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GAME-CHANGING HEALTH: THE FUSION OF SPORTS AND MEDICINE IN A PARADIGM SHIFT

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Abstract

The integration of sports and medicine is redefining the concept of health management, emphasizing not only the absence of disease but also encompassing psychological, physical, and social adaptability, as well as the pursuit of excellence. This shift in understanding reflects a broader perspective on health that extends beyond traditional boundaries. It acknowledges the economic value of health as a tangible asset, promoting effective human productivity and well-being. This transformation underscores the importance of achieving holistic health and the reciprocal benefits it offers.

1. Introduction

The development of integration of sports and medicine is gradually changing with the overall concept of health management. The transformation of the concept of overall health management is first of all a change in understanding of health. “Health is not only a matter of the absence of disease, but also involves psychological, physical, and social adaptability, and even the highest ability requirement to achieve greatness.” (Maslow, 1943) From the perspective of economic value, it can be summarized that health is the feasible ability to promote effective human work (Sen, 1985), the effectiveness and externality of health output, and the positive benefits that health sacrifice can exchange for (Fuchs, 2015).

2. Scientific Base of Integration of Sports and Medicine

The aerobic capacity, cardiopulmonary capacity, muscle and joint functions of the human body will gradually deteriorate if moderate exercise is not maintained. The integration of sports and medical treatment is to improve physical functions and achieve a healthy state through sports. Physical exercise has a certain preventive and therapeutic effect on almost all systemic diseases of the human body. Regular exercise can reduce the incidence of depression and anxiety, reduce the risk of heart disease and stroke, and reduce the incidence of malignant tumors. Moderate physical exercise can increase the number of white blood cells in the blood, thereby enhancing the activity of natural killer cells, eliminating viruses and cancer cells, and promoting the release of exciting stress hormones from the body. It can also promote the blood circulation and endocrine system of the human body, promote the improvement of the function of human organs, and play an important role in maintaining the function of the human immune system. Sports activities not only promote health from a physical and functional perspective, but also can release psychological pressure, regulate psychological emotions, and reduce the incidence of depression.

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3. Development of Integration of Sports and Medicine Worldwide

The United States, as an advocate and pioneer of "integration of sports and medicine", has experienced decades of development, proposing that "exercise is medicine" and taking exercise as an important means of health promotion. The UK's "Exercise Referral Scheme" (ERSS) manages and treats specific health problems through supervised exercise [1]. General practitioners issue exercise prescriptions, and exercise is used for self-care management of long-term chronic diseases or non-communicable diseases (such as diabetes, cancer, cardiovascular diseases and respiratory diseases), effectively reducing the burden of medical services.

Other countries such as Australia, Finland, Germany, Canada, and other countries have actively formulated policies to promote national sports participation [2]. In terms of research, the initial focus was on the impact of physical activity or exercise on physical health [3]. For example, Guy (1843) found that workers with different labor intensities have different all-cause mortality rates, and workers with high labor intensities have lower all-cause mortality rates than workers with low labor intensities; Smith (1864) and Silverstein (1922) , using farmers and professionals as samples, respectively, believe that people with more physical activity have a lower mortality rate than those with less physical activity [4][5][6]. Later, due to the emergence of some chronic diseases, more literature focused on the linear relationship between physical fitness or physical activity intensity and the prevalence of chronic diseases [7]. For example, based on years of tracking data for dock workers, Paffenbarger (19511975) reached the same conclusion at different time points, that is, dock workers with more physical activity have an all-cause mortality rate caused by cardiovascular diseases that is linearly related to physical activity, and the all-cause mortality rate of those with more physical activity is significantly lower than that of those with less physical activity [8]. There are also some other articles that have studied the relationship between other chronic diseases, such as ischemic coronary heart disease, heart disease, diabetes, depression, and physical activity intensity or exercise fitness. More and more literature studies believe that physical activity intensity is positively correlated with physical health under certain conditions, and negatively correlated with chronic diseases (Manson, 1999). The relationship between physical fitness and public health and preventive medicine is also increasingly close [9].

Japan is the earliest country to launch integration of sports and medicine. Japan's inclusive integration of sports and medicine health promotion for the general public is a free health service led by the government and relying on community comprehensive clubs to provide residents with targeted medical care, health consultation, sports participation, and other free health services. Community general practitioners are responsible for issuing exercise prescriptions, and health exercise instructors are responsible for guiding community residents to carry out targeted physical exercise activities, which can help strengthen their physique and prevent diseases.

4. Development Trend of the Integration of Sports and Medicine

4.1 The Influence of Integration of Sports and Medicine on Curing Chronic Disease

Professor Skinner, former president of the American Sports Medicine Association, said, "For many chronic diseases, rational exercise is the best medicine." "A large number of evidence-based medical data indicate that regular physical activity can prevent and treat hypertension, prevent colon cancer and coronary heart disease, and alleviate psychological stress." The occurrence of chronic diseases is mostly closely related to factors such as unhealthy diet, lack of exercise, tobacco and alcohol use, obesity, pathogen infection, and genetics.

Chronic disease patients are mainly middle-aged and elderly people, and lack of guidance for exercise has certain risks. In addition, the short-term effects of exercise are not significant, and other reasons, chronic disease patients have low initiative and enthusiasm to participate in sports. In addition, chronic disease patients do not exercise scientifically, have insufficient understanding of the safety, effectiveness, and sustainability of the exercise process, and lack scientific exercise guidance, resulting in difficulty in long-term adherence to exercise or failure to achieve the desired results. How to grasp how to make sports both safe and effective, and balance safety and effectiveness, must rely on the deep "integration" of "physical medicine" and "integration of sports and medicine" innovative measures.

Although drug intervention is still the main intervention mode for chronic diseases, further exploration of the trinity of "specialists, sports institutions, and patients" in the context of "integration of sports and medicine" can play a certain auxiliary role in effectively coordinating with the main intervention mode of drug intervention.

Specific measures can be taken to create a new model of "integration of sports and medicine" diagnosis, treatment, and management, intervene in chronic diseases in a more scientific, effective, and operable manner, use empirically proven effective exercise prescriptions, combine exercise intervention with dietary intervention, weight management, and medication intervention, change the traditional treatment philosophy of chronic diseases, control the development of chronic disease patients earlier, and achieve early intervention and treatment. To some extent, it can solve the problem of unscientific exercise for patients with chronic diseases and reduce their dependence on drugs, improve their attention and cognition to exercise rehabilitation for chronic diseases, thereby affecting their lifestyle and improving their personal health literacy.

4.2 The Influence of Integration of Sports and Medicine on Exercise Rehabilitation

Sports rehabilitation for the general public includes two aspects: first, the treatment of sports injuries and trauma; the second is non-operative physical function training and recovery after surgery or sports injury. The treatment methods for exercise rehabilitation are mainly physical therapy, which comprehensively utilizes various methods in the form of exercise to restore the balance of body strength, improve body functions, prevent and treat various injuries and disabilities, and restore the best state of the body. Physical rehabilitation is a medical aid that maximizes the quality of life from the physical, psychological, emotional, and social aspects after an injury to the body. It plays an important role in stimulating the potential of the body, preventing, treating, and rehabilitating diseases. Research has shown that 74% of disabled diseases such as musculoskeletal diseases, sports injuries, and nutritional deficiencies can be restored to health through rehabilitation [10]. Currently, sports rehabilitation in China is mainly aimed at people with neck, shoulder, waist, and leg pain, posture adjustment, post exercise injury, postoperative pelvic floor rehabilitation, elderly myopenia, cardiorespiratory, and post stroke rehabilitation. In addition, the exercise rehabilitation of integration of sports and medicine can also provide physical therapy for the neck, shoulder, waist, and back of sedentary people, and provide scoliosis recovery for adolescents and sub healthy people.

4.3 Integration of Sports and Medicine Needs Further Improvement in Health Promotion

First of all, we should fully play a role in formulating scientific and personalized sports prescriptions for the masses. To develop personalized exercise prescriptions, it is necessary to first understand the individual's disease history and family history, conduct physical fitness testing, screen physiological indicators, and conduct a comprehensive physical evaluation. The second is to promote the formation of a healthy lifestyle, including regular work and rest on time, not staying up late; maintain a healthy diet, avoid overeating, have comprehensive nutrition, and maintain a healthy and sunny mindset. Various groups of people should form appropriate exercise habits according to their own conditions. Children and adolescents should accumulate at least one hour of moderate intensity and above of exercise every day, cultivate the habit of lifelong exercise, improve physical fitness, and master sports skills. Adult sports should ensure a certain intensity, frequency, and duration. It is recommended to exercise no less than 3 times a week and engage in a cumulative period of at least 150 minutes of moderate intensity aerobic exercise. The elderly should engage in sports that are suitable for their physical fitness, attach importance to both aerobic exercise and muscle strength exercises, as well as appropriate balance training. Special groups, such as infants, pregnant women, chronic disease patients, and the disabled, should exercise under professional guidance.

4.4 Strengthen the Development of Sports and Health Industry

It is necessary to strengthen the effective supply of the sports and health market and the extension of the industrial chain. The sports and health industry is an emerging industry, spanning both sports and medical industries. The extension of the sports and health industry under the concept of "integration of sports and medicine" has been expanded, with the addition of health related sports industries to the health industry, covering a wide range of fields, including primary and secondary industries such as the planting of health products, production and manufacturing of sports and health products, as well as tertiary industries such as sports and health services, provision of sports and health venues, sports and health leisure and recuperation, and intelligent health. In a word, it covers a wide range of fields, covering all the primary, secondary, and tertiary industries, and can be said to be the sports and health industry in a broad sense.

5. Conclusions

Integration of sports and medicine aims to optimize the allocation of health resources, improve the efficiency of health services, and ultimately promote the improvement of the national health level through resource integration and mutual collaboration between sports and medical health systems. Integration of sports and medicine is the deep integration and interaction between sports and medical treatment. It is a process of viewing sports from medical treatment, viewing medical treatment from sports, re understanding sports, re understanding diseases, and re understanding health. It is a process of integrating sports and clinical medicine's understanding of sports, health, and disease. The integration of sports and medicine can bring about a greater effect on human health than one plus two.

Only by using scientific methods to guide sports, using medical means to serve sports, and using the integration of sports science and clinical medical technology to provide strong support for the integration of sports and medicine can the integration of sports and medicine go further and deeper.

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