

Research on Curriculum Reform of Physical Education Based on "Combination of Physical Education and Medicine"

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Abstract: Under the background of the outline of healthy China 2030 plan, this paper analyzes the development direction of physical education curriculum reform in colleges and universities from the perspective of "combination of physical education and medical education". Taking the contents of physical education curriculum in four colleges and universities of Hebei Medical University, Shandong Normal University, Liaocheng University and Beijing Institute of physical education as the research object, it determines that the training objectives and teaching contents of physical education curriculum in colleges and universities are not clear, lack of contact with medicine, lack of professional skills teaching courses and other major problems. Combined with the new concept of "combination of physical education and medical education" and the requirements of physical education curriculum reform in colleges and universities, some feasible suggestions are put forward from the aspects of specialty curriculum characteristics, professional skills training, joint education and learning from excellent experience.

Keywords: "Combination of Physical Therapy"; College Courses; Reform of Physical Education Teaching; Training Objectives

The "Healthy China 2030" Plan, issued by the State Council in 2016, serves as a pivotal guiding framework for the development of physical education and social sports in China both at present and in the foreseeable future. It not only charts the course for the modernization of sports in our country but also underscores the impetus for the construction and advancement of a healthier China. Within this context emerges the novel concept of "integration of sports and medicine," which

stands as a vital catalyst for the realization of the "Healthy China" initiative. Under the overarching goal of nationwide health development, attention must be directed towards the construction of physical education, for the reform in physical education not only directly impacts the self-development and progress of university students but also bears upon the cultivation and output of talents in the realm of "integration of sports and medicine." However, the current ambiguity in the curriculum design of physical education in universities and the low differentiation of sports majors have led to a situation where the quality of sports talents fails to meet societal demands. Furthermore, research on courses related to "integration of sports and medicine" predominantly concentrates within medical disciplines, with scant alignment in sports-related majors. In comparison to courses in medical disciplines, the scope of education in social sports majors is more extensive, encompassing a broader array of societal responsibilities and engagements. This paper, in conjunction with the innovative concept of "integration of sports and medicine," conducts an analysis of the reform in university physical education curricula. Such research is of profound significance in comprehending the current status of university sports major curriculum design and delineating the meaningful content of specialized courses.

1. Interpretation of the Connotation of "Integration of Sports and Medicine"

The concept of "integration of sports and medicine" embodies the organic fusion of medical practices with physical activities. Rooted in medical expertise, this concept orchestrates a seamless integration between methodologies of physical exercise and knowledge from medical disciplines, thereby rendering sports endeavors more scientifically grounded to enhance physical prowess and prevent diseases. As a novel concept

introduced under the guidance of the "Healthy China 2030" Plan, "integration of sports and medicine" marks the inaugural amalgamation of healthcare knowledge with sporting pursuits. To grasp the essence of this integration, a compilation of relevant materials pertaining to "integration of sports and medicine" has been organized.

Wang Hai (2016) conducted an in-depth analysis of the construction model of "integration of sports and medicine," elucidating the existence of a symbiotic relationship within its framework. Wang Huiqin (2009) advocated for a focus on faculty development in medical institutions and proposed the immersion of sports educators from universities into medical schools under suitable conditions. Zhang Jianwei (2018) delved deeply into "integration of sports and medicine" from abstract, operational, and knowledge perspectives, highlighting its fusion of various aspects including human health management, physical exercise, dietary management, and medical hygiene, with sports activities and healthcare being pivotal components. Cheng Mingxiang (2006) proposed a new model for the reform and development of physical education from the perspective of medical institutions, comprehensively expounding on the reform direction under the guidance of the "integration of sports and medicine" concept in terms of teaching reform objectives, curriculum design, and teaching mode innovation.

This study leans towards the research content of scholar Zhang Jianwei in interpreting the concept of "integration of sports and medicine." Combining Zhang Jianwei's three-dimensional approach, this study conducts an analysis of "integration of sports and medicine."

From an abstract perspective, traditional health service models exhibit a singular focus, lacking the integration of sports knowledge alongside medical expertise. The emergence of the new concept of "integration of sports and medicine" facilitates the effective convergence of medical ideologies with physical techniques and methodologies, advocating primarily for disease prevention through healthy activities. This novel concept effectively alleviates the shortcomings of traditional health models by addressing the growing demand for disease treatment with its inherent features of low cost,

long-term benefits, and high efficacy.

From a knowledge standpoint, the new concept of "integration of sports and medicine" achieves a seamless fusion of knowledge in physical exercise with that in medical sciences. Previous health guidance and physical exercise activities predominantly encompassed knowledge from singular disciplines, lacking diversity. Under the guidance of "integration of sports and medicine," the training of relevant professionals necessitates not only the cultivation of knowledge in medical sciences or physical exercise but also a comprehensive understanding of both disciplines. "Integration of sports and medicine" does not merely juxtapose knowledge from two disparate disciplines within the same training system; rather, it entails a profound integration at the levels of technical skills and knowledge, leveraging the advantages of sports techniques and melding them with medical ideologies to realize true integration, thus meeting the health needs of individuals.

From an operational perspective, the implementation of the new concept of "integration of sports and medicine" inevitably requires collaboration between sports management departments and medical institutions. Despite disparities in their operational scopes, both departments fundamentally prioritize human life and health. In practical application, the realization of "integration of sports and medicine" necessitates joint efforts in conducting health assessments, formulating exercise plans, and managing medical affairs, among other tasks. As outlined in the "Healthy China 2030" Plan, the integration of sports and medicine in China necessitates collaborative efforts between the General Administration of Sport and medical institutions such as the National Rehabilitation Research Center. The General Administration of Sport should systematically organize the development of expert teams, sports management, and sports rehabilitation training, while rehabilitation centers primarily employ specialized medical knowledge to conduct rehabilitation training.

The content of "integration of sports and medicine" across various dimensions exhibits a harmonious alignment, embodying a scientific amalgamation of medical and sports disciplines. The implementation of the new concept of "integration of sports and medicine"

should be tailored to actual needs, devising corresponding implementation plans in accordance with the diverse requirements of different industries and demographics.

2. Research Subjects and Methodology

The present study focuses on Hebei Medical University, Shandong Normal University, Beijing Sport University, and Liaocheng University, with a particular emphasis on understanding the status of the curriculum offerings in the field of social sports guidance across these four institutions.

Extensive investigations, collation, and review of pertinent literature concerning the integration of sports and medicine and the professional curriculum of social sports guidance were conducted. Insights into the current state of development of the integration of sports and medicine and the establishment of sports courses in universities were sought from relevant experts and scholars, supplemented by interviews and exchanges with students currently enrolled in these

institutions. A comparative analysis was undertaken to discern variations in the structure of sports courses among the four universities, aiming to grasp the disparities in the cultivation of professional talents under the backdrop of the integration of sports and medicine, thereby identifying potential issues. Utilizing statistical analysis methods, data acquired were subjected to meticulous processing to draw conclusive findings.

3. Research Findings and Analysis

3.1 Current Status of Educational Objectives of University Sports Courses under the New Concept of "Integration of Sports and Medicine"

In examining the status of sports teaching courses across the four universities, an initial analysis was conducted on the disparities in educational objectives among different institutions. Table 1 presents the fundamental educational objectives of the social sports guidance majors in the four universities.

Table 1. Fundamental Educational Objectives of Social Sports Guidance Majors in Four Universities

University Name	Educational Objectives
Hebei Medical University	To promote the comprehensive development of students in morality, intelligence, and physique; to cultivate professional talents in sports education guidance for social professional sports institutions and research units, equipping students with good moral cultivation and solid professional knowledge.
Shandong Normal University	To cultivate students with foundational knowledge and professional skills in sports; to equip students with problem-solving abilities, providing high-level managerial and technical talents for the development and construction of the sports industry.
Liaocheng University	To cultivate professional talents with high-level theoretical knowledge and professional sports skills, capable of engaging in sports management, educational teaching, and sports training guidance, thus forming a composite professional workforce.
Beijing Sport University	To train applied sports talents proficient in managing sports and fitness projects, providing professional consulting guidance, and engaging in sports research and development work.

It is evident from the aforementioned table that Hebei Medical University, Beijing Normal University, and Liaocheng University have made adjustments in accordance with China's 2016 "Healthy China 2030" Plan. The objectives for the curriculum offerings in the field of social sports guidance have also been modified based on the content of education, aligning with the guiding principles of the new concept of "integration of sports and medicine." Notably, Shandong Normal University's articulated educational objectives remain rooted in the fundamental framework

outlined in the "Comprehensive Guidance Training Plan for All Japan Students," with no apparent adjustments made under the guidance of the "integration of sports and medicine" concept.

3.2 Under the Framework of the Novel Concept of "Integration of Sports and Medicine," The Current Status of University Sports Course Arrangements Unfolds

The course offerings for the social sports guidance majors at the four universities in

Table 2 largely align with the training directives issued by the Ministry of Education, primarily categorizing courses into compulsory and elective classes. The compulsory courses provided by universities encompass specialized knowledge and theoretical content that students must grasp, with a primary focus on cultivating moral character, logical analysis,

and professional sports skills. These compulsory courses represent essential competencies required for students majoring in social sports guidance. The elective courses, professional practical courses, and non-degree courses offered serve as supplementary courses aimed at enhancing students' overall competencies.

Table 2. Status of Curriculum Offerings for Social Sports Guidance Majors in Four Universities

University Name	Course Offerings
Hebei Medical University	Compulsory Courses and Elective Courses
Shandong Normal University	Degree Courses, Practical Courses, Non-degree Courses
Liaocheng University	Degree Courses, Non-degree Courses, Professional Development Courses
Beijing Sport University	Degree Foundation Courses, Professional Compulsory Courses, Professional Elective Courses, Professional Practical Courses

3.3Comparative Analysis of Professional Courses among Different Universities

The present study undertakes a statistical

analysis of the quantity and proportionality of professional course offerings across the four universities.

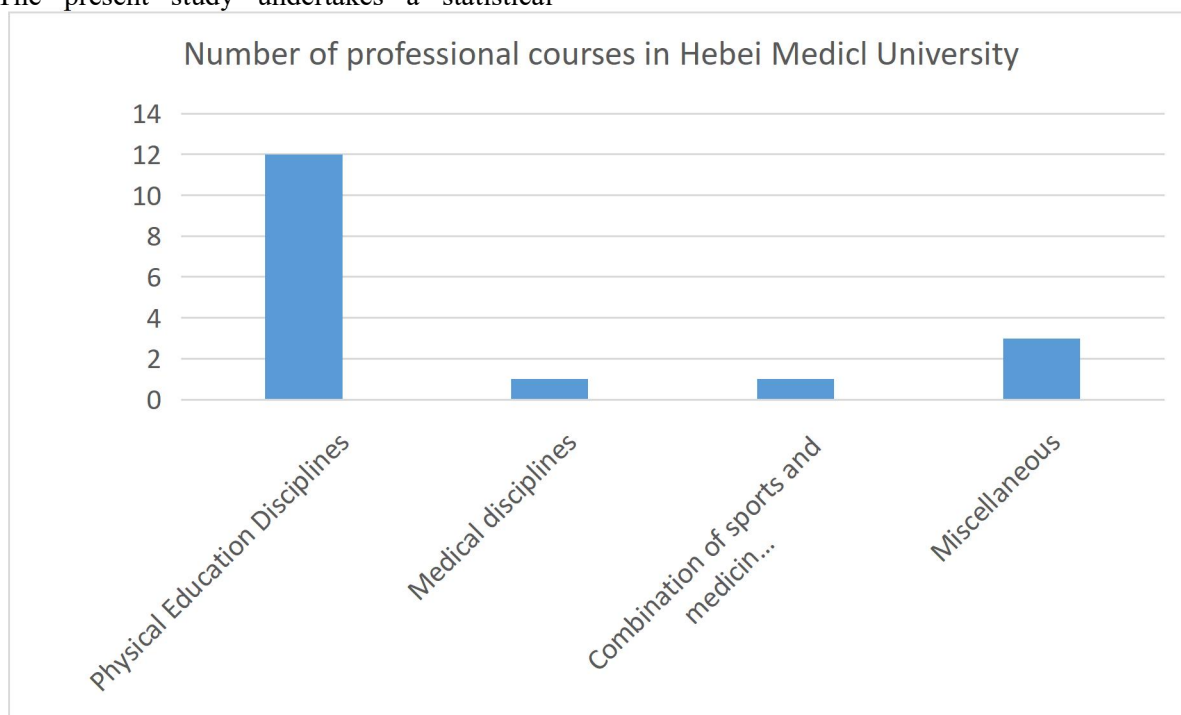


Figure 1. Depicts the Number of Professional Courses Offered by Hebei Medical University.

The statistical findings reveal that Hebei Medical University offers a total of 17 courses in the field of social sports guidance. Within the discipline of sports science, there are 12 courses encompassing topics such as fitness theory and practice, introduction to the sports industry, theory and practice of national physical fitness testing, and sports marketing, constituting 71% of the total courses offered. Courses related to medicine and "integration of sports and medicine" each comprise one course,

with traditional Chinese massage therapy representing the former and exercise prescription representing the latter, both accounting for 5% of the total courses. Additionally, other specialized courses cover topics including methods of sports teaching and research, health education, and guidance, totaling three courses and representing 19% of the curriculum. Notably, all "integration of sports and medicine" courses offered by Hebei Medical University are theoretical in nature.

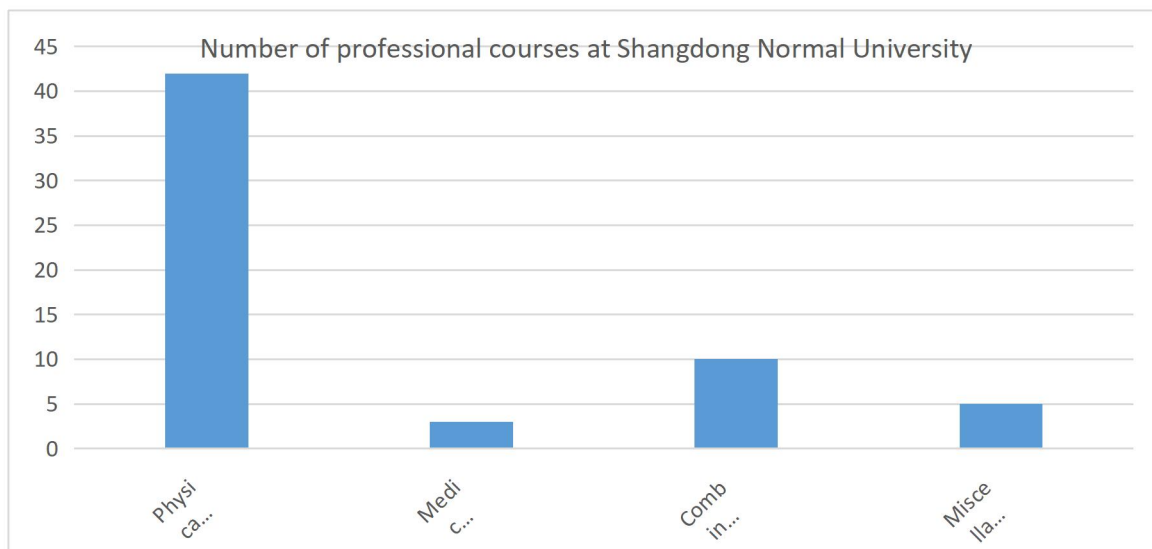


Figure 2. Illustrates the Number of Professional Courses Offered by Shangdong Normal University.

The statistical analysis reveals that Shandong Normal University offers a total of 60 professional courses. Within the field of sports science, there are 42 courses covering various topics such as social sports studies, mass sports management, aerobics, outdoor sports, introduction to traditional martial arts, and sports psychology, accounting for 70% of the total courses offered. Courses in the medical discipline include research methods in medical statistics, basic research methods in medicine, and electrophysiological techniques, constituting 5% of the total. Courses related to the "integration of sports and medicine" comprise ten courses, including exercise

prescription, prevention of sports injuries, exercise for disease prevention, exercise anatomy, and technical action anatomy, representing 16% of the curriculum. Additionally, other courses encompass diverse subjects such as multivariate statistics, VFP database management, scientific methodology, modern educational concepts and higher education reforms, and an introduction to modern educational technology, totaling five courses and constituting 9% of the curriculum. The statistical findings indicate that all "integration of sports and medicine" courses offered by Shandong Normal University are theoretical in nature.

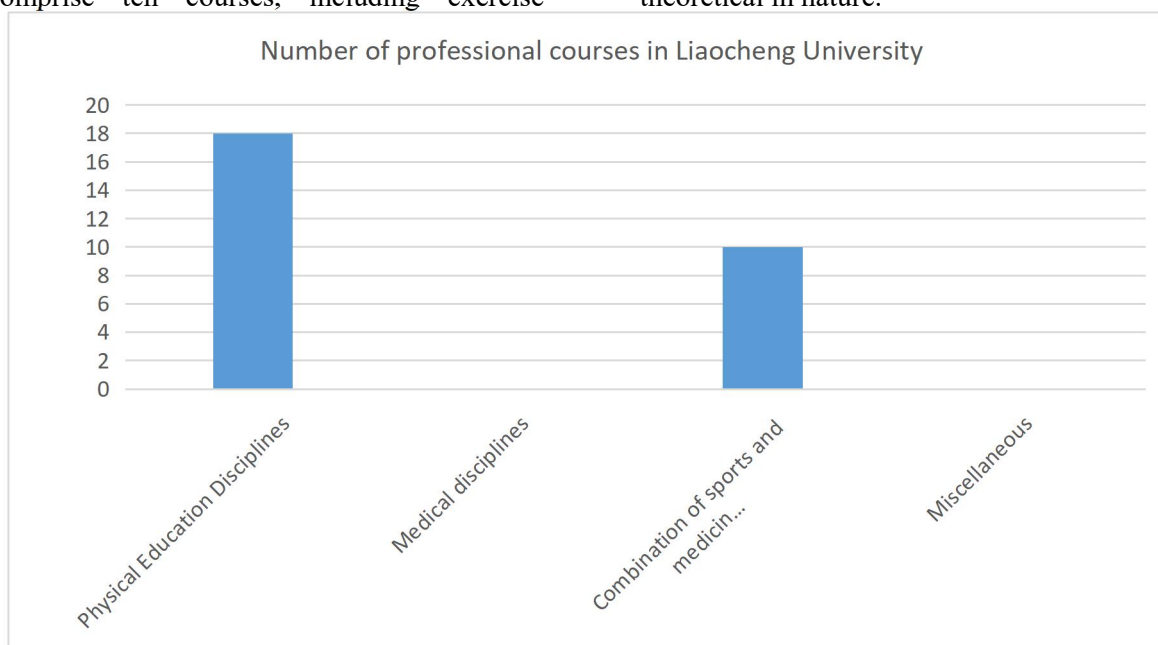


Figure 3. Depicts the Number of Professional Courses Offered by Liaocheng University.

The statistical findings indicate that Liaocheng University offers a total of 28 professional courses. Within the domain of sports science, there are 18 courses covering topics such as exercise physiology, social sports studies, yoga, sports culture, sports management, and sports education, constituting 64% of the total. Courses related to the "integration of sports and medicine" encompass ten courses, including exercise prescription, fundamentals of sports rehabilitation theory, functional anatomy, and guidance in rehabilitation skills, representing 36% of the total. Notably, Liaocheng University's courses in the "integration of sports and medicine" incorporate instruction in rehabilitation skills, comprising not only theoretical knowledge but also practical guidance in rehabilitation techniques, general rehabilitation methods, and auxiliary rehabilitation therapies.

The statistical analysis reveals that the total number of professional courses offered by Beijing Sport University amounts to 58. Within

the domain of sports science, there are 45 courses covering topics such as principles of sports science, research methods in sports, sports management systems, theories and practices of the sports industry, sports leisure studies, sports management, quality monitoring in sports teaching, and advancements in sports rehabilitation research, constituting 78% of the total. Courses related to the "integration of sports and medicine" encompass 11 courses, including behaviors related to sports and health, sports selection, sports immunology, principles of sports control and rehabilitation, and techniques of sports therapy, representing 20% of the total. Other courses, such as logic and mental health studies, constitute 2% of the total. It is noteworthy that within the "integration of sports and medicine" courses at Beijing Sport University, theoretical content is included but there is a lack of necessary practical skills-based course content.



Figure 4. Displays the Number of Professional Courses Offered by Beijing Sport University

3.3 Analysis of the Direction of Reform and Development of University Physical Education Programs Guided by the Concept of "Integration of Sports and Medicine"

According to statistical analysis, there are common problems in the current setting of university physical education programs. Among them, the main issues include the lack

of medical subject-related courses, insufficient "integration of sports and medicine" courses, and an imbalance between theoretical and practical contents. Based on the results of this survey, it was found that only Liaocheng University offers "integration of sports and medicine" skills-based courses among the four universities surveyed. The primary reason for the insufficient courses in this category is the

lack of specialized skill instructors . To address such issues, collaboration between sports and medical universities is essential in designing course content and facilitating communication between experts and instructors from both fields. Universities should adjust their course offerings according to the principles of "integration of sports and medicine," incorporating unique features into their curriculum. The universities surveyed in this study, including Hebei Medical University, Shandong Normal University, Liaocheng University, and Beijing Sport University, should leverage regional characteristics and establish partnerships with local medical institutions to develop distinctive courses and create a unique profile for their physical education programs .

4. Conclusion and Recommendations

4.1 Conclusion

(1) The specificity of the training objectives for university physical education programs is insufficient, lacking content related to the "integration of sports and medicine" concept. Among the four universities surveyed in this study, there is a shortage of specialized medical subject-related content, with a relatively small number of relevant courses.

(2) In this survey, there is a scarcity of "integration of sports and medicine" courses, particularly those focusing on practical skills. Universities should actively collaborate with medical colleges in the reform of physical education programs.

4.2 Recommendations

(1) Under the guidance of the "integration of sports and medicine" concept, the reform of university physical education programs should focus on the integration of "medicine" and "sports," proceeding step by step. Reform efforts should incorporate specialized skills courses such as sports medicine and exercise prescription . Utilizing medical courses to impart foundational theoretical knowledge to students will help them understand the importance of "integration of sports and medicine." Through the study of sports-related programs and medical knowledge, students can grasp the basic principles and main methods of "integration of sports and medicine." In skill training, universities should actively organize

courses such as health sports and fitness activities, integrating basic principles of modern medicine to equip students with professional training and rehabilitation methods.

(2) The reform of university physical education programs should facilitate organic linkage between internal and external courses. Utilizing students' weekend time, universities can organize students to engage in professional sports training and medical knowledge skill learning at external collaborative units. Long-term participation in such activities will cultivate students' interest in learning and emphasize the accumulation of personal professional knowledge and the application of professional skills . In the course of reform, it is crucial to break away from traditional health models, transform inefficient teaching methods in traditional physical education courses, and integrate the advantages of medical and physical education institutions. The curriculum should meet the psychological needs of students for learning and personal growth, clarify the compatibility and consistency within the "integration of sports and medicine" concept, and align with the development of both sports and medical fields to nurture high-quality, modern talent proficient in "integration of sports and medicine."

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