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A Comprehensive Analysis of Sports-Related Injuries in Basketball Players

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ABSTRACT

The aim of this systematic review was to gather pertinent information from the current literature regarding sports injuries sustained by basketball players and to elucidate the variations in sports injuries based on factors such as gender, location, sport, and position on the court. From 1990 to 2024, the papers were digitally searched using the databases PubMed, MEDLINE, ERIC, Google Scholar, and Science Direct. Ankle and knee injuries are the most common serious injuries for both sexes, while ankle sprains and ligament strains are the most common types of injuries. Joint ligament strains and ankle sprains are the most common types of injuries. The most common injuries happen as a player runs and after making contact with the ball. Guards have the highest rate of adductor muscle injuries, while shooting guards are the most likely to be injured, followed by centers and point guards. Additionally research shows that basketball players frequently sustain knee and ankle injuries, with ankle sprains being especially common. Female basketball players are more likely to sustain knee injuries, including Anterior Cruciate Ligament (ACL) damage. Injuries can result from a variety of circumstances, such as the biomechanics of jumping, landing, abrupt direction changes, and the physical strain that the body experiences while playing the game.

Keywords: Sports injury, Dislocation

INTRODUCTION

Basketball is an extremely difficult game that requires players to execute a variety of jumps, accelerate quickly, and make abrupt direction changes. As a result, players' bodies are put under a lot of physical strain, which can result in injuries if they are not physically prepared. NBA player's non-game activities typically exhibit higher load than their game activities. Furthermore, Weiss and colleagues found that the best way to lower injuries in men's professional basketball is to work at a moderate workload. Orthopedic injuries account for the bulk of sports-related injuries and are an essential component of all sports, amateur and professional. Players in a sports game sprint, jump, and pivot in both forward and backward directions, changing the running course several times as the game progresses. Basketball players have been suffering injuries on a regular basis. Prevention is therefore very important.

Sports injuries are the subject of a large number of studies and as a result there are many studies citing the research that has been done. The risk of injury began to rise as training technologies improved and players were put under more physical strain. Young teams were subjected to increased physical demands and are expected to perform better, which may increase the likelihood of injuries. Numerous prospective studies involving both male and female basketball players, both amateur and professional, indicate that the ankle and knee joints are the anatomic sites most commonly injured.

Basketball ankle injuries are the most common type of injuries with ankle sprains ranking first among these injuries. Ankle sprains are the most prevalent injury sustained in basketball, followed by ankle fractures, according to Padua and associates. They added that athletes who sprain their ankles are more likely to experience a recurrence, which can lead to long-term instability. Additionally, female basketball players are more likely to sprain their ankles, particularly during a game, which can cause them to miss up to three weeks of play.

Ankle sprains are the most frequent kind of basketball ankle injuries, accounting for the majority of cases. According to Padua and associates, ankle sprains are the most common injury suffered in basketball, followed by ankle fractures. They also mentioned the increased risk of recurrence for athletes with ankle sprains, which can result in chronic instability. Furthermore, it is more common for female basketball players to sprain their ankles, especially during a game, which can result in a three-week absence from competition.

It is important to note that there is no precise and accurate method to determine the increased risk of ACL injury. The lack of knee stability dynamics is the cause of a rise in knee injuries among male and female basketball players. After searching the database and colleagues discovered 129 meniscus injuries throughout the course of the 21 National Basketball Association (NBA) seasons, with players with higher Body Mass Indices (BMI) experiencing these injuries more frequently. The frequency of ACL injuries rises at the start of the regular season and remains relatively constant before and after halftime. As a result, a thorough investigation is required to determine whether weariness plays a part in the rising incidence of ACL injuries throughout games and the season. In addition, a thorough systematic review must be carried out to shed light on the frequency of injuries among basketball players.

This systematic review set aimed to gather pertinent information from current research on basketball player's sports injuries and to explain variations in sports injuries based on factors such as gender, location, sport, and position on the court.

DISCUSSION

This systematic review of the current literature aims to gather pertinent information about sports injuries sustained by basketball players and explore potential differences in injury patterns according to gender, geography, sport, and court position. The study's principal conclusions indicate that lower extremity injuries ankle and knee are the anatomical sites where injuries happen most frequently in both sexes, with ankle sprains and ligament strains being the most common types of injuries. Compared to centers and point guards, shooting guards have the highest injury rates. The study's therapeutic application is demonstrated by the fact that, according to the results, therapists now have more precise information about how frequently basketball injuries occur, enabling them to plan their rehabilitation programs in preparation for injured body parts. This research is crucial for biomechanics as well because it aims to identify preventative measures that can help lower the number of basketball-related injuries. There are some restrictions on how the results should be interpreted, though. The study's authors did not look into how injury rates varied between National Basketball Association (NBA) and European basketball. Analyzing the incidence of injuries throughout the regular season and postseason competitions, as well as comparing injuries across European nations would be fascinating.

CONCLUSIONS

This study's primary contribution is demonstrating that, for both sexes, the most common injury sites are the knee and ankle joints. Both ligament strains and ankle sprains are the most common types of injuries. Compared to their male counterparts, female basketball players experience a higher frequency of knee injuries, particularly ACL injuries. Guards have the highest rate of adductor muscle injury followed by centers and forwards, while shooting guards have the highest injury rate. Point guards come in last. Basketball players are less likely than handball or soccer players to sustain injuries; the most frequent ailments are knee and ankle sprains. Injuries can result from a variety of circumstances, such as the biomechanics of jumping, landing, abrupt direction changes, and the physical strain that the body experiences while playing the game. Programs for injury prevention, like technique training and prophylactic exercise, seem to be helpful in reducing the likelihood of injuries, particularly sprains of the ankle.