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THE EFFECT OF SPORTS ON PSYCHOLOGICAL AND SOCIAL FACTORS IN THE ELDERLY COMMUNITY: A LITERATURE REVIEW

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ABSTRACT

Exercise can help to slow the aging process. They are beneficial for psychological and social elements in the elderly society. The elderly will be more fit and cheerful. This literature study will look into the impact of sports on psychological and social elements in the aging process. The search engines were Google Scholar and Researchgate. The keywords were sports, anti-aging, psychological, social, and old. The effect of sport on psychosocial factor in the aging process was studied using 16 papers. The aging process alters body homeostasis, organ systems, and other factors, reducing functional capability from the cellular to the individual level. At the cellular level, beta-endorphin is one of the parameters for athletic effectiveness. Happiness can be provided by beta-endorphins. So, sports has effect for psychologican and social factors in elderly community.

Kata kunci: anti-aging; old; psychosocial; social; sports

INTRODUCTION

Physical activity is one of the criteria for determining the health status of elderly people; someone with a healthy and fit body can carry out daily activities independently without bothering other people. A fit body can enable a person to do many activities and move from place to place according to their wishes. Physical activity is the ability to maintain a safe and productive daily life without feeling tired but having the energy to carry out recreational and other activities. Someone who is elderly needs to continue to maintain their health. In elderly people, Physical activity can be maintained with regular exercise and adopting a healthy lifestyle. With increasing age or the ageing process, physical strength will decrease, so you need to know how to respond to this to maintain the Physical activity of elderly people. Therefore, the health and welfare of elderly people must be maintained. So we need to know first what is meant by exercise, diet, the benefits of exercising and maintaining a diet, the ageing process and elderly people, and the types of exercise and diet suitable for elderly people. .Indonesia plans to provide a demographic bonus to 100 million citizens over 60 by 2050 to improve life expectancy and address social issues like depression and anxiety. (Bloom DE, Canning D, 2015; Chatterjee et al., 2017; Hardhana, 2022; Y.-T. et al., 2020).

Many seniors do sports (physical activity) individually and in groups. The sports are usually walking, jogging, gymnastics, swimming, cycling, etc. There are various purposes for elderly adults to do sports, for example, to maintain health, maintain and improve physical and mental Physical activity, have fun and so on. Stress and depression are the mental health disorders that most often occur in people (Canivet et al., 2015; Matteucci, 2022). This causes stress to develop into more severe problems. Many people think that the stress they feel is physical fatigue. Mental health problems are just as dangerous as chronic physical health problems. This problem must be addressed immediately so that it does not have a worse impact. It turns out one way you can reduce this condition is through exercise. (Sarkar et al., 2022; Schuch & Vancampfort, 2021). Exercise can help to slow the aging process. They are beneficial for psychological and social elements in the elderly society. The elderly will be more fit and cheerful. Exercise

activates molecular and cellular signals in various central nervous system processes. It increases the metabolism of essential neurotransmitters, such as dopamine and serotonin, through increased regional blood flow in the brain. Increased regulation of genes related to cellular plasticity and increased levels of neurotrophic factors such as Brain-derived Neurotrophic Factor (BDNF), which is helpful as a neuroprotective24 that stimulates neural plasticity and increases brain tissue volume. Exercise causes the hippocampus to become hypertrophied, which will later have a preventive function against neuronal degeneration. Individuals with a regular exercise frequency and a greater level of aerobic Physical activity show an increase in tissue volume in the basal ganglia and the hippocampus and more excellent neural communication capabilities in the frontal and parietal lobes, both of which can improve cognitive control and memory. Good memory will affect a person's psychology (Canivet et al., 2015; Gyasi et al., 2022).

In elderly people, it is known that muscle size and strength decrease with ageing, which results in physical weakness and various deterioration problems. You can avoid a reduction in muscle strength by doing regular strengthening exercises. There are various purposes for elderly adults to do sports, for example, to maintain health, maintain and improve physical and mental Physical activity , have fun and so on. Moderate-intensity exercise can benefit elderly people in various ways, including cardiovascular status, risk of fracture, functional ability and mental processes. In mental processes, exercise can reduce stress and mental tension, which impacts psychology (Kazeminia et al., 2020; Miller et al., 2019). Some molecular biomarker levels can predict an individual's social network structure (Han et al., 2021). Sport's psychological and physical benefits should be researched more thoroughly (Webster et al., 2016). Many seniors do sports (physical activity) individually and in groups. The sports are usually walking, jogging, gymnastics, swimming, cycling, etc. Exercise for elderly people is essential because it can support them in daily activities. Therefore, people need to take time or schedule exercise to exercise regularly.

Apart from that, the benefits of exercise can help increase blood circulation to the brain while also influencing the hypothalamic-pituitary-adrenal axis or HPA. You need to know that the HPA controls several parts of the brain. This includes the limbic system, which plays a role in controlling mood and motivation; the amygdala, which plays a role in fear, which is one of the responses if you experience stress; and the hippocampus, which plays a vital role in memory formation. When you exercise, your body releases neurotransmitters and hormones, including endorphins, serotonin and dopamine. The endorphin hormone is structurally similar to morphine, which acts as a natural pain reliever while also causing feelings of euphoria. Dopamine, known as the happy hormone, helps increase and improve mood. Increasing serotonin levels also positively impact mood, especially in elderly people (Davis et al., 2022; Han et al., 2021). The aim of this research is to determine the influence of sport on social psychological factors in elderly community.

METHOD

This type of research is literature study (Sugiyono, 2019). The data source for this research is secondary data originating from journal articles that have gone through the selection stage. For this literature study, Google Scholar, Researchgate, and Pubmed were utilized as search engines. Journals and early research articles are used in the literature review process. Tai chi's effects on beta-endorphin levels in the elderly are investigated. Sports, anti-aging, psychological, social, and old were the keywords. There were 16 reliable papers with publication dates ranging from 2015 to 2022. It was either Indonesian or English. Non-full-text literature is not permitted (Fitri, Agus Zaenul, & Haryanti, 2020).

RESULTS

Table 1.
The Analysis of The Sport's Effect to Change Psychosocial Factor in Elderly

Author	Research Method	Results
(Kim et al., 2020)	21 studies show sport participation positively impacts elderly adults' psychological and social outcomes.	Sport engagement has psychological and social consequences for elderly persons.
(Miller et al., 2019)	A cross-sectional analysis of 586 elderly Australians using questionnaires revealed social provision issues, with bivariate correlations and hierarchical multiple regression testing.	Depressive symptoms in elderly individuals are predicted by exercise, mood, self-efficacy, and social support.
(Kosteli et al., 2016)	Physical activity (PA) and retirement focus groups analyzed elderly adults' retirement levels and retirement length.	Examining the psychosocial predictors of physical exercise in elderly adults
(Hamadelseed et al., 2022)	Review summarizes psychosocial risk factors in Down syndrome patients, examining neuroanatomical changes.	Psychosocial risk factors impact Alzheimer's in Down Syndrome patients.
(Van Egroo et al., 2022)	Review identifies The brainstem locus coeruleus (LC) Norephinefrine (NE) system's significant role in sleep-wake organization, including architecture, microstructure, and neuroanatomy, supporting sleep-wake cycle architecture.	LCN system's role in sleep-wake regulation and Alzheimer's disease.
(Fan et al., 2020)	Baduanjin exercise intervention group provided 45-minute sessions for 24 weeks to elderly men and women with sleep disturbances, while control group maintained lifestyle behaviors.	Mind-body Baduanjin exercise improves sleep quality and quality of life in senior sleep-deprived individuals.
(Davis et al., 2022)	Participants performed eight exercises with elastic bands in a randomised, counterbalanced order.	In the aged, elastic band resistance balance exercise has practicality, psychological effects, influence, and perception.
(Cordes et al., 2019)	PROCARE (prevention and occupational health in long-term care) randomized controlled study methodology.	Exercise intervention to improve elderly wellbeing.
(Jha et al., 2018)	Study investigates effectiveness of dance and movement therapy in reducing depression and quality of life among elderly individuals through systematic literature search.	Dance and Movement Therapy (DMT) and Progressive Muscle Relaxation (PMR) help improve depression and quality of life (QOL) in the elderly.
(Tarassova et al., 2020)	Study investigates effectiveness of dance and movement therapy in reducing depression and quality of life among elderly individuals through systematic literature search.	The Response of Peripheral BDNF to Physical and Cognitive Exercise and Its Relationship with Cardiorespiratory Physical activity in Healthy Elderly Adults.
(Canivet et al., 2015)	The study involved 25 volunteers aged 55+ with BDNF profiles, evaluating episodic memory using a Logical Memory test for carriers. Participants were divided into four groups.	The effects of BDNF polymorphism and physical activity on the episodic memory of the elderly
(RBR-3bq4rg, 2019)	Meta analysis	The effects of game therapy on dementia and cognitive decline in terms of functional and cognitive capacity, as well as biomarkers.
(Kazeminia et al., 2020)	A meta-analysis and systematic review were conducted. Outcomes of Health and Quality of Life	The impact of exercise on anxiety in the elderly across the world
(Matteucci, 2022)	Managing technology in the face of the COVID-19 epidemic.	Sport, physical exercise, and elderly individuals' social health.
(Gyasi et al., 2022)	cross-sectional study	Financial inclusion and physical activity involvement in later life.
(Yen & Lin, 2018)	Advantages of engaging in productive physical activity	Life satisfaction in elderly adults

Sixteen articles have shown the psychosocial change after sport in the elderly. Sport was programmed for several various weeks and intervals. The number of participants varied between 8 and 74 subjects and the age group was approximately 65 years.

DISCUSSION

Healthy physical activity for elderly people must meet the FITT criteria (frequency, intensity, duration, type). Frequency is how often the activity is carried out and the number of days per week. Intensity is the difficulty in carrying out activities generally classified into low, medium and high intensity. The duration here is the length of time an activity is carried out, while the type of activity refers to what physical activity is carried out. Physical activity in elderly people includes aerobics, muscle strengthening exercises, endurance and balance exercises. The amount of exercise done depends on what a person wants to achieve (Åhlund et al., 2020; Justine et al., 2013). Frequency is how often the activity is carried out and the number of days per week. Intensity is the difficulty in carrying out activities generally classified into low, medium and high intensity. The duration here is the length of time an activity is carried out, while the type of activity refers to what physical activity is carried out. Types of physical activity in elderly people, according include aerobics, muscle strengthening exercises, endurance and balance exercises.

The amount of exercise done depends on what a person wants to achieve. Seniors should get at least 30 minutes of moderate-intensity physical activity most days. Participate in activities such as walking, planting plants, cleaning and going up and down stairs. People over 65 are advised to do sports that are not too strenuous, including walking, water exercise, cycling and having fun. You should start at a low level for untrained seniors and increase with each training session. Aerobic exercise can trigger the heart and lungs to work harder, such as walking, swimming, cycling and others. Yoga practice is done for a minimum of 30 minutes at moderate intensity five days a week or 20 minutes at high intensity. Three days a week, or a combination of 20 minutes of high intensity two days a week and 30 minutes of average intensity two days out of 7 (Chen et al., 2022).

Muscle strengthening exercises should be added in addition to aerobic exercise for seniors. Muscular elderly adults make it possible to carry out daily activities independently. Muscle strengthening exercises are any activity that strengthens and supports muscles and connective tissue. Activities and sports that are designed so that muscles can produce the force needed to move and hold a load, such as weight-bearing activities, gravity movements such as getting up from a chair, holding it for a few seconds, doing repetitions, or activities with specific resistance, such as rubber band exercises. Muscle strengthening exercises are performed at least twice weekly and rest between sessions. The intensity for building muscle strength using resistance or weights is 10-12 repetitions per exercise. The intensity of training should increase with each meeting. The number of repetitions should be increased before increasing the load. The duration required for one set of exercises is 10-15 repetitions (Åhlund et al., 2020).

A full range of joints (ROM) for elderly people is significant in maintaining and maintaining body flexibility and balance. Flexibility exercises and exercises are structured to train each of the major joints (hips, back, shoulders, knees, and neck). Flexibility training is an activity that helps maintain joint range of motion (ROM), which is needed in daily activities and activities. You should train endurance during aerobic and muscle strengthening days or 2-3 days per week. Exercise intensity is achieved by paying attention to discomfort or pain. Stretching is done thrice, holding each stretch for 10-30 seconds.Physical activity is movement carried out by the body using energy; this includes daily activities such as walking, running, and raising

grandchildren. Physical activity is usually carried out in a planned and structured manner, consisting of body movements carried out repeatedly for physical improvement. This is known as exercise. Exercise carried out by elderly people can prolong life, make the heart, muscles and bones healthy, make elderly people more independent, prevent obesity, reduce anxiety and depression and increase self-confidence. Exercise is considered to improve body composition, such as body fat and bone health, increase muscle mass and endurance, muscle mass and strength, and flexibility for the elderly to be healthier and slimmer and reduce the risk of falls, reduce the risk of diabetes, high blood pressure and heart disease. In general, exercise carried out by the elderly can improve health and body Physical activity , including improving appetite, improving sleep quality, and reducing the need for medication (Hammami et al., 2022; Jia et al., 2019).

Physical activity program for seniors that includes endurance, strength, flexibility and cardiopulmonary (aerobic) balance exercises. These exercises engage muscle groups with optimal movement in ROM without causing pain. Repairing bones, improving posture, and practising functional movements will help improve strength, flexibility and balance. The benefits of exercise in elderly people include increasing heart muscle strength, reducing the risk of heart attack, improving blood circulation in the body to lower blood pressure and preventing high blood pressure, reducing body fat to reduce excess weight and avoid obesity, strengthening body muscles so that body muscles become more robust. Supple and protected from rheumatic diseases, increasing body endurance to avoid diseases that attack the elderly, reducing stress and mental stress, and moderate intensity exercise/exercise can benefit the elderly in various ways, including cardiovascular conditions, risk of bone fractures, functional ability and mental processes. Walking is the safest, cheapest and easiest exercise and benefits most elderly people (Jia et al., 2019; Ni Kadek Yuni Fridayani et al., 2021).

Furthermore, physical activity has physiological, psychological and social benefits. Physiologically, exercise can increase strength capacity, endurance and balance abilities. Psychologically, exercise can improve mood, avoid the risk of dementia, and prevent depression. Socially, exercise can reduce dependence on other people, increase friends, and increase productivity. The benefits of exercise in elderly people include prolonging life and a healthy heart, muscles and bones. Exercise makes elderly adults more independent, prevents obesity, reduces anxiety and depression, and increases self-confidence. Therefore, exercise for elderly people must be done well because, with exercise, people already know the benefits for the body.Exercise and social support in elderly persons can improve life satisfaction, mood, and depression, with social support being a significant predictor of depressive symptoms. Regular exercise behavior, mood state, and self-efficacy contribute to these benefits (Kim et al., 2020; Miller et al., 2019). The previous study explores the psychosocial factors of physical activity (PA) after retirement, focusing on self-efficacy beliefs, social support, positive outcome expectancies, and self-regulation mechanisms. It highlights the importance of PA in providing purpose and addressing Alzheimer's disease risk factors, such as apolipoprotein E (APOE) genotype and poor education (Hamadelseed et al., 2022; Kosteli et al., 2016).

The brainstem locus coeruleus (LC) Norepinephrine (NE) system is important in regulating wakefulness and sleep, and the study is looking at the link between sleep-wake changes and Alzheimer's disease. In senior men and women with sleep difficulties, a 24-week Baduanjin exercise program enhanced sleep quality and quality of life. During PA treatments, participants' heart rates increased significantly. For 16 weeks, the training group will meet twice a week to improve physical functioning and cognitive-motor ability (Cordes et al., 2019; Davis et al., 2022; Fan et al., 2020). The brain-derived neutrophic factor (BDNF) levels in elderly adults

have been found to increase with physical exercise and cognitive exercise, with pBDNF increasing up to 222% after cognitive exercise (CE) and physical exercise (PE). However, there is limited research on the efficacy of dance and movement therapy and progressive muscle relaxation on depression and quality of life among the elderly. Exercise has been shown to outperform active Met carriers and inactive Val homozygous participants in episodic memory performance (Canivet et al., 2015; Jha et al., 2018; Tarassova et al., 2020).

The study examined the position of elderly individuals during the COVID-19 health emergency in Northern Italy. Data was gathered through interviews with the individuals, which assessed their social networks, the perceived social support offered by their family members, friends, and caretakers, and their level of sport and physical activity. The primary outcome is differences in BDNF, Irisine, Cortisol, Inflammatory Cytokines levels, cognitive ability, functional capacity, depressive symptoms, and fear of falls. Physical activity and exercise are effective ways to reduce anxiety in the elderly, with a meta-analysis of 19 papers finding a decrease in anxiety scores after intervention (Kazeminia et al., 2020; Matteucci, 2022; RBR-3bq4rg, 2019). Age-related decline in sexual function is linked to physical activity and television viewing time. Studies show that moderate or vigorous PA at least once a week increases sexual activity, while erectile difficulties are less common among men who are active. Encouraging elderly adults to be more physically active can improve sexual relationships and mental health. Proactive engagement in physical activity can maintain health-related quality of life in long-term care facilities (Gyasi et al., 2022; Yen & Lin, 2018).

CONCLUSION

Sport research influences psychosocial factor in aging process; larger sample size, gender balance, age restriction criteria needed. Senior fitness programs include exercises that train endurance, strength, flexibility and cardiopulmonary balance (aerobics) progressively and enjoyably. This exercise engages significant muscle groups with optimal range of motion without causing pain. This activity can strengthen bones and improve posture; practising functional movements will help increase strength, make oneself more flexible, and maintain balance and physical and psychological health.

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