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Influence of physical activity on self-esteem in elderly population narrative review

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Abstract

Introduction: Older adults show lower physical activity. These changes altogether promote the development of overweight, obesity, and other chronic diseases. These factors substantially influence the quality of life and self-esteem of older adults. This study explores the relationship between physical activity and self-esteem in the elderly population, aiming to address the challenges associated with declining self-esteem in older adults. With the aging population projected to double by 2050, maintaining activities of daily living and enhancing mental and emotional health become crucial.

Methods: The study conducted a comprehensive literature review focusing on studies published between 2003 and 2023 that investigated the impact of physical activity on self-esteem in individuals aged 60 years and above. PubMed, Scopus, and Google Scholar was searched. The search terms included variations of "physical activity," "self-esteem," "elderly," and related terms.

Results: The research underscores the positive influence of physical activity interventions on self-esteem in older adults. By highlighting the significance of maintaining or enhancing self-esteem through regular physical activity, the study contributes to promoting overall well-being and quality of life for the elderly population. Addressing barriers such as health conditions, psychological obstacles, lack of motivation, and environmental factors is essential to encourage older adults to engage in physical activity for improved self-esteem and holistic wellness.

Conclusion: As a conclusion, physical activity is very necessary in old age, it can significantly increase self-esteem, along with mental health. Therefore, with the increase in the world's aging population, attention to policies to increase the physical activity of the elderly becomes very necessary.

Introduction

The population of adults over 65 is rapidly increasing and is expected to double by 2050 (1). However, these later years are often characterized by illness and other medical conditions. It is becoming increasingly important to find and implement low-cost, widely available methods of maintaining daily activities, improving physical function, and protecting mental and emotional health from deterioration. Self-esteem is the overall affective evaluation of one's worth or value and is a crucial aspect of a positive attitude toward life (2, 3). After individuals reach old age, their self-esteem tends to decline significantly, which is believed to be a result of various factors associated with the aging process, such as deteriorating health, changing social roles and dynamics, loss of physical function, the onset of cognitive impairment, and other related transitions (4, 5). Orth et al. (5) have demonstrated that self-esteem becomes less stable and more variable as people age from midlife to late life. Therefore, it is crucial to maintain or enhance levels of self-esteem to protect against intermittent changes in esteem. According to the researchers (6), high self-esteem is related to confidence, and the body can protect against mental health risks. To ensure an appropriate level of self-assessment, it is important to take care of one's bodily sphere, which includes maintaining a proper diet and engaging in physical activity (6). Self-esteem is an attitude towards oneself that tends to remain stable over time, and it can be influenced by cultural, ethnic, and social factors (7). Previous research has found that social status, social relationships, professional situations, and lifestyle can all impact one's self-esteem (8, 9). Engaging in physical activity is an inexpensive behavior that seniors can adopt to improve their overall health and well-being (10). This activity has been found to be consistently linked to positive changes in both physical and mental health in older adults (11).

Previous research has demonstrated that Previous research has demonstrated that physical activity plays a crucial role in improving older adults' self-esteem (12-20). A systematic review conducted by Park examined randomized clinical trials and found that physical activity interventions can potentially boost self-esteem in the elderly population (21). However, a comprehensive study has yet to be conducted to investigate this relationship across various study designs. Hence, our objective is to conduct a narrative review to provide a more thorough understanding of this association.

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Methods

Literature Search and Selection

We utilized electronic databases, including PubMed, Scopus, and Google Scholar, to thoroughly search pertinent literature. The search phrases consisted of various forms of "physical activity," "self-esteem," "elderly," and similar words. Our search was restricted to studies published in English between 2003 and 2023.

Inclusion Criteria

The criteria for inclusion in our study were as follows:
Studies that examined the link between physical activity and self-esteem in older adults.
Participants in the studies needed to be 60 years of age or older.
The studies had to use quantitative research designs like cross-sectional, longitudinal, or intervention studies.
The studies required to report relevant outcomes related to self-esteem.

Exclusion Criteria

We did not include studies that emphasized other psychological constructs instead of self-esteem. We excluded studies that involved participants under the age of 60. We also did not consider studies that were qualitative in nature, such as case studies or qualitative interviews.

Data Extraction:

Relevant data from the selected studies was extracted by two independent reviewers. The data included study design, sample characteristics, measures of physical activity, self-esteem assessment tools, and key findings. In cases of discrepancies, the reviewers discussed and came to a consensus.

Results

Self-esteem

Numerous investigations have been carried out to explore the impacts of physical activity interventions on levels of self-esteem. Most of these studies have utilized the Rosenberg Self-Esteem Scale tool to determine self-esteem levels. The Rosenberg Self-Esteem Scale (RSE) is a widely used self-report instrument designed to assess an individual's self-esteem. Morris Rosenberg developed this 10-item scale to evaluate how positively or negatively an individual perceives themselves (22). Another tool that can be used to evaluate self-esteem is the Self-concept Scale (ASSEI). Self-concept is a term that refers to how we perceive ourselves, assess our appearance, thoughts, and behaviors, and comprehend our identity both as individuals and in comparison to others. It encompasses a comprehensive view of the self, including attributes, self-worth, and ideal self-image (23).

Physical activity

Most previous intervention reports have shown that the most common type of physical activity is a combination of strength, balance, and flexibility exercises.

A combination of strength, balance, and flexibility exercises is beneficial for elderly individuals for several reasons. The decline in muscle strength that comes with aging can affect mobility and independence. Exercises that target strength can help maintain muscle mass and function, making it easier for seniors to perform daily activities (24, 25).

Impaired balance is common among older people and can increase the risk of falls. Balance exercises can improve stability and reduce the likelihood of falls, making seniors safer and enhancing their overall quality of life (26).

Reduced flexibility can limit movement and increase the risk of injuries. Flexibility exercises can help maintain joint mobility, allowing seniors to move more freely and comfortably (27, 28).

Benefits of Physical Activity on Self-Esteem in the Elderly

Improved Self-Perception and Body Image

As people get older, their body weight and metabolism can change, which may cause them to feel dissatisfied with their body image and have lower self-esteem. Older adults can gain weight, lose muscle mass, and experience metabolic issues due to reduced exercise and increased sedentary behavior. However, participating in physical activity programs has increased body image satisfaction, self-esteem, and overall well-being in adults (29).

Increased Self-Confidence and Self-Efficacy

Research has shown that self-efficacy in engaging in physical activity is positively associated with overcoming barriers and maintaining a healthy body mass index (BMI) in elderly individuals with diabetes (30). Additionally, self-efficacy has been found to impact knee strength and physical function among individuals with knee osteoarthritis. Confidence in performing tasks despite discomfort plays a significant role in managing symptoms and improving outcomes for those affected by this condition (31).

Sense of Accomplishment and Mastery

A study was conducted to investigate the connection between fear of falling and activity restriction in older adults and psychological, physical, and sensory factors. The study revealed that fear of falling and activity restriction were associated with personal mastery and physical performance factors like chair-standing performance (32).

Another study highlighted that the elderly can experience a sense of mastery, self-persuasion, and a reduction in negative emotional states through physical exercise and activity (33).

Psychological Well-Being and Emotional Health

In 2017, research was carried out in Ahvaz City to examine the connection between emotional intelligence, physical activity, and psychological well-being among the elderly. The study's findings revealed a noteworthy association between emotional intelligence and physical activity, emotional intelligence and psychological well-being, and physical activity and psychological well-being. The research showed a correlation between the three factors (34).

Mechanisms Underlying the Relationship

Neurobiological Effects of Exercise on Mood and Well-Being

Voluntary engagement in physical activity and exercise training can positively impact the brain's capacity for change and adaptation by facilitating processes that promote neuro-regeneration, neuroadaptation, and neuroprotection. Neurotrophic factors may play a role in mediating some of these processes. Regular exercise and motor skill training enhance certain cognitive functions, such as executive functions, and motor learning in the spinal cord (35). Consequently, physical activity has the potential to affect the brain's functions, including stress, anxiety, depression, and self-esteem (36, 37).

Social Interaction and Support through Physical Activity

Engaging in physical activities in a group setting can help the elderly to socialize and connect with others, which can help reduce feelings of loneliness and isolation (38). Additionally, seniors may feel more motivated to keep up with their exercise routine when exercising with others, leading to greater adherence (39).

Cognitive Benefits of Exercise on Self-Perception

Research conducted on elderly individuals has revealed that physical activity specifically affects executive functions. Executive function, associated with the frontal lobe, refers to the processes that control, direct, and coordinate other lower cognitive processes and goal-directed behaviors. Tasks requiring executive function include scheduling, inhibition, planning, working memory, problem-solving, and task switching (40). Another study found that closed-skilled physical activity was linked to better visuospatial function and selective attention. Open-skilled physical activity was associated with better cognitive flexibility function and inhibition (41).

Factors Influencing the Relationship

Stereotypical beliefs about physical aging can affect how much older adults engage in moderate-intensity activities (42). Physical activity tends to be less intense and highly variable in older individuals. Recalling such activity patterns can be problematic in older people, resulting in imprecise estimates (43).

Gender Differences in Self-Esteem and Exercise Participation

The importance of self-esteem cannot be overstated when it comes to maintaining psychological well-being. However, it has been observed that levels of self-esteem can differ significantly between males and females (44). A study on adolescents in the UK revealed that girls who didn't participate in sports had lower levels of self-esteem. It was concluded that considering gender-specific traits was crucial when analyzing the connection between body mass index (BMI), sports participation, and self-esteem in young people (45). This issue of varying self-esteem levels based on gender could also potentially exist in the elderly population.

A research study conducted on individuals in their sixties found that the top three motivating factors for both genders were to avoid health problems, to feel good, and to shed weight. However, women were more inclined than men to be driven by enhancing their appearance, spending time with others, socializing with friends, and losing weight. Regarding context preferences, both genders preferred nearby, affordable activities that could be carried out alone. However, women were more likely than men to choose gender-specific, supervised activities with people of the same age and at a fixed time. Women were less likely than men to prefer competitive, strenuous activities that required skill and practice and were conducted outdoors (46).

Socioeconomic Status and Access to Physical Activity Resources

Limited research has been conducted on the connection between socioeconomic status (SES) and access to physical activity resources among the elderly. However, previous studies have demonstrated that SES can influence physical activity levels in older adults. In a survey conducted by the OUTDOOR ACTIVE project, it was discovered that there are correlations between SES and physical activity in elderly individuals. Those with higher SES generally have better access to resources like fitness facilities, recreational programs, and parks, which can positively impact their physical activity levels (47).

Challenges and Barriers to Promoting Physical Activity in the Elderly

Health Conditions and Functional Limitations

It can be challenging for older people to participate in physical activity due to chronic health conditions that they may have. These conditions include arthritis, osteoporosis, cardiovascular diseases, and mobility challenges (48).

Psychological Barriers to Exercise Adherence

Healthcare professionals may need more knowledge or proper training to encourage physical activity among older adults. This could result in inadequate guidance and support for this population, as stated in source (49). Moreover, personal factors such as lack of motivation, fear of injury, social isolation, and misconceptions about aging and exercise may also hinder the elderly from engaging in physical activity, based on source (50).

Environmental Factors Impacting Physical Activity Participation

The influence of built environments on physical activity behavior is crucial. The availability of cyclist infrastructure, walkability, sports facilities, and access to parks can serve as motivators or barriers for the elderly to engage in physical activity (51).

Discussion

Identifying cost-effective methods to maintain activities of daily living and enhance mental and emotional well-being is crucial in light of age-related factors that can lead to declining self-esteem among the elderly population.

Rosenberg (2), a pioneer in this field, defined self-esteem as an individual's general positive evaluation of themselves. He also noted that high self-esteem involves individuals having respect for themselves and viewing themselves as deserving of respect. Self-esteem tends to decrease as people age due to health problems, changing social roles, and cognitive changes that come with aging (52, 53). Maintaining self-esteem is critical for guarding against fluctuations in self-esteem and fostering a positive outlook on life.

Regular exercise programs have been linked with positive outcomes for older people's mental and physical health (54). According to research, engaging in physical activity can boost self-esteem, body image, self-assurance, feelings of achievement, and general psychological wellness among senior citizens (Table 1).

During our conversation, we talked about how exercise can affect mood and well-being through the brain's neurobiological changes. We focused on how physical activity can impact brain functions related to stress, anxiety, depression, and self-esteem, especially in elderly individuals (55). In addition to this, exercise can have a significant impact on shaping self-perception in older adults, thanks to the social interaction and cognitive benefits that it provides (38).

Barriers such as health issues (48), mental obstacles, absence of drive, and external factors (49) affect the promotion of physical activity among senior citizens. Overcoming these challenges is essential to motivate older adults to participate in consistent physical activity, which can lead to improved self-confidence and overall health.

Conclusion:

This research study has provided significant understanding regarding the positive influence of physical activity interventions on the self-worth of the elderly. By highlighting the significance of engaging in physical activity to maintain or improve one's self-esteem, the study enhances the older population's well-being and standard of living.

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Table 1. Different studies on effect of physical activity on self-steem

Author/ year / country	Study design	population	Physical activity	Self-esteem tool	result
Grajek (12) 2022 Poland	RCT	N= 600 women with increased body mass (BMI > 25 kg/m2)	12-week physical activity plan 3 times a week, each 45 min, included aerobic effort, resistance exercises, stretching exercises, and exercises aimed at improving balance and preventing falls	Rosenberg Self-Esteem Scale	PA increased self-esteem (P=0.002)
Awick (15) 2015 USA	RCT	N=307 Low-active, older adults	DVD-delivered exercise intervention 6 exercise sessions, one for each month of the program. Each session includes two sets of 10 to 12 exercises focused on strength, balance, and flexibility.	Rosenberg Self-Esteem Scale	PA improving domain levels of self-esteem
Gothe (16) 2011	RCT	N=179	Walking group Flexing-toning-balance	Rosenberg Self-	greater improvements were observed in the flexibility toning-

USA			group	Esteem Scale	balance group, in terms of perceived strength and attractiveness esteem, compared to the walking group.
Opdenacker (17) 2009 Belgium	RCT	N=186	endurance, strength, flexibility, and balance training	Rosenberg Self-Esteem Scale	structured group showed significant improvements in body attractiveness.
Sung (14) 2009 South Korea	RCT	N=40 women	Lower body strength (using 30-second chair test), flexibility (sit-and-reach test), and static balance (ability to balance on one leg with open and closed eyes)	Rosenberg Self-Esteem Scale	older elders receiving the intervention program demonstrated greater improvement in self-esteem than younger elders did, although there were intervention effects in both age groups.
Tsang (18) 2006 japan	RCT	N=82 with depression	16 weeks three times a week with each session lasting for 30 to 45 min.	Self-concept Scale (ASSEI)	Intervention group outstripped themselves in improvement in mood, self-efficacy and personal well-being, and physical and social domains of self-concept when compared with comparison subjects.
Da˛browska-Galas (19) 2021 poland	cross-sectional	N=111 middle-aged women.	IPAQ	Rosenberg Self-Esteem Scale	Women with higher total PA level had better self-esteem
Moral-García (20) 2018 Spain	cross-sectional	N=168	Physical activity	Rosenberg Self-Esteem Scale	There was a positive association be-tween physical activity and positive self-esteem (r = .244; p ≤ .01)
Moore (13) 2012 USA	cross-sectional	N=222	Physical Self-Descriptive Questionnaire (PDSQ)	global self-esteem	Participants with higher physical activity experienced higher self-esteem