

Under the Background of Population Aging, Research on the Development Path of Deep Fusion of Sports and Medicine

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Abstract: With the increasing degree of aging in China, the elderly group has brought great challenges to China's medical and pension services. This paper mainly analyzes the situation of aging population blowout growth and the rising incidence of chronic diseases in the elderly population in China by using documentation method and logical analysis. The external driving factors of deep fusion of sports and medicine are analyzed systematically. This paper systematically explore the development path of the deep fusion of sports and medicine according to the specific national conditions of our country, carry on the research from the aspects of education, talent cultivation resource integration and so on.

Population aging is a global trend. *Blue Book on aging:China's aging Industry Development report (2014 edition)* forecasts: from 2022 to 2030, China's population aging will enter a stage of rapid development. By 2050,China's population over 65 years old will account for 31.3% of the total population[1]. How to deal with the threat of chronic diseases to the health of the elderly and how to improve the quality of the elder's life have become a major social problem of concern in our country. *The Health China 2030 Planning* outline, which was put forward at the nation level, raises some measures, such as “ combining sports and medicine” to promote the combination of physical exercise and disease rehabilitation, and to deal with the influence of aging in China. Based on these, this paper discusses the development path of the deep fusion of sports and medicine under the background of population aging in China, in order to better meet the challenges of aging.

1. The present situation of the elderly population in China.

1.1 A blowout growth in the number of elderly groups.

According to the data released by *the National Office for Aging*, by the end of 2017, there were 241 million elderly people aged 60 and over in China, accounting for 17.3% of the total population, of which the new elderly population exceeded 10 million for the first time in 2017[4]. Demographic data show that in the 18 years from 1999 to 2017, the elderly population in China had increased by 110 million. It is estimated that by 2050, the number of elderly people in China will reach a peak of 487 million, accounting for 34.99% of the total population(figure 1)[5-6]. The aging degree of our country will remain in the trend of rapid growth for a long time in the future, which will put forward new challenges to the medical treatment and pension of our country. At the same time, it promotes the huge consumer market of the elderly group and will further promote the rapid development of medical services, rehabilitation centers and other fields to meet the huge demand for old-age care in our country.

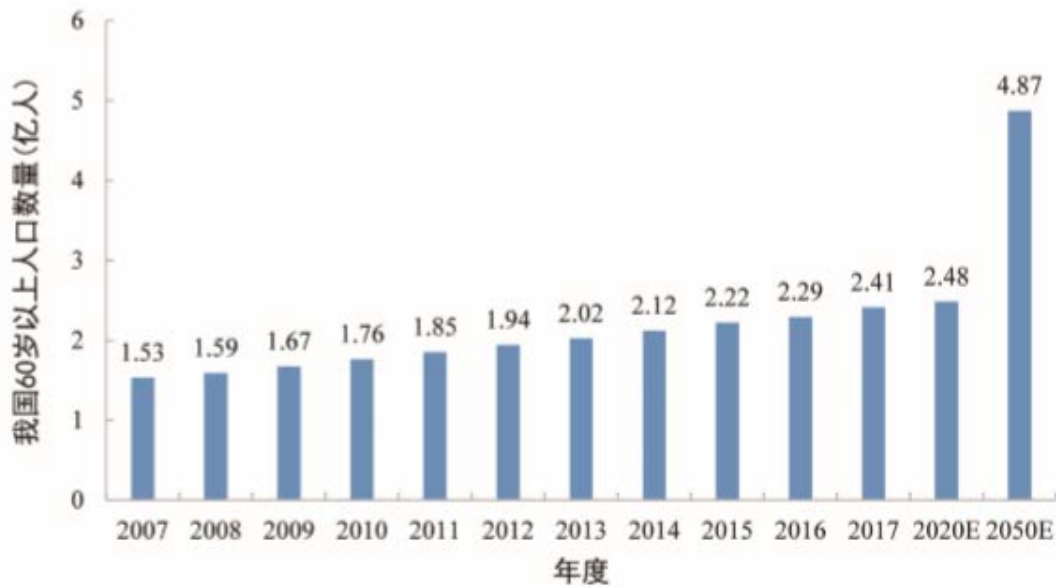


Figure 1. 2007-2050 the number of elderly people aged 60 and over in China

1.2 The incidence of chronic diseases in the elderly population is increasing rapidly.

According to the *World Health Organization(WHO)* report 2016, China's disease spectrum has begun to shift from infectious to non-communicable diseases. At present, the number of chronic diseases in our country has exceeded 260 million, and about 80 % of the aged 60 and elderly will die in die in chronic non-communicable diseases. At present, the number of chronic diseases in our country has exceeded 260 million and about 80% of aged 60 and older will die in chronic non-communicable diseases. At present, there are more than 260 million patients with chronic diseases in China and the deaths caused by chronic diseases account for 86.6% of the total number of deaths [8]. Among the chronic diseases, cardiovascular diseases are the main diseases affecting the health of the elderly, especially ischemic heart disease. Disease characteristics of the elderly in China is similar. According to the results of the report on *Healthy Urban Construction in China(2017)*, chronic diseases account for 91.2% of the causes of death in the elderly in China. what's more, cerebrovascular diseases, malignant tumors, heart diseases, hypertension, respiratory diseases and so on are the important causes of life expectancy loss in the elderly over 60 years old (figure 2)[10].

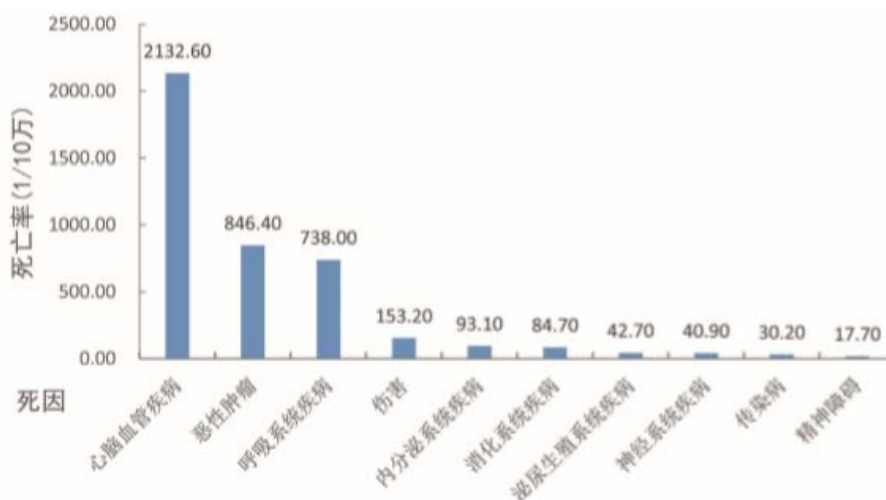


Figure 2. The causes of death in the elderly in China Top 10

2. Analysis of external driving factors for the development of deep fusion of sports and medicine.

2.1 Policy orientation to promote the fusion of sports and medicine.

In October 2014, *GuoFa[2014]*, "some opinions of the State Council on speeding up the development of sports industry and promoting sports consumption" put forward some points: First, promote the combination of health and sports. Through the development of "fusion of sports and medicine". We can strengthen the physical health of the people through physical exercise, can prevent and resist the injury caused by diseases in advance. Promoting physical fitness becoming another protective measure to resist diseases. Popularizing the "exercise prescription" and providing more scientific and reasonable fitness guidance for mass physical fitness. Through the establishment of sports prescription database, we can not only set up differentiation according to the physical health status of different people, but also have targeted physical fitness programs and give full play to the positive role of physical fitness in disease prevention and post-disease nursing. Making full use of the knowledge of sports medicine and other medical fields to guide the crowd to carry out sports. The outline of Healthy China 2030 proposes to extensively carry out the public service of national fitness, strengthen the fusion of sports and medicine and non-medical health intervention, promote the sports activities of the elderly and other key groups, and strength the comprehensive management of chronic diseases in the country.

2.2 "The fusion of sports and medicine": an important means to alleviate the contradiction between national health demand and medical supply.

The deep fusion of sports and medical care will greatly alleviate the demand for fitness and medical care as the aging population intensifies. By 2017, the number of elderly people over 60 years old in China had exceeded 241 million and the number of elderly people over 65 years old had reached 158 million. It is expected that the number of elderly people in China will increase to 255million in 2020. What's more, the total number of medical and health institutions in China had reached 986600. Government expenditure on health care increased from 70.9 billion yuan in 2000 to 1.55173 trillion yuan in 2017. *China Health and Family Planning Statistical Yearbook(2017)*. However, there are still some contradictions, such as the structural imbalance of the allocation of medical service resources, the relatively single service supply system and so on. The rapid incidence of chronic diseases in China, which occupies a large number of medical and health services. Numerous practical and scientific studies have shown that exercise is a good medicine for the prevention and treatment of many chronic diseases. The correct physical exercise of patients with chronic diseases is not only beneficial to psychological and physiological health, but also conducive to the recovery. This effect of physical exercise is irreplaceable in drug therapy.

2.3 The development of deep fusion of sports and medicine is a new concept of " great health, great hygiene and great sports ".

According to the outline of *Health China 2030 Plan*, to build a healthy China, we should give priority to prevention, promote healthy and civilized lifestyle, create a green and safe healthy environment and reduce the occurrence of diseases. Emphasis on prevention, treatment and combination of prevention and treatment has become a new concept of health. The prevention and treatment of diseases tend to change from traditional concept of "post-illness treatment" to the concept of "prevention as the main factor and the combination of prevention and treatment." From the traditional model of diseases treatment to sports and medical care of security model. The concept of prevention is also fully reflected in the traditional Chinese medicine. The thought of treating the disease without disease in our country also advocates prevention before disease, early treatment of disease and prevention of pathological changes. Physical exercise has a conspicuous effect on the prevention and treatment of chronic diseases. Studies at home and abroad have confirmed that there is a linear relationship between physical activity and chronic diseases. Scientific physical activity can not only effectively reduce the incidence of cardiovascular diseases,

osteoporosis, obesity and other chronic diseases, but also play a positive role in the control and improvement of chronic disease symptoms and the reduction of mortality. As the core means to promote the physical and mental health of the elderly and prevent and cure chronic diseases. Physical fitness activities should play their own advantages and functions in the process of dealing with the ageing society: Through sports and medicine dual depth fusion the advantages complement each other. And the scientific and reasonable physical exercise method is used to prevent and treat chronic diseases instead of some medical means so as to achieve the effect of resorting physical health. It is an effective way for patients with chronic diseases, rehabilitation people and sub-healthy groups to promote their physical health. That is a new concept of "great health, great hygiene and great sports."

3. The development path of deep fusion of sports and medicine under the background of aging.

3.1 Strengthen the propaganda and education of the fusion and development of sports and medicine on health promotion.

At this stage, with the deepening of the concept of national fitness, the value of physical exercise in promoting health and preventing chronic diseases is constantly remarkable. Affected by physical function and the decline of sports ability, the elderly group has some inevitable injury problems in the process of physical exercise, which leads to the low degree of participation of the elderly people in physical exercise. According to the 2014 *National Fitness Survey* communique, the percentage of people aged 60-69 and over 70 who took part in physical exercise is only 36.2% and 26%, which is much lower than that of youth group(48.2%). Physical exercise is restricted by the traditional concept. To a certain extent, it restricts the development of the deep fusion of sports and medicine. Based on this, we can change the concept and strengthen the deep fusion of sports and medicine to promote the benefits of health education. Community health service centers should be developed to provide health service education for the elderly. According to statistics, up to 2016, there are 34000 community health service centers(stations) in China. It can give full play to the platform of community service center, promote the deep fusion of sports and medicine among the elderly groups, promote the prevention of chronic diseases in the elderly and slow down the chronic diseases, and strengthen cognition and participation of the elderly groups in the development of sports and medicine integration through various forms.

3.2 Give full play to the advantages of colleges and universities and accelerate the cultivation of sports and health service talents.

For the aging degree of our country is increasing day by day, the number of chronic diseases in elderly population is increasing. It is of great significance to speed up the fusion of sports and medicine for the elderly groups to promote the health of elderly people. With the continuous promotion of national fitness and the increasing degree of aging. It is necessary to train talents according to the policy environment and market demand for the compound talents of sports and medicine. *The State Council's Opinions on the Promotion of the development of Health Service Industry* have pointed out that "Guide the relevant colleges and universities to reasonably determine the scale of the relevant professional talents. Standardize and speed up the development of rehabilitation therapists, health managers, fitness instructors, social sports instructors and the like." [11] Based on this, sports colleges and medical colleges should establish the consciousness of "great health concept " and "great sports concept ". On the one hand, sports colleges and universities should set up the consciousness of "great health concept " and fully integrate the concept of great health into the train of sports and medical compound talents, infiltrate from professional "sports skill teaching " and strengthen the guiding skills of scientific fitness. On the other hand, medical colleges should set up the talent cultivation concept of "great sports concept " and strengthen the role of "sports non-medical means intervention " for the prevention and intervention treatment of chronic diseases in the elderly. Under the guidance of market demand, it

will accelerate the construction of the characteristic specialty subject which serves the health service of the elderly groups under the fusion of "sports and medicine ". And it will improve the curriculum system of integrated development of sports and medicine so as to meet the increasing aging of our country and the demand of the elderly for health service talents with the combination of sports and medicine.

The integration of existing resources is to make full use of sports, medical personnel, material resources and other related resources. With the help of the existing sports professionals, medical personnel to carry out sports, medical training, the establishment of sports medicine information sharing, mutual assistance platform and so on to meet the needs of elderly health services. First of all, from the aspect of human resources. The medical staff of the Third -level grade -A hospital are regularly organized to go to sports colleges and universities to study theories and practices related to sports, such as sports training, sports rehabilitation and so on, so as to strengthen the lack of knowledge in the field of sports. At the same time, we should integrate the social sports instructors, sports professionals and retired athletes of nation team trained in China. Let them go into hospital, medical school for medical supervision, nursing and other aspects of medical knowledge, so as to make up for the lack of medical knowledge. Secondly, from the intersecting aspect of sports and medical science and technology. It is necessary to break down the technical barriers between sports and medical science and technology, accelerate the integrated development of sports and medical science and technology in caring medical diseases, and promote the sharing of technical resources between sports and medical science and technology. The suitable improvement and processing of competitive sports training methods and means are applied to the care of medical patients, such as HIIT(high intensity intermittent training) in competitive sports and ECG(electrocardiogram) high frequency component and ECG spectrum analysis in medical treatment, which play an important role in the treatment of ischemic heart disease, coronary heart disease and so on.

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