

# A study of sports injury prevention and rehabilitation strategies in physical education teaching in colleges and universities

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**Abstract:** Along with the popularity and development of physical education in colleges and universities, the enthusiasm of students to participate in sports activities is increasing. However, the risk of injury increases in sports. Sports injuries not only affect students' physical health, but also may hinder their learning and life. Therefore, it is of great significance to study sports injury prevention and rehabilitation strategies in college sports teaching. This paper briefly analyses the causes of sports injuries in college sports teaching, and conducts an in-depth investigation on sports injury prevention and rehabilitation strategies in college sports teaching for reference.

**Key words:** higher education; physical education; sports injuries; prevention; rehabilitation

## 1 Analysis of the causes of sports injuries in physical education teaching in colleges and universities

### 1.1 Inadequate preparatory activities

Preparatory activities are an important part of physical education, which can help students raise their body temperature, increase muscle elasticity and prevent sports injuries. However, most students have a lack of awareness of the importance of preparatory activities, tend to do them perfunctorily, or even directly skip the preparatory activities to start formal training. In this case, students' physical condition often cannot adapt to the high-intensity sports load, which can easily cause sports injuries such as muscle strains and joint sprains [1]. In addition, some teachers' arrangement of preparatory activities in physical education is also unreasonable. Some teachers pay too much attention to the form of the preparatory activities and neglect the actual effect of the preparatory activities; some teachers do not formulate personalized preparatory activity plans according to students' physical condition and sports level, which leads to the ineffectiveness of the preparatory activities.

### 1.2 Irregularities in technical movements

In physical education, correct technical movements are the key to ensuring sports safety and preventing sports injuries. Due to the individual differences of students, teachers' teaching level and other factors, the phenomenon of non-standard technical movements occurs from time to time. Irregular technical movements not only affect the effect of sports, but also increase the risk of sports injury. For example, in basketball, students' irregular shooting movements may lead to wrist sprains or rotator cuff injuries; while in football, irregular starting movements may cause muscle strains in the posterior

thigh group, which seriously affects students' health.

### 1.3 Inadequate scheduling of exercise loads

Exercise load is an indispensable part of physical education, and a reasonable arrangement of exercise load can help students improve their physical fitness and enhance their athletic ability. However, some teachers have unreasonable arrangements for students' exercise load [2]. Some teachers blindly increase the exercise load in order to pursue sports performance, resulting in excessive fatigue of students, muscle strains and other sports injuries; while some teachers are too cautious, arranging too small exercise load, which can not effectively improve students' physical fitness and athletic ability.

### 1.4 Lack of self-protection awareness and capacity

In the teaching of sports in colleges and universities, students participating in sports activities often suffer injuries in sports due to a weak sense of self-protection and a lack of self-protection ability [3]. This lack may stem from insufficient knowledge of sports safety, or it may be due to a lack of proper skills instruction and emergency treatment training in actual sports. The risk of sports injuries increases significantly when students are unable to correctly identify potential hazards, take effective protective measures, or respond appropriately in an emergency when hazards occur.

## **2 Sports injury prevention and rehabilitation strategies in physical education teaching in colleges and universities**

### 2.1 Warm-up and relaxation activities to relieve muscle fatigue

Warm-up activities can help students gradually raise their body temperature, increase muscle flexibility and joint mobility, thus reducing the risk of strains and sprains during exercise. At the same time, warm-up activities can also enhance the excitability of the nervous system, enabling students to enter the exercise state more quickly and improve their performance. Relaxation activities, on the other hand, help relieve muscle fatigue and tension after exercise, promote muscle recovery, and prevent the occurrence of delayed muscle soreness [4]. Through relaxation activities, students can better discharge metabolic wastes such as lactic acid from muscles, reduce muscle soreness and speed up recovery. Therefore, in college physical education teaching, teachers should pay attention to the design and implementation of warm-up and relaxation activities to ensure that students can fully warm up before exercise and get effective relaxation after exercise. At the same time, teachers should also teach students the correct warm-up and relaxation methods, so that students can self-manage and regulate their physical state, and improve the prevention and rehabilitation of sports injuries. By carrying out good warm-up and relaxation activities, muscle fatigue can be relieved, thus effectively reducing the risk of sports injuries, improving the effect of sports, and safeguarding students' physical health and sports safety.

### 2.2 Strengthening safety education and raising awareness of self-protection

In sports teaching in colleges and universities, strengthening safety education is the key to improving students' awareness of self-protection and preventing sports injuries. Safety education should be carried out throughout the sports teaching, from the teaching of theoretical knowledge in the classroom to the training of practical skills, and the importance of safety should be emphasized [5]. In the process of systematic safety education, students can have a deeper understanding of the hazards of sports injuries and preventive measures, so that they can be more cautious and consciously abide by the safety rules when participating in sports activities. At the same time, teachers also need to make students feel the importance of safety through case studies and simulation drills so that they can feel the importance of safety in their personal experience and learn how to protect themselves in different situations. In addition, teachers have to teach students correct sports skills and self-protection methods, such as the correct landing position, how to avoid collision, etc., in order to help students better cope with emergencies and reduce the possibility of injuries in actual sports.

### 2.3 Reasonable arrangement of exercise load to improve students' exercise capacity

Exercise load refers to the physical burden that students bear during physical activities, including factors such as exercise intensity, duration and frequency. Reasonable arrangement of exercise load implies that teachers should scientifically formulate training programmes according to students' physical condition, exercise level and individual differences, so as to ensure that students engage in physical exercise within a safe range. Exercise loads that are too high or too low may lead to sports injuries. Too much load is likely to cause muscle strain, joint wear and tear and other problems, while too low a load may not be able to achieve the effect of exercise, or even lead to a decline in physical function. Therefore, reasonable arrangement of exercise load needs to take into account factors such as students' physical condition, skill level, recovery ability and teaching objectives. Teachers can ensure the reasonableness of the exercise load by gradually increasing the load, reasonably arranging the training cycle, and monitoring students' physical response. At the same time, teachers should also teach students how to self-perceive and adjust the exercise load, so that they can maintain a moderate body load during the exercise process, which can achieve the exercise effect and avoid the occurrence of sports injury. Through the reasonable arrangement of exercise load, it can effectively prevent sports injuries, improve the effect of exercise, and promote students' physical and mental health and overall development.

### 2.4 Developing a scientific rehabilitation system for sports injuries and improving the ability to deal with sports injuries

In sports teaching in colleges and universities, the establishment of a scientific rehabilitation system for sports injuries should cover a number of aspects such as injury assessment, rehabilitation programme development, rehabilitation training and follow-up, to ensure that students can receive timely, professional and systematic rehabilitation guidance after injury. Among them, injury assessment is the foundation of the rehabilitation system. Through professional medical examination and assessment, the type and degree of injury and the feasibility of rehabilitation can be determined, which provides a scientific basis for the formulation of subsequent rehabilitation programmes. At the same time, the formulation of the rehabilitation programme should be designed according to the specific situation of the students, including the type of injury, physical condition, rehabilitation goals and other factors, so as to ensure the relevance and effectiveness of rehabilitation training. In the process of rehabilitation training, we should pay attention to the cultivation of students' active participation and self-management ability, teach students the correct rehabilitation training methods and skills, and at the same time, combine with physiotherapy, massage, acupuncture and other means to promote the recovery of the injured parts and functional reconstruction. And regular assessment and feedback of the rehabilitation effect, timely adjustment of the rehabilitation programme to ensure the continuous optimization of the rehabilitation effect are necessary. Not only that, it is also necessary to strengthen the professional training and the accumulation of practical experience of physical education teachers. Through systematic training and learning, teachers can be equipped with basic knowledge of sports injuries, disposal skills and first aid ability, so that they can react quickly when students are injured, take correct disposal measures, reduce students' pain and degree of injury, and create favourable conditions for subsequent rehabilitation.

### 2.5 Psychological support and counselling to enable students to face the rehabilitation process positively

Students often face both physical and psychological stress after suffering a sports injury. Physical pain, functional limitations, and difficulties in the rehabilitation process may have a negative impact on student's psychology, such as anxiety, frustration, loss, and other emotions. These negative emotions not only seriously affect the rehabilitation outcome of students, but also may have a long-term impact on their future study and life. Therefore, it is crucial to carry out psychological support and counselling. First of all, colleges and universities should establish professional psychological support teams, including psychological counselors and psychotherapists, to provide professional psychological support and

counselling services for students. These professionals can help students recognize and deal with their emotional problems, enhance their psychological resilience and face the recovery process positively through individual counselling, group counselling and other forms. At the same time, physical education teachers should also have certain knowledge of psychology, so that they can pay attention to the psychological state of students in teaching, and identify and intervene in students' psychological problems in a timely manner. And by establishing a trusting relationship with students, listening to their distress and needs, and providing emotional support and advice, they can help students establish confidence and courage in recovery. In addition, colleges and universities can popularize mental health knowledge and improve students' understanding of psychological problems and their ability to cope with them by organizing lectures and workshops. They also invite cases of successful rehabilitation to share their experiences, so as to set an example for students, stimulate their enthusiasm and motivation for rehabilitation, help them face the rehabilitation process positively, improve their rehabilitation results, and promote their physical and mental health development.

### **3 Conclusion**

In conclusion, in order to prevent sports injuries and protect students' health, teachers should strengthen the guidance and correction of students' technical movements, arrange the exercise load reasonably, strengthen safety education and improve students' self-protection awareness and ability. At the same time, students themselves should strengthen practice and reflection, improve self-protection awareness and ability, and jointly create a safe and effective physical education environment with teachers. In the future, physical education teaching in colleges and universities should continue to strengthen the research and practice of sports injury prevention and rehabilitation strategies, and constantly improve and optimize the relevant strategies to adapt to the increasingly diversified sports needs and health conditions of students, and create a safe and healthy sports environment for students to ensure their healthy growth.

### **Conflicts of interest**

The author declares no conflicts of interest regarding the publication of this paper.

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