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## Research on the integration strategy of cognition, exercise, nutrition, and behavior in the community health promotion model

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### Abstract

**Background and Purpose:** Community health promotion is a complex systematic project involving the comprehensive consideration of multiple factors. This study explores the integration strategy of cognition, exercise, nutrition, and behavior in the community health promotion model, providing a theoretical basis for formulating more comprehensive and effective community health intervention measures. **Methods:** Through a literature review and expert interviews, the study comprehensively examines the role of cognition, exercise, nutrition, and behavior in community health promotion and summarizes the existing integration strategies. Additionally, a one-year intervention trial was conducted in a community, where the integrated strategy was applied in practice and evaluated for effectiveness. **Results:** The study finds that cognition, exercise, nutrition, and behavior interact and influence each other, playing an indispensable role in community health promotion. Integrated, multi-element intervention strategies are more effective than single interventions. The intervention trial shows that the coordinated implementation of optimized cognitive education, physical exercise, balanced diet, and behavior habit modification can significantly improve community residents' physical and mental health. **Conclusion:** Community health promotion requires taking into account multiple dimensions, such as cognition, exercise, nutrition, and behavior, and adopting an integrated strategy for comprehensive intervention to improve the health literacy and quality of life of community residents. This study provides theoretical and practical support for formulating more scientific and effective community health promotion strategies.

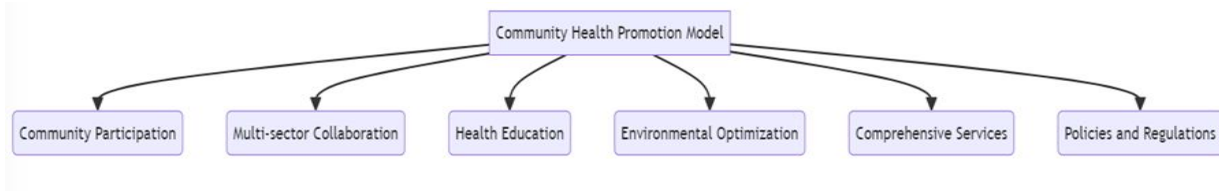
**Keywords:** Community health promotion, Cognition, Exercise, Nutrition, Behavior, Integration strategy

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### 1. Introduction

With the changing lifestyles and the acceleration of population aging, chronic non-communicable diseases are increasingly becoming a significant challenge in the global public health field. Effective prevention and intervention strategies are urgently needed. The community is an essential platform for health promotion work. Through fully exploiting community resources and adopting systematic and comprehensive intervention measures, residents' health literacy and lifestyle can be effectively improved, and disease risks can be prevented and controlled.

Community health promotion is a complex, multidisciplinary, cross-domain systematic project that requires careful consideration and scientific planning from perspectives such as cognition, exercise, nutrition, and behavior. Cognitive factors influence residents' level of health cognition; exercise is essential to maintaining physical vitality, proper nutrition is the basis for healthy living, and good behavior habits are interwoven. Therefore, exploring how to scientifically integrate critical factors such as cognition, exercise, nutrition, and behavior in the community health promotion model is necessary to achieve a synergistic effect.



**Fig 1:** Components of the Community Health Promotion Model

## 2. Overview of the Community Health Promotion Model

### 1. The Connotation of the Community Health Promotion Model

The community health promotion model is a theoretical model and practical framework based on the community, centered on residents, oriented towards prevention, integrating multidisciplinary knowledge and multi-party resources to promote community residents' physical and mental health<sup>[1]</sup>. It emphasizes promoting residents to form a healthy lifestyle and behavior habits through comprehensive measures such as increasing community participation, optimizing the community environment, and strengthening community capacity building<sup>[2]</sup>.

### 2. Components of the Community Health Promotion Model

1. Community participation: Increasing residents' participation and decision-making ability, giving full play to their role as the main body.
2. Multi-sector collaboration: Integrating the efforts of the government, social organizations, enterprises, and other parties to form a collaborative force.
3. Health education: Improving residents' health knowledge and skills and enhancing their self-management abilities.
4. Environmental optimization: Improving the physical and socio-cultural environment of the community to create a health-supportive climate.
5. Comprehensive services: Providing integrated health services such as medical care, consulting, sports, and recreation.
6. Policies and regulations: Formulating relevant policies and regulations to provide institutional support for community health work.

### 3. The Role of Cognition, Exercise, Nutrition, and Behavior in the Model

1. Cognitive factors play a fundamental role in the model. Good health cognition helps residents form correct health concepts, establish awareness of a healthy life, and is a prerequisite for changing health behaviors.
2. Exercise is an essential means of community health promotion. Moderate exercise can improve physical fitness, prevent obesity, cardiovascular diseases, and other chronic diseases<sup>[5]</sup>, and is significant to physical and mental health.
3. Nutrition is a decisive factor affecting health. A balanced diet helps provide adequate nutrition for the body and is the basis for residents to maintain vitality<sup>[4, 6]</sup>.
4. Behavior habits run through the entire model. A healthy lifestyle and behavior habits can significantly reduce the risk of diseases and are the direct goal of community health promotion<sup>[7]</sup>.

## 3. Integration Strategies for Elements in the Model

### 1. Integration of Cognitive Education and Behavioral Intervention

1. Cognitive health education is the foundation for changing residents' unhealthy lifestyles and behavior habits. Through various forms of publicity and education, residents' mastery of health knowledge is enhanced, which is conducive to improving their health awareness, establishing correct health concepts, and preparing them mentally for behavior change<sup>[8]</sup>.
2. Simple knowledge transfer often fails to translate into action, requiring practical and feasible behavioral intervention measures. For example, for unhealthy behaviors such as smoking, alcohol abuse, and obesity, smoking and alcohol cessation group counseling, dietary and exercise guidance can be provided to promote the reshaping of behavior habits specifically.

Therefore, cognitive education and behavioral intervention should be closely integrated, with the former laying the foundation for the latter being the practical extension of the former. A combination of theoretical lectures and practical training, the establishment of health groups and personalized guidance, and other forms can be adopted to progressively and comprehensively achieve overall intervention at both the cognitive and behavioral levels.

### 2. Integration of Exercise and Nutrition

Reasonable coordination of exercise and nutrition plans can be mutually beneficial. On one hand, scientific exercise is conducive to calorie expenditure, weight control, and reducing obesity and related disease risks. On the other hand, a balanced nutritional diet can provide energy replenishment and various nutrients needed for physical activity. Practically, personalized exercise prescriptions and dietary plans can be formulated according to the characteristics of different groups, such as age, gender, and health conditions, with regular examinations, evaluations, and adjustments. Concurrently, emphasis should be placed on disseminating and promoting relevant knowledge, enhancing residents' cognition of healthy exercise and scientific dieting, and promoting conscious behavior habits. Furthermore, community sports facilities and dietary service resources can be integrated to provide one-stop services for residents, such as exercise venues and complementary nutritious meals, facilitating the seamless integration of exercise and nutrition.

### 3. Multi-dimensional Integration of Cognition, Exercise, Nutrition, and Behavior

Community health promotion requires considering multiple dimensions, such as cognition, exercise, nutrition, and behavior. The intervention effect of a single element is often

constrained by other factors, making it challenging to achieve optimal results. Therefore, an integrated strategy must be adopted to realize multi-dimensional importance and mutual coordination.

1. A systematic and complete integrated strategy is needed to guide and implement the work. First, an overall framework should be constructed to design and plan the integration path of all elements from a top-level perspective, clarifying the integration goals and critical areas. This is the overall guiding principle that can ensure the consistency and scientific nature of the integration direction. On this basis, an interdisciplinary expert team needs to be established, integrating disciplines such as psychology, sports medicine, nutrition, and behavioral science to provide professional support for the formulation of the integration strategy and ensure the scientific and systematic nature of the plan.

The implementation of the integration strategy must also be tailored to different groups. Different populations vary in age, gender, health conditions, and other characteristics, requiring the formulation of personalized and comprehensive intervention plans for "one person, one strategy" to achieve full coverage truly. At the same time, innovative integration models should be adopted, combining online and offline approaches, coordinating concentration and dispersion, and emphasizing both theory and practice to improve the accessibility and effectiveness of integration, aligning it with residents' actual lives and enhancing its operability.

2. The smooth promotion of integration work also requires integrating various community resources. The government should coordinate all aspects, formulate relevant policies and regulations, and provide institutional support for the integration work. Social organizations can also leverage their strengths and contribute their professional capabilities during the specific implementation process. Volunteer groups are an essential supplementary force for community health promotion work, as they can engage directly with residents at the community level and win public support for the integration work. The integration strategy can be effectively and efficiently implemented only by integrating the efforts of the government, social organizations, volunteers, and other parties to form a comprehensive promotion mechanism.

At the same time, a scientific monitoring and evaluation system must be established to dynamically track the integration effects across cognition, exercise, nutrition, and behavior dimensions, promptly identify problems, and adjust directions. Regular community health surveys can be conducted to collect resident feedback, evaluate the quality and effectiveness of various measures, identify weaknesses in the work, and continuously improve and optimize the integration strategy, forming a self-correcting and continuous improvement work loop.

The integration strategy encompasses top-level design, professional support, personalized plans, innovative models, resource integration, and process monitoring, constituting a systematic project. By comprehensively implementing it from both theoretical and practical levels and integrating various factors and resources, the integration strategy can be truly put into practice, exerting a synergistic effect, comprehensively establishing healthy concepts for community residents, and laying a solid foundation for fostering healthy lifestyles.

## 4. Discussion and Recommendations

### 1. Research Conclusions

1. Cognition, exercise, nutrition, and behavior are key factors affecting the health of community residents. They interact and influence each other, requiring holistic understanding and systematic intervention.
2. In the community health promotion model, integrating cognitive education with behavioral intervention, exercise with nutritional diet, as well as achieving multi-dimensional integration of cognition, exercise, nutrition, and behavior can exert a synergistic effect, achieving enhanced results.
3. Implementing an integrated strategy requires a systematic deployment in aspects such as top-level design, multidisciplinary support, personalized plans, innovative models, resource integration, and monitoring and evaluation.
4. The implementation of the integrated strategy has been effective, with significant improvements in community residents' health awareness, lifestyles, and physical and mental well-being, verifying the feasibility and effectiveness of this strategy.

### 2. Theoretical Significance

1. It enriches and develops the theory of community health promotion by incorporating the integration strategy of elements such as cognition, exercise, nutrition, and behavior, expanding the theoretical framework of community health promotion.
2. It constructs a theoretical system for the integration of multiple elements in the community health promotion model, providing new theoretical support for achieving the Healthy China strategy.
3. It systematically elucidates the connotation, pathways, and implementation points of the integration strategy, providing new perspectives and methods for research in related fields.

### 3. Practical Recommendations

1. Improve relevant policies and regulations, elevating the integration strategy to an important national measure, providing policy support for its implementation.
2. Strengthen inter-departmental collaboration and establish a cross-sectoral integration mechanism, leveraging the combined efforts of multiple parties.
3. Increase funding to provide financial support for the smooth implementation of the integration strategy.
4. Deepen open collaboration and learn from advanced international concepts and experiences to continuously optimize and innovate the integration strategy.
5. Enhance public education and promotion to raise awareness of the importance of the integration strategy, creating a favorable environment for widespread participation from all sectors of society.

## 5. Conclusion

Integrating key factors such as cognition, exercise, nutrition, and behavior into the community health promotion model is an effective and innovative strategy. Through systematic design and careful implementation, the integration of multiple elements will produce a synergistic effect, significantly enhancing overall effectiveness and

contributing to the construction of a comprehensive health intervention system, injecting new vitality into the sustainable development of public health endeavors. With further theoretical exploration and practical innovation, the integration strategy will undoubtedly make significant contributions to promoting the health literacy and quality of life of the nation, supporting the Healthy China strategy.

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