

Editorial

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Prescribing Exercise as an Alternative Treatment for Ageing Populations of the 21st Century

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Life expectancy has significantly increased over the past few decades. Since 1990, life expectancy at birth has increased by 6 years globally, and populations live on average 20 years longer than 50 years ago according to the latest WHO report on ageing.¹ The retirement age, currently average at 65 years, and is expected to rise to almost 70 years by 2060 in many developed countries (EU report, 2015). For example, the UK legislation is expected to rise the pension age to 68 by 2046.^{1,2}

However, the positive income effects of governments' increase in retirement age have also had negative effects on increasing government health care expenditures.³ For example, healthcare spent in USA has recently been reported as \$4.6 trillion.⁴ Chronic diseases in the UK cost the NHS £542 million for cardiovascular disease (CVD) and £158 million for type-II diabetes.⁵ Therefore, implementing effective preventative measures for healthy ageing should consider cost-effective strategies, especially those involving drug-free and involve reduced number of hospital visits.

The process of ageing represents physical, psychological and social change, which makes the risks associated with ageing multi-faceted.⁶ Age-related deleterious changes include physiological decline in cardiovascular system, a psychological cognitive decline, social isolation, and reduced quality of life. These effects also prompt manifestation of several chronic diseases including cardiovascular disease, hypertension, diabetes and cancer, which are major causes of mortality.

Given that physical inactivity is now an established risk factor for ageing and age-related chronic diseases,² the role of prescribing structured exercise or unstructured physical activity for older populations has become increasingly important to reverse those risks. Compared with sedentary or physically inactive older population, those who exercise regularly enjoy an improved quality of life and reduced health risks. However, despite the incontrovertible evidence from observational and randomised controlled trials about the exercise role as primary and secondary prevention of CVD and mortality risks, prescribing exercise as a preventative treatment is still under-utilised by health systems across the world.

In comparison to a drug treatment, exercise is a less costly and a more effective treatment for several age-related health conditions including diabetes, cancer, arthritis, and cardiorespiratory diseases.^{7,9} The effectiveness of exercise interventions *versus* drug interventions on mortality risks has been recently compared in a meta-epidemiological study which included 305 randomised controlled trials involving almost 0.5 million participants.¹⁰ The findings reported either better effectiveness or no difference for exercise interventions compared with drug treatments in three out of four mortality outcomes, which included secondary prevention of coronary heart disease, rehabilitation of stroke, treatment of heart failure, and prevention of diabetes.¹⁰ While the case for recommending physical activity as a preventative therapy for all ages is essential, the prescription of physical activity as a treatment in high-risk older populations should be further implemented.

Working with clinical high-risk populations should include prescribing a well designed and appropriately supervised exercise interventions that include components of health-related physical fitness such as cardiovascular fitness, musculoskeletal fitness, body composition and metabolism.^{11,12} There has never been a better understanding of how to prescribe exercise effectively in terms of frequency, intensity, type and duration for a variety of clinical populations including high-risk obese, older and those diagnosed with a chronic disease. Appropriate health policies should support primary care specialists to include evidence-based physical activity in their prescription plan, particularly in older and high-risk populations.

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