Injuries in Swedish Elite Basketball

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ABSTRACT: All Swedish male and female elite basketball players were interviewed concerning their injuries during 1981/1982. Fifty-eight percent of the male and 62% of the female players reported injuries. The injury frequency was 2.5 injuries/1,000 activity-hours in male and 2.85 injuries/1,000 hours of activity in female players. This corresponds to 8.6 injuries/male team/season and 7.5 injuries/female team/season. An ankle twist was the most common injury (52%) while a knee injury was involved in 18%. Prophylactic orthoses for knee and ankle are suggested.

Introduction

Basketball is one of the sports rapidly increasing in popularity in Sweden. Presently, basketball ranks tenth in Sweden and during the 1982/1983 season there were 10,600 licensed basketball players. In the US basketball is the most popular sport. Worldwide, basketball and volleyball together have the greatest number of licensed players, although soccer has the largest number of participants for an individual sport. While there is a relatively large number of publications concerning injuries in other sports of the same reputation, there are surprisingly few epidemiological studies of injuries in basketball. We therefore thought it to be of interest to try to document the injury frequency and the injury types of both male and female elite basketball players in Sweden.

Materials and Methods

We have performed a retrospective study of all male and female players of the Swedish elite series of basketball. During the 1982/1983 season all players were interviewed concerning that season. The total number of players in the Swedish elite series was 250 (132 male and 118 female). Fifty-nine were excluded because they were not playing in the elite series during the 1981/1982 season or they were playing abroad during the season. A questionnaire was sent to the remaining 191 active players. This questionnaire asked about the amount of training, number of played games, possible injuries and time of absence from training and from games caused by these injuries. We defined an injury as a condition which caused the absence from one game or one training session. The players were also asked if they had recovered completely from their injury.

Results

One hundred forty players answered the questionnaire. The remaining 51 players were contacted personally by telephone. We were therefore able to obtain answers from 99% of all male and female elite players from the 1981/1982 season.

Male players trained an average of 313 hours/player/season. The corresponding figure for females was 250 hours/player/season. The male players averaged 40 games while the females played 37 games.

The injuries were classified as to the duration of absence from training or games: grade 1, minor injury: absence less than a week; grade 2, moderate injury: one to four weeks absence; grade 3, severe injury: more than four weeks absence from playing. During the 1981/1982 season, 57 male (58%) and 57 female (62%) players were injured at least one time (Table 1). The number of injuries sustained were 86 for the male and 75 for the female players. This corresponds to an injury frequency of 2.5 injuries/1,000 hours activity for the male and 2.85 for the female players. If one considers the severity of the injuries, approximately one half of the injuries, 19 (22%) of the males and 15 (20%) of the females sustained severe injuries.

The most common injury found in this study was an ankle sprain. Forty-one men (48%) and 42 women (56%) totaling 83 players (52%) reported ankle distortions (Table 2). The majority of these were minor injuries (63%). We also found recurring ankle sprains in 13% of the male and 20% of the female players who reported ankle twists. Nineteen percent of the male injuries and 17% of the female injuries were knee injuries. Fifty-six percent of the males and 38% of the females suffering knee injuries were classified as severe. We also found that 4.6% of the males and 8% of the females sustained foot injuries while 6% of the males and 4% of the females were troubled with achilles tendon problems.

Discussion

Earlier studies of injuries in basketball usually deals with one or two teams that had been followed during one or several seasons. It is therefore difficult to compare our data with earlier reported figures. Our injury frequency of 2.5 injuries/1,000 activity hours for male and 2.85 injuries/1,000 for female players and our finding that ankle sprains were the most

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common injuries does not correlate well with the study of Zelisko et al. They followed a male and a female team of American professional basketball players during two seasons. Their injury frequency was much higher than ours (51.2 injuries/1,000 activity hours for females and 32.0 injuries/1,000 for male players). They also found that female players had 60% more injuries than males. The most common injury was an ankle sprain which they found, as did our study, involved 18% of the females and 20% of the males injured. Knee injuries were found in 16% and 12% respectively. They furthermore reported 13% back injuries in male players while we found only 5% in our material. They also reported that 10% of their injuries involved the head and neck while the corresponding figure in our material was 2% for male and 0% for females. In a study performed by Henry and colleagues an American professional basketball team was followed during a period of seven years. They reported 576 injuries in 49 of 71 players. Their injury frequency thus is 82 injuries/season which should be compared to our average finding of 8.6 injuries/male team/year and 7.5 injuries/female team/year.

Henry et al. defined an injury as any traumatic problem that was diagnosed and treated by the trainer and team physician. It should, however, be noted that the average class of Swedish elite basketball competition during the 1981/1982 season could not be compared to professional American basketball during the same period and that it is likely that professional American basketball is tougher than Swedish amateur basketball. In the study of Henry et al. an ankle sprain was also the most common injury and was found in 80% of the cases. Knee injuries were found in 14% of their injuries and of those 24% were patellar tendinitis ("jumper's knee"). In the 16 males who complained of knee injuries in our material, four complained of patellar tendinitis pain. Our injury types thus correlate relatively well with the American figures, although the American authors have a higher frequency of injury than we found.

Lewerenz has reported an injury frequency of 2.7 injuries/1,000 activity hours in female soccer players. Another recently presented Swedish study by Wessmark, however, reported a higher injury frequency of 4.3 injuries/1,000 training hours and 32.8 injuries/1,000 game hours for a female soccer team of the elite division. A comparison with male soccer in the four division gives similar results. Ekstrand found 7.6 injuries/1,000 training hours and 16.9 injuries/1,000 game hours. Andrén-Sandberg and Lindström reported 1.5 injuries/1,000 training hours and 5 injuries/1,000 game hours in European team handball in Sweden. Our basketball injury frequency thus is slightly lower than in soccer and European team handball while it is slightly higher than in volleyball where Edshage and Skårback found 0.4 injuries/1,000 activity hours.

Since Wessmark found a much higher frequency of injuries in female soccer players in the 1983/1984 season than Lewerenz, we have also particularly studied one of the leading female basketball teams in Sweden during the 1983/1984 season to determine if any increase in the number of injuries could be found. We observed an injury frequency of 1.32/1,000 hours activity. Among these injuries a knee problem was the most common (67%). Ankle distortion occurred in 33%. The total frequency was thus lower than the average female frequency in 1981/1982 (1.32 vs 2.85 injuries/1,000 activity hours). No increase in the incidence of female basketball injuries was observed in this limited study of one female elite team.

In our study 35% of the players had not been using regular stretching of their adductor muscles of the thigh. In spite of this we found a frequency of only 5% adductor tendinitis or groin pain. It appears that stretching of the adductors is not as important in basketball as it seems to be in soccer where Ekstrand reported a significant difference in adductor tendon trouble in players who had been taught to stretch their adductors by physical therapists in comparison with players in control teams where this had not been done.
Even if the injury frequency in Swedish elite basketball seems to be relatively low a number of the injuries could probably have been prevented. It has been shown by several authors\textsuperscript{5, 6} that prophylactic taping could help prevent a number of the ankle sprains. A recommendation to the teams to tape the ankles of their players as a standard procedure or to use an ankle supporting sports orthosis\textsuperscript{9} might prevent many ankle sprains.

The knee injuries were the most serious in this study. In our country the players are allowed to use knee orthoses (eg Lenox Hill braces) and since the knee injuries usually lead to a long absence from training and games, we wonder whether it would be advisable to use prophylactic knee braces. We feel that there is a strong reason for suggesting a prospective randomized study where some teams are using knee braces while others are not in order to determine whether serious knee injuries could be prevented.

References