Research on the movement injury for tennis major students of universities

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Abstract: In recent years, tennis has increasingly become a favorite sport for many people, and major institutions of higher learning across the country have established specialized tennis courses. As the number of tennis enthusiasts grows, more and more individuals have sustained injuries for various reasons during the sport, which has adversely affected their studies and daily work. Consequently, preventing injuries in tennis has become one of the vital components of specialized tennis courses. This article scrutinizes the characteristics of injuries among students participating in tennis, analyzes the causes of these injuries through surveys, and proposes preventive measures tailored for tennis-related injuries. It offers a theoretical foundation for students majoring in tennis and enthusiasts, aiming to minimize physical injuries during tennis activities.

Keywords: Higher Education Institutions, Sports Injuries, Tennis Specialization

1. Introduction

As Chinese tennis players have achieved outstanding results in major tennis events at home and abroad, the sport of tennis has also gained popularity. Tennis not only benefits our physical health but can also help us relax and alleviate the stress brought by work and study. However, because this sport has high demands on athletes' physical fitness, with strong requirements for wrist strength, rapid footwork, and quick brain response, many athletes suffer varying degrees of physical injuries during the sport. For professional athletes, this affects their tennis career, while for enthusiasts, it impacts daily study and life. This article investigates the situation of athletes' injuries, analyzes the parts and nature of the injuries, identifies the essence of the injuries during the sport, and proposes a series of preventive measures. It provides a reference basis for tennis enthusiasts, effectively reducing the chances of injury.

2. Characteristics of injuries among tennis major students

2.1. Types of sports injuries

In tennis, for various reasons, the body can be harmed, and there are multiple types of sports injuries. Due to insufficient warm-up activities, some cannot withstand the high-pressure during service, so common injuries during serving include periarthritis of the shoulder, shoulder strains, and shoulder joint sprains. During the game, constant footwork, agile steps, and continuous shifts in body weight are required, during which we often suffer from knee injuries, medial collateral ligament sprains of the knee, and lateral collateral ligament sprains. In addition, the damage to the ankles from rapid movements is also significant. Ankle joints have joint capsules that are more-lax compared to other parts, and the ligaments are taut, which makes them prone to ankle sprains, ligament tears, and tenosynovitis during quick stops or rapid starts.

2.2. Injuries in sports: affected body parts

Tennis is a sport that requires coordination between multiple parts of the body. During the sport, sprains of joints such as the shoulder and ankle are the main injury sites in tennis. Analysis suggests that in athletes' training, the importance of small muscle groups is often overlooked, with an emphasis only on the development of major muscles. This can lead to local joints being unable to withstand the pressure during

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the sport, resulting in sprains of the ankle and shoulder joints. Additionally, in tennis, there are frequent quick stops, reversals, and starts, which put excessive stress on the ankles, making them prone to injury. If fatigue is excessive at this time, the likelihood of injury will greatly increase. Therefore, in sports, it is important to increase the strength of small muscle groups on one hand, and on the other hand, to pay attention to rest and avoid overexertion.

3. Causes of injuries among tennis major students

3.1. Reasons related to school facilities

A sport must be conducted on a professional field. If there is an inadequacy in the construction of the school's tennis courts or if there are significant quality issues, students are prone to injuries during activities. Additionally, if the number of school facilities is insufficient, students will be concentrated on a single court during exercise, greatly increasing the likelihood of injuries. This can include accidental injuries such as scrapes from accidentally hitting classmates with a racket or hitting other students while playing tennis. Furthermore, some schools have tennis courts made of concrete, which does not provide enough cushioning for the ankles. Over time, this can lead to damage to the joints of the lower limbs.

3.2. Limited student equipment

During tennis activities, wearing certain tennis equipment can provide excellent protection for joints. However, due to the limited financial resources of college students, coupled with the high cost of tennis equipment, there is a significant limitation on the quality of the rackets they can purchase. When striking the ball, the arm is easily injured by the vibration. Moreover, cheaper rackets tend to be heavier, which puts more pressure on the forearm during the sport, making it prone to injury. The hands are also likely to blister easily.

3.3. Insufficient warm-up activities

According to surveys, 50% of students do not engage in warm-up activities before exercising, making their bodies susceptible to injury. When the body is at rest, all its parts are in a dormant state, and the muscles have viscosity. In the event of a sudden force exertion, muscles are very prone to strain, which can cause damage to various joints. Therefore, not only in tennis but in any sports activity, it is important to pay attention to the preparatory activities before exercise. Utilizing fifteen minutes for warm-up and joint exercises can greatly reduce the likelihood of injury during sports.

3.4. Poor tennis skills

Without professional tennis techniques or theoretical support, it is easy to suffer bodily injuries due to incorrect movements during the sport. Firstly, non-standard technical movements can lead to injuries because one cannot smoothly and completely execute professional movements, lacking technical principles. Secondly, non-standard serving actions can cause the arm to deform during the swing, and if there is no elbow flexion and no internal rotation of the arm, it is easy to injure the elbow joint due to excessive force. Lastly, non-standard ball-striking movements are another technical issue leading to injuries. If the ball-striking movement is deformed during the process, it can cause wrist injuries, mainly because the forearm acts as a force point for serving, leading to excessive force on the elbow joint. Additionally, insufficient buffering of the ankle joint during the running process to catch the ball can lead to ankle joint injuries.

4. How to prevent sports injuries among tennis major students

4.1. Completing essential warm-up exercises

The necessity of completing the preparatory work not only ensures that athletes are not injured during intense sports activities but also helps them to perform stably and achieve better results. The functional mechanism mainly involves stimulating the body through prior exercise to enter a state of tension, increasing the flexibility of various joints, reducing muscle slackness, and gradually bringing the body into

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an excited state for sports, in order to cope with the intense physical activity. This helps to avoid poor physical condition due to inadequate preparation, which makes it difficult to adapt to high-intensity sports activities. Forcing oneself to participate not only fails to perform at a normal level but also poses a significant risk of serious bodily harm to the athlete.

4.2. Mastering tennis-related skills

Any sport is always inseparable from the support of skills; without skills, sports are merely brute force, which is of no benefit to the athlete. Therefore, an effective way to prevent accidental bodily injuries is to master the relevant skills of tennis. Mastering the skills of a sport is akin to grasping the essence of the sport, which shows that achieving this is not easy. Therefore, athletes should not be complacent but should follow the coach's guidance, patiently engage in tennis training that progresses from simple to complex, and from easy to difficult. They should ponder and carefully understand every standard movement demonstrated by the coach, consult with professional teachers for learning and improvement. Only by doing so can they detect and correct their own non-standard movements, not only enhancing their professional level but also providing a safeguard for a safe sports career.

4.3. Reasonable arrangement of strength training

For tennis, a sport that greatly tests an athlete's endurance, strength training is the preferred method for rapidly improving the level of tennis players. However, it is important to note that while reasonable strength training can indeed bring a qualitative leap in the athlete's physical fitness and professional level, blindly imposing unscientific and unreasonable strength training in the hope of achieving quick results can have consequences far beyond affecting a single match's performance. It may even cause irreversible major harm to the athlete's body and mind, ending their sports career. Therefore, clear and reasonable strength training involves increasing high-frequency, low-resistance exercises and the appropriate use of auxiliary tools, which is not only beneficial for the healthy growth of muscles but also for improving athletes' endurance and explosive power. In addition, scientific strength training can help athletes build a strong physique, which in turn can reduce many external injuries.

4.4. Enhance medical supervision

Many athletes are eager to win and, even after completing the training courses required by the coach, they often adopt the method of extra training to carry out so-called "devil training" in order to quickly improve their technical level, without the coach's knowledge. It should be noted that the coach's daily training arrangements are based on individual physical characteristics, taking into account various situational factors, and reasonably arranged in the most effective way of training. The intensity of daily training will neither make the athlete feel excessively burdened nor too relaxed, after all, once the body relaxes, it is difficult to adjust to a tense state again. At this time, choosing to add training is very unwise, because when athletes cannot scientifically manage themselves, it is necessary to increase the intensity of medical supervision. Once any abnormalities in the athlete's body are found, they should be immediately reported, and timely checks, discoveries, and reports should be made before permanent physical damage occurs. This is the significance of medical supervision.

5. Conclusion

According to surveys, in tennis sports, half of the injuries are concentrated in areas such as shoulder joint sprains, ligament twists, ankle sprains, and knee joint fatigue. The reasons for injuries can generally be attributed to not being prepared for activities, incomplete techniques, overworking the body, and insufficient physical training levels. Any sports activity will have a certain risk of injury, especially high-intensity sports like tennis that require a high level of physical fitness. Therefore, it is recommended that students first prepare for activities, fully activate all parts of the body, strengthen technical practice, and avoid strenuous exercise when the body is fatigued. Reasonably arrange their own exercise time, strengthen muscle exercises in the injured areas, improve their physical fitness, wear appropriate protective gear during exercise, actively take protective measures, prevent injuries during exercise, and maintain a healthy state.

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