrington de Gonzalez A., Visvanathan K., Campbell P., Freedman M., Weiderpass E., Adami H.O., Linet M.S., Lee M.I., Matthews C. (2015) “Leisure time physical activity and mortality”.
- Raiola, G. (2017) Motor learning and teaching method, Journal of Physical Education and Sport, 17, art. no. 236, pp. 2239-2243.
- Raiola, G., D'elia, F., Altavilla, G. (2018) Physical activity and sports sciences between European Research Council and academic disciplines in Italy, Journal of Human Sport and Exercise, 13, pp. S283-S295.
- B. Toso (2003). Back school, Neck school, Bone school. Programmazione, Organizzazione, Conduzione, Verifica. Edi Ermes
- B. Toso (2003). Back school, Neck school, Bone school. Programmi di lavoro specifici per le patologie del rachide. Edi Ermes
- CENSIS-Centro Studi Investimenti Sociali. Available at [<http://www.censis.it/home>]
- Gebel K., Ding D., Chey T., Stamatakis E., Brown W.J., Bauman A.E. (2015), “Effect of Moderate to Vigorous Physical Activity on All-Cause Mortality in Middle-aged and Older Australians”.
- ISTAT-Istituto Nazionale di Statistica: invecchiamento demografico available at [<http://www4.istat.it/it/anziani/>]

Ortancil O. et al. (2009), The effect(s) of a six-week home-based exercise program on the respiratory muscle and the functional status in ankylosing spondylitis. *J clin. Rheumatol.* Mar 15(2), pp 68-70

WHO-World health organization. Active ageing. A policy framework. Available at [[https://apps.who.int/iris/bitstream/handle/10665/67215/WHO\\_NMH\\_NPH\\_02.8.pdf;jsessionid=8D06C99313B2750536365249EE07602F?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/67215/WHO_NMH_NPH_02.8.pdf;jsessionid=8D06C99313B2750536365249EE07602F?sequence=1)]