Research Article: Endocrinology and Disorders

Title: The relationship between physical activity, women's overall health, and well-being

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Abstract:

Background:

This review article review suggests that there are many positive effects of physical activity and exercise on women's overall health. It is widely acknowledged that regular exercise can have a beneficial impact on a number of areas, including cardiovascular health, weight management, bone health, mental well-being, cancer risk and longevity.

Materials and Methods:

In order to gain a comprehensive understanding of the topic, a literature search was conducted using various databases and keywords related to physical activity, longevity, women's health, quality of life, healthy aging, and obesity. The search was limited to peer-reviewed articles published in English between 1994 and 2024. Animal model studies were excluded to focus on human research. The criteria for inclusion in this review were that the studies examined the association between weight control management and overall healthy aging, were published in a peer-reviewed journal, and were written in English. After careful consideration, a total of 38 studies were selected for inclusion.

Results:

Regular exercise is of great importance for the prevention and treatment of overweight and obesity, as well as for the management of numerous chronic diseases that have become prevalent in recent times. Furthermore, it plays a pivotal role in maintaining regular metabolic processes. Integrating regular physical activity into one's daily life, in conjunction with a natural and balanced diet, can facilitate the maintenance of a healthy lifestyle and the maintenance and improvement of overall health. It would therefore be beneficial for women of all ages to consider integrating physical activity into their daily routines to facilitate the enjoyment of these advantages and contribute to the development of a healthier lifestyle.

Conclusion:

The scientific evidence is compelling in supporting the promotion of regular physical activity as a fundamental aspect of women's health. It is imperative that healthcare providers and policymakers prioritize initiatives that encourage and facilitate physical activity among women of all ages. By doing so, we can move toward a future where a greater proportion of women can enjoy the numerous health benefits of an active lifestyle, which will lead to improved quality of life and increased longevity.

Keywords: physical activity; longevity; women's health; quality of life; healthy aging; obesity

Introduction:

Physical activity and exercise are integral components of maintaining overall health and well-being for women. Engaging in regular physical activity not only aids in weight management but also significantly enhances cardiovascular health, mitigates the risk of chronic diseases, improves mental well-being, and promotes longevity Brown, Burton & Rowan, 2007; Eyler et al., 1998). This systematic literature review aims to investigate the multifaceted effects of physical activity and exercise on women's health by examining a variety of research studies in this domain.

It is well documented that regular physical activity has a beneficial effect on cardiovascular health in women. It is widely accepted that aerobic exercise, including resistance training, especially brisk walking, running, and cycling, has the potential to strengthen the heart muscle, improve blood circulation, reduce the risk of heart disease, and be an effective method of weight control in the prevention and treatment of obesity (Hu et al., 2001; Myers et al., 2002; Oral et al., 2023). Research consistently indicates that women who engage in regular physical activity exhibit a significantly reduced risk of developing hypertension, stroke, and heart attacks compared to their sedentary counterparts (Haapanen et al., 1997; Oguma & Shinoda-Tagawa, 2004). Furthermore, exercise positively influences lipid profiles by increasing high-density lipoprotein (HDL) cholesterol, often referred to as "good" cholesterol, while simultaneously reducing low-density lipoprotein (LDL) cholesterol, known as "bad" cholesterol (Chandra et al., 2014).

It is widely acknowledged that physical activity and exercise play an important role in maintaining a healthy weight in women. In addition to burning calories, regular exercise has been shown to positively affect metabolic processes and have beneficial effects on the cardiometabolic and immune systems. In light of these findings, it seems reasonable to suggest that physical activity may contribute to more effective weight management and metabolic improvements, potentially providing critical support for longevity, quality of life, and healthy aging processes in women. (Donnelly et al., 2009; Williams et al., 2015; Rezaee et al., 2022). It would be advantageous for women to implement a balanced exercise regimen that incorporates both aerobic activities, such as walking and cycling, and strength training, specifically anaerobic exercises, in order to achieve their desired weight and prevent weight gain over time (Oral et al., 2024). Furthermore, physical activity contributes to improved body composition by reducing fat mass and increasing lean muscle mass, which positively impacts overall physical appearance and self-esteem (Aldhahi et al.,2022; Sattar, Khan & Iqbal, 2020).

In addition to physical health benefits, regular exercise is associated with improved mental well-being among women. Studies indicate that physical activity can alleviate symptoms of anxiety and depression, promoting a more positive mood and overall psychological resilience (Chu et al., 2009; Mandolesi, et al., 2018; Singh et al., 2023; Rezaee, et al., 2022). The release of endorphins during exercise contributes to feelings of happiness and relaxation, which can be especially beneficial for women managing stress or facing life challenges (Klonoff, Annechild & Landrine, 1994; Sran et al., 2021).

Materials and Methods:

A comprehensive search of the literature was undertaken using a range of databases, including the US National Library of Medicine (PubMed), Scopus, EBSCO, MEDLINE, DRJI, (Directory of Research Journal Indexing), Embase, Web of Science, Google Scholar, and SportDiscus. In order to gain a comprehensive understanding of the subject matter, a number of keywords were selected, including ‘’physical activity’’, ‘’longevity’’, ‘’women's health’’, ‘’quality of life’’, ‘’healthy aging’’, and ‘’obesity’’. In addition, relevant literature was also sourced from searching for articles in reference lists derived from the data searches. The search was limited to peer-reviewed articles published in English between 1994 and 2024, to focus the results. To gain a comprehensive understanding of the relationship between metabolic health,

obesity, longevity, and various systemic conditions, studies that involved animal models were excluded from the research. To be included in this review, studies had to meet some criteria. Firstly, they had to examine the relationship between physical activity and women's overall health and well-being. Secondly, they had to have been published in a peer-reviewed journal. Thirdly, they had to be available in English. After careful consideration, a total of 38 studies were selected for inclusion in this review.

Results and Discussion:

The role of exercise in weight management is well-documented. Donnelly et al. (2013) and Fogelholm and Kukkonen-Harjula (2000) both underscore the importance of regular physical activity in preventing weight gain and aiding in weight loss. The overall impression that can be gathered from these studies is that a training program which incorporates not only aerobic but also a combination of aerobic and resistance training might be an effective approach for women seeking to maintain a healthy weight. Such a program could potentially contribute to reducing the risk of developing obesity-related conditions such as obesity, type 2 diabetes, cardiovascular disease and hypercholesterolemia (Oral, Tatlibal & Stavropoulou, 2021).

Exercise is crucial for cardiovascular health, as it helps improve heart function, reduce blood pressure, and lower cholesterol levels. Kokkinos and Myers (2010) provide evidence that regular physical activity can lead to significant improvements in cardiovascular outcomes, reducing the risk of heart disease. Warburton et al. (2006) also highlight the broad spectrum of cardiovascular benefits associated with regular exercise, emphasizing its role in enhancing overall cardiovascular health.

One of the critical areas in which exercise plays a significant role is in the prevention and management of osteoporosis. In a 2009 study, Schmitt, Schmitt and Dören emphasized the efficacy of weight-bearing and resistance exercises in increasing bone mineral density (BMD), thereby reducing the risk of fractures. Similarly, Singh (2015) and Manaye et al. (2023) underscored the importance of regular physical activity, particularly high-impact and resistance training, for maintaining bone health in women, particularly postmenopausal women who are at an elevated risk for osteoporosis.

Physical activity has also been linked to a reduced risk of certain cancers. McTiernan et al. (2019). conducted a research study, concluding that regular exercise is associated with a lower risk of breast cancer. Lynch, Neilson and Friedenreich, (2011) further support this finding, indicating that physical activity interventions can play a preventive role in various types of cancer, likely due to its effects on hormone regulation and immune function.

The social aspects of physical activity are also important for women's health. Hawkley, Thisted and Cacioppo (2009) and Tsuji et al. (2020) discuss how engaging in group exercises or sports can enhance social interactions, reduce feelings of isolation, and improve overall quality of life. These social benefits are particularly relevant for women, who may experience unique social and psychological challenges.

Exercise has been shown to have substantial benefits for mental health, including the management of clinical depression. Craft and Perna (2004) and Rebar et al. (2015). provide evidence that regular physical activity interventions can significantly reduce symptoms of depression, offering a non-pharmacological treatment option that can be particularly beneficial for women. The psychological benefits of exercise also extend to improved self-esteem and overall mental well-being, as demonstrated by Haugen, Ommundsen, and Seiler (2013). Their findings indicated a positive correlation between physical activity interventions and self-esteem in women.

In light of the substantial contributions that physical activity makes to overall wellness, it would be advantageous to have a comprehensive framework in place to support the implementation of effective physical activity programs for women. This framework should take into account the specific approaches that are required to account for individual preferences, as well as the

barriers and facilitators that may influence the success of such programs. When designing effective exercise programs for women, it would be beneficial to consider this framework in order to maximize adherence and benefits (Larsen et al., 2015; Rebar et al., 2016).

Conclusion:

There is increasing evidence that regular physical activity, especially aerobic exercise, can have a positive effect on cardiovascular health in women. Scientific evidence has been shown in research studies that activities such as brisk walking, running, or cycling can help strengthen the heart muscle, improve blood flow, and reduce the risk of heart disease. The fact that there is a correlation between being physically active and having a lower risk of developing high blood pressure, stroke, or heart attack is an important gain for women's overall health and healthy aging. It is also thought that exercise can help improve cholesterol levels by increasing the amount of good cholesterol (HDL) and decreasing the amount of bad cholesterol (LDL). It is also stated that physical activity can play an important role in weight management and is an effective method for preventing obesity. It is thought that regular exercise can help burn calories, build muscle, and speed up metabolism, potentially helping with weight loss and maintenance. It may be beneficial for women to consider combining aerobic exercise with strength training to reach their desired weight and prevent weight gain over time. It is thought that women may be more prone to developing osteoporosis and in this respect, it is possible that participating in weight-bearing exercises may help to improve bone density and reduce the risk of this condition. Considering starting these exercises at a younger age may be beneficial for the health of the skeletal system in later life.

There seems to be increasing evidence that regular physical activity interventions can have a positive effect on mental health, including reducing symptoms of depression, anxiety, and stress. Group exercise activities may also have the potential to promote social interaction and improve mental well-being, as exercise can help stimulate the release of endorphins, which can contribute to a better mood. It is also suggested that exercise may help improve body composition by reducing fat mass and increasing lean muscle mass, which may lead to improvements in physical appearance and self-esteem.

There is some significant evidence from clinical research studies to suggest that regular exercise, particularly at moderate to vigorous intensity, may have the potential to reduce the risk of certain types of cancer in women, including breast, colon, and endometrial cancer. Although the exact mechanisms behind this protective effect are not fully understood, it is believed that exercise helps regulate hormone levels, reduce inflammation, and improve immune function, all of which contribute to cancer prevention.

It has also been suggested that physical activity may contribute to a longer life expectancy in women; physically active women may have a lower risk of premature death compared to those who are sedentary. In addition to these benefits, physical activity may also help with weight management and cardiovascular health, reduce the risk of chronic disease, and increase longevity. It is thought that regular exercise may help reduce the risk of chronic diseases, such as heart disease, stroke, diabetes, and some cancers, which are leading causes of death, and it may be associated with promoting healthy aging because exercise helps maintain muscle strength, flexibility, and cognitive function. All of these positive health benefits of regular physical activity interventions may help women maintain an active and independent lifestyle as they age, increasing their chances of longevity.

In conclusion, there is a great deal of evidence to suggest that physical activity can have a positive impact on women's health. It would be remiss of us not to mention the numerous benefits of regular exercise. These include improvements to cardiovascular health and weight management, as well as enhancements to bone density and mental well-being. It would be beneficial for women to consider integrating various forms of physical activity into their daily routines, to maximize health outcomes and promote a higher quality of life.

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