

Prevalence of sports injuries among high school students in United Arab Emirates

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ABSTRACT

Objective: The study intended to assess the prevalence of sports injuries among high school students.

Materials and Methods: This cross sectional study was carried out using data from 300 students aged 9 to 18 years at Dubai International School and Universal American High School, UAE. A self-administered questionnaire was employed with open- and close-ended questions to collect the data. Data was analyzed using SPSS software version 19.0 and Chi square test was applied to find the association between variables.

Results: The study population included 43.7% males and 56.3% females. Most of the students (74.3%) belonged to 13-15 year age group. More than half the respondents (58.3%) were in Grade 9. Over half the students (67.6%) had been injured during sports activities, the most common type of injury was sprains (34.5%). Chi square test showed a significant association between history of injury and participation ($p < 0.03$). Upon being injured medical treatment (66.7%) had been used as the most common option among the students.

Conclusion: Sports injuries are common among the high school students. Therefore, awareness of possible sport injuries should be included in the school health programs.

Key words: sports injury, student, prevalence

INTRODUCTION

Physical activity plays a significant role in the well-being of a child, and with physical activity there may be injuries. Sports injuries are defined as acute trauma or repetitive stress associated with athletic activities.

Sports injuries can affect bones or soft tissue, ligaments, muscles, tendons. Children are more likely to suffer sports injuries than adults because of immature reflexes, inability to recognize risks and underdeveloped coordination¹. Children are more susceptible to sports related injuries, the risk factors being unsafe environments and the use of inappropriate footwear. A survey done by Centers of Disease Control among high school students showed that most of ninth grade students were engaged in physical activities at least three days a week. As they got older that number declined, with the number by getting halved by the

twelfth grade². During the period of peak linear growth, children are most prone to injuries. In the United States the highest numbers of sports injuries are recorded in young children. About 20% of children who play sports get injured, and out of these approximately 25% of the injuries are classified as serious¹. Numbers of injuries are highest for student athletes in contact sports, but the most serious injuries are associated with individuals in single person activities. Most childhood sports injuries occur during practice, or in the course of unorganized athletic activity. Sports-related injuries are classified into acute and chronic, and our research is based on acute sports-related injuries which are classified into soft tissue injuries, skeletal injuries, and brain injuries³. The most common sports injury is a sprain, a bruise, or a contusion, and occurs when blood collects at the site

of an injury and causes discoloration of the skin. Sprain is a partial or complete tear of a ligament. Sprains account for one third of all sports injuries¹.

Treatment of sports injuries can range from placing ice to as extreme as surgery, depending on the extent of the injury. The incidence of sports-related injuries is based on sports affiliation, participation level, gender, and the player position. In the past two decades, competitive sports participation has become a very common feature among children in the western countries its offers enjoyment and health benefits. Due to the massive in the number of children participating in athletic activities, more children become competitive and with increase in competitiveness the young athletes have a tendency to train and work harder and that increases the risk of injuries if the training is not done properly⁴.

The main goal of any person after an injury is to recover fully, but the process itself can be long and have many complications. Rehabilitation is designed to facilitate the process of recovery from injury, illness, or disease to a normal condition as possible⁵. One of the first methods of beginning the recovery process is with a therapy called RICE, which stands for rest, ice, compression, and elevation⁶. More sports-related injuries than any other unintentional injury were treated in hospital emergency departments, with the number of visits accounting for nearly one-third of all cases⁷. Sports-related injuries among high school students not only had temporary injuries but also had fatalities. A survey done by the National Center for Catastrophic Sports revealed that a total of 256 students had died due to sports-related injuries in USA⁸. With the increase in the number of students engaging in different sports there is an increase in sports-related injuries. Therefore the study focused on the factors that influence the injuries and the types of sports that are more likely to produce injuries. Studies have been done in the past to determine which injuries occurred most often with the different

sports, but reports could be found from the UAE. Therefore this study assessed the frequency of common types of injuries and their relation to the type of sports in different groups of students in UAE.

MATERIALS AND METHODS

This cross sectional study was carried out using data from 300 subjects comprising students from two schools, Dubai International School and Universal American High School. A self-administered questionnaire that included open- and close-ended questions was used in the study. Approval for the study was obtained from the Ethics Committee of Gulf Medical University and permission taken from school administration before initiating the study.

Anonymity of the participants was maintained as they were not asked for their names. Incidental sampling was used and the questionnaire was completed by 300 students aged 9-18 years. The questionnaire was prepared by the investigators, validated by experts and pretested in a pilot group of 10 students who were not included in study. It included questions/ options demographic data, about type of injuries, mechanism of injury and treatment. Univariate analysis was performed for categorical data, which were given the number and percentage distribution of study variable. Bivariate analysis was performed using SPSS software version 19.0 and Chi square test was applied to find the association between variables.

RESULTS

Table 1 shows the distribution of the study participant by socio-demographic variables, age, gender and Grade level. Most of the students (74.3%) were above 13 years of age, and more than half the study subjects were females (56.3%). The majority (58.3%) of the respondents were in Grade 9, followed by those in Grade 10(16.3%). Equal numbers of students were in Grades 11 and 12 (12.7%).

Table 1. Frequency distribution of participants by socio-demographic characteristic

Variable	No.	%
Age Groups (Years)		
13-15	223	74.3
16-18	77	25.7
Gender		
Male	300	43.7
Female	131	56.3
Class		
9 th	175	58.3
10 th	49	16.3
11 th	38	12.7
12 th	38	12.7
Total	300	100.0

Table 2 shows the most common types of injuries acquired by the high school students who participated in sports activities. The most common type of injury was sprains (35%) followed by contusions (31.1%) large number of students belonged to non-specified group (20.3%) as they did not take part in the sports activities.

Table 2. Frequencies and percentages of most common types of injuries

Variable	No.	%
Type of Injuries		
Sprains	61	34.5
Contusions	55	31.1
Dislocation	10	5.6
Fractures	15	8.5
Non Specified	36	20.3
Total	177	100.0

Table 3 show a p value ≤ 0.031 on the association between history of injury and participation found to be significant.

Table 3. Distribution of respondents who suffered injury based on age, gender and type of participation

History of Injury	Age		Gender		Competitive	
	13-15 years No. (%)	16-18 years No. (%)	Male No. (%)	Female No. (%)	Participate No. (%)	Non- Participate No. (%)
Injured	136 (76.8)	41 (23.2)	88 (47.9)	89 (50.3)	96 (54.2)	81 (45.8)
Non-Injured	56 (65.9)	29 (34.1)	37 (43.5)	48 (56.5)	34 (40.0)	51 (60.0)
P value	NS		NS		<0.05	

DISCUSSION

The present study documents various aspects of sports injuries in high school students. The study describes the most common injuries faced by the subjects and the associated mechanisms of their injuries. The study reveals that most of the subjects suffered from sprains (34.5%), which were followed by contusions (31.1%) sustained a result of all (57.1%). Upon comparison to another study it also revealed that sprains were the top most common type of injury students suffered from (34%). This could be due to various causes like adolescence age group subjects who may be underweight/underdeveloped with respect to the sports activity they were involved in. Another reason which can explain such results can be the practicing of sports in a low visibility environment without proper supervision⁸. An overall 66.7 % of the injured students underwent medical treatment. Another study, unlike ours, showed that surgery was the treatment option used most⁹. When analyzing the data on demographic variables like age and gender, the study showed that females experienced a higher rate of injuries. It may well be attributed to improper motor skill development and lack of guidance for involvement in the respective sports¹⁰. To summarize, this study elicited various aspects of sports-related injuries among high school students, and it was observed that the younger age group and females were more prone to injuries.

This study was questionnaire-based and recall/information bias was possible in many of the responses. Non-probability sampling was used and the sample was unrepresentative of the population under study.

CONCLUSION

The results indicate that more female students than males were injured and sprain is the most common sports-related injury among males as well as in females. This was followed by contusion due to falls in schools. Medical treatment was the commonly used health care service in schools. The study findings may be useful in planning school health services programs.

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