Creative Review
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Obesity in an ageing population: a proposed multidisciplinary intervention model for supporting cognitive performance and physical function in obese seniors

Abstract

Obesity in ageing adults is a precursor for increased risk of various diseases and chronic health conditions including cognitive impairment and poorer mobility thereby threatening quality of life and independent living for many seniors. Fortunately, weight loss and weight management interventions have been recognized as a means to help improve both physical function and cognition in obese older persons. Based on the literature, we propose that programs and services embodying a multidisciplinary team who focus on education and training related to physical activity, diet, and pharmaceuticals be offered to optimally support weight loss, improve mobility and enhance cognition for this population. Future intervention research is warranted to test this multidisciplinary approach in order to help develop suitable interventions and preventative measures to reduce or delay decline in mobility and the onset of cognitive impairment and dementia in obese seniors.

Keywords: obesity, older adults, cognitive performance, physical function

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Introduction

Older adults (>65) are the fastest growing age group in North America.[1] In fact, the latest Canadian census[2] revealed that for the first time, seniors over the age of 65 exceed the number of children under the age of 15 and this shift in demographics is projected to radically accelerate over the next two decades.[3] While growth in older adult populations endures, public health and public policy rely on the health status of seniors to inform and determine their current and future service needs. The current brief review summarizes the risks associated with obesity in older adults and then diverts its focus to the cognitive and physical consequences. We also outline three key recommendations to consider for future prevention and intervention programs that explicitly target obese and overweight seniors.

By and large, obesity remains a primary health concern given that close to 70% of American adults are obese or overweight.[4,5] Consequently, the prevalence of obesity increases the risk of additional epidemic developments. For instance, obesity in older adults is well-documented as a precursor for increased risk of various diseases and chronic health conditions such as cardiovascular disease, stroke, hypertension, type II diabetes, osteoporosis, some cancers, sleep apnea, anxiety and depression.[6,7] In addition, obesity is a principal cause of disability in older adults.[8,9] Changes in cognition and mobility are deemed the two most common and intertwined complexities faced by seniors[10,11] and although these functions tend to gradually decline with the process of ageing, some studies reveal that they may deteriorate faster in older obese persons.[12] According to the literature, obesity is indeed associated with poorer mobility, stability and gait movement among older adults.[13] Obesity can also contribute to cognitive deficits including diminished memory, decreased problem solving abilities and impaired decision making.[14] Midlife obesity is also a risk factor for dementia in later years.[15] Overall, evidence suggests that obesity can cause severe and widespread health problems among the rapidly ageing population thereby resulting in negative consequences on quality of life and independent living among seniors.

With the considerable growth rate and substantial increase in obesity among this population, a significant decline in cognitive performance and physical mobility will likely bring about high demands for general health care, home care and continuing care particularly in Canada. These adverse effects instigated by obesity parameters (e.g., body mass index (BMI), percentage of body fat, waist circumference) are therefore more relevant than ever as the population ages. Fortunately, intervention trials have been recognized as a means to help improve physical function[16,17] and cognition[18] in obese older persons.

Villareal et al.,[16] found that after a 52-week intervention, both physical activity and diet improved obese older adults' physical function compared to either the physical activity or diet intervention alone. In addition, a recent systematic review and meta-analysis[19] revealed that the most effective weight loss and weight management programs for obese individuals were those that combined physical activity and diet strategies. Furthermore, a review by Kramer & Erickson[20] which comprised of epidemiological observational studies and randomized human clinical interventions found that, in general, physical activity enhanced cognition and protected against the development of neurodegenerative diseases in obese older adults. However, they also noted that investigations of the benefits of physical activity programs to help reverse cognitive degeneration in obese older adults are still underdeveloped. Finally, geriatric research suggests that regular medication reviews by a health care professional may also aid with weight loss and improvements in cognition and physical function in obese older adults.[21] For example, some medications used by ageing adults are known to have adverse effects including weight gain (e.g.,

antipsychotics) and changes in cognition and behaviour (e.g., pain relief medication), all of which may impede their ability to participate in programs that focus on weight loss and weight management. On the other hand, some drugs can increase adherence to behaviour change and may improve physical functioning.[21] Hence, medication reconciliation may help practitioners recognize and understand the influence of drugs and drug combinations in obese seniors that impact the efficacy of weight intervention programs.

Overall, obesity intervention and prevention programs are receiving a lot of attention and continue to be developed and tested as the need arises. Based on the current review of obesity and geriatric literatures, we emphasize three key components as the minimal requirement to optimally address the issues of cognitive decline and poor physical function in obese and overweight ageing adults. We propose that a multidisciplinary team with a focus on education and training related to physical activity, diet and pharmaceuticals would be ideal. Given that older adults are the least physically active group[22] and are more likely to encounter additional complications from medications, weight loss and weight management services should examine the effects of a multifactorial framework in which a variety of lifestyle factors or pharmacological treatments are measured in conjunction with physical activity and diet. Professionals carrying out such programs and interventions often exclude or simply overlook the role of medication on weight and lifestyle. Therefore, the Canadian Institute for Health Information[23] recommends that an expert or pharmacist be integrated into the team of professionals to address this salient and frequently contributing factor. Future intervention research is warranted to test this proposed multidisciplinary approach to help researchers and clinicians develop suitable interventions and preventative measures to reduce, or at the very least, delay decline in mobility and the onset of cognitive impairment and dementia in obese seniors thus ultimately prolonging independent living and quality of life.

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Conflict of interest

The author declares no conflict of interest.

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