

# A Discussion on the Influence of Functional Strength Training in College Physical Education on Students' Physical Health

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**Abstract:** Exploring more scientific and effective methods of physical education has become an important topic of college physical education. As a new training method, functional strength training has been paid more and more attention in college physical education. To explore the application effect of functional strength training in college physical education, analyze its specific impact on students' physical fitness, verify its comprehensive effect in improving students' physical health, and promote the innovation and development of college physical education. By using the literature method, 3632 relevant literatures and 523 cases were extensively collected through libraries, databases and other channels. The literatures and cases were screened, read, sorted out and analyzed, and the theoretical basis, practical experience and research results of functional strength training were extracted. Using the problem description method, this paper analyzes and describes the relevant problems in the research progress of the application of physical education and functional strength training in college, and summarizes and explains them. It is clear that the expression of functional strength training in many studies can clearly identify the needs of solving the problems embodied in the current college physical education and promoting the physical health, mental health, exercise habits and social adaptability of college students.

**Keywords:** College Physical Education; Functional Training; College Students; Physical Health.

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## 1. Introduction

At present, the development of the world modernization pattern is deepening, and the demand for high-quality talents is more urgent in society. University is a gathering place for cultivating higher talents. Higher requirements are put forward for the cultivation and development of college students in university education as well as the increasing demand for talents in society. According to this thinking, returning to the needs of college students themselves in college education, physical health needs show more prominent significance. Physical health is a comprehensive and relatively stable characteristic of the human body's morphological structure, physiological function and psychological factors. It has been confirmed by many scholars in the past that physical education in universities can satisfy the physical health and exercise habits of college students. From the perspective of physical activity exercise and the current organizational form of college physical education, it is not difficult to find that the traditional strength exercise is widely used in college physical education as a common form of expression, which is beneficial to its historical inheritance and simple and easy characteristics to enhance students' physical health ability in all aspects. Traditional strength training exercises usually include push-ups, sit-ups, pull-ups, bench presses, squats, etc. These exercises focus on strengthening parts of the body, such as the strength of the limbs and lower abdomen. These training methods are widely used in physical education because of their foundation and easy implementation, but they also show some limitations. First, the impact on students' physical health is one-sided and uncoordinated, traditional strength training often only focuses on the strength of the body, ignoring the

coordinated development of the whole-body strength. The second is the lack of explosive power and flexibility training, traditional strength training mainly focuses on the improvement of staying power, but the training of explosive power and flexibility is insufficient. Third, the lack of personalized and scientific guidance, traditional strength training often adopts a "one-size-fits-all" approach, ignoring the individual differences of students. Every student's physical condition, sports foundation and training needs are different, but traditional training methods are often not customized according to the specific situation of students. Fourth, it is easy to cause sports injuries, and traditional strength training is easy to cause sports injuries in the absence of scientific guidance and correct posture. According to the embodiment of physical health problems of college physical education students, it is clear that the future physical education will pay more attention to the introduction of personalized, scientific and diversified application content to enhance the physical health of college students. With the renewal of educational concepts and the integration of sports training and rehabilitation medicine, functional strength training methods are not only widely used in the field of rehabilitation medicine, but also in the field of sports training and competitive sports. At the same time, some scholars tend to introduce functional strength training into college physical education. However, it is more reflected in the special sports or the education of high-level athletes in schools, and there are few studies widely applied to the physical education of ordinary students, and no relevant systematic and practical operation has been formed. Therefore, according to the relevant characteristics of functional strength training, it is applied to college physical education as a universal physical activity content. It can be used as a new way to broaden the

vision of university physical education.

## 2. Definition and Related Characteristics of Functional Strength Training

Functional strength training originated in the West, emphasizing the function of the human movement chain as the starting point, by strengthening the core strength, improving the body's stability, balance and coordination, and optimizing the movement mode, to improve the human movement ability and physical quality. This training method focuses on the participation of multiple joints in the whole body and the synergistic effect of muscles in the whole body, and uses the core as the engine to transmit power to the lower limbs to maximize the overall strength [1]. It focuses on training patterns that mimic daily activities or specific motor movements, aiming to improve overall functional motor ability. It refers to the exercise of muscle groups required for daily activities with the purpose of improving functional strength [2]. It emphasizes integrating multiple muscle groups to improve overall functional movement, rather than training individual muscles or muscle groups in isolation. This mode of training is designed to improve an individual's physical performance in real life and work, such as lifting heavy objects, carrying objects, climbing stairs, or participating in physical activities. The specific characteristics are: joint participation of multiple joints and muscle groups, functional strength training usually involves multiple joint and muscle group compound movements, these movements can exercise multiple muscle groups at the same time, improve the overall coordination and stability; Different from traditional strength training, functional strength training pays more attention to the correlation between training and daily life or specific sports, and aims to improve the athletic performance of individuals in specific situations. Focusing on stable balance, functional strength training emphasizes training in an unstable environment to improve the stability and balance of the body, which helps individuals to maintain stable posture and movement in a complex and changing environment; Comprehensive and flexible, functional strength training is comprehensive and flexible, and can be customized according to individual needs and goals [3]. It can not only enhance muscle strength, but also improve flexibility and endurance and other physical qualities; Emphasis on the quality of the completion of the movement, functional strength training pays attention to the quality and standardization of the movement, emphasizing the training under the correct posture and movement mode. This helps reduce the risk of sports injuries and improves training effectiveness; By working multiple muscle groups at the same time, functional strength training helps improve muscle balance and coordination. Functional strength training is a comprehensive and effective way of training, which focuses on the improvement of overall function and the physical performance of individuals in real life and work. Through the complex movement of multiple joints and muscle groups, emphasizing stability and balance, and paying attention to the quality and standardization of movement, functional strength training provides a comprehensive physical fitness improvement program for individuals.

## 3. Limitations of Traditional Strength Training Mode in College Physical Education

The single teaching objective is the external problem expression [4]. Traditional college physical education teaching mode often limits the teaching objectives to the completion of specific requirements in the physical education syllabus and focuses on the completion of educational tasks, ignoring the real situation of students' demands for physical health and not fully considering students' practical needs for physical education. Such a single teaching objective cannot truly meet the substantive requirements of college physical education. Nor can it effectively lay a foundation for students to have a healthy physique and good exercise habits. Educational content lacks innovative flexibility [5]. The traditional physical education teaching mode represented by strength training is dominated by physical education teachers, and students passively accept learning, which can not mobilize students' learning enthusiasm and enthusiasm to participate in physical exercise. At the same time, teachers often choose the content of textbooks according to their own preferences and specialties, which solidifies the teaching mode, ignoring the individual differences and the needs of students' comprehensive development. Lack of individualized teaching needs of students [6]. The traditional physical education of strength training often adopts the teaching method of collective training, ignoring the differences of individual differences among group students. This teaching mode cannot provide personalized guidance and guidance for students, resulting in the difficulty for students to obtain their own learning methods and schedule in the learning process. Educational technology means lag behind. Because of its historical stability, the traditional physical education teaching mode of strength training does not make full use of modern science and technology and new teaching methods. The lack of smart devices and the introduction of virtual reality technology cannot provide students with a richer and more vivid learning experience. Lack of integration of interdisciplinary education [7]. The traditional physical education teaching mode of strength training often only focuses on the teaching of physical education itself, ignoring the connection and integration between physical education and other disciplines. This single teaching mode can not make full use of the advantages of interdisciplinary disciplines, improve students' comprehensive quality and interdisciplinary ability, and is not conducive to the comprehensive growth of students' physical health. Lack of injury prevention and recovery training [8]. The traditional physical training mode of strength training often only focuses on the training process and results, but ignores the importance of injury prevention and recovery training for students. The prevention of sports injury is also a very important part of students' physical health. This may lead to injuries in the training process, affecting their health and sports performance, which is not conducive to the improvement of students' physical health. On the whole, the traditional strength training mode in college physical education has many limitations, and it needs to be reformed and innovated constantly to meet the needs and development trend of modern education.

#### **4. Physical Health Needs and Expectations of Students in College Physical Education**

Students' physical health needs are objectively led by school education and focus on students' actual and corresponding individual needs [9]. The presentation form of physical education reflects the demand for diversified sports items, and students expect university sports to provide more diversified sports items to meet different interests and needs. In terms of the extension of physical health, the purpose of recreation and relaxation can be achieved through physical activities, and the diversification of training methods needs to meet the needs of students with low-intensity and high-interest projects, which can help students find a way to relax in the tense study and life, and also help improve the mood and sleep quality [10]. Physical education needs to clarify the specific goals of students' physical health, including improving cardiopulmonary function, strengthening muscle strength, improving flexibility and body coordination, weight control, etc. These goals should be personalized according to the age, gender, physical condition and athletic ability of students. According to the students' physical health goals, physical conditions and athletic ability, develop personalized training programs. The plan should include specific arrangements in terms of training content, training intensity, training time and training frequency. It is also necessary to take into account the principle of gradual progress, in the development of exercise plans, should follow the principle of gradual progress, gradually increase the exercise load and difficulty, to avoid over-training and sports injuries, which are the necessity of scientific guidance of physical education. Finally, the monitoring and evaluation of students' physical health [11]. It is an effective means to understand students' physical health status through regular monitoring, promote students' active participation in physical exercise and improve their physical fitness. According to the monitoring results, provide personalized physical exercise suggestions for students, help students to improve their physical health and provide scientific exercise guidance for students. On the other hand, the monitoring results can be used as an important basis to evaluate the effect of physical education teaching, help teachers adjust the teaching plan and method, and also an effective method to evaluate the teaching effect. Students' physical health is not only limited to students' strong physical fitness, but also includes the formation of exercise habits, mental health and certain social ability, which are the necessary prerequisites for comprehensive physical and healthy development [12]. In terms of cultivating sports habits, students hope that college physical education can guide them to develop good sports habits, integrate physical exercise into daily life, and form a lifelong sports consciousness. This can reflect that physical education can enhance students' health awareness by guiding them to develop good exercise habits and healthy lifestyle. By guiding students to discover the fun and value of sports, so that they can stick to physical exercise for a long time and form a healthy lifestyle. This habit will stay with students for the rest of their lives, providing lasting security for their physical and mental health. In terms of enhancing students' mental health, students recognize the positive effect of sports on mental health, so they expect that sports activities can relieve learning pressure, improve emotional state, improve self-confidence and social ability. Physical education teachers can

help students correctly understand the relationship between body and mind and strengthen the consciousness of exercise through theoretical teaching and practical guidance, so as to improve their mental health level. Enhance social adaptability. Students are expected to enhance social adaptability, including teamwork, communication and problem solving skills, through participation in team projects and group activities. College physical education lays a solid foundation for the all-round development of students through knowledge imparting, practical experience, healthy behavior guidance, and improvement of physical quality, mental health, body shape and other aspects [13].

#### **5. Functional Strength Training is in Line with the Demand Analysis of University Physical Education to Improve Students' Physical Health**

The advantages of functional strength training in improving physical fitness in college physical education [14]. In line with the comprehensive development of students' physical and physiological health, functional strength training focuses on the participation of multiple joints in the whole body and the synergy of muscles in the whole body, and uses the core as the engine to transmit power to the lower limbs to maximize the overall strength. Compared with traditional strength training, functional strength training is more efficient in improving physical fitness and can achieve better training results in a shorter period of time. In terms of safety attributes, functional strength training focuses on the correctness and stability of movements, and reduces sports injuries caused by irregular movements or unbalanced strength by strengthening the stability of core muscles and joints. In terms of interest, the training methods of functional strength training are diverse and challenging, which can stimulate students' learning interest and motivation. By designing new and interesting training movements and scenes, students can actively participate in training in a pleasant atmosphere and improve the training effect. In addition, another important function of functional strength training in the physical physiological quality of students, which is also an important aspect that students need to receive physical education, is the prevention of sports injuries [15]. Functional strength training can comprehensively enhance students' muscle strength and endurance by designing reasonable training plans and movements. Strong muscles can better support and protect the joints, reducing the damage caused by excessive joint load or muscle fatigue. By correcting students' wrong movement patterns and optimizing the power transmission path, energy leakage and joint pressure increase caused by irregular movements can be reduced, thus reducing the risk of sports injuries. In addition, functional training also focuses on improving students' body perception and control ability, so that they can more accurately perceive the changes of the body and the needs of movement, so as to make more reasonable and safe actions.

In college physical education, functional strength training not only helps to improve students' physical quality, but also has a significant positive impact on students' mental health [16]. The first thing is to enhance self-concept and self-esteem, which has played a role in the improvement of self-concept. Functional strength training can significantly enhance students' self-concept, which is an individual's perception of their own body, abilities, and worth. Through continuous

practice of functional strength movements and continuous challenges to break through themselves in physical education, students can gradually realize their own potential and ability in functional training, so as to improve their self-cognition and self-worth. Considering from another psychological dimension, functional strength training can also relieve stress and anxiety [17]. In terms of the release of pressure, students in college life are faced with pressure from many aspects such as study, employment and interpersonal relations. Functional strength training provides students with an effective way to release stress. In the process of training, students can devote themselves to the exercise, temporarily forget the trouble and pressure, so that the body and mind can be relaxed and relieved. For anxiety relief, studies have shown that exercise can prompt the brain to release neurotransmitters such as endorphins, which have analgesic and pleasurable effects and help relieve anxiety. Functional strength training, as a high-intensity exercise, can more effectively promote the release of endorphins, thereby helping students relieve anxiety and maintain mental health. In terms of improving emotional stability and happiness, functional strength training can affect the emotional stability of college students. Functional strength training requires students' efforts and persistence, and this training process is conducive to cultivating students' tenacity and perseverance. The shaping of team spirit in cultivating team spirit and cooperation ability, functional strength training often requires multiple people to cooperate to complete some complex movements and training tasks. In this process, students learn to support, encourage and collaborate with each other, thus developing a strong team spirit. This kind of team spirit not only helps students to get better results in training, but also helps them to cooperate and get along with others better in study and life. It is clear that functional strength training meets the needs of physical education to improve students' mental health. By enhancing self-concept and self-esteem, relieving stress and anxiety, improving emotional stability and happiness, and cultivating team spirit and cooperation ability, functional strength training can effectively promote students' mental health development.

In college physical education, functional strength training also has significant compatibility and positive effect on the demand analysis of enabling students to have good exercise habits [18]. Functional strength training includes a variety of training methods and movements, such as vibration strength training, proprioceptive function training, core strength training, etc. These training methods are both interesting and challenging, and can stimulate students' interest in sports. The variety of training content can meet the interests and needs of different students, making it easier for them to find the right training style for them, thus increasing engagement and continuity. Functional strength training not only focuses on external movement performance, but also emphasizes students' perception and control of their own bodies [19]. In the process of training, students need to always pay attention to their body state and adjust their movements and breathing. This ability of self-perception and control will encourage students to participate in the exercise more actively and form the consciousness of independent exercise. When students are aware of the positive effects of exercise on their bodies, they are more likely to maintain exercise as a lifelong habit. By cultivating a positive attitude towards life, students can not only improve their physical condition, but also cultivate their mental qualities of perseverance and courage to challenge in

training [20]. This positive attitude towards life will encourage them to be more optimistic and confident in the face of difficulties in study and life, and then pursue sports as a positive way of life. Functional strength training meets the needs of college physical education to make students have good exercise habits. By promoting sports interest and participation, cultivating independent exercise awareness and promoting the formation of lifelong sports concept, functional strength training can effectively help students develop good exercise habits and lay a solid foundation for their physical and mental health and all-round development.

## 6. Conclusion

Through systematic functional strength training, students can achieve significant improvement in strength, endurance, flexibility, coordination and other aspects, so as to build a more comprehensive and balanced physical foundation. More importantly, this training method emphasizes the overall improvement of physical function, which can benefit students in their daily study, life and future career development. It teaches students how to use their physical strength more effectively, reduces the risk of sports injuries, improves athletic performance, and invisibly develops self-discipline, perseverance, and teamwork. In addition, functional strength training also provides students with a platform to release pressure and regulate emotions, which helps to relieve the psychological burden brought by academic pressure and promote students' mental health. Therefore, the introduction of functional strength training into university physical education is a forward-looking and strategic measure, which can not only meet the current needs of students' physical health improvement, but also pave a solid road for their future comprehensive development. We hope that this innovative practice can be promoted and applied in a wider range, and contribute to cultivating more healthy, sunny and all-round college students in the new era.

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