

## The Physical Exercise as a Strategy of Reduce Costs with Medicine for Aged

### Abstract

**Background:** To provide a critical reflection from the literature review to describe the current panorama on the importance of physical exercises in the improvement of the quality of life of the aged, besides the use of medications. While aging brings a high cost to health and demographic pyramid changes, so does the disease. As aging is a biological process and many diseases develop at this time of life, the aged are the fastest growing segment of the Brazilian population due to the natural susceptibility of the organism. With this increase, health costs in the country also increase. In everyday practice, medicine has often been characterized as a therapeutic intervention instrument for the first choice, and a consequence, generates significant and significant economic and social damages. **Methods:** Search in databases using analysis descriptors as exercises and medicine for the aged. **Results:** The involvement of the aged in physical exercise programs is an important adjunct to reduce the progressive degeneration associated with natural aging, becoming a powerful instrument to guarantee a healthy, active and independent lifestyle. **Conclusions:** The physical activity was inversely associated with the number of medications, the more physical activity and fewer drug expenses. The need to implement programs for orientation and for the promotion of health through physical activity was also verified.

**Keywords:** *Aged, exercises, medicine, primary prevention, public health*

### Introduction

It is interesting to observe that with the increase in the number of aged people in Brazil—following a trend that has already occurred in developed countries—services and health professionals are facing increasing challenges. The aging of the global population imposes new strategies to improve the health and quality of life of this population. There are many pathologies found with different symptoms and the prevalence of chronic degenerative diseases, which often depend on prolonged or continuous drug therapy. As a result, these individuals become major drug consumers, possibly being the most medicated age group in society, accounting for 50% of multi-drug users.<sup>[1,2]</sup>

On the other hand, there is strong evidence—supported by high-quality studies—that demonstrate the positive association between increased levels of physical activity, participation in exercise programs, and improved health. It is imperative to develop a strong

commitment to improving levels of physical activity in the aged. The exercise should be performed regularly, given its numerous benefits, and it is been considered as a non-pharmacological strategy that is determinant for successful aging.<sup>[2]</sup> There is evidence that exercise can delay or reduce heart attacks, angina, osteoporosis and hypertension. Exercise also helps in overall well-being, reducing anxiety, depression, tension, and the effects of stress.<sup>[3]</sup>

Aging is a process that consists of a decline in functional capacity and is associated with numerous changes in the mobility, autonomy and health of the aged, facilitating the development of chronic-degenerative diseases and physical incapacity. These extra years bring diseases with sequels, functional decline, less autonomy, social isolation, and depression. In terms of public health, it is important to know ways to mitigate this progressive degeneration, so that individuals are able to grow older with autonomy and independence, with ample physical health, playing social roles and remaining active.<sup>[2,4,5]</sup>

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**How to cite this article:** Scolese M, Rached CD, De Liberal MM. The physical exercise as a strategy of reduce costs with medicine for aged. *Int J Prev Med* 2019;10:153.

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**DOI:**  
10.4103/ijpvm.IJPVM\_440\_18

### Quick Response Code:



## Methods

The present study, approved by the Federal University of Sao Paulo, Medical Sciences Research Ethics Committee with ethical code no 1482.0009.12/2017, carried out a bibliographic survey of articles whose themes address the analysis of physical activity with the reduction of drug costs in the aged population. To develop the study, the searches were performed using the following descriptors: physical activity and drugs in the aged, physical activity and costs, physical inactivity and costs, financial resources in health in the aged, health of the aged, in the Portuguese language. The objective was to demonstrate that this practice could be non-pharmacological, determinant for the success of aging, and helped in reducing expenses with medications to treat specific diseases and chronic diseases. The study was approved by the Research Ethics Committee of EPM/Unifesp on 04/30/2018.

The relationship of physical activity with health, quality of life and aging has been the target of current scientific research. Many studies emphasize sedentary lifestyle and stress as factors that are responsible for diseases and reductions in quality of life. Health is characterized not only as a state of absence of disease, but also as a general state of individual equilibrium in different aspects and systems, that characterize the human being such as biological, psychological, social, emotional, mental and intellectual resulting in terms of well-being.<sup>[5,6]</sup>

The impact of the sedentary lifestyle on the public health of a country should be a matter of great concern. The technological progress has resulted in a chronic inactivity of people, whether by the forms of employment and work and in the moment of leisure. For the aged and people in general, the lack of physical conditioning is settling into their lives over the years, making sedentary lifestyle a deadly silent weapon. As a result of which, older people expect to use various medicines to control diseases and to maintain the quality and quantity of life years.<sup>[7]</sup>

In Brazil, non-transmissible chronic diseases have become the main priority of public health policies, since they affect the most vulnerable segments of the country with lower income and lower levels of education.<sup>[8]</sup> The highest index of these pathologies makes aged people use health services and medicine frequently. This portion of the population consumes about 50% of the drugs prescribed for the entire Brazilian population.<sup>[3,5]</sup>

## Results

Aging is directly related to the increase in medical expenses. In developing countries, the medicine rank second in health budgets. Patients often rely more on medicine than on physicians, and spending on medicine accounts for 40% of public health funding, while in developed countries it is limited to just 8%.<sup>[9]</sup> People over 65 years of age account for approximately 25% of

total drug sales in developed countries, and this number is expected to reach 40% by 2030.

The use of drugs in the aged has a fine line between risk and benefit because the high use of medications can affect the quality of life of the patient, but also can help to prolong it. The use of drugs in the aged requires constant care, because while in normal adulthood, 10% of patients develop some type of reaction to medications, after 80 years this possibility can reach 25%. Usually, the problem is not the consumption of the drug, but the irrationality of its use, which exposes the aged to potential risks. In addition to the peculiarities of the pharmacokinetics and pharmacodynamics of medicinal products, the cost of therapeutic maintenance and the difficulties in adherence to treatment should be considered.<sup>[1]</sup>

It should also be noted that society is paying a high price for the exaggerated consumption of drugs. It results in complications and deaths that could be avoided, thereby hurting the fundamental principles of the Unified Health System (SUS) and aggravating the insufficient financial resources in the health sector.<sup>[10]</sup> The means of acquiring medicine varies according to the socioeconomic power of the population. In classes A/B, the average cost of medicine for the aged is higher than the same costs for classes C/D/E. At the same time, the cost of medicine consumed in class A is significantly higher than in the other classes. However, there is no significant difference between classes C/D/E.<sup>[11]</sup>

Typically, the aged in socioeconomic classes A/B buy their drugs in private establishments. The others classes depend on the access to free provided by the public health system, with costs underestimated not considering other expenses such as human resources or logistics costs in relation to the distribution of the product to different health units. Analyzing the average monthly expenses of medication with the share of the family income involved, it is noted that the class A group has a higher spending on the purchase of medicine (60.0% of the national minimum wage and 4.0% of their individual incomes). These show a smaller impact on this class than on other social classes: 19.0% (5.7% of a minimum wage) for class C and 15.0% (10.0% of a minimum wage) for the class E.<sup>[5]</sup>

The high-income population uses drugs prescribed by doctors, giving preference to those that have been release on the market recently and technologically more advanced. However, these expenses represent only a small portion of their total income. While the consumption of drugs by the middle-income population is influenced by price changes, the low-income population presents an inelastic demand for price, even when a significant drop in drug prices occurs they do not consume. In the Brazilian case, the use of drugs for the low-income population depends on the essential drug list adopted by the public administration.<sup>[9]</sup>

Regarding the differences in the five regions of the Country, the Northeast presents the lowest prevalence of free access to all medicine. Only 78% of the municipalities have a low Human Development Index (HDI) and the income commitment in the purchase of medicine can be almost three times higher among the poorest (7.3%), when compared to the richest (2.7%). The population of this region may be more vulnerable to discontinuation of treatment due to lack of payment capacity for treatment with drugs for chronic diseases and that free access to medicine in Brazil is lower in individuals with more chronic diseases. It indicates that the integrality of access to treatment is still a challenge to be face by the managers of the health care network in the country.<sup>[8]</sup>

Lifestyle is also of fundamental importance for health status, especially when related to the individual's behaviors. Regarding physical inactivity, the World Health Organization (WHO) shows that lack of exercise is among the four leading causes of mortality in the world and is one of the major public health problems. The lack of physical activity pre-disposes people to illness, high drug consumption, incidence relative coronary artery disease, acute myocardial infarction, arterial hypertension, colon cancer, breast cancer, type II diabetes and osteoporosis. In Brazil, diabetes and hypertension are the major cause of hospitalization, followed by cardiovascular diseases, which is the main cause of mortality in the country.<sup>[12]</sup>

Most people seek pharmacological treatment to control diseases. However, abusive, inadequate or inadequate use of medicine does not benefit the population and is wasting public resources, mainly in Brazil, whose health system, centered on the promotion actions related to Attention, proposes the free distribution of medicine for various diseases. The expenditures could be probably avoided with the inclusion of physical activity programs which are been considered strategic for the prevention and for the control of various diseases in relation to chronic diseases. The increase of the levels of physical activity of the population contribute to a great deal of economy to the health system and studies of population estimates show that reductions in the prevalence of physical inactivity and/or sedentary lifestyle are directly related in a reduction in health costs.<sup>[13]</sup>

In developed countries, the use of such services among people aged  $\geq 65$  years is three to four times greater than their proportional size in the population. This is a reflection of the increased prevalence of various diseases and physical disabilities among the aged. In Brazil, the ratio between the proportional cost of public hospital admissions and the proportional size of the aged population increases progressively with age: 2.3; 3.4 and 4.3 in the age groups of 60-69, 70-79 and  $\geq 80$  years of age, respectively. Considering that around 50% of the aged have a personal income of  $\leq 1$  minimum wage (IBGE, 1998), the average expenditure per month

with medication commits approximately one quarter of the income (23%) of half of the Brazilian aged population.<sup>[14]</sup>

As physical exercise is beneficial in all spheres of human experience, it is necessary to develop public policies aimed at encouraging and promoting regular practice in the age group considered as old age. The regular practice of physical activity can interfere positively with the reduction of the use of medicine in the aged. Physical activity influences the prevention, protection, promotion, and rehabilitation of health. It is up to health professionals interested in preventing and minimizing the effects of aging to create strategies that allow the participation of the aged in groups of activities, thereby contributing to the improvement of the quality of life, independence, autonomy, and participation.<sup>[4,5]</sup>

## Discussion

With the population growth of the aged in Brazil, the model of the service organization and health care practices has been reorienting them in the recognition that the aged represent a challenge for public policies. In terms of health policy, this recognition is focused on care and attention to this age group since its physical and biological characteristics and its way of living in society have repercussions on the multidimensionality of its health. It is also necessary that therapy takes a different tack and that drug prescriptions are been restricted in extremely necessary cases.

In this sense, medicine must turn to the vision of the human being as a whole and not only of the disease in isolation, as the issue of aging requires an interdisciplinary approach. It is also necessary to seek the rational use of medicine with the awareness of the professionals about their commitment to health-giving a stop to force the sale in pharmacies.<sup>[3]</sup> It is up to the public health managers to stimulate and promote the rational use of medicine through studies that allow the diagnosis and qualification of the use of medicine in the SUS.

The National Medicine Policy establishes as essential objective the availability of medicine to the population according to criteria of efficacy, safety, and quality and in accordance with the principles of rational use. The process of population aging, self-medication, and alteration of the epidemiological profile, for example arising from emerging diseases, constitute the main arguments that justify this policy. This means that therapy should evolve as early as possible to the aged, where the issue of medicine is not been treated as a care component, allowing the logic of simple supply to be overcome by that of patient care.<sup>[3]</sup>

Regular physical activity is essential for healthy aging, contributing to the prevention and control of chronic diseases in this population. It is necessary to invest in strategies aimed at reducing physical inactivity, thus contributing to the reduction of SUS expenditures and the quality of life of the population. Improvements at the

national level could be achieved if physical activity were been offered more consistently to the Brazilian population. The greater participation of professionals in the SUS, leading to an increase in the number of programs to promote physical activity and a greater implementation of successful strategies are initiatives that can be effective to concretize and sensitize the population on the importance of this behavior.<sup>[15]</sup>

## Conclusions

The prevalence of physical activity counseling at basic health units is low regardless of the region or the care model. They are usually the gateway to the health system. Therefore, there should be integrated action among the different areas of health knowledge, in order to benefit the population and promote significant changes towards a healthy lifestyle.

It is necessary to increase the participation of managers, professionals, and population, in order to increase the prevalence of educational counseling related to the practice of physical activity. The participation of health professionals with specific knowledge in this area, as a strategy to qualify both the professional group of the basic health unit and the educational orientation itself in this area of knowledge, would be appropriate, since physical activity is an important strategy with the great potential to promote health and quality aging.<sup>[2]</sup>

## Financial support and sponsorship

Nil.

## Conflict of interest

The authors declare no conflict of interest.

**Received:** 29 Sep 18 **Accepted:** 19 Jun 19

**Published:** 25 Sep 19

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