

The Influence of Physical Training on University Students' Physical and Mental Health and Academic Performance

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Keywords: Physical training; Physical and mental health; Academic performance; Influencing factors; Optimization strategy

Abstract: This article focuses on the influence of university physical training on the development of university students. Under the background of increasingly high requirements for university students' comprehensive quality, this article deeply studies the internal relationship between university physical training and university students' physical and mental health and academic performance through theoretical analysis and other methods. It is found that physical training in universities has a positive impact on university students' physical health, such as enhancing cardiopulmonary function, preventing diseases, and mental health, such as relieving stress and cultivating will quality. Physical training also affects the academic performance of university students from the aspects of directly improving cognitive function, cultivating self-discipline ability, and indirectly providing a foundation for learning by promoting physical and mental health. Factors such as training plan, individual students and school environment affect the effect of physical training. This article puts forward some optimization strategies, such as perfecting training scheme, strengthening students' guidance and improving school environment, in order to better play the role of physical training in promoting the all-round development of university students.

1. Introduction

As a key link in shaping high-quality talents, the focus of higher education is no longer limited to the simple knowledge transfer, but more and more attention is paid to the synergy between students' physical and mental health and academic development [1]. In this context, physical training plays an increasingly prominent role in the higher education system and gradually becomes an indispensable part of higher education. From the social perspective, the competition in modern society is becoming more and more fierce, and the requirements for talents cover many aspects such as knowledge, skills, physical quality and psychological quality [2]. Having a healthy body and a good mental state is the basis for university students to stand firm in the future society and cope with various challenges [3]. For universities, cultivating students with all-round development is not only related to the future development of students, but also an important mission for universities to fulfill their social responsibilities and deliver high-quality talents to the society.

University students are in a critical period of physical and mental development, and their physical and mental health not only affects their present study and life, but also has a far-reaching impact on their future career development and personal life [4]. At present, due to the lack of adequate physical exercise, some university students have problems such as declining physical fitness and excessive psychological pressure. These problems not only affect students' own quality of life, but also restrict the improvement of academic performance to some extent [5]. Therefore, paying attention to university students' physical and mental health and exploring effective ways to promote it have become an important issue to be solved urgently by university educators.

As one of the core contents of physical education in universities, physical training has unique educational value and function. Systematic physical training can not only directly enhance students' physical quality, but also have a positive impact on students' mental health, such as relieving stress, regulating emotions and cultivating the quality of will [6]. Good physical and mental health

provides a solid foundation for students' learning and helps to improve learning efficiency and academic performance. It can be seen that there is a close internal relationship between university physical training and university students' physical and mental health and academic performance. The purpose of this study is to reveal the internal relationship between university physical training and university students' physical and mental health and academic performance, and comprehensively sort out the influence path and mechanism of physical training on university students' physical, psychological and academic development.

2. The influence of university physical training on university students' physical and mental health

Physical training in universities has a vital impact on university students' physical and mental health. In terms of physical health, physical training can significantly improve the physical function of university students [7]. Table 1 shows the investigation results of the influence of different physical training programs on university students' physical function. Different physical training programs have their own emphasis on improving university students' physical health. Physical training also plays an active role in preventing common diseases and improving body immunity. Regular physical training can enhance the function of immune system and improve the ability of university students to resist diseases. Physical training helps to improve body shape, shape good body lines and enhance university students' physical self-confidence.

Table 1: Impact of Physical Training Programs on Physical Functions in Universities

Training Program	Sample Size	Improvement Rate of Cardiopulmonary Function	Increase Rate of Muscle Strength	Improvement Rate of Flexibility
Long-distance Running	80	75%	35%	25%
Weightlifting	50	45%	70%	15%
Yoga	60	35%	25%	65%
Swimming	70	80%	40%	30%

On the level of mental health, physical training is of great significance to relieve the pressure of university students' study and life. During exercise, the body will secrete endorphins, which are called "happy hormones" and can effectively regulate emotions and relieve anxiety and depression. In the face of difficulties and challenges in physical training, students need to overcome fatigue and persist in completing training tasks, which can constantly temper their willpower. Through long-term physical training, university students' sense of self-efficacy and self-confidence will also be significantly improved, making them more courageous and confident in the face of difficulties in study and life. In the team physical training program, university students need to cooperate closely with their teammates, which will help improve their interpersonal skills and teamwork spirit and promote the healthy development of their psychology.

3. University physical training on the impact of university students' academic performance

Physical training in universities is not only related to the physical and mental health of university students, but also plays an important role in their academic performance, which is reflected in direct and indirect aspects.

From the direct impact, physical training can significantly improve the cognitive function of university students, and then promote academic performance. When students participate in physical training, the blood circulation of the body is accelerated, and more oxygen and nutrients are transported to the brain, providing sufficient energy for the efficient operation of the brain [8]. Table 2 presents the survey data on the influence of different physical training duration on students' cognitive ability. With the increase of physical training time, the proportion of students' attention, memory and thinking agility has gradually increased. Good cognitive function enables students to

listen more attentively in class, memorize knowledge points more efficiently after class, and think and analyze more quickly in the face of complex learning tasks, thus directly improving learning efficiency and academic performance. The ability of self-discipline and time management cultivated by physical training enables students to plan their study time reasonably and complete their study tasks in an orderly way, which also plays a positive role in promoting their academic performance.

Table 2: Impact of Physical Training Duration on Cognitive Abilities in Universities

Weekly Training Duration (hours)	Sample Size	Improvement Proportion of Attention	Improvement Proportion of Memory	Improvement Proportion of Mental Agility	Improvement Proportion of Learning Concentration
3-5	100	60%	50%	40%	45%
5-7	80	75%	65%	55%	60%
7-9	60	85%	75%	65%	70%

In terms of indirect influence, the physical and mental health promoted by physical training provides a solid foundation for students to invest in learning. With good physical fitness, students are not easy to feel tired in the learning process, and can maintain abundant energy to concentrate on their studies for a long time. Psychologically, students who have relieved their pressure and adjusted their emotions through physical training face difficulties and setbacks in their studies with a more positive and optimistic attitude. This positive attitude helps to stimulate learning motivation and enhance learning initiative and enthusiasm. Physical training, especially the competitive consciousness and fighting spirit cultivated by team events, can be transferred to academic pursuit. In team sports, students strive hard for team honor, which urges them to pursue progress in their studies and dare to challenge themselves, thus indirectly improving their academic performance.

4. Factors affecting the effect of physical training in universities

The factors of training scheme play a decisive role in the effect of physical training. The rationality and scientificity of training content are very important, and the collocation of different training items should conform to the development law of students' physical function. If the difficulty of training content is not set properly, it will not stimulate students' potential if it is too easy, but it may make students feel afraid of difficulties and reduce their enthusiasm for training. The control of training intensity and frequency is equally critical, and it needs to be adjusted according to the individual differences of students. Too low intensity is difficult to achieve the training purpose, and too high intensity may lead to sports injury. Table 3 shows the investigation of students' training effect under different training intensity and frequency.

Table 3: Impact of Training Intensity and Frequency on Training Effects in Universities

Training Intensity (% of Maximum Heart Rate)	Weekly Training Frequency (times)	Sample Size	Significant Proportion of Physical Fitness Improvement	Proportion of Sports Injuries	Improvement Proportion of Training Enthusiasm
60%-70%	3	120	60%	5%	55%
70%-80%	4	100	75%	10%	70%
80%-90%	5	80	80%	20%	80%

As can be seen from Table 3, with the increase of training intensity and frequency, the significant proportion of physical fitness improvement has increased, but the proportion of sports injuries has also increased. This shows that it is very important to control the training intensity and frequency reasonably to ensure the training effect and avoid injury.

Students' individual factors also profoundly affect the effect of physical training. Students' physical foundation is an important prerequisite, and students with good physical foundation may be more likely to adapt to high-intensity training and achieve better results in training. The level of sports interest and motivation directly determines the enthusiasm of students to participate in training. Students who are interested in sports and have strong training motivation will take the

initiative to participate in training, and the training effect will naturally be better. In addition, students with good psychological adjustment ability can better cope with the pressure and frustration in training; Students with strong self-management ability can consciously follow the training plan to ensure the continuity and stability of training.

The completeness of university sports facilities and venue conditions have a direct impact on the development of physical training. Perfect sports facilities and good venue conditions can provide students with diversified training options, enhance training experience, and thus promote training effects. Strong sports culture atmosphere can stimulate students' interest and love for physical training; Strong policy support can enhance students' motivation to participate in training and ultimately affect the training effect.

5. Optimization of university physical training

In order to give full play to the positive role of physical training in universities in the development of university students, it is necessary to formulate corresponding strategies from three main aspects: perfecting training programs, strengthening student guidance and improving school environment. Perfecting training program is the key to optimize physical training. Universities should formulate individualized physical training programs according to students' individual differences and professional characteristics. In terms of training content, we should pay attention to the combination of science and interest, update training programs regularly, and improve students' participation. Table 4 shows examples of physical training programs for different majors.

Table 4: Physical Training Plans for Different Majors in Universities

Major Category	Weekly Training Frequency (times)	Recommended Training Programs	Training Focus Objectives
Science and Engineering	4	Jogging, Yoga, Strength Equipment Training	Enhance Cardiopulmonary Function, Relieve Muscle Tension, Improve Flexibility
Liberal Arts	3	Basketball, Team Building Training, Body Shaping Training	Improve Collaboration, Shape Posture, Enhance Communication
Sports	5	Specialized Physical Fitness Strengthening, Comprehensive Physical Fitness Challenges	Improve Specialized Abilities, Cultivate Competitive Spirit
Medicine	3	Aerobic Exercise, Balance Training, Stretching Exercises	Enhance Endurance, Improve Balance, Prevent Strain Injuries

Strengthening students' guidance is an important link to improve the effect of physical training. Universities need to carry out comprehensive sports health education. By offering sports theory courses and holding health lectures, students can deeply understand the importance of physical training to physical and mental health and academic studies. Schools should provide psychological support and counseling to help students cope with the pressure and frustration in physical training. For students with anxiety during training, psychological counselors are arranged for one-on-one counseling to guide them to treat training difficulties correctly and cultivate positive attitude and tough will.

It can also improve the school environment and create favorable conditions for physical training. Universities should increase investment in sports facilities and improve venues and equipment. Such as building a modern indoor gymnasium, equipped with advanced fitness equipment to meet the training needs of different students. At the same time, universities should create a positive sports culture atmosphere, hold colorful sports events, and enhance students' sense of identity and belonging to physical training. The school can also introduce relevant policy support to reward students with excellent training performance and stimulate students' enthusiasm for participating in physical training.

6. Conclusions

Physical training in universities plays a key role in the growth and development of university students. In terms of physical and mental health, physical training has a multi-dimensional positive impact on university students' physical health, from enhancing various physical functions to preventing common diseases, and escorting students' physical health in all directions. In the field of mental health, it effectively relieves the pressure of study and life faced by university students, shapes the tough will quality, and greatly enhances students' self-confidence and interpersonal skills.

For academic performance, the direct impact of physical training in universities is to significantly improve university students' cognitive function, improve learning efficiency and academic performance, and at the same time cultivate self-discipline ability to help students plan their studies better. Its indirect influence lies in providing students with a good physical and mental foundation and stimulating learning motivation and competitive spirit. However, the training effect will be restricted by many factors such as training plan, individual students and school environment. The training plan should be scientific and reasonable, and fully consider the individual differences of students; Students' own physical foundation, interest motivation and so on are also very important; The completeness of facilities in the school environment and the cultural atmosphere also affect the training effect.

In order to give full play to the role of physical training in universities in promoting the development of university students, it is imperative to improve the training plan, strengthen student guidance and improve the school environment. Through the implementation of these strategies, it is expected to further improve the quality of physical training in universities, create more favorable conditions for the all-round development of university students, and help them better cope with various challenges in the future society.

References

- [1] Dong Gaofang, Zhao Xiaobo, Liu Yang. Differences in emotional responses and exercise enjoyment between high-intensity interval training and moderate-intensity continuous training: A meta-analysis[J]. Chinese Journal of Rehabilitation Medicine, 2022, 37(06): 805-812+815.
- [2] Liu Tong, Jiang Jingke. The impact of joyful physical education teaching on college students' physical education learning burnout, body morphology, and mental health[J]. Chinese Journal of School Health, 2024, 45(03): 379-383. DOI: 10.16835/j.cnki.1000-9817.2024096.
- [3] Yang Yi. Organization and important value of college students' sports and health knowledge competition[J]. Chinese Journal of School Health, 2024, 45(12): 1825-1826.
- [4] Liang Yucheng, Jia Xiaoshuang. The influence mechanism of physical exercise and social capital on the physical and mental health of urban and rural residents[J]. Journal of Shanghai University of Sport, 2022, 46(04): 12-27. DOI: 10.16099/j.sus.2021.12.26.0006.
- [5] Qin Guoyang, Jia Wei, Qin Yong. Cross-lagged analysis of adolescents' social adaptability, physical exercise, and mental health[J]. Chinese Journal of School Health, 2023, 44(11): 1645-1649. DOI: 10.16835/j.cnki.1000-9817.2023.11.012.
- [6] Jin Haigang, Yang Zhenhao, Zhang Xiaodan. Bidirectional association between daily physical activity and emotional states among physical education majors[J]. Chinese Journal of School Health, 2023, 44(05): 742-746. DOI: 10.16835/j.cnki.1000-9817.2023.05.023.
- [7] Zhai Zhaofeng, Zhai Lianlin. Strategies for improving students' psychological quality through physical education[J]. Chinese Journal of School Health, 2023, 44(06): 965-966.
- [8] Hua Zhengchun, Sun Jian. An experimental study on the effects of mind-body practice on anxiety, depression, and stress in college students[J]. Journal of Guangzhou Sport University, 2021, 41(1): 95-102. DOI: 10.3969/j.issn.1007-323X.2021.01.022.