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COMBATING DEPRESSION IN ELDERLY CHINESE: A RECREATIONAL SPORTS STRATEGY FOR GUANGDONG PROVINCE

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Abstract

This study addresses the critical issue of depression among older people in Guangdong, China, by developing and validating recreational sports strategies. Employing a Research and Development (R&D) methodology, the study involves four phases: a theoretical examination of recreational sports and depression, development of intervention strategies, feasibility assessment, and refinement of the plan. Data were collected through questionnaires from 84 elderly individuals with depression and interviews with 11 key informants, analyzed using SWOT and TOWS analyses. Connoisseurship evaluation by experts and further validation with a target population were conducted. The results highlight the need for tailored recreational sports strategies, leading to the creation of the FVIPT model: Financial Subsidies, Venues, Instructors, Programs, and Time. The implementation of these strategies could alleviate symptoms of depression in older adults in Mao Ming, Guangdong. This research provides a practical framework for promoting mental well-being through sustainable, community-based interventions, emphasizing the integration of physical and mental health support for older adults. Therefore, the study contributes to addressing mental health challenges within a sustainable and interdisciplinary context.

Keywords: Recreational Sports, Depression, Elderly, China, Mental Health

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Introduction

With the high speed of the global economy, people are in a highly competitive environment. Pressure from work, life, and study often puts much pressure on people, and when the pressure is not released for a short period of time, people will suffer from depression. Depression is a common mental disorder in which the patient feels persistent sadness and a lack of interest or pleasure in activities that were previously beneficial or enjoyable. Depression can also lead to a range of emotional and physical problems that reduce a person's ability to function at work and at home. Similarly, China, with its high economic growth, is facing the same dilemma, so depression has become an urgent public health challenge in China. The lifetime prevalence of depression in Chinese adults is estimated to be 6.8%, particularly affecting females, adolescents, and urban populations (Huang et al., 2019). China is not only a country with a large population, but also a country with a large elderly population, and with the various pressures that society is constantly increasing, the number of people suffering from geriatric depression is high. Hence, the prevalence rate among older people is naturally high. Older adults can suffer from geriatric depression as a result of their own failing health, declining earning capacity, and family disharmony, which creates a great deal of stress. In particular, Guangdong Province, which has the largest population in China and a high proportion of older adults, also has a large number of older adults suffering from depression. In China, in the past, the main treatments for depression in the elderly included medication, psychotherapy, and physiotherapy.

However, these treatments have various limitations, including excessive treatment costs, poor treatment continuity, and numerous side effects, among other drawbacks. With the establishment and promotion of medical rehabilitation departments, recreational exercise therapy has been used as the most recommended treatment in various guidelines for the treatment of depression in older people. Its benefits have become a hot topic in the treatment of depression in older adults due to its high sustainability, maneuverability, and fewer side effects, in addition to its suitability for older adults' physical functioning and lifestyle characteristics (National Institute for Health and Care Excellence, 2022). Therefore, the present study seeks to gain insight into this multifaceted issue by examining existing theories of recreational sports and current manifestations of depressive symptoms in older individuals in Guangdong, with the ultimate goals of developing targeted recreational sports intervention strategies and validating the feasibility of these strategies to alleviate depressive symptoms in the elderly population within Guangdong. Scientific strategies of recreational sports are essential conditions to ensure the improvement of depression in older people."

Literature Review

Recreational sports refer to the physical exercise activities that people engage in during their leisure time to improve physical and mental health, enrich their lives, and develop their interests. Recreational sports offer medical benefits: adhering to scientific principles of recreational sports exercise can improve the structure and function of each bodily system. First, it can enhance immunity and play a role in preventing the occurrence of chronic diseases, as well as promoting the physical rehabilitation of participants. Second, it can strengthen the function of the cardiovascular system and reduce the occurrence of cardiovascular and cerebrovascular diseases. Third, it can coordinate the structure and function of bones, joints, and muscles, and help prevent sports-related injuries. Fourth, it can prevent nerve atrophy and improve the body's balance and coordination. Fifth, it can regulate insulin secretion to help prevent obesity and diabetes. Sixth, it can enhance the function of the respiratory system, thus strengthening the resistance of the respiratory tract and lungs. The mental health value of recreational sports is also significant. It can nourish mental health through the hormonal chemicals produced by sports. This results in improved emotional

effects and can be used to promote mental health. Moreover, it can have a positive psychological impact, providing good physical and mental pleasure, as well as a sense of accomplishment after exercise (Zhang, 2018). Recreational sports not only directly reduce depression scores in the elderly but also indirectly reduce the likelihood of depression by improving their physical health level and peer support (Fan et al., 2023).

The consequences of untreated late-life depression are severe and multifaceted. It exacerbates chronic health conditions (e.g., cardiovascular diseases, diabetes) and increases mortality risk, partly due to poor self-care and medication nonadherence. Socially, depression contributes to isolation, strains family relationships, and reduces quality of life. Functionally, it impairs daily living activities, such as managing personal hygiene and household tasks, and increases caregiver burden. Critically, depression among older adults is strongly associated with suicide, with older men exhibiting the highest suicide rates among all age groups. Early intervention is essential, as prolonged depressive episodes are linked to irreversible cognitive decline and accelerated neurodegeneration (Yang et al., 2023).

Older adults with standardized physical fitness are less likely to develop depressive symptoms. Standardized physical fitness, regular physical activity, and quality sleep contribute to lowering the incidence of depression. In the early stages of depressive symptoms, adopting healthy habits and engaging in appropriate physical activity can help regulate mood and alleviate symptoms in older adults in Guangdong (Zheng et al., 2022). Physical activity significantly reduces the likelihood of depression among community-dwelling older adults; thus, promoting regular physical activity is recommended to prevent depression in this population (Liang et al., 2021). Long-term and stable practice of Tai Chi (Taijiquan) among older adults has been shown to effectively reduce the occurrence and progression of depressive symptoms (Guang et al., 2016).

Depression is a common mental health issue among older adults. Regular exercise, maintaining social interactions, and fostering a positive mindset are associated with a lower incidence of depression. Therefore, strengthening mental health services for older adults is necessary (Zheng et al., 2022). Participation in exercise has been shown to reduce depressive symptoms, and older adults should be encouraged to engage in physical activity more frequently (Chunli & Lijuan, 2013).

SWOT analysis is a comprehensive situational analysis tool used to evaluate Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T), also referred to as the Dawes Matrix. By assessing internal strengths and weaknesses alongside external opportunities and threats, this method provides a systematic and accurate understanding of the context, supporting the formulation of development strategies, action plans, and interventions (Valentin, 2005).

TOWS analysis is an extension of SWOT that further emphasizes aligning internal capabilities with external conditions. It serves as a structured decision-making tool that enhances competitive advantage through strategic planning (Wehrich, 1982).

Governmental policies have also emphasized the improvement of mental health services and the promotion of community engagement among older adults. In Guangdong, authorities promote increased participation in physical activity, emphasizing that leisure sports play a crucial role in promoting both physical and mental well-being. Community-based fitness programs tailored to older adults are being supported, and local cultural elements, such as traditional sports, are being integrated to help alleviate depressive symptoms (Guangdong Provincial People's Congress, 2019).

In Maoming City, initiatives to improve mental health among older adults include the establishment of senior activity centers and the integration of recreational sports with healthcare services. Activities such as Tai Chi and square dancing are promoted citywide to enhance physical and mental well-being in older adults with depression, as shown in Maoming Municipal Government (Jin et al., 2024).

Hospitals have also incorporated non-pharmacological interventions such as exercise therapy into geriatric depression treatment. For example, a rehabilitation activity center in Maoming offers light exercise equipment (e.g., stationary bikes, walking training). It promotes traditional Chinese exercises, such as Tai Chi and Five Animal Frolics, in alignment with principles of Chinese medicine. These interventions have shown promising outcomes for managing depression among older adults (Gill et al., 2020).

From the reviewed literature, it can be concluded that depression in older adults has been addressed through national, provincial, and municipal efforts, all emphasizing the value of leisure sports as a treatment and prevention strategy. These findings support the development of long-term recreational sport strategies to alleviate depressive symptoms among older adults in Guangdong Province.

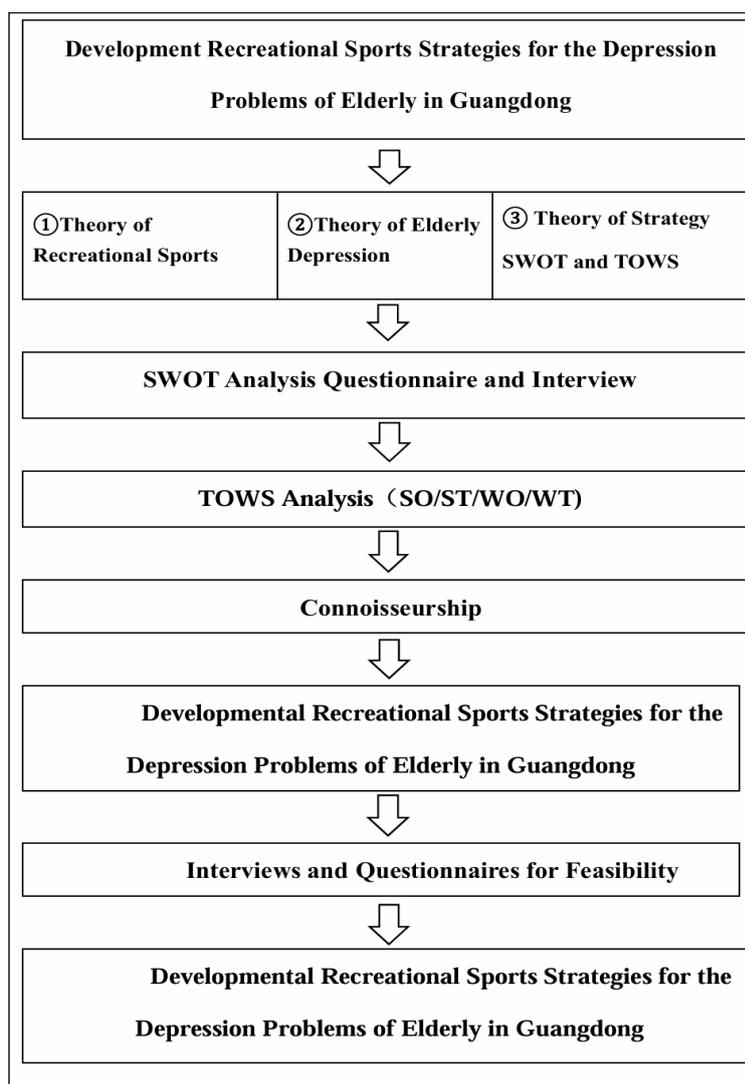


Figure 1 Conceptual Framework

Research Methodology

This study employed a scientific Research and Development (R&D) methodology and utilized both quantitative and qualitative data collection methods. The study consisted of four main phases:

Step 1: Research Phase 1 (R1) - This phase involved a theoretical study of recreational sports and an investigation of the current strategies addressing depression among the elderly in

Guangdong. Relevant national policies were reviewed to construct a questionnaire and interview protocol. A total of 84 elderly individuals diagnosed with depression completed the questionnaire, and 11 key informants were interviewed. Both sets of data were analyzed using SWOT analysis.

Step 2: Development Phase 1 (D1) - Based on the findings from R1, strategies were developed to address depression among the elderly in Guangdong. TOWS analysis was employed to formulate specific recreational sports strategies.

Step 3: Research Phase 2 (R2) - This phase adopted a connoisseurship approach, involving a workshop with nine experts from relevant fields to evaluate the feasibility of the drafted strategies. Feedback from this workshop informed the revision and refinement of the initial development strategies.

Step 4: Development Phase 2 (D2) - The revised strategies were then further improved and validated with a target population of 90 elderly individuals with depression residing in Maoming City, Guangdong Province, China (Qianpai Town Mental Health Center Research Group). Using the sampling formula of Krejcie and Morgan (Morgan, 1970), a minimum sample size of 73 participants was determined. To prevent data loss, responses were collected from 84 participants. Quantitative data were analyzed using descriptive statistics, and qualitative data were analyzed through content analysis.

Research Results

The recreation sport strategies for the depression problems of older adults in Guangdong questionnaire consisted of three parts. The first part included 12 questions about the basic situation of the elderly. The second part contained 6 questions about the depressive symptoms situation. The third part included 19 questions about recreational sports.

The results of the current situation of elderly depression problems in Guangdong revealed the following: The analysis of the basic situation showed that all participants were Han Chinese. The level of education was relatively low. A higher number of respondents had three or more children. The types of work were mainly farming and self-employment. A larger group of respondents relied on national health insurance to pay for medical expenses.

Regarding physical condition, the findings indicated that most participants felt troubled by their own health, including issues with nutrition and sleep. Symptoms of depression were common and severe, but treatment approaches remained limited. Knowledge of recreational sports was low. The morning was the most popular time period for participation. The movements were simple and easy to learn. Chorus, indoor fitness, and other recreational sports were the most popular activities. The majority of respondents recommended exercising 3-4 days a week. In terms of exercise duration, most respondents suggested 1 to 2 hours per session.

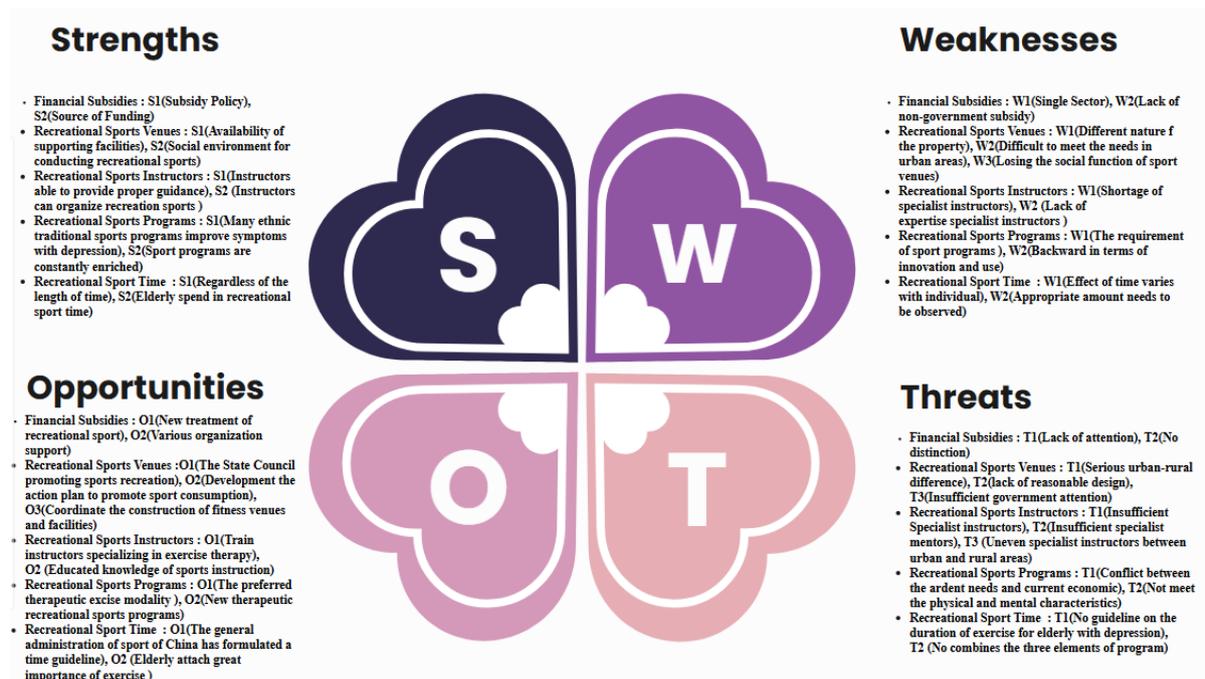


Figure 2 SWOT analysis “Recreational Sports Strategies for the Depression Problems of the Elderly in Guangdong”

Based on the analysis, five key components of the “Recreational Sports Strategies for the Depression Problems of the Elderly in Guangdong” were identified: Financial Subsidies, Recreational Sports Venues, Recreational Sports Instructors, Recreational Sports Programs, and Recreational Sports Time. These components guided the formulation of recreational sports strategies for addressing depression among the elderly in Guangdong using the TOWS.



Figure 3 TOWs matrix (Weihrich, 1982)

The final draft of the strategy includes vision, mission, and strategy. The vision of Recreational Sports Strategies for Depression in Guangdong Elderly is to alleviate the symptoms of depression in the elderly through scientific recreational sports strategies,

thereby improving their physical and mental health, quality of life, and other aspects, and enhancing their overall sense of well-being. The mission: 1) To establish a financial subsidy system based on a multi-sectoral approach. 2) To do a good job of maintaining, renovating, upgrading, and building. 3) To cultivate, allocate, and appoint sports instructors who specialize. 4) Do a good job in the inheritance and innovation of Recreational sports programs. 5) Scientifically and reasonably arrange the Recreational sports time. Strategies: "Recreational Sports Strategies for the Depression Problems of the Elderly in Guangdong."

Strategy 1: Establishment of a subsidy system that combines multiple sources of funding by multiple payers.

Sub-strategy (SO1.1) 1.1 Establish a system of subsidizing funds by multiple government departments working together.

Sub-strategy (WO1.1) 1.2 Fundraising by various social organizations to assist in raising funds for recreational and sports activities for the elderly with depression.

Strategy 2: Maintain, renovate, upgrade, and construct recreational and sports venues properly.

Sub-strategy (WO2.1) 2.1 Appropriately renovate existing parks and civic activity plazas.

Sub-strategy (WT2.1) 2.2 Give due consideration to the needs of the elderly when subdividing areas for active people in public sports venues.

Sub-strategy (SO2.1) 2.3 Enhance the planning and design of greenways for fitness walks to increase recreational and sports venues for the elderly.

Sub-strategy (ST2.1) 2.4 Rationalize the planning of recreational and sports venues and facilities for the elderly in communities and village councils.

Sub-strategy (SO2.2) 2.5 Design recreational and sports places for the elderly inside nursing homes.

Sub-strategy (WO2.2) 2.6 Fully utilize fee-for-service stadiums and unit sports venues for recreational sports for the elderly.

Strategy 3: Train, assign, and appoint physical education instructors who specialize in recreational sports for elderly depression.

Sub-strategy (SO3.1) 3.1 Train physical education instructors who specialize in recreational sports for elderly depression.

Sub-strategy (WT3.1) 3.2 Assign specialist instructors to guide elderly depressed patients in recreational sports.

Sub-strategy (WO3.1) 3.3 Appointment of physical education instructors who specialize in recreational sports for elderly depressed patients.

Strategy 4: Promote the heritage and innovation of recreational sports programs.

Sub-strategy (WO4.1) 4.1 Select recreational sports programs that are popular, reasonable, targeted, and have national characteristics.

Sub-strategy (ST4.1) 4.2 Use male and female genders as differentiating factors, according to the preference levels of elderly depressed patients for different recreational sports, to rationally design the recreational sports program strategy aimed at reducing symptoms of depression in the elderly.

Sub-strategy (ST4.2) 4.3 Precisely design strategies for recreational sports and exercise programs to alleviate symptoms of elderly depression by taking the age group as a differentiating factor.

Strategy 5: Scientifically and rationally develop recreational-time physical activity schedules for elderly depression.

Sub-strategy (ST5.1) 5.1 Instruct elderly depressed patients on the recommended frequency of engaging in recreational sports each week.

Sub-strategy (ST5.2) 5.2 Instruct elderly patients with depression on a reasonable amount of recreational sports time per day.

Sub-strategy (ST5.3) 5.3 Specify the number of days per treatment session in which elderly patients with depression are instructed to engage in recreational physical activity.

Sub-strategy (ST5.4) 5.4 Instruct elderly depressed patients on the dynamic and static times of recreational sports.



Figure 4 FVIPT Strategies “Recreational Sports Strategies for the Depression Problems of the Elderly in Guangdong”

To validate the research on the feasibility of the strategies in “Recreational Sports Strategies for the Depression Problems of the Elderly in Guangdong,” the overall mean score of the strategy was 4.48 with a standard deviation of 0.50, indicating that the strategy is highly feasible. The breakdown of the individual sub-strategies with the highest feasibility is as follows:

SO: SO2.1: Sub-strategy (SO2.1) 2.3: Enhance the planning and design of greenways for fitness walks to increase recreational and sports venues for the elderly.

ST: ST4.1: Sub-strategy (ST4.1) 4.2: Using male and female gender as differentiating factors, and based on the elderly depressed patient group's preference levels for various recreational sports, rationally design a strategy for the recreational sports program to reduce symptoms of depression in the elderly.

WO: WO4.1: Sub-strategy (WO4.1) 4.1: Select recreational sports programs that are popular, reasonable, targeted, and have national characteristics.

WT: WT3.1: Sub-strategy (WT3.1) 3.2: Assign specialist instructors to guide elderly depressed patients in recreational sports.

Conclusion and Discussion

This strategy is also consistent with the perspective of Kanrong (2016), who proposed development strategies to improve the symptoms of depression in the elderly. The suggestions include an emphasis on recreational sports and physical activities for elderly patients with depression. Community centers are advised to publish materials related to scientific fitness and wellness and to conduct activities such as disseminating fitness knowledge, as well as offering counseling and demonstration sessions. It is necessary to

effectively strengthen the recreational sports and fitness guidance for elderly patients with depression, and actively cultivate specialized social sports instructors and sports volunteers to guide the elderly in participating in sports activities. Kanrong (2016) also emphasized the importance of improving the conditions for sports and fitness activities among the elderly. This includes coordinating the planning of sports venues and facilities that cater to the specific needs of elderly individuals. For example, when designing public squares and residential areas, facilities and equipment suitable for the elderly should be allocated appropriately, making it convenient for elderly patients to participate in physical activities within their communities. Priority can be given to building sports facilities suitable for elderly individuals, allowing them to engage in recreational sports close to home and at their convenience, along with providing a variety of activity options.

The findings of this assessment align with the recommendations of the Healthy China Action Promotion Committee (2019), which states that China has the largest elderly population globally. Promoting physical exercise among the elderly is crucial for enhancing overall health, improving quality of life, and promoting healthy aging. The report encourages social organizations such as universities for the elderly, activity centers, grassroots elderly associations, and qualified groups to organize various healthy exercise programs for elderly patients. It recommends that geriatric patients be guided in selecting exercise methods appropriate to their physical and health conditions and to participate in recreational sports within their capabilities. While aerobic exercises are emphasized, attention is also given to muscle-strengthening, flexibility, and balance training to strengthen the musculoskeletal system and provide a systematic, holistic approach to treating elderly depression.

Furthermore, the Healthy China Action Promotion Committee (2019) recommends adjusting exercise intensity and duration according to the health status of geriatric patients. Elderly individuals are encouraged to stay physically active, mentally engaged, and socially involved to delay the aging process and prevent mental disorders through a healthy lifestyle. The plan also supports enterprises related to health services in developing diverse offerings such as health maintenance, check-ups, counseling, fitness assessments, sports rehabilitation, and health tourism to enrich recreational sports options. Higher education institutions are encouraged to establish geriatrics-related majors or courses in rehabilitation, nursing, nutrition, psychology, and social work to cultivate a workforce of professionals who are equipped to support recreational sports for the elderly. These professionals are considered essential and urgently needed, and their training is to be strengthened as part of national human resource development.

This assessment aligns with the General Administration of Sport of China (2022), which issued a directive emphasizing that addressing the challenges of aging and elderly health is a national strategic concern. The document identifies recreational sports for the elderly as a crucial part of both aging policy and the broader national fitness agenda. It recommends that scientifically sound and feasible exercise strategies for geriatric patients be submitted for review and, if appropriate, promoted through official channels. The government is encouraged to lead these initiatives through a coordinated, multi-departmental approach that involves participation from civil society and the private sector. Such integration ensures the effective development of sports for the elderly while protecting their right to physical fitness and wellness.

Among the various treatment methods for depression in the elderly, recreational sports have been recognized as a tailored remedy. This aligns with Weiwei (2022), who described the main treatment options for elderly depression as including medication, psychotherapy, and physiotherapy. However, these methods often suffer from limited adherence and side effects. Exercise therapy, which is increasingly recommended in treatment guidelines, has become a

prominent intervention due to its high compliance, ease of implementation, and minimal side effects.

This finding also aligns with the study by Yongmei & Jingwen (2020), who investigated the prevalence and influencing factors of depression among elderly individuals in Guangdong Province. Their research concluded that multiple factors, including demographic characteristics such as place of residence, gender, and age, influence depressive symptoms and their severity. For rural elderly individuals, economic and physical health factors are significant contributors to depression. In contrast, for urban elderly individuals, the causes are more multifaceted, including social support, income, and adaptability to life. As a result, the development strategy of recreational sports should be scientifically structured and adapted to these influencing factors to address depression in the elderly population effectively.

In conclusion, this current situation of depressive symptoms among older adults in Guangdong is associated with several contributing factors, including low levels of education, having three or more children, being engaged in farming or self-employment, and a heavy reliance on national health insurance. This study employed a mixed-methods approach, collecting quantitative data through questionnaires completed by 84 elderly individuals with depression, and qualitative data through interviews with 11 key informants. A SWOT analysis was conducted to assess the internal and external environment, followed by a TOWS matrix to formulate strategies. Connoisseurship evaluation by nine experts was used to validate the feasibility and revise the strategies accordingly.

As a result, the study developed the FVIPT recreational sports strategies, which focus on five key elements: Financial, Venues, Instructors, Programs, and Time. These strategies aim to mitigate depressive symptoms among elderly individuals in Maoming, Guangdong, by enhancing access to and engagement in structured recreational sports activities. The final five strategies are as follows:

Establish a subsidy system that integrates multiple funding sources and contributors to reduce financial barriers for elderly participation in recreational sports. Maintain, renovate, upgrade, and construct recreational sports venues to ensure accessibility, safety, and suitability for older adults. Train, assign, and hire qualified instructors who specialize in recreational sports programs tailored for elderly individuals with depression. Promote the preservation and innovation of recreational sports programs, incorporating both traditional and modern activities to enhance participation and cultural relevance. Develop scientifically and rationally designed recreational-time physical activity schedules that align with the physical and emotional needs of older adults with depression. These strategies offer a practical, community-based approach to addressing late-life depression through the promotion of recreational sports, contributing to improved mental health and quality of life among the elderly population in Guangdong.

Recommendation

Based on the findings of this study, two key recommendations are proposed: (1) implementation of the FVIPT recreational sports strategies and (2) future research directions.

1) Implementation of FVIPT Strategies

To apply the FVIPT model—Financial, Venues, Instructors, Programs, and Time—several points should be addressed:

Funding Subsidies: During economic downturns, social financing should be utilized, and government departments must provide support for related administrative services. A multi-payer subsidy system can help support the financial needs of implementing this strategy.

Recreational and Sports Venues: The government's role in land use planning is crucial, encompassing urban development and the utilization of public land in both urban and rural areas. This supports the building, renovation, and management of recreational sports venues for older adults with depression.

Instructors for Recreational Sports: Wage structures and budget distribution must be adjusted to recruit and support qualified instructors. These instructors should be trained to conduct recreational sports programs for elderly individuals with depression.

Recreational Sports Programs: Introducing and promoting new types of recreational sports programs requires cooperation between local governments and the General Administration of Sport of China. These programs should reflect cultural and community needs.

Recreational Sports Time: Physical activity schedules should be tailored to each individual's health status, daily routines, and needs to support mental well-being through recreational participation.

2) Future Research Directions

To enhance the scope and relevance of the strategy, future studies should include a broader range of participants from diverse socioeconomic and ethnic backgrounds. Expanding research to cover other areas in Guangdong and other provinces can support the development of a more inclusive and practical approach. Including various ethnic groups will also help refine the strategy to reflect cultural characteristics among elderly individuals with depression.

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