Editorial

Is It Ethical Not to Prescribe Physical Activity for the Elderly Frail?

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Physical inactivity is a key factor contributing to the onset of muscle mass and function decline (ie, sarcopenia), which in turn appears to be a vital aspect related to frailty. Poor health, disability, and dependency are not inevitable consequences of aging. The promotion of a healthy lifestyle and physical exercise, and the avoidance of sedentariness have proven to be effective for frail older adults, enhancing their independence and, most likely, reducing health-related costs. Recently, it has been also proven that physical activity, as an intervention, is one of the most important components in improving the functional capacity of frail seniors. Among several comorbidities that may coexist in frailty syndrome, diabetes is one of the most prevalent. In frail patients with diabetes, enhancement in functional capacity is crucial and may be more beneficial than attention to metabolic control alone. To counteract this functional decline, exercise interventions including resistance training are quite effective in improving muscle strength and power, balance control, and gait ability and in reducing incidence of falls in frail elderly. The main interventions that have proven effective to prevent and even reverse the frail state are physical exercise, multidimensional geriatric assessment, and intervention on major geriatric syndromes, with emphasis on proper adjustment of medication. Interventions to promote physical activity in the population have been effective in improving mobility and function. Exercise intervention may improve functional capacity even in polypathologic aging patients who have diabetes mellitus resulting in severe functional decline. Other interventions, such as nutritional or pharmacologic interventions, are unsuccessful, although nutritional and testosterone interventions have been successful in some trials. Accordingly, an important conceptual idea for frailty is that the focus should be on functionality and not on the diagnosis of disease for older patients.

The positive effects of exercise intervention on functional capacity, rate of falls, gait ability, balance, cardiorespiratory, and strength performance may be observed more often when multiple physical conditioning components (ie, strength, endurance, or balance) are included in the exercise intervention compared with only 1 type of exercise. Multicomponent exercise programs and particularly those including strength training are the most effective interventions to delay disability and other adverse events. Indeed, it has been recently reported that multicomponent exercise training including explosive resistance training improved neuromuscular function and functional outcomes in frail institutionalized nonagenarians after long-term physical restraint, in frail patients with multiple comorbidities, and in persons with hip fractures. Furthermore, physical exercise administration is relatively free of potential unwanted side effects caused by common medications that are prescribed in patients with multiple comorbidities. However, regular participation in physical activity and/or exercise training programs by prefrail or frail patients is anecdotal and not clearly established. Indeed, in a recent study only 10% of nursing home residents exercised at least twice a week.

Although studies have focused on the benefits of concurrent training on young populations, a limited number have explored or implemented training adaptations in frail older patients. The absence of changes in functional or strength outcomes measured in some previous studies suggests that the exercise prescription may not have been carefully adapted to provide a sufficient stimulus for improving not only maximal strength but also the functional capacity and muscle power output performance of frail patients. A recent task force of clinical researchers, under the auspices of the International Association of Gerontology and Geriatrics-Global Aging Research Network and the International Association of Gerontology and Geriatrics-European Region Clinical Section established recommendations of physical activity and exercise for older adults living in long-term care facilities (LTCFs) to prevent functional decline and disabilities for Nursing Home residents and how to implement prevention of functional decline in community-dwelling frail elderly within the nursing home setting.

Because of the heterogeneous population living in LTCFs (from independent living to assisted living, and finally, to skilled nursing care), a single exercise prescription is unlikely to fit the desires...
and needs of all frail population. Thus, the first step is to recommend reducing sedentary behaviors for all LTCF residents, and a second step is to recommend focusing on multicomponent training composed of muscle strength and cardiorespiratory endurance exercises as the core components.

In the current social and economic context, where society and health and social systems are being strained, a shift toward prevention and health promotion is mandatory. Functional ability, retaining autonomy and independence as people age, is the target of healthy aging, a term established by World Health Organization in its first world report on aging and health. The largest share of the use of health care and social resources in an individual’s life span is concentrated on the last phase. The elderly represent more than 40% of the hospital care demand in the National Health Service, and the costs associated with their attention are constantly increasing. Later in life, the morbidity pattern is modified and diseases or health problems that cause dependence become more important, such as cardiovascular diseases (heart failure and coronary artery disease), diabetes mellitus, chronic obstructive pulmonary disease, neurologic diseases (especially the stroke-dementia binomial), osteoarthritis, and sensory impairment affecting vision and hearing. Recently, with the aim to explore the incremental costs of frailty associated with ambulatory impairment affecting vision and hearing. Most recently, with the aim to explore the incremental costs of frailty associated with ambulatory care demand in the National Health Service, and the costs associated with their attention are constantly increasing.

Despite the overwhelming scientific evidence that physical activity improves the health of the population, society in general and health professionals in particular are not yet clear on how to approach this matter. What is delaying the prescription of physical exercise as a form of medicine? This would necessarily involve an individualized prescription according to the functional capacity of the elderly person, with specific recommendations about the dose (intensity, volume, and frequency), similar to those of other medications. Therefore, when will the so-called “Prescription of Physical Exercise” be incorporated into the National Health System, for example, by prescribing the practice of physical exercise two days per week for the prevention and treatment of cardiovascular diseases and other chronic diseases such as the decline in functional capacity? If muscle training is an essential treatment for some diseases, why is muscle strength training not prescribed for the treatment and prevention to improve neuromuscular and cardiorespiratory function, as well as functional capacity and quality of life in the elderly frail?

As a consequence, it is worth promoting healthy and dignified aging by helping countries to make their health systems more efficient to implement pilot programs that can interact directly with frail older patients, aiming to measure the response to multicomponent sport exercise programs for tackling late-life disability. Such a pilot program with rapid screening for frailty and sarcopenia coupled with referral to exercise therapy has been developed in St. Louis. With this framework in mind, the European Union has also included several initiatives in many of their programs. This is also the case for the Erasmus initiative, which has been created to support European health systems to handle the challenges of efficient care provision and system reorganization aimed to meet future needs, related to an aging society and the search for formulas that improve quality of life. The Vivifrail Project, an EU-funded project as part of the Erasmus+ program, tries to provide training on how to promote and prescribe physical exercise in older adults to maintain a level of function that provides the highest degree of autonomy possible (http://www.vivifrail.com). The Vivifrail Project, therefore, focuses on the enhancement of knowledge development and implementation of good practice, as well as the design of materials that can enable us to define a physical exercise prescription as a way to effectively improve health in older people within their environment, creating synergies among the fields of sport and health and social-care services.

The need for agreed-upon and transferable methods is urgent. Individual institutions typically adopt solutions that often address only their specific problems, and even though cultural and demographic characteristics may differ, the underlying causes and mechanisms are similar and transferable approaches are expected. It appears that much remains to be done, but the possibility of physical exercise as the new medication for the 21st century is truly inspiring. That we still have some way to go has never been better stated!! This is an exciting time for clinical scientists who wish to combat the increasingly recognized impact of frailty in our societies.

References


