



# The Development of a Management Model on An Integration of Physical Education, Health Education, and Medical Practice for Sustainable Students' Health Development

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## Abstract

**Background and Aim:** The health of any person could not develop segmentally because all body parts were related and affected each other as the concept of “a sound mind is in a sound body”. Integrating physical education and health education in school teaching and learning could be implemented to enhance the students' whole body's health development. The medical practice in some aspects could gain more success in health screening, habits, and practice on prevention and reduction of some health deficiencies. In response to the “Student Physical Health Standards” the government declared the policy on the integration of physical education and education to strengthen education and other subjects. The concept of an integration of physical education, health education, and medical practice could be a good model to serve this policy of the “Healthy China 2030” plan. This research developed a school students' health management model, provided macro guidance for the development of primary and secondary school sports courses, made everyone clear the basic outline of sports health management operation, and laid a foundation for subsequent development and research.

**Materials and Methods:** The participants of this research are as follows: 17 experts for expert interview to collect preliminary data, 5 experts to test the reliability and validity of the questionnaire with IOC and IOC value = 0.87 (.60-1.00), 19 experts for Delphi to gather the appropriateness and accuracy of the model, 11 stakeholders to connoisseurship group to gather the acceptance of the model on a satisfaction, practicality, and usefulness.

**Result:** The findings of an integrated management model by merging physical education, health education, and medical practice to improve students' health for sustainable development included the following findings: (1) Planning and guiding students' physical education through the comprehensive management model could improve the comprehensive quality and development level of students' health with a scientific measurement practice system, objectively evaluation through the management modern on integrated operations and activities of physical education and sports, health education and medical practice. (2) The collaborative networks among schools, the Department of Community Public Health, and community sports organizations should be established to drive this model. 3) The physical education and health. education should integrate some courses to enhance the knowledge and practice of students' health. 4) Schools should cooperatively organize events on students' health development, such as annual health checks, health exhibitions, sports competitions, and health contests 5) The integrated management model and measurement practice was accepted to be practical, useful, and satisfying to them.

**Conclusion:** Based on the POLC theory, the establishment of cooperation and communication mechanisms among the government, schools, families, communities, hospitals, community public health, and sports clubs could promote the effective integration of school physical education, health education, and medical practices. This model could serve the government policy and total health development to the primary students in Xi'an Shaanxi Province.

**Keywords:** Physical Education; Medical Practice; Management Model; Sustainable Students' Health.

## Introduction

According to the 2010 National survey on students' physical fitness and health showed that there are many problems in the physical health of Chinese students. The lung capacity of students aged 7 to 18 has been declining for 20 consecutive years, but the lung capacity level is still low, although there is an inflection point. The detection rate of obesity and overweight continues to increase, the detection rate of poor vision continues to rise, and there is a tendency for younger age. The results of the national survey on students' physical fitness and health in 2014 show that while students' physical health has improved overall, some old problems still exist. Compared with 2010, the physical form and development level of urban and





rural students in China continued to improve in 2014, and the physical fitness of primary and middle school students showed a stable and good trend, but the detection rate of obesity and overweight among students of all ages continued to rise, the detection rate of poor vision remained high, and the trend of younger age continued to show. The results of a large sample survey show that the mental health status of Chinese children and adolescents is not optimistic. In 2010, the "Chinese Youth Mental Health Survey" conducted by the Chinese Science Association and the Chinese Psychological Society showed that although the overall mental health status of Chinese adolescents was good, the proportion of serious psychological problems was high, and depression was common. Xin (2009) explored the changes in the mental health of Chinese middle school students since 1992 by using the cross-sectional historical research method and found that the psychological problems of middle school students were increasing slowly, and the overall level of mental health was gradually declining. Moreover, the differences in mental health levels among middle school students were increasing, and many middle school students may have psychological problems. Zhang (2013) reviewed and summarized the research on anxiety disorders in Chinese children and adolescents in the past 10 years and found that the detection rate of anxiety disorders in Chinese children and adolescents was 20.3% to 26.7%, and the detection rate and prevalence rate were increasing year by year. In China, physical education is a compulsory course of basic education stipulated by the state, and it is the basic way to realize the purpose and task of school physical education. If we calculate the general teaching time of 3 class hours per week in primary and middle schools, 2 class hours per week in high schools, and 18 weeks per semester, Chinese students will complete about 1,188 class hours of physical education from primary school to high school graduation. At present, with the change in the "talent view" of principals and parents and the development of economic conditions, more and more people can start full physical education. On the contrary, due to heavy academic tasks, lack of guidance, insufficient equipment, and other factors, the situation of Chinese children and adolescents participating in physical exercise outside and after school is not optimistic.

Yu (2018) sorted out the main characteristics of the content changes in the physical education syllabus and physical education and health curriculum standards in the order of time models and analyzed the current situation and development of physical education and health curriculum content in the stage of compulsory education. It is suggested that the content of our PE and health curriculum should attach importance to the development of PE and health core accomplishment, attach importance to the connection with students' lives, and attach importance to the selection of content according to students' physical and mental characteristics. In the context of "Healthy China". Wang (2021) believed that physical fitness and health education of college students should be an important topic in college education. However, for a long time, most colleges and universities have neglected the publicity and education of physical health. At present, college students participate in physical exercise less often, their physical health status shows a downward trend, and they are prone to fatigue, low resistance, and insomnia, most of them lack physical health knowledge. They know little about the national strategy and policy of physical health and pay little attention to physical health assessment. Based on this, schools should strictly implement the standards and norms of physical health testing for college students, strengthen knowledge publicity and education, and incorporate physical health assessment and health education into modern curriculum reform planning.

In recent years, many social organizations, especially some enterprises, have frequently used the term sports health management. However, in academic research, this concept has not been widely spread, and only a few people have adopted it. In 2012, Huang Junzhi of Yangzhou University's master's thesis was entitled "Development and Application of Network Platform for Sports Health Management". However, the thesis did not use sports health management as a proper term but vaguely explained that sports intervention is an important part of health management. In 2013, Yu Fei put forward the prototype of the concept of sports health management in "Talking about Sports Health Management", which was defined as using modern medical science and technology and scientific sports means to systematically pay attention to and maintain the physical health of athletes from the perspectives of physiology, sociology, and psychology. The concept was only a simple description without highlighting the characteristics of sports





health management. After some articles on the development of sports health management equipment appeared, the term sports health management was directly used without explanation. Sports health management is quite different from simple sports intervention. Sports health management is a part of the health management module. At the same time, it can become an independent sports service and realize its unique health promotion value. Therefore, it is of great significance to define the concept of sports health management for the construction of a sports health management model. At present, the concept of sports health management has been recognized by the World Health Organization and has been officially accepted and used in the world. Generally speaking, sports health management takes sports as the main means, comprehensive detection and evaluation as the tracking process, and adjustment and improvement as the goal to achieve a relatively applicable and effective management model for different groups. However, due to regional differences, there are differences in the application of sports health management in different countries.

Health management in the United States was the integration of the resources of the entire medical and health service system, including not only non-medical and health services, but also medical services, which promotes win-win results in a specific historical stage. However, this development model has its special historical basis: First, the development of non-profit Blue Cross/Blue Shield plans, most of the health management organizations in the United States were founded on a non-profit basis, but the development of today, non-profit is only a marketing strategy, are transformed into for-profit health management (insurance) organizations. Second, the American tradition of liberalization, privatization, and government intervention, as well as the sense of individual responsibility for health, is a social contract implied by the public, medical and healthcare companies, insurance companies, and other social sectors. In the United States, sports health management is a branch of health management.

Chen et al., (2021) analyzed the realistic predicament of rural primary school physical education, the problems and constraints of its development, and proposed a more effective path for the development of rural primary school physical education under the background of a "new era", providing a reference for the comprehensive implementation of rural education. Hong (2020) combined theory with practice, integrated literature, theoretical analysis, experience summary, and other research methods, briefly analyzed the teaching status of the primary school physical education and health courses under the background of quality education, and then explored practical strategies for primary school physical education and health teaching under the background of quality education, hoping to provide some help for front-line teachers to better carry out physical education teaching activities And guide; Shang et al., (2020) analyzed the practical significance of promoting the training of physical education teachers in primary and secondary schools of "healthy China", understood the factors affecting physical education teachers in primary and secondary schools, and constructed ideas for training physical education teachers in primary and secondary schools given existing problems. It is suggested that the training of physical education teachers in primary and secondary schools should be changed to the health application type, improve the level of physical education teachers, change the teaching concept, and ensure the healthy growth of teenagers in primary and secondary schools. Ren et al., (2020), the research results of the Fit-4-Fun program provide valuable information for improving children's health and physical fitness level and provide a reference for large-scale implementation in China in the future. Liu (2020) To better promote the innovation and reform of physical education and health education in primary schools and effectively improve the professional quality of physical education and health teaching design in primary schools under the background of the new curriculum reform, schools, and teachers should further understand and implement the teaching concept of the new curriculum reform, and explore the scientific development path of physical education and health teaching design in primary schools from the perspective of professional teaching practice

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Based on the classification of existing research about the integration of sports, physical education, health education, and medicine, this study focuses on the analysis of multi-subject literature related to the integration of sports and medicine, primary school students' sports management model, health management model and the integration of sports and medicine, which lays the theoretical basis and literature foundation for the in-depth study of the construction of Chinese primary school students sports and health management model. In recent years, domestic scholars are trying to integrate medical knowledge into the field of physical education, but most of them are in the primary stage of research, and physical literacy was the entry point and fundamental goal to realize the integration of physical health and expand the function of physical education.

The researcher was an instructor in a sports university and considered that an integration of physical education (including sport and exercise), health education, and medical practice" could enhance better development of school students' health. So, it was valuable to research "The Development of a Management Model on an Integration of Physical Education, Health Education, and Medical Practice for Sustainable School Students Health Development".

## Objectives

To construct a management model on the integration of physical education, health education, and medical practice for a Sustainable Schools Students' Health Development.

## Research Questions

1. What are the factors, organization, and strategies related to the effectiveness of the integration of physical education, health education, and medical practices to develop students' health in primary school students
2. How to develop the management model based on factors, organization, and strategies that related to the effectiveness of the integration of physical education, health education, and medical practices to develop students' health in primary school students
3. Was the developed model accepted by the stakeholders on satisfaction, practicality, and appropriateness?

## Literature Review

### 1. Health Situation of Students

The results of the 2010 National survey on students' physical fitness and health showed that there were many problems in the physical health of Chinese students. The lung capacity of students aged 7 to 18 has been declining for 20 consecutive years, but the lung capacity level is still low, although there is an inflection point. The detection rate of obesity and overweight continues to increase, the detection rate of poor vision continues to rise, and there is a tendency for younger age. The results of the national survey







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In 2010, the "Chinese Youth Mental Health Survey" conducted by the Chinese Science Association and the Chinese Psychological Society showed that although the overall mental health status of Chinese adolescents was good, the proportion of serious psychological problems was high, and depression was common. Zhang (2013) reviewed and summarized the research on anxiety disorders in Chinese children and adolescents in the past 10 years and found that the detection rate of anxiety disorders in Chinese children and adolescents was 20.3% to 26.7%, and the detection rate and prevalence rate were increasing year by year. In China, physical education is a compulsory course of basic education stipulated by the state, and it is the basic way to realize the purpose and task of school physical education. If we calculate the general teaching time of 3 class hours per week in primary and middle schools, 2 class hours per week in high schools, and 18 weeks per semester, Chinese students will complete about 1,188 class hours of physical education from primary school to high school graduation. At present, with the change in the "talent view" of principals and parents and the development of economic conditions, more and more people can start full physical education. On the contrary, due to heavy academic tasks, lack of guidance, insufficient equipment, and other factors, the situation of Chinese children and adolescents participating in physical exercise outside and after school is not optimistic.

Based on the recent two national survey reports on students' physical health, the physical form, some physical functions and physical fitness indicators of Chinese primary school students have begun to show a trend of stopping the decline, but these indicators still need to be improved in the context of the continuous decline of more than 20 years, and other physical functions and physical fitness indicators are still declining. It can be said that the physical health level of Chinese teenagers has not been fundamentally improved. In terms of mental health, the main problems of Chinese primary school students are high depression and anxiety, and there is a trend of increasing year by year. These problems hide the bad signal that the mental health of Chinese primary school students is deteriorating, and it is urgent to arouse the attention of the education sector. Therefore, it is necessary to take effective intervention measures to promote the physical and mental health of Chinese primary school students.

## 2. Management of Schools' Sport and Health Activities

Sports health management started relatively late and was originally originated from the United States. Exercise intervention is one of the contents of health management, which originates from the effect of exercise on the effective control and rehabilitation of chronic diseases. It is the application of modern medical knowledge and scientific sports means from the perspective of sociology, physiology, and psychology to systematically pay attention to and maintain the physical health of athletes. Based on the health status, living status, and exercise habits provided by individuals, through physical fitness assessment, exercise consultation, and communication, we can understand their sports needs and goals, establish personal exercise prescriptions, provide safe, effective, and reasonable exercise plans, provide guidance with practical teaching methods, and provide all-round health services with sports effectiveness tracking. To help improve personal fitness and physical fitness, to achieve the goal of personal fitness and physical health.

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### 3. Sustainable Development Concepts

Sustainable development refers to the concept of meeting the needs of the present without compromising the ability of future generations to meet their own needs. It involves achieving a balance between economic, social, and environmental aspects to ensure long-term well-being for both people and the planet.

The connotation of sustainable development theory is numerous. From an ecological perspective, the sustainable development of sports should align with the sustainability of natural resources and the ecological environment. From an economic perspective, the sustainability of sports requires comprehensive planning in terms of manpower, materials, finances, and supply-demand aspects. From a sociological perspective, the harmonious development of sports should consider equal rights, opportunities, and balanced enjoyment of resource benefits (Zhang and Zheng, 2013).

The theory of sustainable development was first officially discussed in 1972 at the United Nations Conference on the Human Environment held in Stockholm. In 1980, relevant researchers provided a formal definition of the sustainable development theory in the corresponding research literature, offering a more comprehensive explanation of the concept. Building upon previous research, Brundtland further elaborated on the idea of sustainable development in 1987. Baumgartner (2010) believes that sustainable development is the journey people undertake in pursuit of sustainable development goals, it is a continuous process and approach. Sustainable development is an essential path for today's socio-economic progress. It not only drives a shift in the economy from quantity to quality but also brings about changes in people's lifestyles and consumption habits.

### 4. Physical Education and Health Education in Schools

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The literature emphasizes the close relationship between physical education and overall health and well-being. Integrating these two areas can lead to improved student health outcomes. The reviewed studies emphasize the importance of adopting a holistic approach that considers not only physical fitness but also mental and emotional well-being. Such an approach is believed to contribute to sustained student health. Moreover, several studies discuss the role of integrated models in promoting sustainable lifestyles among students. These models aim to instill healthy habits that students can carry into adulthood.

### **5. Roles of Hospital and Community Public Health to Schools.**

Małkowska-Szcutnik, et al (2021), stated that 1) Hospital teachers are central to the continuity of education and support provided to children, and the quality of teachers' work is connected, amongst other things, with their job satisfaction and 2) There were differences across countries regarding the organization of hospital schools due to national regulations 3) Hospital teachers organize various activities and teach students from preschool, elementary, and sometimes also secondary school level, the educators also take care of students' well-being and help them develop passions 4) They perform professional tasks crucial to students' educational and personal growth. They support students' emotional well-being and are a source of support for parents and other teachers by organizing group activities, facilitating socialization processes in students, and working on students' educational, emotional, and social development. On their research findings, the highlights related to school health programs were, 1) Needs Connected with Social Relationships: The needs related to social relationships were in four dimensions: those with students, parents, hospital staff, and teachers from mainstream schools. Every dimension is described below in a separate subsection. 2) Relationships with Hospital Staff (Doctors, Nurses): they feel ignored and disregarded, and they emphasize the need for recognition of their role. doctors and nurses have difficulty accepting and understanding the importance of their work as educators and facilitators. 3) Relationships with Mainstream School Teachers: Most participants highlight the importance of cooperation between the hospital school and mainstream schools. They express a strong need for mainstream school teachers to recognize the grades they give in hospital schools. The teachers shared many similar stories about problems with grades that were called into question. As a result, students had to retake the tests they had already passed in the hospital school. They concluded that Hospital teachers play an important role in keeping children with diseases engaged in education. Apart from pursuing educational goals, teachers also





pay attention to the normalizing function of hospital schools and take care of children's well-being. They are aware that hospital education is of vital importance to students with chronic diseases, and that attending hospital school is their steppingstone to achieving sound mental health.

## 6. Role of school nurses

Council on School Health (2008) said that 1) The school nurse is the health care representative on site. they work as coordinated care, 2) School represents the second most influential environment in a child's life. As more students enter schools with health or mental health problems, pediatricians face the challenge of managing their care throughout the school day. 3) There was a relationship between health and learning, as there was between school nurse availability and student well-being and educational success. The role of the school nurse encompasses both health and educational goals. These included both physical and mental health needs. They perform a critical role within the school health program by addressing the major health problems experienced by children, providing preventive and screening services, health education and assistance with decision-making about health, and immunization against preventable diseases, providing interventions for acute and chronic illness, injuries and emergencies, communicable diseases, obesity, substance use and abuse, adolescent pregnancy, mental health, dental disease, nutrition, and sexually transmitted infections.

The health services are the minimum that should be offered, according to the American Academy of Pediatrics (AAP) manual School Health: Policy and Practice:19 as follows: (Council on School Health (2008); (1) Assessment of health complaints, medication administration, and care for students with special health care needs. (2) A system for managing emergencies and urgent situations. (3) Mandated health screening programs, verification of immunizations, and infectious disease reporting; and (4) Identification and management of students' chronic health care needs that affect educational achievement

The reviewed literature showed the importance of each person and organization related to the development of the student's health. We could not run by individual operations, the integration, or collaborative operations among the concerned people and organization by merging contents and practice to meet the goals. Therefore, this research will construct a sustainable integrated management model of student sports and measurement practice, successful models often involve collaboration between physical education instructors, healthcare professionals, and educators, these models aim to promote long-term, sustainable health and well-being among students.

## 7. How do you implement an integrated curriculum

The benefits of an integrated curriculum both for teaching and learning are endless. For an integrated curriculum to be effective, the curriculum does need to be thought out and developed. Here are a few steps that need to be considered when developing an integrated curriculum (Barton (2019); (1) Select achievable learning outcomes. (2) Consider what service experiences are most likely to enable students to achieve the desired outcomes. (3) Approach potential community partners. (4) Plan the experience in detail. (5) Determine how you will prepare students for the experience. (6) Select activities that are appropriate and meaningful for the students. (7) Integrate critical reflection through experience. (8) Address logistical issues. (9) Develop a plan to measure the achievement of students and community outcomes

## 8. Related Research

Li Gen, Zhang Qi, and Jiang Yuxuan (2020) in the research on "Opportunities, Concepts and Strategic Actions for Chinese Sports to Promote Sustainable Development in the New Era" indicated that the international community, represented by the United Nations and the International Olympic Committee, has been actively promoting sustainable development through sports. The Chinese government's emphasis on sustainable development and ongoing reforms in the sports sector have created opportunities and favorable conditions for the continuous advancement of sports in support of sustainable development in China. By analyzing the United Nations' sustainable development agenda and the concept of a human community with a shared future, the value of promoting sustainable development through sports becomes evident in various aspects, including gender, environment, community development, partnerships, and institutional





governance, enriching the appreciation of sports' social significance. Reflecting on past experiences of promoting sustainable development through sports and updating our understanding of its social value will lay the groundwork for practical endeavors. By integrating and implementing sustainable development concepts and policies within China's internal sports governance and external sports exchanges, we can effectively achieve meaningful progress in this field of work.

Zhou (2022) drawing from the experiences of constructing and developing Wenjiang and Wuhou bases, and considering the status, opportunities, and challenges of Shuangliu Base, a sustainable development path is proposed (1) At the macro level, the focus lies on optimizing the top-level design and enhancing the management system. Improving financial investment mechanisms and reinforcing policy guidance guarantees are essential. Creating a high-quality business environment will invigorate the base's vitality. Strengthening government planning and guidance is crucial to fostering industrial integration and overall development; (2) At the meso level, sports will play a guiding role in promoting national fitness. Special attention will be given to cultivating excellence and attracting strong players in the sports industry. Nurturing industrial market players and sports manufacturing enterprises will contribute to optimizing the sports industry system. Exploring the potential of sports consumption will further stimulate the base's development; and (3) At the micro level, implementing a brand strategy is key, aiming to establish a distinctive “double-stream sports brand.” Enhancing event operations capability will increase the influence of base events. The construction of smart venues will be prioritized to enhance the regional competitiveness of the venues. Investing in consolidating the talent foundation of the sports industry will further bolster the Shuangliu base's competitiveness.

Ren and Zheng (2021) indicated that Sustainability serves as the core principle guiding present-day global sports development. To effectively put this concept into action, the United Nations and IOC have devised a range of strategies, policies, and specific measures. As sports' significance in the global Sustainable Development Goals (SDG) framework gains more recognition, reflecting on the historical evolution and current progress of strategies for global sports sustainability holds great importance.

## Conceptual Framework

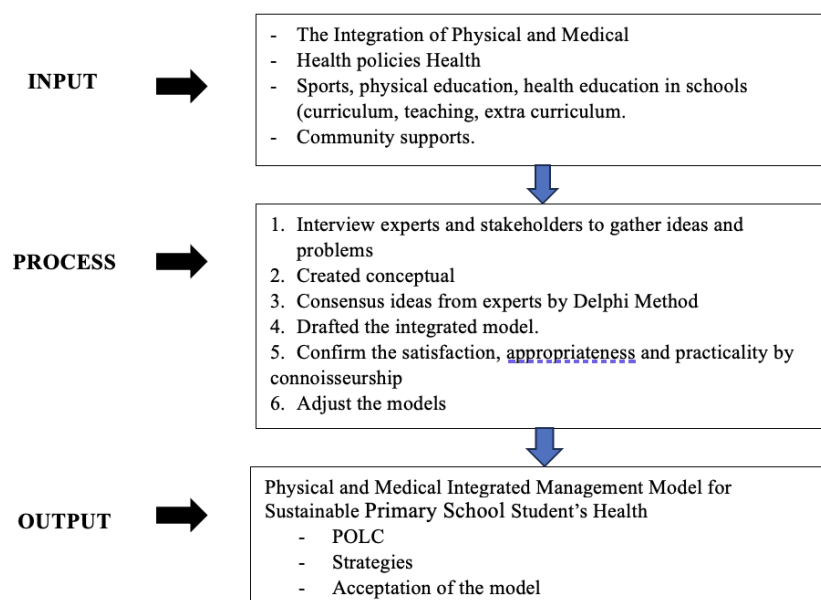


Figure 1: Conceptual framework



## Methodology

### 1. Participants

1.1 Experts for interview: 7 experts including physical education teachers, deans of hospitals, doctors and nurses of health management departments, coaches of related clubs, social instructors of communities, and relevant public officials of the education and sports bureau were recruited to collect preliminary data for the development of an integrated management model of physical medicine.

1.2 5 experts to test the reliability and validity of the questionnaire with IOC.

1.3 Experts for Delphi method: 19 experts were utilized to validate the appropriateness and accuracy of the model's content by using the Delphi method.

1.4 Stakeholders for verifying the Model: 9 stakeholders were involved in conducting focus groups to assess the reliability and outcomes of implementing the model for practical benefits.

**2. Research tools:** Questionnaire: create a questionnaire to be used in the expert interview process and for consensus by Delphi. IOC value = 0.87 (.06-1.00)

**Data collection and data analysis:** Experts were consulted through face-to-face interviews, telephone interviews, and email interviews to collect preliminary data. Then, draft the questionnaire through literature review and expert interviews, and reach a consensus through the Delphi method with 19 experts, and establish a management model. Lastly, the focus group with 9 experts to confirm the acceptance of stakeholders on the satisfaction, appropriateness, and practicality of the sustainable student health physical and medical integrated management models.

## Results

### 1. The result of interview

The experts interviewed were concerned with the integration of sports, physical education, health education, and medical practices. The issues covered: (1) Is it feasible to integrate sports, physical education, health education, and medical practices in school health programs.? (2) How do we set the operations of the integrated model? (3) Which was the organization to participate in or join this model? (4) Would you suggest the strategies in your organization or department offer to drive this model? The highlight of some suggestions and answers;

Expert 1 was a school principal, "It is a good model to motivate and drive to meet the policies of government on the "China health 2030" It is useful and helps the schools to fulfill the teaching and learning in sports physical education and health education"

Expert 5 was a health teacher "Many topics in health education should merge with physical exercise and sports, and when we organize events on health promotion we needed the collaborative operation with physical education teachers, hospital officers, and community public health officers"

Expert 9 was an instructor at the university "It is a good creation because we can establish a network to drive the health activities to promote the health of the students, my university could send my student to lead the schools' students and at the same time they will gain more experience on this health promotion". "First we could proposal this Idea to the city health department to support this"

Expert 6 was a nurse in a hospital "In our hospital, we have a health education department who responds to medical and nurse students, consults to the patients, and sets events on health promotion in the hospital, we can join this on the collaborative operation either the teaching and special events as exhibition in schools or study tour in our hospital."

Expert 11 was a community sportsperson "We could support this project. In our sports center could provide a training course for students and usually, we organize many sports competitions and we can organize for students' groups"

Expert 4 was a physical education teacher" We could provide sports clubs in school to promote sport and exercise after class, and we could organize the healthy camp by combination of health activities and sports activity for students."

### 2. Drafted Model





Researchers summarized the data from experts' interviews, literature review, and consensus of experts from Delphi and took to form the draft of the Integrated model of sports, physical education, health education, and medical practice as follows:

*First Steps Operation;* (1) Set policies and plan to establish the integrated model at the Xi'an City level. (2) Develop a plan to activate the model. (3) Create the proposal and distribute it to the concerned organization and ask to adjust it to complete. (4) Assign the first-round meeting to share the ideas and ask for a suggestion

*Second steps;* (1) Develop the details of the model, and distribute it to the concerned organization and persons. (2) Sign MOU among the organization. (3) Each organization assigns persons to respond to these projects and design the events and activities for collaborative operation for this project.

*Third steps:* (1) Setting the network at each level (city level, community level, and school level. (2) Each level assigns committees and hosts, develops a plan, organization, leading and controlling within the network organizations.

*Fourth step:* Organized the meeting for all sets of committees to notify, clarify, and share ideas to run the projects and model. Activate projects in the models

### 3. Result of consensus with Delphi Methods

The researcher distributed, collected, and analyzed the data on the Delphi method consensus from 19 experts for 2 rounds, the conclusion was that 1) all items were accepted with the criteria of median > 3.50 and interquartile range <1.50). 2) they were accepted on the roles and activities of hospital and community public health in the model, schools' administration roles and activities, and school teachers' and nurses' roles and activities. 3) they accepted the proposed management functions on POLC of the model. (see table1)

Table 1 The conclusion of the consensus of 19 experts from the Delphi method.

No	Factors Relate to Integrated Management Model on School Health	Level of response N=19					Mdn.	IQR
		1	2	3	4	5		
The roles of hospital and community public health								
1	To be the policy committee			1	2	16	5.00	0.00
2	To be the operation committee			2	1	16	5.00	0.00
3	To support staff and resources to the school health program activities			3	5	11	4.00	1.00
4	To set the school health program as the priority of hospital operation.				2	17	5.00	0.00
The acceptable activities								
1	The collaborative networks of school health program.					19	5.00	0.00
2	The support on people, materials, and academic content to schools as request					19	5.00	0.00
3	Support teaching and learning					19	5.00	0.00
	- Study tour in hospital				2	17	5.00	0.00
	- Set special events on children's health				5	14	5.00	0.00
	- Allow the staff to be a resource person in health events or classes				5	14	5.00	0.00
	- Support the annual student health screening, vaccine, and curation of some fevers.				1	18	5.00	0.00
	- Organized school health events annually to support the school health program				5	14	5.00	0.00
School Administration								
1	To be the policy committee					19	5.00	0.00

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No	Factors Relate to Integrated Management Model on School Health	Level of response N=19					Mdn.	IQR
		1	2	3	4	5		
2	To be the operation committee					19	5.00	0.00
3	To support staff and resources to the school health program activities				2	17	5.00	0.00
4	Curriculum developments on physical education, health education,					19	5.00	0.00
5	Support and promote the extracurricular activities concerned with sports and health promotion				3	16	5.00	0.00
6	Priority on teachers, competencies, and quantity.				2	17	5.00	0.00
7	Setting MOUs with organizations concerned with sports and school health programs					19	5.00	0.00
8	Created the tangible facility and environment to be a healthy school such as sports facilities, classrooms, food courts, and schools' surroundings.				3	16	5.00	0.00
9	Provided the training for teachers to understand the concepts of integrated model operation				2	17	5.00	0.00
<b>School teachers and nurses</b>								
1	Setting a school sport and health program				1	18	5.00	0.00
2	Commit to developing and integrating teaching and learning in physical education and health education in some courses					19	5.00	0.00
3	Organized the Professional Learning Community (PLC)				5	14	5.00	0.50
4	Organize the sports clubs, and health clubs to support the students learning.				1	18	5.00	0.00
5	Organized sports events, and health events on special occasions, and annually.					19	5.00	0.00
6	Assign students to participate in events.				5	14	4.73	0.50
7	Cooperate with hospitals, and sports organizations to organize sports and health events for students				2	17	4.89	0.00
8	Develop research on sports and health in schools and home			3	16		3.84	0.00
9	Bring technology to support events such as the Smartwatch application, TikTok, WeChat, and Video Clips.			4	15		4.00	0.00
10	Send students to participate outside school sports competitions and health promotion				1	18	5.00	0.00
<b>The Management Model</b>								
<b>A Planning</b>								
1	Setting School Health Policy for Xi'aan City				1	18	5.00	0.00
2	Develop Plan					19	5.00	0.00
	Vision, Goal, and Misson Strategies			2	17		4.00	0.00
<b>B Organization</b>								
				7	12		4.00	1.00
1	Set organization at the city level, community level, and school level				4	15	5.00	0.00





No	Factors Relate to Integrated Management Model on School Health	Level of response N=19					Mdn.	IQR
		1	2	3	4	5		
2	Set the job description and roles of each organization			6	13		4.00	1.00
3	Assign people and departments to be a host of each organization				16	3	4.00	0.00
<b>C Leading</b>								
1	Administrative level							
	- Set a meeting to ignite the model and discussion.				9	10	5.00	1.00
	- Distribute the job and responsivity			7	12		4.00	1.00
2	Community level							
1	Set School sports and health networks				15	4	4.00	1.00
	- Hospital, community public health departments, community sports organizations, schools.				4	15	5.00	0.00
	- Meeting and discussing the models				16	3	4.00	0.00
	- Distribute jobs and responsibilities				15	4	4.00	0.50
	- Assign projects, events, etc.				16	3	4.00	0.00
2	School Level							
	- School Administrations					19	5.00	0.00
	- Department of Physical Education					19	5.00	0.00
	- Department of Health Education			7	12		4.00	1.00
	- School nurse or health unit			3	16		4.00	0.00
	- Extra curriculum.			4	15		4.00	0.00
<b>D Controlling</b>								
	Develop MOU among the concerned organization					19	5.00	0.00
	Set the provision team to follow the progression and evaluate to program					19	5.00	0.00
	Develop the operation manual			4	15		4.00	0.00
	Survey and record the operation by formative and summative methods				14	5	4.00	1.00
	Set a meeting to follow up and discussion				13	6	4.00	1.00

Researchers summarized the results of consensus data with the Delphi method from 19 experts to draft a management model, event and activities, and diagram of the model as shown in Table 2,3 and Figure 1

Table 2 The details of a management model on the integration of physical education, health education, and medical practices for sustainable school students' health development.

No	Items	Details
1	Planning	1. Setting a vision, goal mission for the projects 2. Find the collaborative organization and persons 3. Setting first round meeting to create and suggest idea 4. Assign a committee for each network level.



No	Items	Details
2	Organization	1. Setting the organizational structure of each level (city level, community level, school level) 2. Create an operation manual 3. Assign persons and host
3.	Leading	1. Set each network committee meeting to run the projects 2. Each organization operates its projects in each site and cooperates with the other organizations to drive the central events 3. Develop communication channels to notify
4	Controlling	1. Setting the controlling committee to follow up the operations, collect data for formative evaluation and summative evaluation 2. Report the movements of projects to the participants and public

Table 3 The table of suggested events and activities

No	Networks	Strategies: events and activities
City Network		
		1. Set policies and organize the networks on an integrated health model 2. Coordinate and support budgets, persons, and materials to operate the projects 3. Organize annual events to integrate health promotions - Annual Conference - Annual sports competitions, health contests, projects exhibitions - Research fund grants
Community networks		
Hospital		1. Assign the staff to coordinate and support the school health program 2. Support the medical and public health team to check the annual health status of students 3. Allow the staff to be special teachers as demand. 4. Set the project for school students to learn or study tour to the hospital.
Community Centers	Sport	1. Provide sports facilities and equipment for children and youth 2. Organized sports skills training for school students 3. Organized sports competitions for novice players. 4. Support staff to be coaches in school sports
Schools		1. Improve the curriculum to serve the health policy 2. Provide adequate sport area, facility, and equipment for teaching and service 3. Assign the Department of Physical Education and Health Education to develop some courses to integrate courses and events for health promotion 4. Provide a PLC unit and in-house training for teachers to operate and learn on integrated projects in this model 5. Assign extra curriculum activities, and events in schools
Departments in schools		1. Assign the teachers to upgrade their competencies 2. Set priority importance of the concepts, events, and activities of this model 3. Motivate the staff to run the activities in the model

No	Networks	Strategies: events and activities
		4. Organized extracurricular activities such as Sports clubs, Sports and health camps, sports competitions, and health promotion activities for students.
	Curriculum improvement	Provide a variety of required courses and elective courses to support health promotion
	Extra curriculum	1. Provide sports clubs, health clubs, and others that relate to improving health, 2. Organized the learning camp on sports, health, music, and food for students. 3. Set the school's annual exhibition on health promotion 4. Organized the sports competition and health contest. 5. Set annual physical fitness tests, and health checks, for students
	Teaching and learning	1. Assign the integrated course on physical education (PE) health education (HE) and medical practice (MP) 2. Study tour to the hospital health education department or exhibition 3. Cooperate with community health network to share the teaching and learning

#### 4. The Diagram of the Model

From the above concepts and research findings, the researcher drew a diagram of “the integrated physical education, health education, and medical practice to improve the health of the schools’ students as below:

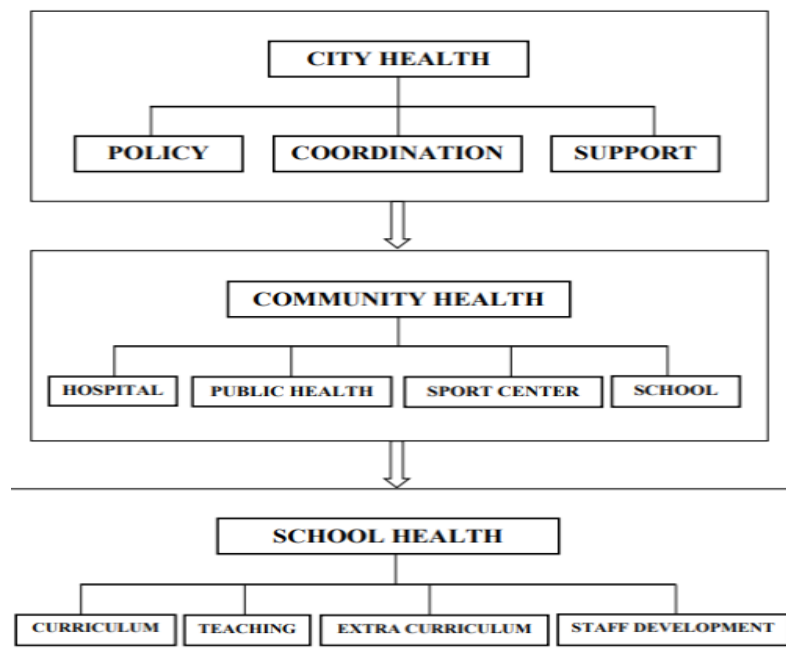


Figure 2 Diagram of “the integrated physical education, health education, and medical practice to improve the health of the schools’ students



## 5. Confirmation of Model

To ensure the satisfaction, usefulness, and practicality of the model, the Researcher organized the connoisseurship panel by the stakeholders consisting of 11 persons, 3 school principals, 2 PE teachers, 2 HE teachers, 1 school staff who responded to a nursing room, 1 medical doctor, 1 hospital nurses in HE department, 1 community sport center

The conclusion of the connoisseurship panel

1. The model was acceptable, but we should suggest more alternative strategies to operate the projects, events, and activities.
2. This should be proposed to the city health organization to accept and set as the city policy.
3. At first stage might be difficult to run it but in the long run, this model will be useful and could be the sample of another city
4. We agree to pursue this model and fully support the schools to run the projects, events, and activities.
5. The MOU needs to be signed by the participating organizations.

They accepted this model as a good model, practical, and useful to our city and students

## Conclusion

This research aimed to develop a management to integrate physical education health education and medical practice to improve students' health in Xian City. The research process was divided into five phases. 1) formulate the conceptual frameworks by reviewing literature and experts interviewing to collect the problems and opinions of school administrators, teachers, heads of hospitals, community public health officers community sports centers, and university scholars 3) Drafting questionnaires to consensus on the decision on the management model to integrated physical education health education and medical practice to improve students' health in Xian City 4) Drafted a management model 5) Confirm the of management with connoisseurship method by the stakeholders 6) Adjusting the management model and writing a research report to promote the Wushu in primary schools. The research findings were as follows:

The management model should establish collaborative networks from the city level to the school level. The organizations concerned with the successive models were, 1) city health organization, hospital, community health department, community sport center, and schools. 2) The organization in a network should respond to their assignment on cooperative activities and events, support and cooperate to run the projects, events, and activities in the model. 3) Schools should consider the improvement of curriculum, support the integration of teaching and learning in physical education and health education, provide extra curriculum events and activities on sports, physical education, and health education of students to promote students' health, 4) Support the teacher development to drive the integrated students' health events and activities. 5) Created networks of cooperation on health development among schools, health organizations, and sports centers. The confirmation of the model on satisfaction, usefulness, and practicality by the stakeholders according to the connoisseurship process.

## Discussion

### 1. Policy support is essential for the development of a health management model

In physical exercise, students can not only exercise their body, and improve their quality and competitive ability but also enjoy fun in activities and strengthen social contact. Therefore, the management model is helpful to comprehensively promote the improvement of students' physical fitness levels and promote the sustainable development of physical education. This is consistent with the research of Baumgartner (2010) which indicated that sustainable development symbolizes the continuous expedition individuals undertake as they strive to attain sustainable development goals. This expedition is a perpetual undertaking and approach, highlighting its ever-evolving character. Sustainable development stands as an essential pathway for progressing modern socio-economic welfare. It not only guides the shift







in the economy from a focus on quantity to an emphasis on quality but also initiates substantial changes in people's lifestyles and consumption patterns.

## **2. School plays an important role in the health management model**

School plays an important role in this management model, and everything is based on school, monitoring and management. Schools can provide personalized health management services for students according to their physical conditions and health needs, combined with hospitals and communities within a certain range. This is consistent with the research of Liu (2020), to better promote the innovation and reform of physical education and health education in primary schools and effectively improve the professional quality of physical education and health teaching design in primary schools under the background of the new curriculum reform, schools and teachers should further understand and implement the teaching concept of the new curriculum reform, and explore the scientific development path of physical education and health teaching design in primary schools from the perspective of professional teaching practice.

## **3. Scientific data collection, analysis, and feedback mechanism are some of the keys to the management model**

Scientific data collection, analysis, and feedback mechanisms can enable education administrators to more accurately understand the needs and health of students in physical exercise. This will help educators timely adjust educational plans and management measures to meet students' needs and safeguard their physical health.

## **4. The close cooperation between schools and medical institutions is the key to promoting the implementation of the management model.**

Close collaboration between schools and medical institutions is key to advancing a sustainable integrated management model of student physical education and measurement practices. By establishing a cooperation mechanism between schools and medical institutions, schools and medical institutions can jointly develop sports health management plans and carry out monitoring and intervention of students' physical health. Relevant policies in China also support the development of this model, such as: "integration of physical medicine", "integration of physical health", etc. Schools and medical institutions establish cooperative relations, and close cooperation between schools and hospitals can better promote the healthy development of primary school students.

## **Recommendation**

### **Application of the Research**

1. The city officers concerned with health development should consider this model and help all schools establish this model in the first steps.
2. To run the project's events and activities at the beginning, all participating organizations and people must be clear and understand the concepts and goals of the model, dedicated to the collaborative works to operate the models.
3. The extra curriculum and after-school activities were very important to enhance the health habits of students, each school should create strategies to motivate them to participate in the events and activities.

### **For further research**

1. The dept data collection on schools' networks and community networks to promote sustainable health improvement is needed to collect and analyse for better corporative operation.
2. The teachers who were the key persons in running this model should be trained, so the research on teacher development on the integration of different disciplines should be considered.

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