Social Medicine and Health Management (2024)
Clausius Scientific Press, Canada

DOI: 10.23977/socmhm.2024.050106
ISSN 2616-2210 Vol. 5 Num. 1

Integration of Sports and Medicine in Higher Medical Education: Challenges, Significance, and Strategies

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Keywords: Integration of medicine and physical education; challenges; significance; strategies

Abstract: This paper explores the importance of integrating sports and medicine in the comprehensive education of medical students, along with addressing the current challenges and solutions in teaching practices. It initially introduces the integrated medical-sports education model, emphasizing its significance and discusses the existing problems in teaching practices, including teacher competency, lack of teaching materials, low student participation, and inadequate integration of sports and medical resources. Solutions proposed include enhancing coordination, standardizing materials, improving teaching methods, and optimizing resource integration. The paper further underscores the significance of integrated sports and medical education in achieving teaching goals, reforming physical education, and enhancing professional readiness in medicine. In its conclusion, it highlights the need for comprehensive development amid societal competition, advocating for the integrated medical-sports education model as an effective approach to cultivate highly qualified composite talents in medical universities.

1. Introduction

The integrated teaching model of medicine and physical education is an instructional approach that combines medical knowledge with physical activities [1]. Its primary goal is to enhance the overall qualities of medical students, cultivating their health consciousness, sports skills, and medical expertise. Guided by the principle of "health first" and centered around the concept of Integration of Medicine and Physical Education (IMPE), this model aims to promote the comprehensive development of students [2]. Through various forms of instruction such as theoretical teaching, practical training, and extracurricular activities, the model assists students in acquiring both medical knowledge and sports skills, fostering good exercise habits, and improving physical and mental fitness.

In theoretical teaching, teachers can integrate medical knowledge with physical activities, elucidating the impact of exercise on human health, prevention and treatment of sports injuries, and precautions for physical exercise [3]. This helps students establish correct health and exercise perspectives. Practical teaching involves organizing students in various physical exercises, including

fitness routines, yoga, and ball sports, facilitating the acquisition of sports skills and enhancing physical fitness [4]. Extracurricular activities encompass school-organized sports competitions, fitness events, etc., encouraging active student participation to enhance their interest in sports and instill healthy exercise habits [5].

In this instructional model, students not only learn medical theory but also engage in physical activities to enhance their physical fitness. The integrated teaching model aims to comprehensively educate students, ensuring they not only grasp medical knowledge but also possess positive exercise habits and health awareness. IMPE contributes to improving students' overall capabilities and promoting their physical and mental health development. IMPE represents a crucial feature in the development of modern sports and modern medicine, meeting the interdisciplinary requirements for medical professionals in contemporary society.

2. Problems of Current Teaching Practice

2.1 Teacher Competence and Lack of Teaching Materials

In the current landscape of university education in IMPE, there are significant challenges related to teacher competence and the availability of relevant teaching materials. Currently, the teaching model is primarily led by medical instructors, who focus on imparting foundational medical knowledge. However, the incorporation of physical education and health aspects is managed by sports instructors. Issues are therefore highlighted. Firstly, teacher competence. Many medical instructors lack sufficient knowledge in sports-related topics, leading to the oversight of students' physical health concerns and sacrificing relevant content for teaching effectiveness. Secondly, teaching materials. The lack of designated or standardized textbooks in universities results in varied teaching materials, including self-authored content and material adopted from other institutions. This diversity creates inconsistency in the quality and coverage of teaching materials [6].

To address these challenges, there is a need to enhance coordination between medical and physical education instructors, improve the standardization of teaching materials, and ensure a comprehensive representation of IMPE in physical education.

2.2 Low Student Participation

Despite the mandate for physical education, there is a prevalent issue of low participation among students in most medical universities. The traditional teaching methods, which primarily focus on basic sports knowledge and skills, contribute to a lack of enthusiasm and interest among students [7]. The incorporation of fitness exercise prescriptions is notably absent, and the outdated, monotonous content further hinders student engagement. To tackle this issue, there is a need for a shift in teaching methods, placing emphasis on student interest, nationwide fitness trends, and lifelong sports awareness.

2.3 Poor Integration of Physical Education Resources

The integration of physical education resources with medical resources faces significant challenges. While IMPE represents a novel teaching model, sports instructors might lack teaching experience and relevant medical knowledge. Conversely, the existing sports instructor pool faces challenges related to a shortage of talent, outdated knowledge structures, and teaching concepts. Additionally, the lack of facilities for sports-related laboratories and skill centers impedes effective learning, hindering the seamless integration of sports and medical resources. To bridge this gap, universities should invest in adequate facilities, facilitate collaboration between medical and sports

instructors, and ensure a more comprehensive integration of resources [8].

Generally, addressing these challenges requires a comprehensive approach, including improving teacher competence, standardizing teaching materials, adopting engaging teaching methods, and enhancing the integration of physical education and medical resources.

3. Significance of IMPE

3.1 Reaching Physical Education Teaching Goals

Building upon the foundation of training a large number of general practitioners, higher medical universities are further expanding their efforts to cultivate talents who are not only proficient in "medicine" but also in "sports." The physical education programs in medical universities are gradually transforming students' perceptions, leading them to recognize the significance of physical exercise. Students are becoming increasingly aware of the health benefits of medical sports practices, actively engaging in physical activities and fitness. Fields such as rehabilitation medicine, sports medicine, exercise prescriptions, and health assessments are outcomes of the integration of medicine and sports, serving as crucial breakthroughs for future reforms in integrated medical and sports education [9].

However, despite the ongoing deepening of the "new medical reform" and the increased interaction between patients and community medical service centers, there remains a prominent contradiction in China's healthcare talent development. This contradiction arises from the incongruence between the demands of economic and social development, as well as the health needs of the general public. The pace of reforms in talent development at higher medical institutions remains slow and fails to meet the public's health requirements. This misalignment poses a challenge to the current development spirit of the new medical reform.

3.2 Reforming Physical Education with IMPE

As institutions dedicated to cultivating advanced medical professionals, higher medical universities establish an inseparable connection between medicine and sports. The teaching process of physical education courses incorporates a substantial amount of theoretical knowledge related to medicine. Through the study of physical education courses, students not only ensure the scientific nature of their own physical exercise but also leverage specialized knowledge advantages not found in other disciplines. This approach broadens their professional knowledge framework, expands the scope of their knowledge, and comprehensively grasps the knowledge pertaining to the relationship between sports and the human body. Considering the professional characteristics of medical students, the integration of theory and practice is employed to develop relevant medical-sports courses [10].

By designing and teaching sports courses with a medical focus, medical knowledge is continually infused into the curriculum. This process gradually expands the students' knowledge domains, allowing them to adeptly and accurately understand the connection between sports and human health. Aligning with the trends in modern medical development, this approach pioneers a new field for the future development of medical universities, gradually advancing the curriculum and teaching reforms in higher medical education.

3.3 Transformative Impact of IMPE on Professional Preparedness

IMPE can help medical students recognize the importance of physical health, enabling them to develop a stronger physique. This prepares them to adapt to higher-intensity medical work upon entering society [11]. Through such education, medical students systematically acquire specialized sports knowledge, equipping them with the ability to guide fitness, assess physical fitness, and

prescribe exercise. This broadens their knowledge structure and optimizes the allocation of human resources within the medical system. As most higher education institutions further explore the model of cultivating talents with an integration of medicine and sports, they aim to chart a reform path that suits the characteristics of medical universities in China. This reform serves as both an enlightenment and guidance for the restructuring of sports courses, allowing the integration of medicine and sports to play a guiding role in higher medical education. This, in turn, provides an effective reference for the swift cultivation of talents who are not only proficient in medicine but also skilled in sports.

4. IMPE Strategies

The integrated development of sports and medicine requires, first and foremost, students to understand the relationship between sports and their own health. It is essential for students to fundamentally comprehend the medical aspects of sports, rediscover the charm of physical activities, and reassess the importance of health. This process enhances students' awareness of sports and fosters autonomy and consciousness in their engagement with physical activities. Medical university physical education must organically integrate with preventive medicine education, reflecting the distinctive features of medical universities [12]. Establishing the guiding principle of lifelong sports, it ensures that medical university students possess the culture of lifelong sports, accumulate knowledge in sports health, and follow an educational path where sports and healthcare develop synergistically. The ultimate goal is to enhance physical fitness and promote health, returning to the original purpose and essence of sports.

The implementation of IMPE requires a shift in traditional perceptions, teaching models, and methods of physical education. Beyond basic motor skills, the content of physical education courses should instill concepts related to fitness, health preservation, physical strengthening, and disease prevention. This continuous promotion of students' physical fitness is crucial. Furthermore, additional courses such as sports health, exercise prescription, health management, and health maintenance should be introduced to teach fundamental scientific knowledge of the human body. Finally, the implementation of IMPE must address the issues of exercise effectiveness and sustainability, laying a solid foundation for instilling in students an awareness of lifelong physical exercise and contributing to the construction of a tropical medical university.

China has been actively promoting quality education, aiming to improve students' basic physical fitness while mobilizing their initiative to develop healthy physical and psychological qualities. Medical universities should focus on the characteristics and needs of IMPE, addressing the issue by intensifying the construction of the physical education faculty. The medical university in the tropical region should further explore a model for cultivating talents with an integration of medicine and sports, excel in tropical medicine, create tropical medicine textbooks, enhance the construction of tropical medicine disciplines, and cultivating talents in tropical medicine should be prioritized. By charting a reform path suitable for the characteristics of Chinese universities, students will recognize the importance of sports in health and disease prevention, ultimately becoming genuine composite talents, and striving to achieve educational objectives.

5. Conclusion

In modern society, the demand for talent is oriented towards comprehensive and versatile individuals, with good physical fitness forming the foundation for holistic development. As societal competition intensifies, individuals face significant pressures on their physical and mental well-being. For university students about to enter the workforce, they encounter severe tests in meeting societal challenges and adapting to its development amid the increasing pressures.

In future physical education, medical universities should intensify reform efforts. This entails

making physical education courses more personalized, diverse, and specialized while fostering a lively and active learning atmosphere. Enhancing health, improving physical abilities, cultivating students' awareness of their role in physical activities, and instilling a positive and optimistic life attitude should be prioritized as the primary objectives of physical exercise in medical universities. The aim is to seamlessly integrate sports and medicine, not only in the cultivation of highly qualified composite talents but also in bringing greater benefits to society and humanity.

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