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Physical activity in older people – Case studies of how to make change happen

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A B S T R A C T

Enhancing physical activity (PA) is recognized as a powerful intervention for the prevention and treatment of chronic diseases and disability in older people. Furthermore, there is an agreement that increased PA in daily life is a key determinant of active and healthy ageing and should be recommended for frail and sedentary older people. Unfortunately, relatively few older people engage in regular PA or stay active in the long term. This article summarizes and discusses PA recommendations for older adults without focussing on specific diseases, presents the main barriers and facilitators for increasing PA levels, and considers the implementation of these recommendations on the basis of the existing evidence. Finally, we provide case studies of PA programmes for older people that were successfully implemented and highlight the current lessons learned.
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Introduction

Ageing of the population is one of the most significant societal transformations of the 21st century. An estimated 8.5% (617.1 million) of the total 7.3 billion people worldwide were aged 65 and older in

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2015, but this is projected to grow to 12.0% (1 billion) by 2030 and 16.7% (1.6 billion) by 2050 [1]. Nearly 80% of the world's older population will live in less developed regions in 2050 [2].

Although people are living longer, they are not necessarily healthier than before. According to the Global Burden of Disease Study, nearly a quarter (23%) of the overall burden of illness is in people aged over 60 (574 million of the 2490 million disability-adjusted life years [DALYs]; where a DALY expresses the burden of disease as the sum of years of life lost due to dying early and years lost due to disability. Much of this burden is attributable to long-term illnesses caused by diseases, such as cardiovascular disease (30.3%), cancer (15.1%), chronic respiratory diseases (9.5%), musculoskeletal diseases (7.5%) (such as arthritis and osteoporosis), and mental and neurological disorders (6.6%) [3]. With longer lifespans, the number of years lived with ill health or disability due to non-communicable diseases (NCDs) and frailty is increasing, and there is currently an estimated average 9 years of healthy life lost globally due to disability [4].

Being physically active is one of the key lifestyle behaviours for health; and physical inactivity is a major contributor to mortality and morbidity in older age. Not only is it associated with cancer [5] cardiovascular disease [6], obesity, and diabetes [7], but physical inactivity itself is a risk factor for all causes of mortality [8]. Furthermore, it is associated with loss of muscle mass and bone density, decrease in balance ability, decrease in muscle strength and endurance, and decline in functional performance, all of which are associated with frailty and loss of independence in older age [9]. The global healthcare costs attributed to physical inactivity for 5 major NCDs (breast and colon cancers, coronary heart disease, stroke, and diabetes) across 142 countries was calculated to be $53,8 billion [10]. The effects of physical inactivity on musculoskeletal health are also striking, since fragility fracture is a common end point of declining physical function, sarcopenia, and osteoporosis, all of which are strongly associated with physical inactivity. The cost of fragility fracture is similarly increasing worldwide with 2 million DALYs lost annually in Europe alone [11].

Enhancing physical activity (PA) is recognized as a powerful intervention for the prevention and treatment of chronic diseases and disability in older people [12]. Not only is PA a key recommendation for those robust and active older people, but particularly for those with chronic diseases and disabilities or for those who are already frail or near frail [12,13]. Much of the burden due to chronic diseases and related functional impairments and activity limitations is amenable to prevention or treatment with exercise [14]. Furthermore, there is an agreement that increased PA in daily life is a key determinant of active and healthy ageing [15] and should be recommended for frail and sedentary older people [16]. Unfortunately, relatively few older people engage in regular PA or stay active in the long term [14].

Despite the recognized benefits of PA, interventions for increasing PA are generally overlooked by clinical practitioners, frequently in favour of the pharmacologic intervention [17,18]. Amongst other factors, the lack of information regarding the existing evidence and how to implement that evidence in everyday practice may contribute to the under-prescription of exercise and to a more active approach to enhance PA by practitioners [18].

This article summarizes and discusses the PA recommendations for older adults without focussing on specific diseases, present the main barriers and facilitators for increasing PA levels and considers the implementation of these recommendations based on the existing evidence. Finally, we provide case studies of PA programmes for older people that were successfully implemented and highlight the current lessons learned.

The overall aim of this article is to update the recommendations of PA in older adults in general and discuss how to implement them from the clinical practitioner perspective.

Physical activity definition and recommendations

PA is an overarching term including ‘exercise’, which may involve structured or planned programmes of specific physical tasks and movements and incidental day-to-day PA, such as housework and gardening. PA includes leisure-time PA, occupational PA, household PA, and transportation PA. People can be physically active without doing exercise; however, greater health benefits are achievable only with the increment of regular exercise [19]. Metabolic equivalents (METs) are commonly used to express the intensity of physical activities. A MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly and is

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