Common Sports Injuries In Relation To Age Gender and Sports in Elite Athletes of Pakistan
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Abstract

Background: Participation in sports and physical activity is overall determinant of population’s health. Risk of injury is always present even by mere participation in sports. Injuries are most common disability for a sports person to restrict him or her in participation. Coaches and health experts face the problems of physical injury despite all the benefits of participation in sports.

Methodology: Injuries reported at Rehabilitation & Treatment wing of Pakistan Sports Board over a seven month period were surveyed. Data was collected from 100 injured professional athletes in the National Training Camps. Diagnosed cases were categorized in the present study on the basis of Age Gender and Sports played. Self designed questionnaire was used.

Results: The average patient age was between 15 to 21 years, with a peak in the 16 years to 19 years of age group. Injuries were most prevalent in age group 15 to 21 years. Results reported greater injury ratio in young age group and less experienced athletes. Patients with muscular injuries accounted for 57% of all injuries, out of which 29% were in age group 15 to 21 years. The age group 15 to 21 years suffered from ligaments injuries of 11% out of total 24%. Back injuries were more common 29% than shoulder injuries 19% and then knee injuries 17% in our study. Most injuries were reported by the athletes of taekwondo and wrestling which was about 40%. Patients with Muscular Injuries fractures had an average age below the overall mean, while those with internal derangement of the knee, patella femoral pain syndrome, and inflammatory injuries were significantly older than average. Males accounted for 80.3% of all injuries.

Conclusion: For both gender the most common areas injured were the knee and ankle, with sprains/strains the most common injuries. Injuries involving the patella femoral articulation were significantly more frequent among females. The most common sport of injury was football, with greater than 12 times the number of injuries seen in the next most common sport.

Introduction

A sports injury can be defined as an injury that occurs during preparation and competitive sport and leads to different consequences including reduction in the level of sports activity and the need to get treatment. (1) Injuries related to sport are of great concern all over the world due to its hazardous effect on sports. Injuries in return have greater burden on economy as there is a risk of injury even by participating. It is recorded that each year one in seventeen Australians got sports injuries while playing competitive sports or in training session and to leave the field of played got medical or first aid treatment. Most of these injuries occur in major sports including football, rugby, netball, basketball, field hockey, and cricket. (2)

Researches also reported that most of the injuries occur in involvement with sports related activities 32% and in which mostly 25% occur during participation in formal sports and around 7% in leisure sports activities. (3) The five most common sports represented were soccer, basketball, volleyball, long-distance running and cycling. Soccer (13.91%) and basketball (13.43%) were almost equally important in causing injury. Injury to the knee (35.11%) was the most common and injury to the ankle is another common one. Lower-limb injury was more common than upper-limb injury with an injury. The most common injuries were sprain (44.60%) and strain. (3) One other such study the three most repeated injuries were muscle strain (28%), bruising 25%, and a ligaments sprain (21%). the diagnosis of injuries varied in different sports on the basis of mechanism of injury occurred. (4)
Previous research on athletes has reported that 48.2% of athletes having bilateral ankle sprain, while 51.8% athletes reported unilateral ankle sprain. With unilateral ankle sprain, 36.6% athletes reported that the ankle of their dominant leg was injured, and 15.3% reported that the ankle of their non dominant leg was injured. Thus, a total of 563 sprained ankles were recorded with injury solely to the dominant leg's ankle 2.40 times higher than injury solely to the non-dominant side. (5)

Athletes involved in sports are exposed to the increased risk of sport injury as a result of their participation. The reason behind sports injuries are due to certain factors associated with skeletal immaturity and developmental variability. Athlete age, gender & sports are the major demographics in which injuries vary. The present research is done to identify common sports injuries in related to age, gender and sports. The purpose of the present study was to investigate the injury pattern in the nine sports most commonly associated with injury in Pakistan. The identification of these could provide a guideline for directing coaches & federations to the related sports. It is hoped that the present study will also provide guidelines for appropriate planning and staffing for local medical services.

Method
Injuries reported at Rehabilitation & Treatment wing of Pakistan Sports Board over a seven month period were surveyed. Data was collected from 100 injured professional athletes from the National Training Camps. Diagnosed injured cases were categorized in the present study on the basis of Age Gender and Sports played. Self designed questionnaire was used. Data was collected from both male and female athletes (82 males, 18 Females). Athletes from nine games are selected for the present study with injury. Games included in the present study were hockey, athletics, hand ball, taekwondo, wrestling, badminton, weight lifting, volley ball and squash. Age ranges of the participants were between 15 to 42 years. To be eligible for inclusion in the study, participants needed to be competing at a non-professional or first class level; they were also required to have a sports injury before the study.

Results
Results of the present research have reported that overall 82 male participants and 18 female participants participated in the study. Most of the participants were between the age of 15 to 21 years (51) rest of the participants were between age 22 to 45 years (majority were between age 22 to 28 years). Common sports injuries reported in the present research were back injuries (29%), shoulder injuries (19%), knee injuries (17%), hip & thighs injuries (10%), ankle injuries (9%), hand injuries (7%), lower leg injuries (5%), neck pain (3%) and elbow injuries (1%).

![Figure 1: Common Sites of Sports Injuries](image)

Table 1: Frequencies & percentages showing common types of injuries
<table>
<thead>
<tr>
<th></th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscles</td>
<td>57</td>
<td>57%</td>
</tr>
<tr>
<td>Ligament</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>Tendon</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>Bony</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Common types of injuries reported were ligament (24%), muscles (57%), tendon (11%) and bony (7%).

**Figure 2**

**Region of injury**

Muscle Injuries were more common at low back as compared to upper cervical spine.

**Figure 3**

**Region of Injuries**
Graph present that Ligaments injuries were higher at ankle joint and muscle injuries were common at Hip and Thigh region.

**Figure 4**

*Types of injuries in different sports*

Graph present that Ligaments injuries were more common in wrestling, taekwondo and hockey

**Figure 5**

*Muscles Injuries in Sports*
Graph present that Muscles injuries were more common in taekwondo and weightlifting.

**Figure 6**

*Tendon Injuries in Sports*

Graph present that tendon injuries were common in badminton and wrestling players.

**Table 2**

*Percentages of Injuries in different age ranges*
Age Ranges of Athletes | Injury Percentages %
---|---
15-21 | 51%
22-28 | 36%
29-35 | 12%
36-42 | 1%

Table 2 showed that Injuries were more prevalent in younger age group ranging from 15-21 years.

**Graph 6**

*Gender Difference according to Injury region in Athletes*

Injuries were more common among male athletes as compared to female. Shin pain injuries were greater in female as compared to male.

**Discussion**

Present research findings suggested that the percentage of sports injuries among younger athletes is high. Few researches also indicated that the injuries are higher in older athletes instead. Previous research reported that sport injury in adolescents has a
reportedly high. In Canada, sport injury is the leading cause of injury in adolescents (7). In Alberta, it has been estimated that 1 in 4 adolescents requires medical attention for a sport injury every year. Specific sports such as football, hockey, basketball, wrestling, and gymnastics are more vulnerable to injuries (8).

It is reported through previous research that 32.2% of all injuries reported were the result of sports related activities, 25.1% occurred during formal sports activities and 7.9% were sustained during informal leisure activities. Higher percentage of boys than girls reported a sports related injury (38.3% of boys compared with 24.1% of girls). There was also a significant increase in sports related injury with age. Sports related injuries formed a larger percentage of all injuries sustained by the 15 year olds (38%) than the 13 year olds (34.7%) or 11 year olds (24.2%) (3).

Gender difference of injury showed that there were significantly more injuries presented in males than females but in the gender-comparable sports of soccer, basketball, track and field, and baseball/softball injury rates were higher for female than male. It is also estimated that muscle injuries were 57% and ligaments injuries were 24% which showed that strain and sprain are major sports injuries.

Previous researches has focused that Injuries were significantly more frequent among boys than girls (47.7% and 36.7% respectively were injured). Male reported higher frequencies of sport related injury, gender differences were also found in the type of sports injuries sustained by girls and boys. The injuries most frequently reported by boys were fractures and dislocations whereas girls most frequently sustained sprains and strains. Although the most common location for injuries in both genders was the lower limbs, the frequency of these was higher in boys than girls, and girls reported more neck and spine injuries.

Conclusion

Rates of participation in sports and sport injury are high in adolescents. Rate of participation of male athletes is more common in Pakistan as compared to female at elite level. Many factors can be associated with this including the facilities and development of sports culture in the country. For both Gender the most common areas injured were back And shoulder along with knee injuries. Sprain/Strains Injuries are most common. Sports involving Weight lifting and contact produce more back related strain and spasm as compared to non contact injuries. Athletes need to strengthen their back muscles, shoulder Muscles and Knee musculature to avoid injuries by counter balancing the overload of training and competitions on different joints.

Recommendations

- Factors such as character and nature of various sports disciplines, inappropriate use of non-standard equipment and lack of close proper monitoring on implementation skills having impact on injuries in sports.
- It is necessary for specialists and athletic trainers to prevent injuries in athletes by designing sports programs, holding of training camps, standardization of sporting equipments and close supervision on exercises while keeping the nature of sports in mind as much as possible.
- Strength training of muscles by using sophisticated equipment in which one can train muscles on isometric, isotonic and isokinetic mood.
- Further studies can be conducted to find out common sports injuries in preparation and competitions.
- Muscular injuries are high and further studies can be conducted to find out muscular strength in elite athletes of Pakistan by using sophisticated equipments.

REFERENCES


2. Egger, G. "Sports injury in Australia: Causes, costs and prevention." *A report to*


