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A Big Data Survey on Lower Extremity Injuries and Prevention of Athletic Students in General Colleges and Universities

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Abstract

INTRODUCTION: Athletics is trendy; many events rely heavily on lower body coordination. With the development of track and field, lower extremity injuries in track and field also occur frequently. In general colleges and universities, lower limb injuries in track and field not only affect students' physical and mental health but also affect students' daily life and Training.
OBJECTIVES: This paper examines the causes of lower limb injuries in students and suggests measures and recommendations for preventing lower limb injuries to increase the importance of lower limb injuries and reduce the rate of lower limb injuries in students.
METHODS: Combined with big data, the linear regression model was used, along with the literature method, questionnaire survey method and logical analysis method, to investigate the lower limb injuries of track and field students in general colleges and universities and analyze the survey results.
RESULTS: The following points were summarized: the lower limb injury rate of track and field students was as high as 79.03%, mainly focusing on ankles, followed by knees and joints; joint sprains dominated lower limb injuries, and the degree of injuries mainly was mild to moderate; the main factors affecting lower limb injuries included preparatory activities, technical movements, physical fitness and self-protection awareness; and the students did not have enough knowledge of and paid enough attention to the prevention of injuries.
CONCLUSION: The research in this paper can provide some references for more track and field students to help them have better careers.

Keywords: general college, track and field students, lower limb injury and prevention, extensive data survey

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1. Introduction

Since ancient times, track and field has been an essential sport, prevailing worldwide. In China, with Liu Xiang, Su Bingtian, Xie Zhenye and other track and field athletes making a splash on the world stage, track and field has entered a rapid development stage. To let more people participate in athletics, track and field stepped into the classroom of sports colleges and universities. With the development and promotion of athletics in China's sports colleges and universities, more and more students are participating in athletics[1]. In many general sports colleges and universities in China, the recruitment of students and curriculum are gradual to high standards and strict requirements; track and field in many general sports colleges and universities are set up as special courses and elective courses in some departments so that more

students can have the opportunity to participate in the study of track and field[2-3].

With the comprehensive development of track and field in general colleges and universities, more and more participants in track and field, and with the increase of track and field injuries, after searching the literature of Chinese academic journals network, we know that in track and field, lower limb injuries account for the most[4-6]. The incidence is very high, and some lower limb injuries begin to appear in the beginning stage of track and field, because of track and field lower limb injuries, so that track and field students in Training suffer from This not only seriously affects students' interest in learning athletics but also affects their use of lower limbs in daily life, and some even have fear and resistance to learning athletics because of these pains, which is not conducive to the promotion and development of athletics among students[7-8].

Although there are elective courses on sports injuries in physical education majors in general colleges and universities, we know through survey data that not many people choose to take this course, and sports injuries do not attract enough attention; most of the students in physical education majors will become teaching staff in the future, and it is essential for teaching staff to learn to prevent sports injuries[9].

Students not only have many students but also occupy an important social status. After reviewing the literature in CNKI, we know that most of them are studying the injuries of amateur and professional athletes in track and field. More research must be done on the lower extremity sports injuries of track and field students in sports colleges[10-13].

2. Research Background

2.1.The current situation of domestic research

In the current situation of Injury, it was found that the lower limb injuries were the most common, accounting for 65.5% of the total injury parts, accounting for more than half of the total injuries, and the lower limb injury parts were The Injury of the ankle joint is the most common; through the study of the results of the survey, it is finally pointed out that the importance of preparation activities influences the Injury of track and field sports, the reasonableness of technical movements, the comfort of sports equipment and the strength of physical quality, and the corresponding preventive measures are given at the end[14]. The findings showed that most of them had lower limb injuries such as ankle, knee, and joint in the beginning stage of athletics[15].

Among the causes of Injury, through the analysis of the characteristics of athletics and the situation of each part prone to Injury, proposed that in athletics training due to inadequate preparation activities, neglected recovery from physical fatigue and wrong technical movements can cause injuries in athletics, and reminded athletics learners to learn need professional guidance, understand the athletic characteristics of track and field, and be prepared both physiologically and psychologically[16]. Pointed out that the overload of athletics, insufficient or improper physical Training, and insufficient preparation activities are some of the causes of athletic injuries[17].

Among the effects of Injury, pointed out that the occurrence of sports injuries would affect the training effect and competition performance[18]. Students would be under great physical and psychological stress.Llaunched a detailed investigation of excellent track and field athletes in China's sports colleges and universities, and after the investigation, according to the characteristics of track and field injuries, track and field injuries were divided into closed injuries and chronic injuries[19]. Through the study of the findings, it was pointed out that external factors such as field conditions, track and field equipment and technical movements Through the study of the survey results, it was pointed out that external factors such as field conditions, track and field equipment, and self factors such as the play of technical movements can cause track and field injuries[20]. Pointed out that students, coaches and physical education workers cannot be trained with the idea that athletic injuries are inevitable in Training, which is highly harmful to sports colleges[21].

In the strategy of Injury, pointing out that preparation activities, standardization of technical movements, physical quality and training intensity, as well as ideological reasons and climatic conditions, are closely related to lower extremity sports injuries in track and field. In the article "An Analysis of common sports injuries and Prevention in college athletics," published in Sports World (Academic Edition), enhanced awareness of self-protection to improve physical quality, and adequate preparation activities are essential measures to prevent athletic injuries[22].

In summary, the research on lower limb injuries in track and field in China is still in the exploration stage, and there needs to be more comprehensive in-depth research, all of which are more in-depth research on a particular aspect. From the perspective of track and field injuries, China's current research primarily focuses on the overall injury causes and preventive measures of track and field, the lack of research on the causes and preventive measures of local injuries, and the lack of specialized research on college students as a group, which indicates that the local injuries of track and field in China's physical education institutions have not been practical attention, based on this point, the focus on track and field injuries accounted for a large proportion of the Based on this, we focus on the lower limb injury, which accounts for a large proportion of track and field injuries, and put forward our suggestions for the prevention of lower limb injury in the collective of college students, to reduce the incidence of lower limb injury, ensure the study and Training of track and field students, and

improve the overall level of track and field in general colleges and universities.

2.2.Status of foreign research

The text shows a large number of excellent track and field athletes around the world injury data through the data can be more intuitive to see the injury situation, there are track and field athletes around the world are plagued by injuries, specific data are shown in Table 1 below.

Table 1 The number of track and field athletes around the world injury statistics table

Athletes nationality	Number of statistics	Years of Professional Training	Number of people who have been injured	Percentage of injured persons
United States	28	12.2	19	67.9%
United Kingdom	22	11.2	15	68.2%
France	18	10.8	13	72.2%
Sweden	15	9.8	13	86.7%
Switzerland	18	8.5	10	55.6%
Belgium	13	9.7	6	46.2%

Through the review of foreign literature, it is evident that foreign research on track and field injuries is more in-depth, but most of the research is on track and field athletes and professional athletes; for athletes and professional athletes, they are equipped with professional doctors, for sports injuries, there are suitable preventive measures for themselves, these are not possible for the collective of track and field students in sports colleges. Research on athletic college students regarding sports injuries needs to be sound.

3. Materials and Methods

3.1. Basic theory

This paper uses linear regression analysis in statistics, which is a method of predicting the future value of a random variable that is correlated with one or a group of independent variables based on the variation of the variable. Regression analysis requires the establishment of a regression equation describing the correlation between the variables. Depending on the number of independent variables, the regression equation can be either a univariate regression or a multiple regression. The variables are considered linearly correlated if the regression function is linear. Generally, the variance is equal everywhere along the linear direction of the regression while customarily distributed, and the observations are independent. Univariate linear regression analysis includes two variables; one is the independent variable, denoted by x. The other is the dependent variable (predictor variable) denoted by y. The specific characteristics can be seen in Figure 1 below.

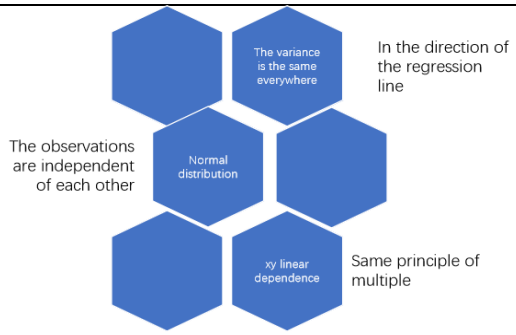

Figure 1 Common characteristics of linear regression

3.2. Model setting and data sources

3.2.1. Model setting

In this paper, the lower limb injuries of track and field students in general colleges and universities were investigated with 62 track and field students in general colleges and universities. Therefore, a questionnaire was set up based on the evaluation scale of our sport. Firstly, to meet the need for research literature, we searched the relevant journals, papers and other literature about this topic among CNKI, and also checked the books about lower limb injury in the libraries of general colleges and universities, and collected numerous related theoretical knowledge to lay a solid theoretical support for the research of this paper, and the specific formulas are as follows.

$$y(h) = n + a_1 x_1 + a_2 x_2 + a_3 x_3 \quad (1)$$

Where n is a constant, and a1, a2 and a3 are the influence coefficients of each factor of lower limb injury, respectively.

3.2.2. Model setting

Secondly, a random sample of general college and university athletic students was surveyed. A total of 100 questionnaires were distributed through the Internet, from which 68 questionnaires were successfully collected, 62

of which were valid because their contents were relevant and logical. Hence, the recovery rate of the questionnaires was 68%, and the effective rate was 91.18%. Finally, this thesis summarizes and classifies the collected data through logical analysis, combines the collected literature for a more abstract scientific study, and finally combines the data analysis results with the reviewed literature to form a scientific theoretical basis.

4. Results and discussion

4.1. Analysis of statistical results-Status of lower limb injuries among general college athletics students

The basic model is as follows after the questionnaire survey and data statistics.

$$y(h) = 20.6 + 13.2x_1 + 9.21x_2 + 7.52x_3 \quad (2)$$

4.1.1. Lower limb injury rate

After taking the track and field students in general colleges and universities as the target of the investigation, the following data were obtained by investigating and interviewing them about lower limb injuries, shown in Table 2.

Table 2 Incidence of lower limb injuries among track and field students in general colleges and universities

Investigation subjects	Male students	Female students	Specialized students	Non-specialized students	Total
Number of surveyed students	49	13	55	7	62
Number of lower limb injuries	39	10	43	6	49
Percentage	79.59%	76.92%	78.18%	85.71%	79.03%

Table 2 shows that among the surveyed students, 79.03% of them had lower limb injuries. The rate of lower limb injury is exceptionally high, among which 79.59% of male students and 76.92% of female students had lower limb injury, and 78.18% of exceptional students and 85.71% of non-special students had lower limb injury, which shows that: lower limb injury of track and field students is a common situation in general colleges and universities.

4.1.2.Lower limb injury-prone areas

According to the characteristics of track and field, four parts of the legs, ankles, knees and palms were summarized, and 49 students with lower limb injuries were investigated to get the following data, see Table 3.

Table 3 Common parts of lower extremity injuries of track and field students in general colleges and universities

Lower limb injury parts	Number of Injured	Percentage of Injury
Leg	35	71.43%
Ankle	33	67.35%
Knee	30	61.22%
Palm	14	28.57%

Through Table 3, we can clearly see that the injuries occurring in the leg, ankle and knee are similar, and the injuries of the three are much higher than those occurring in the palm; among the investigated students, the most students who had leg injuries accounted for 71.43%, followed by 67.35% and 61.22% of the students who had ankle and knee injuries, respectively, and the most minor students who had palm injuries, only Through the study and analysis of the data, the leg, ankle and knee are the most frequent parts of the lower limb injuries; the characteristics of athletics combined with the physiological structure of the lower limb parts were found: the leg includes the humeral head and scapular glenoid, such a structure is more flexible, less stable, weak ligaments, maintaining the stability of the leg relies on the role of leg muscles, and the leg muscles and joints The space between the muscles and joints of the leg is relatively narrow, and it is very easy to produce friction during leg movements, especially when subjected to significant mechanical stresses such as when starting athletics, which can easily cause leg injuries; the soft tissues of the knee are weak, and when throwing the shot put, confrontation, etc., the ligaments suffer excessive stretching, violent muscle contraction and forced abduction or adduction of the elbow joint can cause soft tissue injuries in the knee.

4.1.3.Types of lower limb injuries

In the daily Training of track and field, many track and field lower extremity injuries occur, and there are various types of lower extremity injuries; we draw out the following ones, see Figure 2.

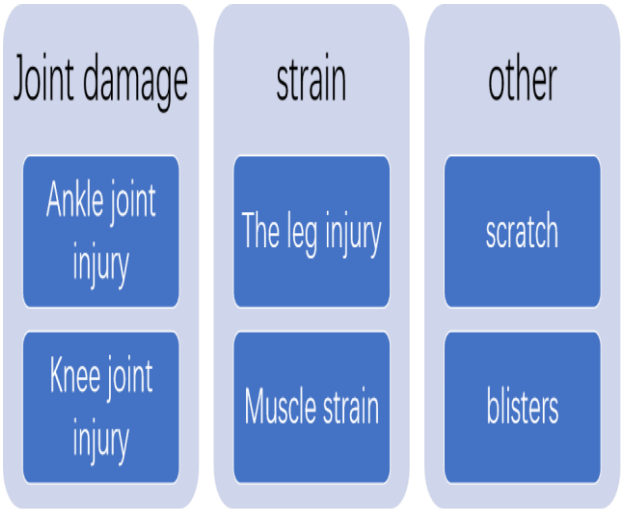

Figure 2 Types of lower limb injuries of track and field students in general colleges and universities

The injury types in Figure 2 are roughly divided into three categories: joint injuries, strains and others. Moreover, among all the injuries, ankle injuries and leg injuries are the most common, both accounting for 81.63% of the total, much higher than other lower limb injury types, followed by abrasions, blisters and knee joints, 44.9%, 42.86% and 40.82% respectively, with similar percentages of the three; the least is muscle strains, accounting for only 34.69%. Combined with the literature, it is found that muscle strains occupy a significant proportion of the injuries in other parts of the body, while in the lower limb injuries, muscle strains are the least, which is related to the causes of muscle strains, which are caused by rapid muscle contraction or excessive stretching during exercise. In contrast, in athletics, the lower limb has fewer cases of rapid muscle contraction or excessive stretching than other body parts.

4.1.4.Lower limb injury-prone season

The temperature and other conditions vary significantly throughout the year in China, so the seasons with the most injuries to the lower limbs of the surveyed subjects were investigated, and the following data were obtained after the survey, as shown in Table 4.

Table 4 Frequent seasons of lower limb injury of athletic students in general colleges and universities

Season	Number of people	Percentage
Spring	5	10.2%
Summer	20	40.82%
Autumn	1	2.04%
Winter	23	46.94%

The data in Table 4 shows that students have lower limb injuries in all seasons of the year. We can see that the injury cases in summer and winter are much higher than those in spring and autumn, in which winter, which accounts for 46.94% of the injury cases, is the first, followed by summer, which accounts for 40.82%, spring, which has 5 cases accounting for 10.2% of the total, and autumn, which accounts for only 2.04%. The muscles of our body have viscosity, and before doing extensive exercise, we need to go through some preparation activities to make the body warm up to weaken the muscle viscosity. Otherwise, it will cause muscle strain, and the joints' flexibility also needs preparation activities to improve. In some areas of winter, due to the lower temperature, the muscle viscosity is not easy to weaken, and the flexibility of the joints is limited, so winter is the most common season of the year for students Injuries occur most often in the season; in summer, students perform athletics more frequently, technical movements are used more, the probability of lower limb injuries is greater, and the heat, the body loses energy, water and electrolytes more quickly, causing faster muscle fatigue, technical movements are more likely to deform, increasing the risk of lower limb injuries.

4.1.5.Extent of Lower Extremity Injury

To understand whether students can train after their lower limbs are injured, a survey on the degree of lower limb injury was conducted on students, and the following data were obtained, see Figure 3.

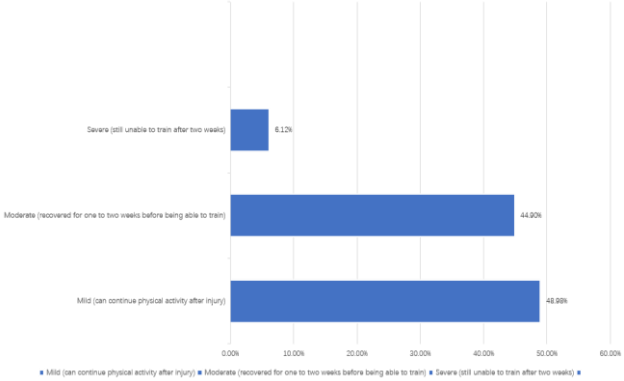

Figure 3 The degree of lower limb injury of track and field students in general colleges and universities

According to the survey data in Figure 3, it can be seen that the lower limb injuries of students are concentrated in mild and moderate, accounting for 48.98% and 44.9% of the total number of students, respectively, and the two degrees of injuries are similar. Students cannot participate in Training for a long time due to lower limb injury; students cannot live and train without the use of various parts of the lower limbs, and as long as there is an injury to the lower limbs, it will hinder the use of the lower limbs and affect Training.

4.2. Result verification and reason search

After the statistics of lower limb injuries of track and field students in general colleges and universities, the results were further verified, the causes were further searched, and the common causes are shown in Figure 4 below.

Figure 4: Causes of lower limb injuries among track and field students in general colleges and universities

4.2.1. Lower limb injury due to inadequate preparation activities

Adequate preparatory activities before exercise are not only in athletics but also in other sports, and adequate preparatory activities should attract the attention of both teachers and students.

In track and field, every movement is inseparable from the collaborative activities of all parts of the lower limbs, so all parts of the lower limbs, both joints and muscles, need to be highly mobile, and the human muscles have strong adhesion before warming up the preparatory activities, so if they are not warmed up through the preparatory activities and thus weaken the adhesion of the muscles, it will significantly increase the risk of causing muscle strain; for all parts of the lower limbs For the joints, athletics is a sport that requires joint flexibility, before exercise, if the warm-up activities are not done adequately, the flexibility of the joints and the tissues around the joints are not improved, during exercise, it will not be possible to achieve a more excellent range of motion, and every extensive range of motion has the risk of causing Injury; inadequate preparatory activities can not be done in the process of exercise, rapid continuous movement, rapid stopping Adequate preparation activities can also mobilize students to enter the state in a short period of time, so inadequate preparation activities will not only increase the risk of Injury but also reduce the training effect and affect the performance of the game, especially in winter, the temperature is low, inadequate preparation activities will not allow the muscles to relax, the muscles can not reach the required level when the need to pull, forcibly pulling It is very likely to lead to muscle strain and joint sprain.

4.2.2. Lower limb injury caused by irregular or wrong technical movements

According to the survey data, the accuracy of technical movements is one of the main factors leading to lower limb injuries.

The technical movements of athletics are completed by the parts of the lower limbs in cooperation with each other. Technical movements cannot be performed without the parts of the lower limbs. Suppose the technical movements lose accuracy during the movement, resulting in the force of the parts of the lower limbs is not scientific and reasonable. In that case, it will cause lower limb injuries. Inaccurate technical movements may not affect students at the beginning stage of technical movements because they do not know how to apply force, but as the technology becomes more proficient if the technical movements are not corrected, they will cause damage to the lower limbs; during Training, inaccurate technical movements may not cause damage, but these inaccurate technical movements will be magnified several times or even tens of times in the stressful environment of the competition, causing the lower limb injury The probability of lower limb injury is significantly increased.

4.2.3.Lower limb injury due to lack of self-protection awareness

In the survey data, the lack of self-protection consciousness is the leading cause of lower limb injury among students. The lack of self-protection consciousness does not mean they do not think about protecting themselves in sports but need a clear understanding of their own physical quality, athletic level and load capacity. They do not understand the preventive measures for lower limb injuries. When they are doing athletic Training, they tend to do some things beyond their ability, resulting in lower limb injuries.

4.2.4.Lower limb injury due to unreasonable training and rest time arrangement

The data of unreasonable physical Training, physical fatigue and excessive training tasks can be summarized as unreasonable training and rest time. Athletics is a sport with high requirements for physical fitness, and physical fitness training is essential; many students have low physical fitness plus unreasonable physical fitness training and athletic Training, which increases the incidence of lower limb injuries. Unreasonable physical Training not only fails to achieve the desired effect, there is a risk of Injury to their own bodies, such as training load exceeds the limit of what they can bear, compare our body to a leather belt, pull it to the limit it will spring back, but more than the limit will only pull the belt off; track and field training should follow the principle of appropriate load and appropriate recovery, not just

strengthen the Training, if the body does not recover, then Once again to strengthen the load, not only can not achieve the training effect, but also cause athletic fatigue, lower limb muscle strength is relatively weak, the need to pay more attention to the appropriate load and recovery, like a balloon full of gas, give the balloon enough pressure, and then slowly reduce the pressure, not waiting for the balloon to completely restore the original state and give it the same pressure, gradually the pressure on the balloon is getting bigger and bigger, and eventually the balloon will not be able to recovery and can not withstand the pressure and explode.

4.2.5.Lower limb injury caused by unsuitable athletic equipment

In the survey results, although there are not many lower limb injuries caused by track and field equipment, there is still a part, here the track and field equipment mainly refers to a variety of track and field infrastructure equipment, for students; the infrastructure equipment is essential, suitable mainly refers to the weight of the equipment and the frequency of use. Too heavy and their own lower limb strength is weaker will lead to the use of equipment to enhance the compression of the lower limbs, leading to the occurrence of Injury, such as in the process of exercise, each exercise and response to emergencies, the lower limbs have to bear more pressure, which leads to the various parts of the lower limbs will exceed the load operation, and is very easy to cause Injury to the lower limbs.

4.3.Analysis of the impact mechanism of lower limb injury on track and field students in general universities

4.3.1. Influence on psychological aspects

When a person is injured by something or something, they will reject it. A survey was conducted to understand the degree of rejection of athletics when students are injured, and the following data was obtained, shown in Figure 5.

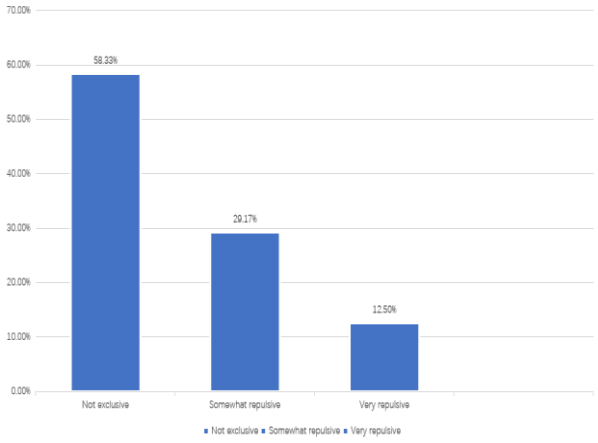

Figure 5 Rejection of athletics after Injury among general college athletics students

Figure 5 intuitively shows us that students' negative emotions towards athletics after suffering from lower limb injury, among which 58.33% of students do not reject athletics because of lower limb injury, 29.17% of students have a little rejection, and the remaining 12.5% students have a strong feeling of rejection towards athletics, but there is no situation that students give up athletics; students in general colleges and universities are the future purveyors of athletics, and the Injury of lower limbs will reduce students' enthusiasm for learning and training athletics to a certain extent, which is not conducive to the promotion and development of athletics.

4.3.2.Impact on Daily Life

In students' daily lives, using lower limbs is indispensable. To investigate the impact of lower limb injuries caused by athletics on students' daily life, the following data were obtained from a survey of students who had sustained injuries, see Figure 6.

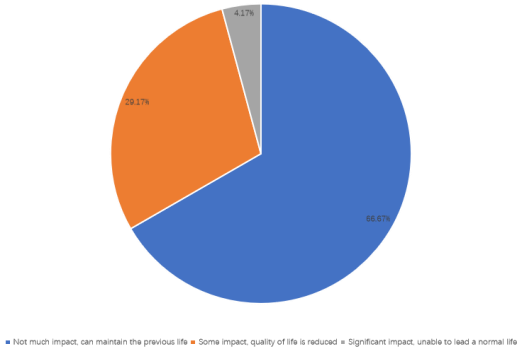

Figure 6 Impact of lower limb injury on the daily life of track and field students in general colleges and universities

According to the percentage of the degree of Influence in Figure 6, it can be seen that 66.67% of the students said that the upper limb injury has little Influence on their life, they can maintain their previous life, and the students who have a particular influence on their life and the quality of life decreases. As a result account for 29.17% and the remaining 4.17% of the students will not be able to live normally because of the upper limb injury; thus, it can be seen that the number of students who can still live as usual after the Injury accounts for Only a minimal number of students were unable to live generally due to upper limb injury. Overall upper limb injury would not significantly impact students' daily lives.

4.3.3.Effects on Track and field training

Injuries to the lower limbs will undoubtedly have an impact on athletic Training. To understand the impact of students' lower limb injuries on students' regular Training,

the following data were obtained through the survey, see Figure 7.

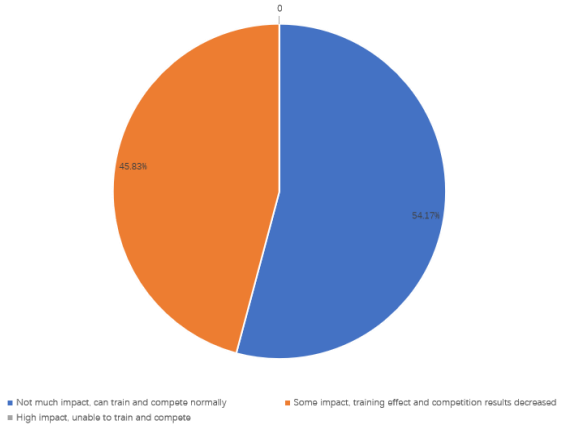

Figure 7 Effect of lower limb injury on track and field training of general college track and field students

Figure 7 shows that lower limb injury has little effect on 54.17% of students who can participate in Training and competition usually; 45.83% of students said that lower limb injury has some effect on daily Training and competition, which will reduce the training effect and competition results, and there has not been a situation that lowers limb injury causes the inability to conduct Training and competition; lower limb injury basically does not cause students to be unable to conduct Training, and thus will not delay the training process will not be delayed.

5. Conclusion and outlook

The lower limb injuries of track and field students in general colleges and universities are prevalent. The injury rate is as high as 79.03%, and the lower limb injuries are concentrated in three parts: legs, knees and ankles.

The lower limb injuries of track and field students in general universities are mainly joint, followed by bruises and blisters, and muscle strains are less; the degree of Injury is primarily mild and moderate, so it does not cause much impact on students' daily life and Training.

The main reasons for the lower limb injuries of track and field students in general universities include insufficient preparation activities, irregular technical movements, unreasonable training plans and lack of self-protection awareness.

Students' awareness and attention to preventing lower limb injuries in track and field must be increased. Here again, several specific countermeasures for prevention are emphasized.

5.1.Suggestions for lower limb injury and prevention for track and field students in general colleges and universities

By reviewing the literature and combining the causes of injuries, the following preventive measures for lower limb injuries are proposed. To understand the agreement of general college track and field students on these measures to prevent lower limb injuries, a survey was conducted on 62 students.

The data shows that 88.71% of students think that standardized technical movements and relaxation of the body after Training can prevent lower limb injuries, 82.71% of students agree that adequate preparation activities before exercise can prevent lower limb injuries, 79.03% of students agree that reasonable physical training plan and suitable training load can prevent lower limb injuries and 75.81% agree that adequate physical training plan can prevent lower limb injuries. Analyzing the above data, standardized technical movements, body relaxation after training, adequate preparation activities, a reasonable training plan, and a suitable training load are all targeted preventive measures. However, training frequency is low because students' daily training time could be higher. This preventive measure of adequate physical recovery is less relevant to students because of the short training time and low training frequency.

5.1.1.Adequate preparation activities

Adequate preparatory activities before athletics can prevent the occurrence of Injury. For the lower limbs, in the preparatory activities, we should do an excellent job of stretching the lower limb muscles, weakening the adhesion, moving the joints of various parts of the lower limbs, improving joint flexibility, and doing some basic technical athletics movements. Athletics small field interaction is a standard method of warming up activities; at the beginning of the interaction, do not carry out large movements to gradually increase the range of lower limb activities so that the muscles and joints gradually adapt to a wide range of activities. The preparation activity is about 20 minutes, and the body can sweat slightly. The preparation time can be changed according to the surrounding environment; for example, the preparation time can be lengthened in winter due to the low temperature.

5.1.2. Improve the standardization of technical movements

In athletics, most of the technical movements are done by the lower limbs, and the formation of technical movements has to go through four stages: generalization stage, differentiation stage, technical consolidation stage and automation stage. Especially in the technical consolidation stage, students should keep on honing their skills to make the technical movements perfect; by strengthening the lower limb control ability, they can improve the standardization of technical movements.

5.1.3.Reasonable Arrangement of Training

Athletics is a sport with high requirements for physical fitness, physical Training includes strength, speed, endurance, agility and flexibility, the exercise of the lower limbs is mainly in the strength and flexibility, in quality training pay special attention to the quality of injury-prone parts of the Training, but not only lower limb training, the human body is a whole, all parts need to coordinate the development, if there is a short board, not only will the weak parts cause Injury will also affect other parts, so in the body training for each part, each quality of balanced Training; physical quality of Training should be arranged reasonably, neither too long an interval to achieve the training effect, nor frequent Training so that the lower limbs do not recover, three times a week physical quality training is more appropriate, the length of Training needs to be reasonably arranged according to their own circumstances, the lower limbs special strength training does not need Training with large weights, but small weights, fast frequency training, regular physical Training can help prevent the occurrence of lower limb injuries.

Athletics requires regular Training to maintain the technical level; long periods without athletic activities will lead to a rusty sense of movement and thus affect the level of athletics; only regular practice can maintain and improve their athletic technical level; playing athletics can also improve student health and relieve student stress. Athletics training about three times a week is most suitable for students, in the training intensity and Training time need to be combined with the student's situation for reasonable arrangements; a set of reasonable training plans can not only prevent lower limb injury to ensure learning and Training progress but also to consolidate and improve the level of athletics.

5.1.4.Improve self-protection awareness

Students should have a clear understanding of their physical condition, mental health condition and athletics technical level, master some basic theoretical knowledge of athletics injury, summarize the injury experience, pay attention to the prevention of lower limb injury in daily athletics training, ensure the implementation of preventive measures in learning and Training, and then strengthen the awareness of self-protection; teachers should pay attention to the theoretical knowledge of sports injury In the teaching process, teachers should pay attention to theoretical knowledge of sports injuries, combine theory with practical Training, and gradually cultivate students' awareness of injury prevention.

We hope that the research in this paper can provide some references for more athletic students and help them have better careers.

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