Highlights in Art and Design
ISSN: 2957-8787 | Vol. 10, No. 3, 2025

A Survey on the Effects of Dance on the Physical and Mental Health of Elderly Women

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Abstract: This paper takes the members of the dance team of The Seniors University of Jinhua in Zhejiang Province as the research object, and explores the effect of dance exercise on the physical and mental health of the elderly through questionnaire survey, literature review method and data statistics, and studies the promoting effect of dance exercise on the balance of the elderly. The results showed that dancing had a significant effect on improving the healthy posture of the elderly, increasing muscle strength, reducing body weight and shaping a good body shape. Long-term dance training can promote the body's metabolism and accelerate the repair of aging tissues. It can improve the vital capacity, respiratory function and cardiopulmonary function of elderly women. In addition, dance exercise is beneficial to improving the mental state of the elderly, enhancing energy, self-confidence, and promoting life satisfaction and happiness. Finally, dance exercise can improve the core strength and lower limb muscle strength of elderly women, thereby enhancing their fall prevention ability. This study provides reasonable suggestions for elderly dance fitness training, better integrating dance training into the daily lives of middle-aged and elderly people. Therefore, the promotion and popularization of dance among middle-aged and elderly populations are of great significance.

Keywords: Dance Training; Aging; Elderly Women; Mental and Physical Health; Balance Ability.

1. Introduction

With the rapid development of the world economy, the average life expectancy of human beings has increased, and the fertility rate has decreased, making the problem of population aging increasingly prominent. The number of elderly people in the world aged 65 and above has reached 761 million in 2021, and by 2050, the number of elderly people in the world will reach 1.6 billion, accounting for 21% of the total population. By the end of 2021, the number of elderly people aged 60 and above in China reached 267 million, accounting for 18.9% of the total population. Around 2035, the number of elderly people aged 60 and above will exceed 400 million, accounting for more than 30% of the total population, entering the stage of severe aging. The issue of aging has become one of the current social hot spots, and has elevated the whole society's attention and care for the elderly to a strategic position in the development of the word.

At present, exercise will be considered an important method to improve the physical fitness of the elderly. Wenli Fan [1], Hong Dong [2] and other scholars have confirmed through research that physical activity can effectively reduce the risk of various diseases for the elderly and improve physical functional performance such as balance, flexibility, endurance, cardiopulmonary function, gait speed, etc. In addition, exercise training intervention will inhibit and alleviate common diseases such as Parkinson's disease, diabetes, hypertension, dementia, cognitive impairment, etc. in the elderly, enhance the cognitive function of the elderly and thus reduce the risk of falling, prevent diseases, and help rehabilitation, thereby improving the quality of life of the elderly [3]. Dance is a popular sports activity and aerobic exercise widely participated by the elderly, especially square dance, which is a social sport that combines self-entertainment, fitness, simple and easy-to-learn movements, and has rhythmic and diverse movements and steps. It has received widespread attention in today's society, and more and more elderly people are actively signing up to participate in dance fitness activities. In order to make elderly dance education provide more scientific and professional dance art popularization and education to the elderly, improve the dance aesthetics and artistic literacy of middle-aged and elderly people, and effectively provide dance practice guidance. Therefore, in order to adapt to the aging population, cultural centers, senior citizen universities, and training institutions in provinces and cities across our country have guaranteed the elderly's right to continue to receive education in accordance with *Law on the Protection of the Rights and Interests of the Elderly* and *Elderly Education Development Plan*. At the same time, taking into account the development trend of dance art education, met the spiritual and cultural needs of middle-aged and elderly people, and actively opened various dance genres of elderly dance education courses to provide personalized course options for the elderly.

Dance is a comprehensive form of art that integrates visual, auditory, and sensory stimulation. It is an engaging activity that involves experiencing music, learning movements, memory processing in the brain, and emotional expression. When elderly individuals participate in dance training as a form of recreational activity, it can help regulate their emotions, promote psychological well-being, and potentially delay the aging process. Previous studies have documented the effectiveness of dance in enhancing psychological functions among older adults. Studies have found that after menopause, women experience a significant decline in estrogen levels, leading to degenerative changes in physical functions. As a result, from the age of 50 onward, the incidence of falls, fall-related injuries, and fractures in women is higher than that in men. The estrogen level, bone density, balance ability and other aspects of middle-aged and elderly

women can be improved to a certain extent through dance exercises [4]. In senior citizen universities, dance courses are held at fixed times and locations, and the amount of exercise is appropriate, which is conducive to the formation of good exercise habits in the elderly group and regular participation in dance practice.

This paper will use literature review, questionnaire and other research methods, with 60 elderly women who participated in dance exercises in the dance class of The Seniors University of Jinhua in Zhejiang Province as the research subjects. By comparing the changes in the physical and mental health of the elderly in the class before and after participating in dance exercises, this paper will explore the effects of dance exercises on the physical and mental health and balance of the elderly (women). The purpose is to select a suitable dance training program for this group of people, better play the advantages of dance, improve the physical and mental health of elderly women, and provide a reference for the development of related dance courses and dance therapy programs for the elderly in the future.

2. Research Methods and Research Content

2.1. Research Subjects

The research subjects are 75 female students of the dance class of The Seniors University of Jinhua in Zhejiang Province, aged 60-72 years old, with an average age of (67±3.45 years old). The dance class course lasted for 6 months, with dance training 3 times a week, 1.5-2 hours each time. Research inclusion criteria: students are conscious and can communicate normally; can walk independently without major diseases; informed and agree to participate in this survey and research.

2.2. Research Methods

Firstly, the literature method was used to search the full text through Chinese academic journal databases such as China Knowledge Infrastructure , Weipu, and Wanfang, and English academic journal databases. The Chinese search keywords were "elderly dance" and "influence", "dance therapy", "elderly falls", "balance ability", "square dance", "aging", etc., combined with English keywords such as "Dance therapy", "Elderly", "Balance", "Old adults", and "Cardiovascular risk". The search matching conditions were accurate and the searched literature was classified and sorted. In addition, the course information of The Seniors University of Jinhua in Zhejiang Province was understood and summarized and analyzed to screen out data and information related to this study.

Secondly, the questionnaire survey method was used. According to the relevant references of this study, some contents of the SF-36 (The SF-36 scale, also called the Short Form Health Survey, is a generic measurement scale developed by the Medical Outcomes Study (MOS) group in the United States. This work began in the early 1980s and resulted in multiple versions with different items and language backgrounds. From 1990 to 1992, simplified versions of the 36-item health survey questionnaire, SF-36, in different languages were released one after another. Among them, the UK-developed version, the U.S. standard version, and the Chinese version are more commonly used, all include eight domains: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health.) health status survey form was selected and combined with the Likert scale (The Likert scale was proposed in 1932 by American social psychologist R.A. Likert. It is a commonly used form of attitude scale in the fields of social surveys and psychological testing. The five-point Likert scale provides five response options for each item to reflect the degree of attitude (such as no influence, slight influence, moderate influence, considerable influence, and great influence), and assigns scores from 1 to 5 to these options according to the level of impact.) five-level scale form to design a questionnaire [5], with a total of 17 questions and 40 items for three aspects. The reliability and validity coefficient of the questionnaire was α=0.98, which was very reliable. The basic information of the respondents, their physical health status, the main reasons for their participation in dance practice, their physical and mental changes before and after participating in dance practice, relevant dance injury prevention information, and their true feelings about participating in relevant dance exercises were collected. According to the statistics of the "Wenjuanxing" APP platform, a total of 71 questionnaires were collected. The returned questionnaires were reviewed, and 11 questionnaires with missing data and too short filling time (less than 2 minutes) were eliminated, resulting in 60 valid questionnaires.

Finally, the data were mathematically analyzed; after being collected by the Wenjuanxing APP platform, the invalid survey data were filtered out by the platform and Excel table, and the valid data were screened. The relevant data obtained were statistically analyzed by using SPSS 25.0 version. $P < 0.05$ represented significant differences, and $P < 0.01$ represented highly significant differences. Through descriptive statistical analysis, the basic information of the respondents, such as gender, age, dance experience, and dance style, was recorded, and the questionnaire scores on psychological and physical health effects were analyzed by using methods such as combined sample t-test and single sample t-test.

2.3. Research Content

The main content of the questionnaire revolves around three dimensions: one is the basic information of the students (age, dance experience, dance style, etc.), the second is the psychological health effects of the students (including happiness, self-confidence, mental state, social interaction); the third is the changes in the students' physical health (including daily activities, balance ability, flexibility, coordination, flexibility, cardiopulmonary function, sleep quality, etc.).

3. Research Results

3.1. Basic Information of Research Subjects

By using the online questionnaire of "Wenjuanxing", the basic information and situation of 60 students in dance classes of senior university were obtained. Among the women aged 60 to 72 surveyed, 71.42% of the students who participated in the survey signed up for square dance courses, and 14.29% participated in ballroom dance and folk dance respectively. The data also further proves that although the learning experience and level of the elderly in dance projects are different, more and more elderly people are willing to learn various types of dances through more systematic dance courses. Among them, square dance, as a low-cost and popular mass fitness activity, has received more extensive

attention and participation.

In addition, the survey results show that 60.71% of the students are in good health, 25.29% are in good health, 14% are in general, and there are zero students who self-assessed that their current physical condition is poor and have no diseases (the students with serious diseases in the previous study will be excluded). It can be seen that the elderly surveyed are optimistic about their own health evaluation and are relatively satisfied with their own health status, which may be related to the lack of understanding of the definition of health among the elderly in our country, including the general public. According to the survey on the original intention of participating in dance practice, the primary intention of 51 elderly people (85%) who signed up for dance classes at the senior university was to exercise and shape their bodies through dance, and secondly, 71.43% of the elderly people hoped to improve their temperament and enhance their immunity through dance practice. Participating in dance practice to improve body flexibility and balance is one of the keys for 42.86% of the elderly students to enjoy dance practice. 17 elderly students (28.33%) participated in dance practice to relieve mental stress, make new friends, and expand their circle of friends, while the elderly who participated in dance practice because of increasing opportunities to perform on stage or recommended by their children or friends only accounted for 14.29% of the total number.

Since the dance courses that the respondents signed up for included square dance and folk dance, there were some differences in the arrangement of the content of different dance courses. 42.86% of the students said that they would not organize or have the teacher conduct warm-up activities before class. They believed that the amount of dance activities at the beginning of the class was light and could achieve the effect of warm-up. Only 28.57% of the students would independently perform a simple warm-up for 5 or 10 minutes. According to the student survey, the total duration of dance classes in senior citizen universities is mainly divided into 2 hours and 1.5 hours. Due to the different class lengths, the students' break time is also adjusted accordingly. The corresponding breaks are 15-20 minutes and 5-10 minutes. In the interview, the lecturer said that the break time is more flexible, some elderly people will take the initiative to reduce the break time and practice independently due to their high enthusiasm; some elderly people can extend the break time by themselves due to physical strength, health conditions and other reasons. When the class is about to end, the teacher arranges 10 minutes of relaxation and stretching time or actively stretches after class for 51.14% of the total number of students, followed by no relaxation and stretching time, accounting for 40.78% of the total number of students, and the number of students who have teachers organize collective stretching and relaxation time of more than 10 minutes is only 9.07%. This shows that most classes arrange more reasonable stretching and rest time before and after the end of get out of class. As a short break in the middle of a long course, the break between classes has a significant effect on relieving the fatigue of the brain and muscles of the elderly, thereby improving the learning effect of the class. In the questionnaire statistics, 46.86% of the students thought that the intensity of the current dance class was easy, and 33.77% and 19.37% of the students thought that the intensity of the current dance class was moderate and very easy, respectively.

3.2. The Impact of Dance on the Mental Health of Female Elderly People

The questions about mental health mainly include: life happiness, self-confidence, mental state, and social interaction. According to the statistical results (Table 1), through the single sample t test, it can be seen that there are very significant differences between the groups of each question, and the average score is above 4 points, indicating that the students have a high sense of recognition that dance training helps to improve and improve mental health. The results show that while learning dance in dance class, students gain a sense of accomplishment, become confident, are willing to show themselves, and get spiritual pleasure. At the same time, the improvement of social interaction ability is also closely related to dance learning. Social interaction ability is greatly improved in the process of learning and practicing dance.

Table 1. The scores of dances on improving mental health

Title	Mean Score ± Standard Deviation	Significance P-value
Life happiness	4.60±0.67	0.000**
Self-confidence	4.20±0.58	0.000**
Mental state	4.70±0.53	0.000**
Social interaction	4.50±0.62	0.000**

Note: The recognition of the improvement in mental health through dance learning **(P < 0.01)** indicates a highly significant difference.

3.3. The Impact of Dance on The Physiological Health of Elderly Women

The changes in the students' daily activities before and after learning dance, as shown in Table 2, before and after dance practice, after dance training, there was a significant improvement in carrying daily necessities (such as buying groceries, shopping, etc.), going up 5-10 floors, bending over and squatting, and walking 100 meters and 800 meters. However, there was no significant difference in going up 1 floor and walking more than 1500 meters before and after learning dance. There was no significant difference before and after the daily activity of going up 1 floor, which may be because the amount of exercise is small, and the elderly's own physical assessment is mostly healthy and good; in addition, the distance of more than 1500 meters is not short for most elderly people and exceeds the walking range that most elderly people can handle, so there is no significant difference in the questionnaire score. Perhaps for them, the distance of more than 1500 meters is not easy, and the low-to-medium intensity dance training is not enough to change their aerobic endurance performance.

Table 2. Comparison of scores on the effect of dance on daily activities (Mean ± SD)

Title	Before Dance Learning	After Dance Learning	Significance P-value
Carrying daily items	4.75±0.60	4.81±0.50	0.045*
Climbing one floor	4.90±0.35	4.91±0.28	0.321
Climbing 5-10 Floors	4.50±0.77	4.65±0.58	0.002**
Bending, kneeling, squatting	4.58±0.62	4.68±0.50	0.013*
Walking 100 meters	4.85±0.36	5	0.002**
Walking 800 meters	4.68±0.54	4.78±0.45	0.013*
Walking over 1500 meters	4.60±0.56	4.63±0.52	0.159

Note: Comparison before and after dance learning * ($P < 0.05$) indicates a significant difference; ** ($P < 0.01$) indicates a highly significant difference

According to the statistics in Table 3, the improvement of the physical fitness and health of the elderly in the dance training team has basically been significantly recognized. According to the questionnaire, the impact on the balance ability of the elderly has been significantly improved. There are 49 students who have never fallen (accounting for 81.67% of the total number), but 11 students rarely fall in life and dance practice (1-2 times). Therefore, the elderly have slightly improved their balance when walking and going up and down stairs, and are less likely to fall when walking than before. At the same time, after systematic dance practice in the past six months, the limb flexibility, coordination, and flexibility of the dance class students have been greatly improved. The joint sensitivity of 41.67% of the respondents has been greatly improved. The students with slightly improved sensitivity and no improvement account for 31.67% and 30.00% of the total number, respectively. The improvement of balance can help students complete dance movements with larger strides and play a great role in improvement. More than half of the respondents said that they can now maintain a single dance shape for a period of time (such as 4 eight beats) more stably, and can smoothly follow the music to complete a dance segment. Dance has a significant change in promoting the body's performance ability. However, there was no significant difference in the effect of dance exercise on cardiovascular and pulmonary function. The participants did not perceive a significant improvement in their cardiovascular and pulmonary function through dance, with an average score of 3.16, which is close to option 3 (uncertainty) with a score of 3. Additionally, 8 participants disagreed with the view that dance can improve cardiovascular and pulmonary function. After dance practice, 95% of the participants reported improvements in sleep quality. Only 5% of the participants felt that their sleep quality had not improved during the six months of exercise. However, through statistical analysis, the average score reached 4.37, indicating that dance significantly improves sleep quality.

Table 3. The scores of dances on improving physical health

Title	Mean Score ± Standard Deviation	Significance P-value
Physical Balance Ability	4.20±0.65	0.000**
Physical Performance Ability (Flexibility, Coordination, Agility)	4.10±0.66	0.000**
Cardiovascular and Pulmonary Function	3.16±0.67	0.058
Sleep Quality	4.37±0.58	0.000**

Note: The recognition of the improvement in mental health through dance learning ($P < 0.01$) indicates a highly significant difference.

4. Analysis and Discussion

Dance, as an aerobic exercise that is both artistic and entertaining, not only improves the body composition and function of the elderly, but also the results of this study show that dance plays a key role in improving the physical and mental health of elderly women. Through moderate-intensity dance practice, the core muscles and lower limb strength of the elderly can be improved, thereby improving the balance of the elderly and reducing the risk of falling.

4.1. The Role of Dance on the Mental Health of Elderly Women

Mental health is the spiritual pillar of physical health, and physical health is the material basis of mental health. The two interact, depend on and restrict each other. This survey conducted a study on 60 members of the elderly amateur dance team of The Seniors University of Jinhua in Zhejiang Province and found that dance exercise has a good promoting effect on improving the mental health level of the elderly. Previous studies have confirmed that dance aerobic exercise can delay the aging process of the central nervous system, prevent mental health problems caused by various physiological changes, and enrich the retirement life of the elderly through dance practice. In the process of dance learning and training, they gain affirmation and confidence, and their emotions are further effectively released. The learning exchanges between students and the coordination of dance movements help the elderly expand and rebuild their social circles, thereby reducing their loneliness and helplessness and alleviating the impact of adverse events in life on their mental health. In addition, the study also confirmed that moderate-intensity dance exercises and a relaxed and pleasant atmosphere can reduce the anxiety and mild depression of the elderly [6]; Appropriate dance competitions and performances provide spiritual sustenance for the elderly; good interpersonal relationships enhance the joy and satisfaction of life and make people feel refreshed; pleasant and rhythmic music also promotes the elderly's auditory system, soothes the mood, relieves stress, releases negative emotions, maintains a healthy mentality, and improves the level of mental health.

4.2. The Role of Dance on the Physical Health of Female Elderly People

According to the current survey and research data, dance

exercises such as dance class exercises and dance team rehearsals at The Seniors University of Jinhua in Zhejiang Province have a positive effect on the physical health of the elderly. On the one hand, the physical fitness of the elderly has improved after practicing dance, which is reflected in the fact that they can complete some daily life behaviors more easily and without obstacles, such as carrying daily necessities or heavy objects within their ability. The elderly who originally had some difficulty walking up 5-10 floors and long distances (walking more than 1,500 meters) have reduced the difficulty after dancing exercises. Most elderly people can go up and down low floors and walk shorter distances. Dance practice places higher demands on the flexibility of the waist and joints (especially the shoulder joints and knees) of the elderly. In the survey data, the number of respondents who can easily complete movements such as bending, kneeling, squatting, etc. has increased by 5% from the original level, and the joint sensitivity has been greatly improved. It can be seen that dance exercise can effectively delay the decline of muscle function in the elderly, especially the lower limb muscle strength. In the relevant literature on the effect of dance on the lower limb isometric muscle strength indicators of the elderly, it is pointed out that long-term aerobic exercise can effectively improve the function of the antioxidant system and slow down the aging of skeletal muscle [7]. There are a large number of changes in dance steps and squatting movements in dance. Appropriate dance exercise can also be used as lower limb muscle strength rehabilitation training for the elderly.

On the other hand, the physiological promotion effect on the elderly is reflected in the development of good dance exercise habits and the promotion of body coordination and flexibility. Elderly dance, especially folk dance, requires the coordination of dancers' limbs and self-awareness. Different dance styles require different movement textures. When posing or practicing body posture, it requires sinking shoulders, tightening abdomen, standing waist, and clamping hips. After a period of practice, it can shape the elderly's good body shape, improve temperament, and help the elderly reduce excess fat in the body. Flexibility exercises in dance allow the elderly to slowly stretch their bodies. Simple static stretching such as leg pressing combined with breathing can relieve muscle soreness and fatigue and reduce dance injuries. Stretching muscle tissue promotes the formation of beautiful muscles and smooth lines, improves body shape, and thus achieves the purpose of body shaping. Most dances have many movements and formations, which require the elderly to concentrate in class and have certain music understanding memory, on-the-spot reaction, self-perception, and movement imitation. Strengthening the work of cognitive neural networks has a positive effect on memory stimulation, cognitive function improvement, and brain awakening in the elderly. Dance has an improving effect on the cardiopulmonary function, blood lipids and blood sugar in the elderly.

The survey found that moderate intensity (small to medium intensity) aerobic dance exercise can enhance the heart contraction ability of the elderly, strengthen the vasodilation and contraction function, that is, the elasticity and toughness of the blood vessels are enhanced, thereby effectively improving the body's blood microcirculation, maintaining resting blood pressure within the normal range, and preventing, slowing down and treating cardiovascular diseases. As the elderly age, the respiratory system function gradually weakens. The questionnaire survey results show that the cardiopulmonary function of the elderly respondents has greatly improved after dance practice, that is, the vital capacity has increased. According to a research report on the impact of dance on the physical and mental health of elderly women, dance exercise places higher demands on the respiratory system of the elderly. Chinese classical dance body rhythm, yoga, and breathing exercises in other dance types enable the elderly to fully expand their chests when inhaling, enhance the mobility of the chest, thereby allowing more alveoli to be produced and maintaining the elasticity of lung tissue. Dance exercise below medium and low intensity can cause the elderly to feel mild fatigue. Regular dance practice can improve the brain function of the elderly, improve sleep quality, help speed up the time to fall asleep, deepen sleep, and play a positive therapeutic role in insomnia [8].

Balance is one of the important physiological functions of the human body. It can manipulate the center of gravity of the body to maintain a stable posture when relatively still or to maintain a certain movement stability when moving. The ability is also particularly important for the elderly. When people grow to the age of 40, the body begins to gradually age, such as the decline in bone cell activity leading to osteoporosis, the aggravation of cognitive impairment, the decline in muscle activity, and the decline in memory and language ability. It is precisely because of these changes that the balance of the elderly is reduced and the incidence of accidental falls is increased. In the results of this study, the balance performance of the elderly has changed significantly after 6 months. Dance training has once again confirmed that it has a positive role and effect on the performance of the balance ability of the elderly. Due to the decline in physical function, the elderly need to "mobilize" more parts of the body to maintain balance. Among them, the core part (refers to the area below the shoulders to above the hip joints including the pelvis, formed by the chest, waist, pelvis and hip joints) and 29 muscle groups such as the waist and abdominal muscles play a vital role in maintaining body posture and completing various complex movements. [9] The elderly's center of gravity control, lower limb muscle group coordination, and knee joint stability exercises in dance also play a certain role in preventing the elderly from falling. Taking the teaching content of ethnic dance classes as an example, the elderly can master the rhythm and movement skills of different ethnic dances by learning Tibetan step combinations and flexion and extension combinations; Uyghur three steps and one lift, rolling step combinations, and more importantly, exercise the elderly's lower limb muscle control and center of gravity transfer stability. In daily life, the elderly can adjust their stride to suit themselves, reducing falls caused by discontinuous walking, unstable stride, and limited ankle flexion and extension rotation.

Some researchers pointed out that cerebral atherosclerosis and Alzheimer's disease in the elderly are caused by mild cognitive impairment, and elderly people with cognitive impairment have a higher risk of falling than normal people [10]. Physical exercise plays a key role in improving mild cognitive impairment [11]. Combined with the statistical data of the questionnaire, dance exercise can improve blood microcirculation and cerebral blood oxygen supply, so that more nutrients can be supplied to brain tissue and maintain brain function. It can also induce fibroblast factors in the hippocampus, delay the decline of cognitive function in the

elderly, and have a certain effect on the prevention and treatment of mild cognitive impairment. Improve the elderly's nervous system and alleviate the negative emotions caused by cognitive impairment, thereby reducing the risk of falling in the elderly.

5. Research Limitations

This study can verify some effective effects of dance training on the physical and mental health of elderly women through questionnaire surveys, but there are also some shortcomings and limitations, which are mainly manifested in the following aspects.

First, some questions in the questionnaire survey lack complete before-and-after control experiments and lack specific individual body index data, such as waist-to-hip ratio, body dimensions, body fat rate, blood pressure, blood lipids, heart rate, cholesterol and other data of respondents of different dance ages.

Second, the sample size of the respondents is small, and the subjects are subject to geographical restrictions, which has caused certain obstacles to the promotion of the research conclusions. The sample size can be expanded in the future.

Third, the survey on the balance of the elderly is mostly subjective feelings and memories, lacking the scientificity of experimental proof, and the results are greatly affected by subjective factors. In addition, the research on the effects of exercises of different dance ages and different dance types on core strength or dynamic balance and static balance has not been involved. The breadth and depth of the research still need to be strengthened and improved, which also provides new ideas and directions for future research.

6. Conclusion and Suggestions

6.1. Conclusion

Dance, as a popular sport based on aerobic metabolism, has a significant effect on improving the healthy body shape of the elderly, increasing muscle strength, reducing weight, and shaping a good body shape. It is one of the recreational means to improve the body's immunity, relieve fatigue, and strengthen the body. Long-term dance exercise can promote the body's metabolism and accelerate the repair of aging tissues; improve lung capacity, improve the respiratory function of elderly women, and enhance cardiopulmonary function; medium and low intensity dance exercises can help lower blood pressure, prevent, slow down and treat cardiovascular diseases, and improve blood lipid metabolism in middle-aged women.

The elderly make dance exercise a habit, which is beneficial to reduce psychological pressure, vent negative emotions, improve the mental state of the elderly, enhance energy, self-confidence, and psychological quality, generate a sense of pleasure in interpersonal communication, and enhance life satisfaction and happiness. In addition, dance exercise can improve the core strength and lower limb muscle strength of elderly women, thereby improving dynamic balance ability, static balance ability, and improve the ability of elderly women to resist falls. Dance exercise can slow down the occurrence of cognitive impairment in the elderly, improve motor ability and stability, and effectively reduce the incidence of accidental falls.

6.2. Suggestions

Senior universities and community streets across the country should attach great importance to and actively advocate the participation of elderly women in dance exercises, strengthen publicity efforts, actively build and expand elderly dance venues, accommodate more elderly students who love dance, and provide a better environment for dance learning and exercise. At the same time, more dance courses should be opened, and learning channels should be broadened online and offline to provide diversified choices for the elderly, so that dance learning and exercise are not only a choice for elderly women. In the future, more elderly men with athletic ability should be supported to help more elderly people develop good habits of dance exercise. Professional dance teachers should be hired to give students professional guidance, reasonably arrange the intensity of dance exercises according to the physical health status and balance needs of the elderly, and create dances that are more suitable and popular with the elderly. Create a comfortable classroom atmosphere, attract students with more favorable registration fees, and make dance an indispensable part of the lives of the elderly.

Pay full attention to the mental health of the elderly, help students correctly understand and accept themselves, adjust their mentality, and use diversified forms to enable the elderly to gain more autonomy, self-esteem, self-identity, emotional belonging, and identity, thereby enhancing their subjective well-being. Before practicing dance, the elderly should pay attention to fully warming up before class, stretching and relaxing after class, relieving muscle soreness and other discomforts, and gradually strengthen their attention to dance injuries. They should prepare necessary protective measures. Teachers and class administrators should pay attention to the physical condition of the elderly in a timely manner, organize them to participate in medical rescue-related knowledge training, and prevent and treat dance injuries of different degrees. The elderly should enhance their self-protection awareness, pay attention to listening to the body signals indicating fatigue, pain and the need to stop during exercise, strengthen the learning of correct movements, and consciously strengthen their weak muscle group exercises in moderation. By memorizing dance movements and formations, feeling the emotions and rhythm of music, improving brain activity, and preventing falls caused by cognitive impairment.

Recommended plan for reasonable dance training for the elderly: arrange three fixed dance classes per week, each class lasting 90 minutes, and persist for more than 6-9 months to achieve ideal fitness results. Each dance class can include 5-10 minutes of warm-up activities; 5-10 minutes of previous class review; 20-30 minutes of new class teaching; 10 minutes of break between classes; 30 minutes of core and lower limb stability dance exercises; 5-10 minutes of relaxation and stretching. The exercise time should be adjusted in time according to the actual physical health level of the elderly to avoid sports injuries caused by excessive fatigue.

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