

Study on the Causes and Medical Recovery of Common Sports Injuries in School Physical Training

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Objectives: In recent years, the status of sports in teaching activities has been continuously improved, and various schools have also increased the intensity of sports activities. In order to avoid sports injuries, enhance students' physical fitness, and improve the quality of physical education and training, it is necessary to strengthen the responsibility of physical education teachers. Heart, improve their professional knowledge and skills, in-depth understanding of the characteristics of sports injuries, find out the cause of injury, strengthen prevention awareness, master how to treat in time, in order to improve the classroom effectiveness of physical education classes, to achieve better teaching and training results.**Methods:** After the injury occurs, the teacher should deal with it in time and further treat it afterwards, so as to alleviate the pain of the injured athletes and prevent complications. **Results:** It is a very serious problem that students are often injured in sports meeting, because injuries not only delay their participation in physical exercise, but also affect their normal study and life. **Conclusion:** Understanding the causes, occurrence rules, preventive measures and timely treatment of sports injuries can not only effectively achieve treatment and prevention, but also provide a basis for scientific participation in physical exercise or sports training.

Keywords: school sports training, sports injuries, causes and medical recovery research
Tob Regul Sci.™ 2021;7(5-2): 4976-4987
DOI: doi.org/10.18001/TRS.7.5.2.60

Under the new era, the cultivation of higher education talents in China should not only cultivate the knowledge structure, humanistic quality and ideological concepts of college students, but also optimize the physical education of colleges and universities¹. Sports is a basic form of activities including human beings, such as walking, running, Jumping, throwing, etc. Training the professional sports knowledge and sports skills of college students, but also cultivating the sportsmanship and physical quality of college students. In the process of physical training, muscle damage is common²⁻⁴. The main reason for this problem is the lack of standardization of sports techniques, the lack of preparation activities, the constraints of venue equipment, the large muscle burden, and the excessive range

of motion. From the basic theory of muscle injury, biomechanics and anatomy and physiology, we study the muscle injury of sports training exercise⁵⁻⁷. In particular, the study of muscles in multiple sites of injury can improve the theoretical understanding of the causes of muscle damage in sports, thereby reducing the incidence of injuries and improving the level of training⁸. The reasons for the students' injury are poor physical quality, inadequate pre-class preparation, lack of self-protection awareness, irregular movements and so on. Among all kinds of sports injuries, acute is often more than chronic, so in the treatment, treatment should be timely treatment, as far as possible to take safe and effective methods to recover, otherwise treatment will be delayed⁹⁻¹¹. Combined with the characteristics of sports and the characteristics of

the body joints to analyze the causes of sports injuries, a correct understanding of first aid methods, diagnosis and treatment of symptoms and injuries to reduce great help¹². All kinds of injuries occurred during the movement. The injured parts are related to sports items and special technical characteristics, and the corresponding preventive measures and treatment methods after injury are put forward, which provides a theory for improving school physical education teaching¹³.

Physical training can strengthen students' physical quality and psychological quality. Physical training also has many advantages for students' life and study, but there is also a serious problem. In the process of injury, there may be damage, damage and training content. Special technology is closely related, and there are many reasons for sports injuries, which may be due to low training level, or because of irregular movements and weak self-protection ability¹⁴⁻¹⁶. Analysis of sports injuries that have occurred in the past can be seen that acuteness is more than chronic. It can be seen that once injury occurs, it should be treated immediately and effectively treated, and feasible and reasonable methods should be adopted as much as possible to allow the injury site to recover quickly¹⁷⁻¹⁹. On the contrary, it may delay treatment. The main causes of injury are: inadequate training, poor physical fitness, incorrect movements, lack of self-protection ability; inadequate pre-exercise preparatory activities or preparatory activities, poor physical condition, lack of training to adapt to the environment, and inappropriate teaching and competition organization²⁰. Therefore, in the process of physical education teaching and training, mediating and controlling students' emotions, making students overcome and eliminate all unfavorable emotions to teaching, and guiding students to always be in a state of vigorous and energetic good mood is a direct and effective means to prevent and avoid accidental sports injury, but also sports workers can. The key to successful completion of teaching tasks is not²¹.

College students may participate in fitness activities, sports competitions and classroom teaching activities, which may lead to different levels

of sports injuries, which may not only play the expected effect of physical education, but may also affect the learning activities of college students. Therefore, under such a macro background, the innovative teaching concept of physical education in colleges and universities not only reduces the theoretical knowledge class in the physical education classroom, but also encourages students to actively participate in fitness activities and enhance their personal physique during and after class²²⁻²⁴. Under the premise of ensuring college students to carry out sufficient physical activities, how to prevent sports injuries of college students has become an important topic in college physical education. The most common injury during exercise is bodily injury²⁵. There are many reasons for bodily injury. For example: sprain and abrasion caused by improper exercise; muscle strain and lumbar muscle strain caused by improper exercise; injury caused by improper exercise habits to the heart and other organ²⁶. Football, basketball and other sports to the students do not know the principle of injury, some improper treatment, first thought of hot compress, and then paste on the Huoxue painkiller. Hot compress and sticking Huoxue Zhitong ointment can only make the sprain more congestive, swelling, pain aggravation, injury degree deepened²⁷⁻²⁹.

METHODS

The occurrence of sports injuries is often related to the lack of understanding of the meaning of prevention of sports injuries and the lack of knowledge. It must also be noted that the preparation activities should be moderate, the preparation time of a class should be kept at about 10 minutes, and the force should not be too strong or too fast, too intense preparation activities can easily cause muscle strain and joint sprains of the athletes. . Ideologically paralyzed, and lack of scientific exercise knowledge, blindness in sports, irritable emotions, eager to seek success, etc. are the causes of sports injuries. Many people believe that the lack of physical and psychological quality of students will not cause much impact in sports, such an idea is absolutely wrong. Because the students' physical quality is not good, there is not enough rest time will cause muscle strain, physical coordination

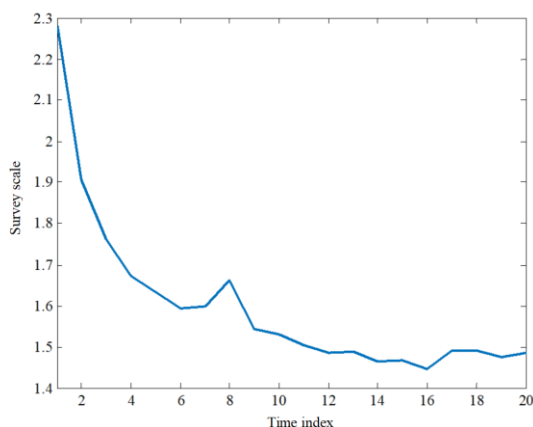
decline, and their attention is not focused, movement will not be in place. Exercise training, sports enthusiasm and initiative is not high, but also prone to sports injuries. Sports can cause varying degrees of damage, which is unavoidable, but can reduce the number and severity of occurrences, and there is a very close relationship between the location of the injury and the basic content of the training and the specific technology. There are many reasons for the damage, it may be that the level of training is not high, or the training may not be standardized, or

the students lack strong self-protection ability. After analyzing the damage of some sports items in the past, it can be seen that there are more acute injuries than chronic injuries, but no matter what kind of damage occurs, it needs to be treated immediately, so as to promote effective treatment of the damage. In the physical education activities of colleges and universities, or in the amateur exercise of students, it is very important to prevent sports injuries and must be dealt with immediately in the event of sports injuries.

Table 1
Survey of Student Sports Injuries

	Sports injury	No sports injury
Student	43%	57%

Figure 1
Survey of Student Sports Injuries



The survey in Table 1 and Figure 1 above shows that more than 43% of the students have sports injuries, which should arouse the attention

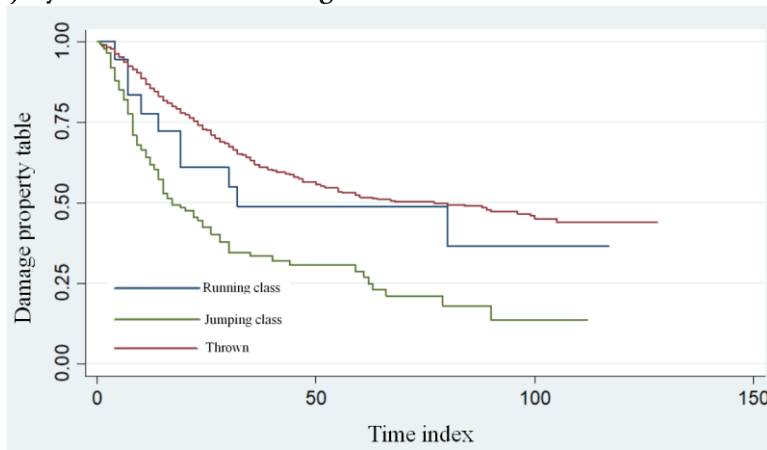
of students themselves, their parents and relevant departments.

Table 2
Sports Injury Characteristics of High-Level Track and Field Athletes in a University

	Running class	Jump class	Throwing class
Acute injury	2	1	2
Chronic injury	2.1	3.2	1.8
Acute to chronic injury	3.9	2.1	3.3

Figure 2

The Sports Injury Characteristics of High-Level Track and Field Athletes in a University



It can be seen from table 2 and table 2 that the nature of sports injury in different items has obvious project characteristics.

The dependency of the condition attribute on the decision attribute is transformed into mutual information, and the change of the mutual information caused by adding an attribute is taken as a measure of the importance of the attribute. The probability distribution is:

$$y_i = f\left(\sum_j w_{ij}x_j - \theta_i\right) \quad (1)$$

$$O_i = f\left(\sum_i T_{ii} - \theta_i\right) \quad (2)$$

The information of conditional attribute T in decision table is:

$$T = \frac{M}{R} = \frac{i\eta_e M_e}{r} \quad (3)$$

The FN of the decision attribute relative condition attribute in the decision table is defined as:

$$F_N = Ac + mg \tan \phi + F' \quad (4)$$

Assuming that an attribute is added to the conditional attribute of the above information system, the increment of the added information is calculated as follows:

$$F_q = F_r = F_1 + F_2 = mg(f_1 + f_2) \quad (5)$$

The definition of weights does not depend on human prior knowledge, but on the basic properties of objects in the domain. The importance of decision attributes is defined as:

$$W = \alpha\left(\beta\left(\frac{E^2_{i-current}}{E^2_{i-init}}\right) + (1 - \beta)\frac{d_i}{d_{max}}\right) \quad (6)$$

A domain can be divided into three distinct regions, positive region, negative region and boundary region:

$$c(j_1, k) = c(j_1, k - 1) + t_{j_1 k}, k = 2, \dots, m \quad (7)$$

$$c_{max} = c(j_n, m) \quad (8)$$

$$a_i = (\tau_i - \tau_{i-1}) / (\rho_i h_i) \quad (9)$$

Obviously, the three concepts have the following relations:

$$\Delta y = M(t_0 + \Delta t) - M(t_0) \quad (10)$$

$$Q = 2 \times \frac{\Delta w}{M} \times N \times e \quad (11)$$

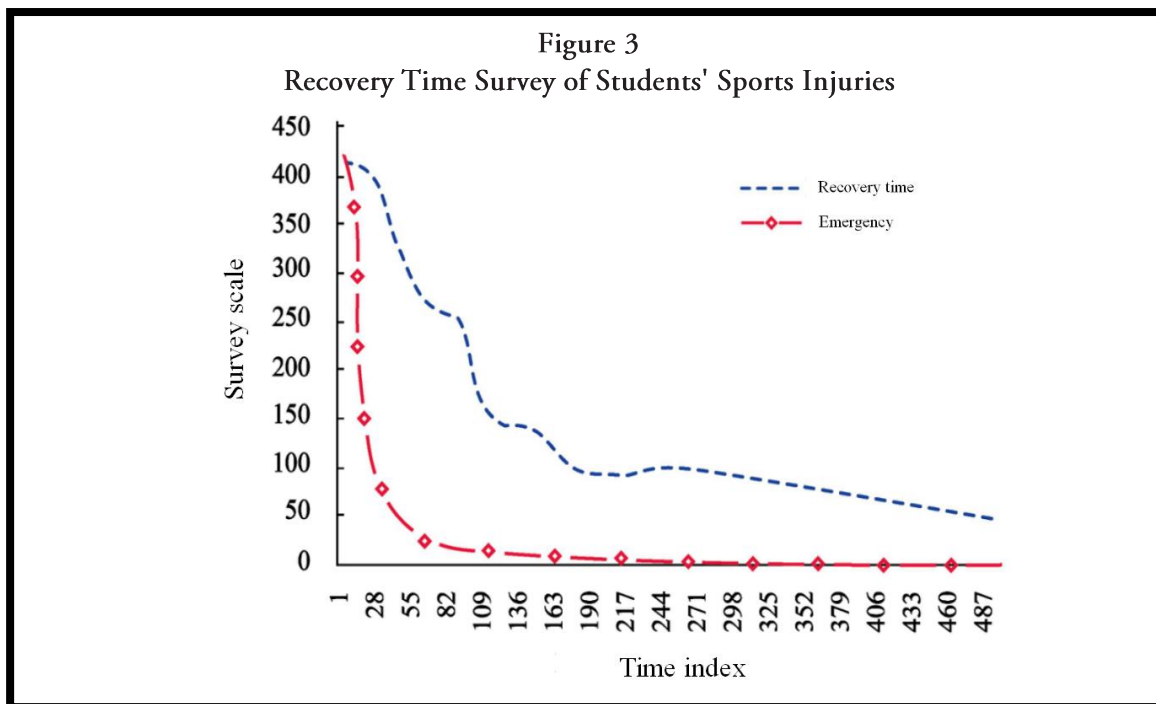
$$T = \frac{Q}{I} = 2 \times \frac{\Delta w}{MI} \times N \times e \quad (12)$$

Many students lack basic sports knowledge and basic knowledge, paying less attention to the warm-up activities in the early stage of sports, and even think that they are dispensable. This kind of concept must be abandoned. If you do not prepare for the preparatory activities, the impact on the body is very great. After the body joints and muscles are moved by warm-up activities, appropriate physical training is carried out. The movement state of the human body in sports activities is gradually integrated and gradually exerted. This is the process in which the human body gradually adapts to the needs of sports. The process that everyone must go through during exercise. After this process is completed, the human body functions fully in coordination, strength and agility. Preparatory

activities are mainly for students to get a good stimulation of the central nervous system, so that it has been in a state of excitement, in order to enhance the main function of the system activities, so that students do not cause excessive stress training obstacles and training injury. But the problem is that some colleges and universities are not fully prepared before sports training, so the students' central nervous system and other organs can not be unified together, in this case, once students start to exercise, it will lead to insufficient muscle mass, poor elasticity, incompatible stretching. Since students can't combine training preparation and training content, the longer the exercise, the greater the probability of risk. In the process of insisting on sports, the athletes are also undergoing certain tests. In addition, during long-term uninterrupted training, exercise may also bring some hidden damage to the body. These physical injuries will not be immediately highlighted. It is accumulated in the long-term, once sick. Hair, the damage to the body is also difficult to estimate.

Table 3
Survey on Recovery Time of Sports Injuries Among Students

Recovery time	Within 7 days	Longer time
Occupation ratio	81%	19%
Emergency Management	Clear understanding	Little understanding
Occupation ratio	75%	25%



It can be seen from Figure 3 and Table 3 above that most of the students recover faster and usually recover within 7 days. Very few serious ones may require longer recovery time. Most students have the corresponding knowledge in this area, and can effectively handle themselves for minor injuries.

RESULTS

If too much exercise or too high exercise intensity may cause muscle damage. In the process of sports training, if the amount of exercise is not arranged scientifically, it may reduce the physical fitness, make students produce physical fatigue, because of excessive use of muscles, eventually muscle paralysis may occur. An enterprising and responsible teacher and coach should, from the beginning of preparing lessons, list the prevention of sports injury as an important part of teaching and training, that is, on the basis of preparing students, teaching materials and equipment for the venue, they should also prepare safety measures, pay attention to strengthening classroom discipline, eliminating potential safety hazards, and strive to do so. Before training, check the venues and equipment, and do not practic

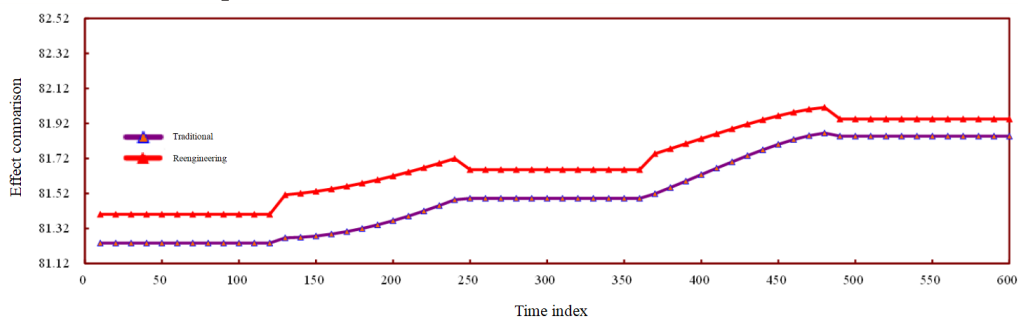
e on uneven venues or unqualified equipment. Training should be moderate, not excessive fatigue. Learn the correct methods of self-protection. Preparatory exercises can not only improve the excitability of the central nervous system and overcome the physiological inertia of the body, but also increase the number of capillaries in the muscle and the elasticity of the muscle. At the same time, they can also improve the function of the motor organs, enhance the elasticity of the ligaments, increase the number of synovial fluid in the joint cavity, and prevent the loss of muscles and joints. Injury can effectively reduce the incidence of sports injuries. When the muscles are in working condition, a large number of small blood vessels expand to increase the blood flow of the muscles, so that the volume of the muscles is further enlarged, causing relative muscle tissue hypoxia, the intracellular environment also changes, lactic acid is formed, and body fluids are infiltrated from the capillaries. Out, intramuscular edema will follow. This further increases the pressure of the muscle interval and affects the blood circulation. The muscle contraction in the interval pulls the periosteum, causing an inflammatory reaction of the periosteum, and then pain occurs. In the sport, the tendon of the shoulder joint will rub against the surrounding soft tissue, so that part of

the tissue will become very weak, and it is easy to form damage under the external force.

Table 4
Comparison of the Effects of the Two Process Services

Group	Patient satisfaction (%)	Satisfaction of Surgeons (%)	Complication rate (%)
Traditional process	85	93	2
Business process reengineering	93	100	1

Figure 4
Comparison of the Effects of the Two Process Services



Service process reengineering not only improved the professional quality of operating room nurses, but also improved the quality of operating room nursing services, the success rate of surgery and the satisfaction of doctors and patients. The two were statistically significant.

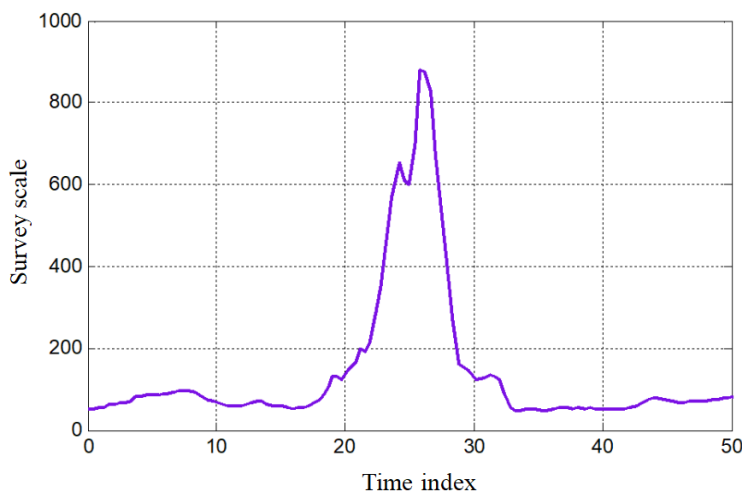
Each student's own physical quality is different, the level of sports foundation is different, the different sex of students in extracurricular sports training in the occurrence of sports injuries are very different, technical action is not standardized or technical action errors, it will be because of the characteristics of human structure and function and the movement process of the strength of the principle violated. Some sports injuries. This is the main reason that students take part in sports training for the first time or take part in sports injuries when they learn new technical movements. Is to teach the meaning of physical education, sports and learning the relationship between basic knowledge and common sense, improve students' understanding and interest in physical education, combined with the specific content of each class, after the start of a little time, to adjust students' mood, so

that they are eager to try every class, self-confidence and enterprising, attention focused on In class, I am full of energy and energy. Sports injuries caused by excessive exercise load may cause more serious injuries, and even cause permanent damage to the body of college students. In the current college campus sports activities are prevalent, sports culture has also been greatly promoted. Physical training should echo the physical and physiological characteristics of people. Many sports training in colleges and universities in order to pursue the effect of physical training and deviate from the physiological characteristics of students, so it is very easy to cause sports injuries. For example, when there is backlog and friction in the muscles of the shoulder and the surrounding muscles, the local position will be in a weak position, and the external force is more obvious, resulting in the occurrence of sports injuries. Warm-up exercises maximize the movement of muscles in all parts of the body, mitigating the irritation of muscles, bones and internal organs caused by large-scale, high-intensity exercise. Eliminating exercise fatigue in time can help the body recover.

Table 5
Survey of the Proportion of Students After Exercise Injury Treatment

	Take medical treatment	Not taking medical treatment
Student	27%	73%

Figure 5
Survey of the Proportion of Students After Exercise Injury Treatment



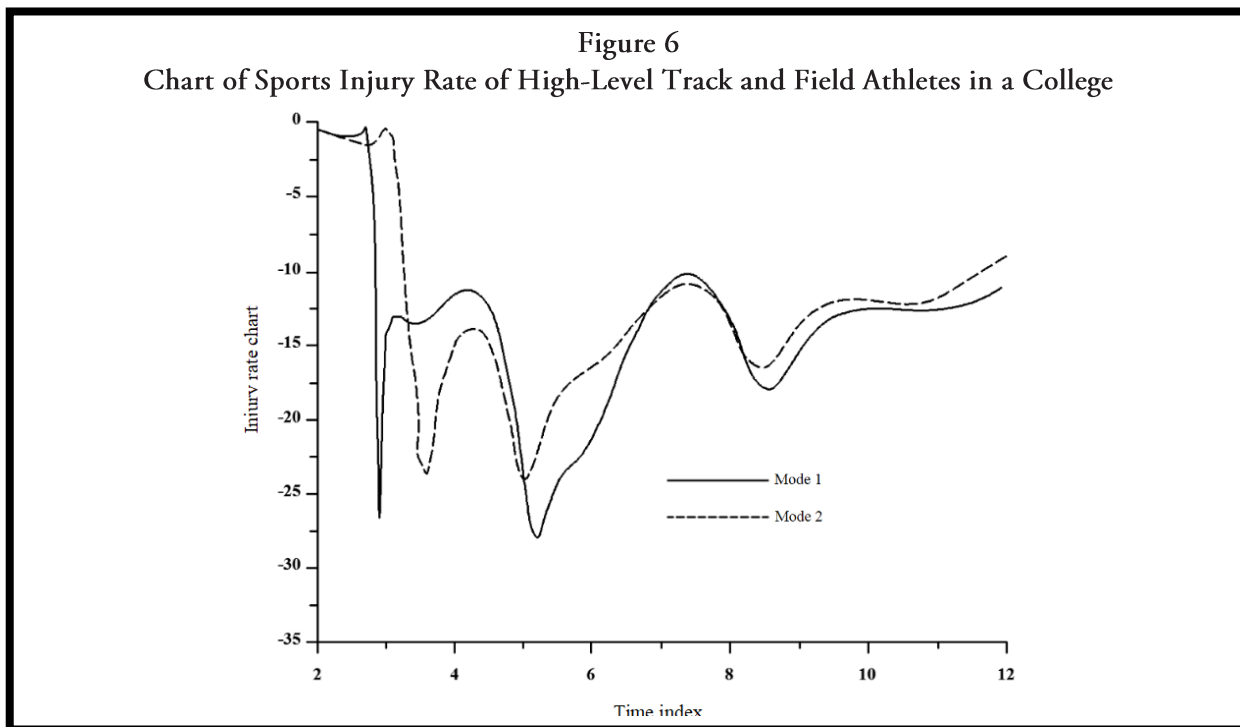
The surveys in Table 5 and Figure 5 above show that more than 73% of the students did not take medical treatment, and they all handled it by themselves. From this point, it can be seen that the damage is not very serious. At the same time, it also reflects the students' injuries to sports. The impact is not enough.

If teachers lack basic knowledge about sports training and prevention of sports injuries, and do not have excellent professional knowledge and skills in sports, they should not use reasonable protective measures and protection methods during practice, nor can they educate athletes about relevant knowledge. In the event of physical injury, there will be no analysis of the cause of the injury, and no lessons learned, resulting in continuous injury, even leading to increased injury, especially when learning new actions, due to the age and physical characteristics of young students. The irregularity of the formation of the body's motor skills, coupled with the teacher's professional knowledge and skills is not too hard, practicing technical movements in violation of the human body structure and the principles of motion

mechanics, it is easy to cause movement due to various wrong actions and Zhao Cheng sports trauma. After the physical injury occurs, traditional Chinese medicine maintenance treatment can be implemented. The use and research time of traditional Chinese medicine is long. Before the introduction of Western medical law, China mainly used traditional Chinese medicine in the course of disease treatment. At the same time, Chinese medicine has a good effect in the treatment and recovery of sports injuries, and enjoys world-renowned reputation. Chinese medicine also has the characteristics of palliative, economical and effective. Physical therapy is a more practical, safe and feasible method to recover from sports injuries, and it can recover quickly. Among them, cold therapy has the most obvious effect and has a wider audience. This is because cold therapy can significantly reduce the local skin temperature and make the capillaries shrink greatly, so as to control the amount of bleeding and restrict the sensitivity of the central nervous system. Finally, it can reduce inflammation, stop bleeding and relieve pain. Subsequently, the injured part of the reasonable bandage, and lift the injured limbs, so as to avoid bleeding again,

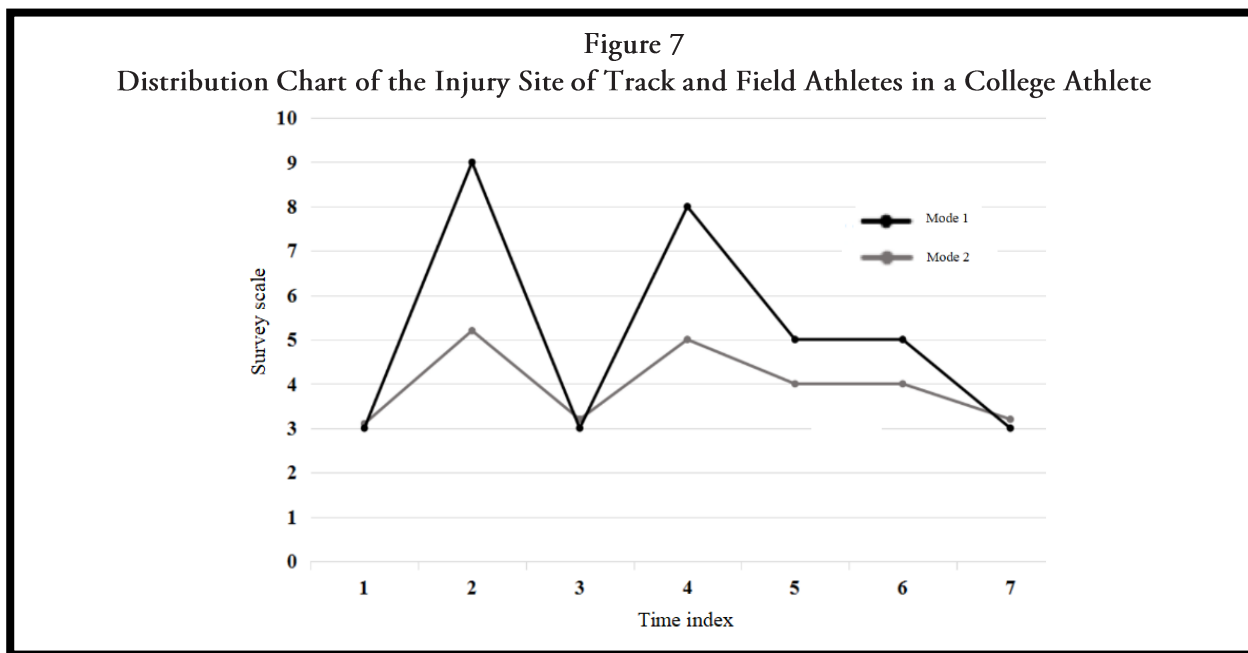
repeated small load will also cause tissue damage. Any part of the body under repeated mechanical loads, through the accumulation of wear or fatigue, the function of the body tissue will decline, so that the body's ability to adapt to the load and withstand the decline. In track and field

events, runners and race walkers often suffer from these injuries. When the human body is in a static state, the ground support reaction force almost perpendicular to the lower limbs to the upper body, gradually absorbed by human muscles and bones and other tissues.



Guiding students to concentrate on training tasks with firm confidence and avoid injury accidents due to improper organization. Paying great attention to relaxation and tidying activities is an active way to promote students' recovery of physical strength and energy after physical education teaching and training. Law. Physical education teachers play a very important role in physical education. Rehabilitation exercise after injury can maintain cardiovascular function and metabolic adaptability, prevent various diseases caused by stopping training, prevent disuse of muscle atrophy and bone and joint changes. Exercise therapy can cause changes in myogenin in myogenic proteins, improve muscle strength, increase serum testosterone levels, increase myotubes (active muscle fibers), and promote recovery of injured muscles. Different intensity training has different effects on muscle

recovery. In the event of sports injuries, rehabilitation training can maintain the normal function of the cardiovascular system, ensuring that the metabolic activity has exercise adaptability, so as to avoid the disease caused by the termination of training, avoid the emergence of muscle atrophy and prevent the bad changes of the joint. The principle of using exercise therapy to treat and restore sports injuries is to change the content of muscle protein inside myogenin through exercise, strengthen muscle strength, adjust serum testosterone levels, increase myotubes, and finally recover muscles quickly. Due to different training intensity, the corresponding recovery effects are different. For acute muscle strain injuries, small-intensity training can be performed to allow the damaged muscles to recover slowly toward the good side.



According to incomplete statistics, we can know that there are a lot of sports that have caused the muscle damage of students. The unreasonable arrangement of exercise volume will not only improve the physical fitness of students, but also cause physical fatigue of students, which will eventually lead to excessive use of muscles, which will cause tension and muscle spasm for a long time. In school physical education, teachers should carefully study textbooks according to their age, gender, health status and sports skills, and use various forms of physical exercise methods to strengthen comprehensive training and basic technical teaching. Improve students' physical quality in an all-round way, strengthen the teaching of basic skills, so that students correctly grasp the essentials of basic movements. Reasonable arrangement of exercise load, especially attention should be paid to the local burden of the motor organs and the arrangement of sports activities after injury, to avoid a single training method, to prevent local burden caused by large. In learning new movements, we should pay attention to the correct demonstration, so as to achieve from easy to difficult, from simple to complex, from the decomposition of movements to the teaching of complete movements. The ability of sports varies from person to person. In the process of sports, everyone needs to set reasonable sports goals

according to their own situation. The goal of the sports is too simple to achieve the effect of daily training. Setting a goal too high may cause a physical and psychological burden on yourself. Therefore, in such a situation, the formulation of the moving target must be reasonable.

DISCUSSION

Sports training injury is caused by a variety of reasons. Once sports injury occurs, it will restrict daily learning, students' own health and sports training. In a word, there are many reasons for sports injuries in school sports training. Schools should also increase publicity in sports safety so that every student can realize that teachers must strengthen the ideological education of athletes, arrange training and competition reasonably, strengthen the training of vulnerable parts and teach them before sports. Student protection and self-protection, strengthen medical supervision and sports venues management, prevent the occurrence of sports injuries, so as to better complete the school sports training. Avoid injuries and enable students to learn and grow in school healthily. Regularly organize the inspection of the site, equipment, equipment safety level, etc., and timely maintenance and repair. Do a good job in sports promotion and encourage students to participate in physical exercise. Not only must we have an accurate understanding of the causes of

sports injuries, but also need to understand the preventive measures of sports injuries, and when sports injuries occur, they must also be treated correctly, choose a reasonable treatment, and strive to minimize injuries and exercise injuries. Can get better recovery.

Human Subjects Approval Statement

This paper did not include human subjects.

Conflict of Interest Disclosure Statement

None declared.

Acknowledgements

The work presented in this paper is financed by Ministry of education's first batch of University-Industry Collaborative Education Program in 2019 (No.:201901076006), the General Scientific Research Project of Hunan Provincial Education Department in 2019 (NO.: 19C1272), and the second batch of teaching reform research project of Hunan University of Arts and Sciences in 2019, Project Name: Experimental Research on the Cooperative Learning Model in the Specialized Teaching of Badminton in Colleges and Universities.

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