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Developing Dance Exercise Model for the Elderly

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Abstract

Background and Aim: Creating a dance exercise model for the elderly is important because it improves physical fitness, balance, and flexibility while also promoting mental well-being by lowering stress and cognitive decline. It also encourages social interaction, which reduces feelings of isolation and improves overall quality of life. Thus, the study aimed to develop a dance exercise model tailored for the elderly population in Guangdong Province through qualitative research.

Materials and Methods: The research employed interviews with 19 experts, guided by Buridge and Rickeymore's theory of managerial functions in organizational planning. The study involved selecting a specific sample group, including presidents of dance associations (past or present) with at least 5 years of experience (4 participants), dance instructors with 5 years of teaching experience (5 participants), dance champions with 3 years of experience (5 participants), and individuals with 5 years of experience in exercise (5 participants). The data was evaluated on a 5-point scale, and the Delphi technique was used for consensus building through two subsequent rounds of expert meetings, utilizing median statistics (MDN) and interquartile range (IR) for data analysis.

Results: The research identified several key elements in the development of a strategic planning model, including policy formulation, SWOT analysis, TOWS Matrix, and the design of dance steps and training processes. The model also emphasized the importance of establishing appropriate values, creating motivation, reducing the risk of disease, and fostering leadership and teamwork. The study recommended organizing training systems to measure physical fitness, practicing basic ballroom and Latin dance, and ensuring appropriate practices both indoors and outdoors. The involvement of nurses in monitoring participants' health, stress management, and vision-focused leadership was also highlighted. The dance exercise model for the elderly included warm-up and cool-down routines, balance practice, stress tests, SATST tests, and a rhythm-based practice sequence. The study also recommended measuring pulse rates before and after exercise, assessing team potential, and maintaining good health. The model was further refined through group discussions with health experts, leading to an improved dance form. Pre- and post-dance physical tests, evaluations using the PDCA cycle, and nurse-supervised adjustments to balance and exercise size were included to ensure appropriate dance forms and effective post-evaluations.

Conclusion: The study successfully developed a comprehensive dance exercise model for the elderly that integrates strategic planning, health monitoring, and physical fitness practices, providing a structured approach to promoting health and well-being among the elderly in Guangdong Province.

Keywords: Model; Dancing; Elderly People; Guangdong

Introduction

The issue of global aging is becoming increasingly significant, with health concerns taking center stage in society. As individuals age, their physical health deteriorates, leading to declines in the functionality of various bodily systems, including the cardiovascular and respiratory systems. Muscle mass decreases, fat accumulation increases, and overall physical fitness weakens. Consequently, the elderly population faces greater health challenges, making disease prevention and health maintenance vital to improving their quality of life.

Research indicates that long-term participation in physical activities, particularly dance exercises, can positively impact the physical health of the elderly. Regular dance programs help regulate metabolic functions, increase energy expenditure, accelerate fat breakdown, and lower plasma insulin levels, all of which contribute to better physical health. Moreover, engaging in dance exercises fosters social interaction, reducing feelings of loneliness and alleviating the burden on families. It also enhances physical fitness, which can lower healthcare costs and promote economic development by reducing the incidence and progression of diseases.

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Following the American College of Sports Medicine's (2012) assertion that "exercise is medicine," the role of physical activity in health promotion has garnered widespread attention. Dance, in particular, is popular among the elderly due to its blend of entertainment and fitness benefits. Studies have shown that dance positively impacts various physiological systems, including the cardiovascular, musculoskeletal, respiratory, and immune systems, as well as mental health. For middle-aged and elderly individuals, consistent participation in dance exercises influences body shape, fitness levels, physical function, and psychological well-being.

Dance is a versatile activity that combines music and movement, making it accessible to people of all ages, personalities, and backgrounds. However, existing research on dance and fitness has primarily focused on the general benefits of dance, without considering the specific needs and conditions of elderly participants. There is an urgent need to explore which types of dance and exercise intensities are most suitable for middle-aged and elderly individuals, especially women, to ensure that these activities are both safe and effective.

The importance of structured, professionally managed exercise programs cannot be overstated. Exercise programs, particularly those involving dance, must be designed and supervised by professionals who understand the unique needs of the elderly. These programs should be enjoyable, safe, and capable of providing both physical and psychological satisfaction. Agencies and organizations responsible for such programs must take their role seriously, organizing and analyzing exercise patterns that build participants' confidence and trust. As Du et al (2023) suggest, exercise is crucial for building resilience against diseases, and for the elderly, it serves as a preventive measure against various health complications. Dance exercise is particularly suitable for this demographic.

Given the physical limitations often associated with aging, it is essential to develop dance styles that accommodate the elderly's reduced capacity for vigorous exercise. Dance programs should incorporate gentle movements that align with the principles of sports science, ensuring that exercises are both accessible and beneficial. As highlighted by Li (2019)), selecting the right exercise postures is critical, as each elderly individual has varying levels of physical strength. Exercises should progress from simple to more complex movements to maximize benefits for participants.

Based on an extensive review of research literature and consultations with experts in elderly exercise, there is a clear need to create a specialized dance exercise program for the elderly. This program should cater to the specific needs of older adults, allowing them to engage in physical activity that is both easy to perform and non-injurious. The researcher is particularly interested in developing such a program, aiming to provide a model that benefits the current elderly population as well as future generations.

Objectives

Main Objective:

1. To develop a dance exercise model specifically designed for the elderly.

Subsidiary Objectives:

1. To examine the dance and exercise patterns of the elderly.
2. To create dance styles tailored for exercise among the elderly.

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Conceptual Framework

The research on management practices for developing and creating a dance exercise model for the elderly in Guangdong Province, China, involved interviews with 19 experts. This study was guided by Bridge's and Roquemore's management function theory, focusing on the core functions of Planning, Organizing, Implementing, and Controlling.

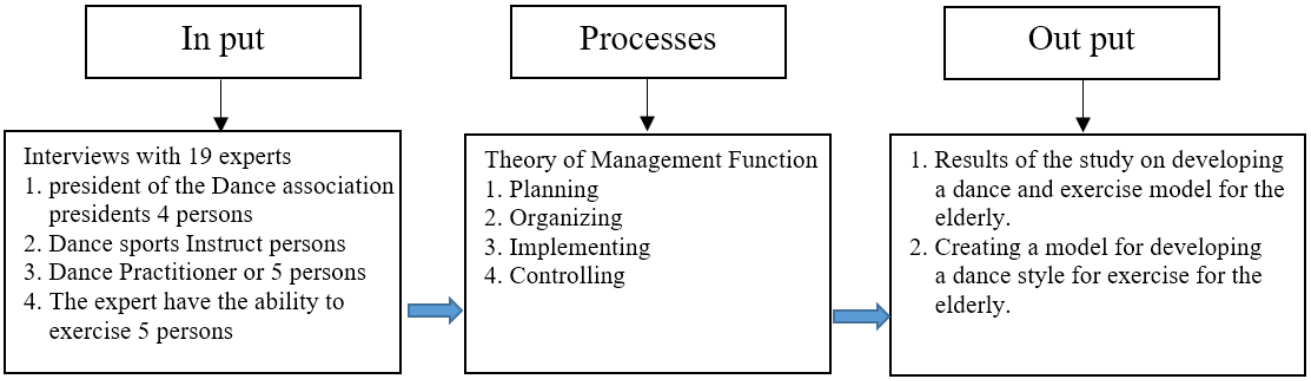

Figure 1 Conceptual Framework

Methodology

1. Population

The population consisted of 21 individuals, including: 1. Executives of the Dance Sports Association with at least 5 years of management experience. 2. Experts in organizing and teaching dance with at least 5 years of experience. 3. Individuals who can dance or are dance champions with at least 3 years of experience. 4. Experts with knowledge of exercise, each with a minimum of 5 years of experience.

2. Sample

A purposive sample of 19 individuals was selected from the population of 21, divided as follows: 1. Dance Association Management Experts: 4 individuals with at least 5 years of management experience, either current or former association administrators. 2. Dance Teaching Experts: 5 individuals with at least 5 years of teaching experience. 3. Dance Ability Experts: 5 individuals who can dance or are dance sports champions with at least 3 years of experience. 4. Exercise Knowledge Experts: 5 individuals with at least 5 years of experience in exercise.

3. Scope of Research

This research focuses on studying and developing a dance exercise model for the elderly in Guangdong Province, China.

4. Research Tools

Structured Interviews: Initial interviews were conducted with 19 experts, focusing on the management functions of Planning, Organizing, Implementing, and Controlling. Rating Scale: A five-level rating scale was used in the second round of interviews, based on responses from the first round, to assess the suitability of the content. If experts provided no further comments, data saturation was assumed, negating the need for a third round. Focus Group: Information from the second round (or third, if necessary) was discussed in a focus group setting, with participants who had similar qualifications but were not part of the initial expert group, to seek consensus on the developed dance exercise model. Consensus Confirmation: The developed model was reviewed for appropriateness and feasibility, using median and interquartile range (IR) statistics to ensure consensus among experts.

5. Data Collection Process

1. Distribute relevant literature from Thonburi University in Bangkok to all 19 experts. 2. Conduct the first round of structured interviews based on management function theory. 3. Administer the second

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round of interviews using the rating scale. 4. Conduct a third round of interviews if needed, based on corrections made in the second round. 5. Organize focus groups to reach a consensus. 6. Analyze the data and summarize the model.

6. Data Analysis and Statistical Methods

1. Analyze qualitative data from interviews using content analysis. 2. Evaluate the data from group discussions to determine the suitability of the developed dance exercise model. 3. Perform statistical analysis of expert responses from the second and third rounds, focusing on Median (Mdn) and Interquartile Range (IR)

Results

This research aims to study and develop a dance exercise model for the elderly in Guangdong Province, China. The analysis of the research data is presented in the following sections: **Part 1:** Analysis of Opinions and Consistency. **Part 2:** Development of the Dance and Exercise Model. **Part 3:** Suitability and Practical Feasibility. **Part 4:** Opinions on Suitability. **Part 5:** Implementation Steps. **Part 6:** Practice Guidelines

The study involved input from 10 experts who provided recommendations for developing a dance sports exercise model for the elderly in Guangdong Province, China. Their insights can be summarized as follows: 1) Strategic Planning: Experts emphasized the need for comprehensive strategic planning. This includes conducting SWOT analyses and using the TOWS Matrix to identify strengths, weaknesses, opportunities, and threats. Effective planning should align with the objectives and include strategies for organizing exercise steps, grouping participants, and expanding exercise groups. 2) Organization: Recommendations highlighted the importance of forming a competent team capable of managing both indoor and outdoor activities. A systematic approach is essential, starting with pre-practice steps, conducting physical fitness tests for participants, evaluating group behavior, and incorporating diverse dance rhythms. Ensuring that elderly participants understand their roles and can perform safely is crucial. 3) Practice: Experts suggested implementing physical tests to ensure participants' readiness for exercise and designing dance routines that are appropriate for their capabilities. Continuous monitoring and evaluation of participants' behavior, stress levels, and the effectiveness of the exercises are important. Use of the SAT ST system for testing, setting suitable postures and rhythms, and including cooldown periods are recommended. Pulse measurements before and after exercises, along with correct posture practices, should be integral to the routine. 4) Control: For the control phase, experts advised on measures to prevent injuries and ensure safety during practice. This includes regular physical fitness assessments, appropriate group arrangements, and adherence to rhythmic dance principles suitable for the elderly. Employing the PDCA (Plan-Do-Check-Act) theory for measurement and evaluation is recommended to address any issues and make necessary adjustments. The focus should be on balance and fall prevention. (Figure 2)

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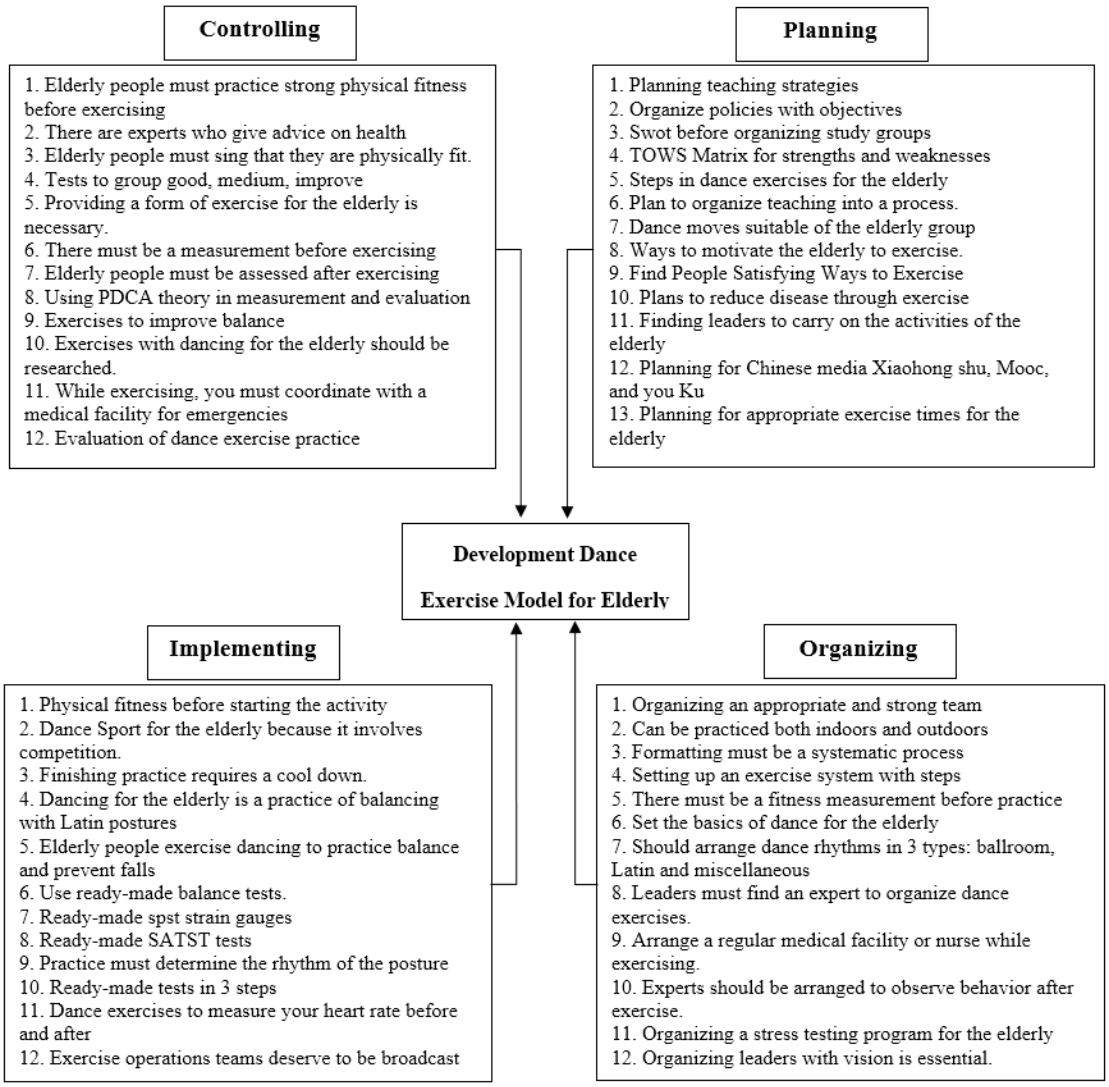

Figure 2 Model Development Dance Exercise Model for the Elderly

Conclusion

The study highlights key elements in developing a dance sports exercise model for the elderly in Guangdong Province, China, focusing on planning, organization, implementation, control, and evaluation. Experts emphasize the following: 1) Planning: Strategic planning is essential. A SWOT and TOWS analysis should guide the development of an effective exercise process. Expert leaders should leverage Chinese media to enhance visibility and engagement. Final planning must include the organization of teams and the structuring of the entire exercise process for both indoor and outdoor settings. 2) Organization: Successful execution requires a well-organized team and systematic processes. Teams must oversee the entire exercise process, including expert observations and first aid provision during sessions. Effective leadership with a clear vision is crucial. 3) Implementation: Before initiating exercises, a physical fitness test and warm-up are necessary. Utilize standard tests and procedures for balance and fall prevention. A structured system is required for implementing dance exercises, including tests and measurements to ensure effectiveness and safety. 4) Control: Strong control mechanisms are vital for maintaining safety and effectiveness. This

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involves expert advice, grouping participants based on their fitness levels (good, medium, improving), and using standard formats for balanced measurement. PDCA (Plan-Do-Check-Act) principles should guide ongoing evaluation and adjustment of the exercise model.

The research underscores the importance of a comprehensive approach to planning, organization, implementation, control, and evaluation to develop an effective dance exercise model for the elderly. Regular assessments and expert input ensure the model's adaptability and effectiveness in promoting elderly fitness and safety.

Discussion

1. Planning: Effective planning for developing a dance exercise model for the elderly necessitates strategic foresight and policy formulation. This includes Strategic Planning: Clear policies must be established for the exercise program. Before implementing changes, conducting a SWOT analysis is crucial to identify weaknesses and strengths. A thorough planning process ensures that the policies align with the objectives and leverage advantages effectively. TOWS Matrix: Creating a TOWS Matrix helps in outlining the steps required for development. This approach should align with Li. et al. (2024), which emphasizes that the working methods and useful features should be considered to enhance policy principles and methods. Exercise Guidelines: The movement patterns and exercise guidelines for the elderly must be well-defined. Dai et al. (2022) suggest that appropriate exercise methods are essential for maintaining physical strength and overall health. Thus, planning must include effective activities led by skilled leaders. Media Utilization: Leveraging Chinese media platforms such as Xiaohongshu, MOOC, and Youku is recommended for broadcasting exercise programs. As noted by Yu and Buck (2022), utilizing such platforms facilitates broader reach and engagement. The timing of exercise sessions should be adapted to the elderly's convenience, whether in the morning, afternoon, or evening.

2. Organizing: Effective organization is crucial for developing a successful dance exercise program for the elderly. Key considerations include Strong Team and Systematic Approach: A robust team is essential for managing both indoor and outdoor activities. The organization must implement a structured process to ensure that the exercise program follows a clear sequence. According to Lu (2019), an effective organization requires well-defined procedures to avoid operational issues. Leaders play a critical role in managing and overseeing these processes effectively. Structured Exercise Levels: The exercise program should be organized into levels, starting from basic movements and progressing to more advanced routines. Wang et al. (2023) emphasize the importance of adapting exercise intensity to the individual's fitness level. The initial focus should be on fundamental movements, gradually advancing to more complex steps to ensure safety and effectiveness. Fitness Testing: Before engaging in exercise, participants should undergo fitness assessments to determine their readiness. This ensures that the exercises are appropriate for their physical condition. Dai et al. (2022) highlight the need for exercise programs that are safe and tailored to the elderly's health conditions, including considerations for high blood pressure and other cardiovascular issues. Dance Rhythms and Expertise: The exercise program should include various dance styles such as ballroom, Latin, and other rhythms. It is crucial to have qualified instructors who can teach these dances correctly. Additionally, having a nurse or first aid professional available is essential to address any potential health issues during the exercises. Monitoring and Stress Relief: Regular observation of participants during and after exercise is necessary to ensure safety and to address any issues that arise. There should be a permanent stress relief program in place, as well as an ongoing evaluation of the participant's physical and emotional responses. Yu and Buck (2022) note that elderly individuals require careful monitoring due to their decreased physical strength and potential for injury.

3. Implementing: Effective implementation of a dance exercise program for the elderly involves several key steps to ensure safety and efficacy: Physical Fitness Testing: Before engaging in dance exercises, it is essential to conduct a physical fitness test. This is particularly important given the

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competitive nature of dance sports for seniors. Li. et al. (2024) emphasize that warming up before practice and cooling down afterward are crucial for preventing injury and promoting recovery. A structured warm-up prepares the body for exercise, while a cooldown helps to relax and stretch muscles back to their normal state. Balance Training: Incorporating body balance training is vital, especially with Latin rhythms that help maintain stability and prevent falls. Dai et al. (2022) support the use of standardized balance exercises and programs to assess and enhance balance, which is critical for preventing falls in elderly participants. Standardized Programs and Safety: The exercise program should include standardized tests to measure physical fitness and stress levels, ensuring that activities are safe for the elderly. Du et al (2023) highlight the importance of focusing on safety, given the reduced physical strength and increased vulnerability of older adults. Standardized programs help to identify and address potential risks before they become problematic. Monitoring Pulse and Progress: Regular monitoring of pulse rates before and after exercise is necessary to ensure that the cardiovascular system is functioning well. Lu. (2019) underscores the need to measure progress and analyze pulse rates to detect any issues that may arise during exercise. If the pulse is unusually weak before or excessively high after exercise, it indicates a need for further investigation and adjustment of the exercise regimen. Team Leadership: Effective team leadership is crucial for guiding quality exercise sessions for the elderly. Leaders must be adept at building and managing teams to deliver safe and effective exercise programs. This includes ensuring that the exercise is appropriately scaled to be light yet beneficial, minimizing the risk of harm while maximizing physical benefits.

4. Controlling: Effective control of a dance exercise program for the elderly involves several critical aspects: Pre-Exercise Physical Testing: Before engaging in dance exercises, a thorough physical test is essential to assess the elderly participants' strength and overall readiness for exercise. This is crucial to ensure that individuals are fit enough to participate without undue risk. Wang et al. (2023) emphasize that participants must be physically, mentally, and emotionally prepared for exercise; otherwise, the exercise may not achieve the intended outcomes and could potentially cause harm. Expert Analysis: Experts should analyze whether each participant is suitable for the planned exercise regimen. This involves understanding the rules and procedures to ensure that the practice is aligned with the individual's capabilities. Li (2019) highlights the importance of assessing physical readiness to prevent injuries and ensure that exercises are performed correctly. Incorrect exercise can lead to adverse changes in behavior and physical condition. Group Classification and Measurement: Exercise participants should be categorized into groups—good, medium, and needs improvement—based on their physical condition. Accurate measurement and evaluation before exercising are essential to determine if an individual is fit to participate. This classification helps tailor the exercise regimen to the participant's ability, ensuring safety and effectiveness. Evaluation Using PDCA: The PDCA (Plan-Do-Check-Act) methodology should be employed for a detailed evaluation of the exercise program. This approach helps in systematically assessing the effectiveness of the exercise and making necessary adjustments. Shilton (2008) supports the use of standardized evaluation methods to monitor progress and maintain balance, which is crucial for the elderly. Emergency Preparedness: Exercise programs should include coordination with medical personnel or knowledgeable individuals to handle emergencies. This ensures that any unforeseen issues can be promptly addressed, maintaining the safety of the participants. Ongoing Research and Evaluation: Continuous research is vital to evaluate the effectiveness and appropriateness of exercise methods. Li. et al. (2024) assert that research helps to refine exercise models and ensure they are based on solid theoretical and practical principles. This ongoing evaluation allows for improvements and adjustments to be made, enhancing the overall quality of the exercise program for the elderly.

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Recommendation

1. Adaptation for Other Groups: The developed model for dance exercise for the elderly can be adapted for use with different age groups or populations. This could involve adjusting the intensity and complexity of the exercises to suit various demographic needs and fitness levels.

2. Incorporation of Different Music Rhythms: Explore the use of different musical rhythms and styles in the dance exercise model. By integrating a variety of music genres, the program can be tailored to enhance engagement and enjoyment, potentially increasing adherence and effectiveness.

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