

## **A Survey of Injuries Prevalence in Varsity Volleyball Players**

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### **Abstract**

The primary objectives of the study was to qualify the injuries of varsity volleyball players and to determine the nature, location, causes, outcome of injuries and the possible risk factors involved. Information on injuries was collected through a questionnaire from members of twelve Indian varsity teams participating in all India Inter Varsity tournament held in Dr. Babasaheb Ambedkar Marathwada University, Aurangabad Maharashtra in December 2007. The age range of the players was 18 to 25 years. 58% of players were in the age range of 22 to 25 years. The volleyball players were asked to recall injuries over the preceding one year period. A total of 121 out of 144 volleyball players sustained injuries. One hundred seventy eight injuries were recorded of which 36% injuries were of recurrent nature. Lower limb injuries were found to be predominant; the ankle and knee being the most commonly injured anatomical location. Most injuries involved soft tissue and related to the muscle and tendon. Most common circumstances giving rise to injuries were spiking (33.70%), blocking (24.15%), diving (17.41%) and setting (11.23%). It was further observed that volleyball players directly involved in attack or defense were found to be more susceptible to injury. Muscle injuries were observed to be the most common type. Spiking is the most common cause of injuries. The results of the research provide a useful insight into the nature, incidence and sites of injuries in varsity level volleyball players.

**Key Words: Job Satisfaction, Government Schools, Private Schools, Public Schools**

### **Introduction**

Volleyball is a game that can be played by all ages and both sexes indoors and outdoors. It can be highly competitive, requiring a high level fitness, agility and co-ordination, or it can be a relaxing and highly enjoyable recreation. The players of the game require competitively concentration, quick thinking and a great deal of movement. In addition the speed of the game requires the players to take quick decisions because of the quick changing situations of attack and defense (*Nicholls 1978*).

Volleyball requires a variety of physical attributes and specific playing skills therefore participants need to train

and prepare to meet at least a minimum set of physical, physiological and psychological requirements to cope with the demands of the game and to reduce the risk the injuries.

Volleyball playing largely involves, jumping, stretching, twisting. Diving, spiking and turning movements' that place the players to greater risk of injuries. (*Waston A 1993*)

In the epidemiological studies, injury occurs in training or matches, interrupt or hampered play (*Sinku 2006a, b & 2007*). Special treatment is required in order to continue the game, or if the injury has made playing impossible.

Volleyball has received a little interest in the sphere of sports medicine. Volleyball is low risk sports, dominated by overuse injuries while recovery time from injuries is relatively long, but only a few working days are lost by the players to return back to play, thus leading to abuse of the injured sites. In volleyball overuse injuries are the most frequent occurrences of injury. In volleyball, injuries are traditionally divided into contact and non-contact mechanism in which case contact refers to player contact. Some of the forces involved in a non contact injury are transmitted from the playing surface to the injured body part.

Keeping in view the paucity of information about sports injures in general and volleyball playing in particular, an attempt has been made in this area to investigate the possible risk factors involved in volleyball.

**Material and Methods:**

Information on injuries was collected from twelve Indian varisty teams, which were participating in all India varsity volleyball tournament held in December 2007, in the city of Aurangabd, Maharashtra. A questionnaire prepared by Crombell and Gromely (2000) for elite Gaelic football players and modified by the investigator was given to the subjects for completion. The volleyball players were asked to recall injuries over the preceding one year period. The study was conducted on 144 volleyball players. Mean scores, standard deviation and percentage were calculated and utilized to identify the nature, location and cause of injury in volleyball players.

The investigator personally contacted with the team mangers and

coaches of the twelve teams and the purpose of the study was explained to them. Further instructions were given by the investigator to the players for the completion of the questionnaire. A total of 152 questionnaires were administered and 128 were returned by the players after completion thus giving an over all response rate of 84.21%.

**Results and Discussion**

Mean, age, weight and height of the volleyball players were 22.33 (SD± 2.66) years, 63.01 (SD± 9.12) kg and 179.54 (SD± 12.77) cm. respectively. Average training duration was 2.08 (SD±.89) hours.

A total of 121 out of 144 volleyball players reported of having sustained injuries. A total of one hundred and seventy eight injuries were reported by the players.

The results of volleyball players with respect to their injury details are presented in figure 1.4

**Figure - 1**

**Parentage of injuries of varsity volleyball players with respect to location**

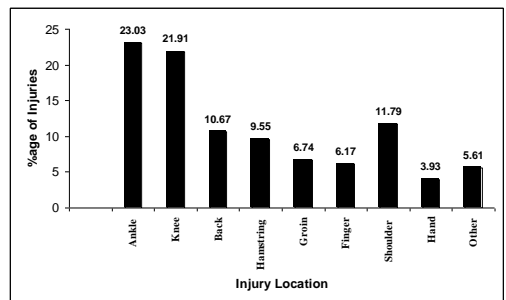


Figure – I illustrates the most commonly injured anatomical in volleyball players. Maximum injured site in volleyball players was found to be the region of Ankle (23.03%) followed by Knee (21.91%), Shoulder (11.79%), Back

(10.67%) Hamstring (9.55%), Groin (6.74%), Finger (6.17%), hand (3.93%) and other (5.61%). Figure shows that the ankle, knee and shoulder were the most involved sites of injury in volleyball players.

**Figure-2: Percentage of injuries of volleyball Players due to causes**

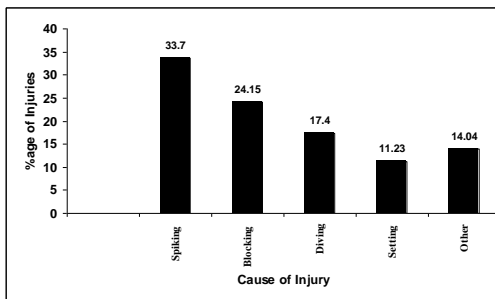


Figure – 2 depicts the common causes of injury in volleyball players. It can be observed that the most common cause was Spiking (33.70%), Blocking (24.15%), Diving (17.41%), Setting (11.23%) and others (14.04%)

**Figure – 3: Percentage of injuries of volleyball players with respect to their Nature**

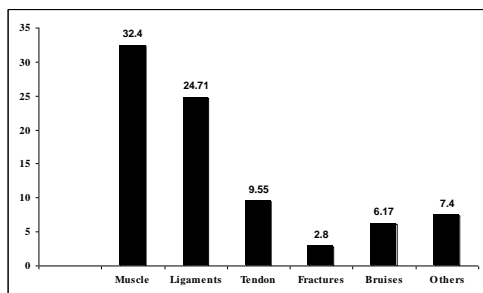


Figure 3 demonstrate the nature of injuries incurred by volleyball players. Maximum incidence of injuries reported by the volleyball players relate to the muscles (32.40%) followed by Ligaments (24.71%), Tendon (9.55%), Fracture (2.80%), Braises (6.17%), and other (7.40%) Muscle and Ligament injuries

were the most frequently occurring injuries in volleyball players.

**Figure -4: Percentage of Recommendation of treatment of Volleyball injuries**

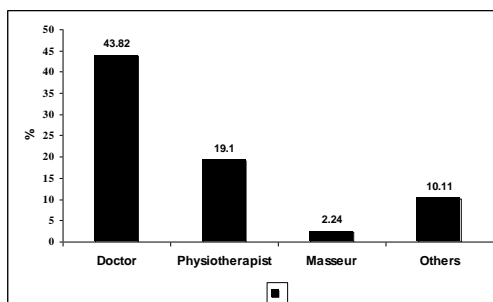


Figure 4 compares the method of treatment obtained by the volleyball players for the injuries incurred by them. It is observed that 57.33% of volleyball players got their injuries treated by a doctor followed by 24.71%, 2.24% of volleyball players who went to physiotherapist & sports masseur for treatment. It is observed that doctor treated maximum volleyball players than physiotherapist and sports masseur.

### Discussion:

This study reveals that 67.33% injuries occurred during the competition while 32.22% were occurred during training. The relatively high incidence of injuries during competition was probably due to bad technique, low fitness, large amount of over training and competitive temperament by the volleyball players.

The players who are directly involved in attack or defence are most likely to be injured. This is event from the fact that most injuries were sustained by the volleyball players due to spiking and blocking.

In this study, most injuries were acquired in the lower limb of which 23.03% related to ankle and 17.59% to

knees. Waston (1993) also found that lower limb injuries were most common in sports. A significant proportion of injuries occurred in the upper limb region of which shoulder injuries, predominated (11.79%), relatively high incidence of shoulder injuries is due to fact that the shoulder charge is permitted while smashing in volleyball playing.

Muscle and ligament injuries were the most common types of injuries to the volleyball player. It may be due to bad technique, and low fitness level of volleyball players.

The least common injuries were of the most serious types and included fractures (2.80%). About 75.28% of injuries required treatment of which doctor treated 43.82% of the injuries. Finally it is concluded that injuries are a very serious problem for varsity volleyball players.

### **Conclusion:**

Most of injuries of volleyball player are sustained in lower limb; ankle and knee injuries are the most commonly occurring injuries among volleyball players.

### **Study also commanded that**

1. Most injuries were sustained to the spikers and blockers.

2. Regarding the nature of injuries, muscle and ligament injuries are the most commonly reported ones in volleyball players.
3. Upper limb injuries occurred in the shoulder and finger region.
4. Maximum injures occur during competition.
5. Regarding treatment of injuries, doctor is the most common attention provider of volleyball players.

This research provides a platform for further research in the field of physical education sports sciences and sports medicine.

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