MEDICAL CHANNEL

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INJURIES IN STUDENTS OF SCHOOLS

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ABSTRACT

Objective: To find out frequencies and types of injuries occurring in students of schools in three different Towns of Karachi and to know about the availability of medical facilities within the school premises and to give emphasizes on management and preventive measures of injuries.

Design: Prospective study.

Place and Duration of Study: This study is carried out in 50 schools of three different Towns of Karachi. 25 were private schools and 25 were government schools. 19 schools were co-educational schools. Schools upto higher secondary levels were chosen in this study. Minimum 750 students irrespective of sex were included in the study from each school. This study is carried out during 1st January 2010 to 31st May 2011.

Patients & Methods: This study is carried out in 50 schools of three different Towns of Karachi. 25 were private schools and 25 were government schools. 19 schools were co-educational schools. Schools upto higher secondary levels were chosen in this study. Each school consists of 750 students irrespective of sex. The student's age ranges from 4 to 16 years.

There were 37500 students included in this study. A self administered questionnaire was compiled by us with the help of principals, heads, doctors if available, paramedical staff if available of the schools. The inclusion criteria are proper examination and radiological evidences for diagnosis.

Results: Out of 50 schools 25 were private schools and 25 were government schools. 19 schools were co-educational schools. The mean Number of students in each class was 37. 1520 students were found to suffer different types of injuries. Boys were affected 67 % while girls were 33%. Soft tissues injuries are found 65% while fractures and ephyseal injuries were found 35%. 69% of the injuries were occurred in Govt. Schools, while 31% of injuries were occurred in private schools. 87% of injuries were un-intentional, 6 % of injuries were intentional and 7 % of injuries were found corporal because of punishments of teachers.

Discussion: Record keeping of injuries of the students in a school was found almost non-existent. The injured students initially should be managed in school if doctors/para medical staff are available in school, otherwise students should be referred immediately to clinic or hospital. Govt. schools were found to have very poor first aid medical services as compared to private schools which need to be improved and upgraded. The proportion of serious injuries is 1:2 minor injuries.

Conclusion: School based injuries are considered insignificant in Karachi. Our study highlights the importance of significance of school based injuries and the preventive and therapeutic measures should be available in school.

Key Words: Soft tissues injuries, supracondylar fractures , ephyseal injuries

INTRODUCTION

Student injuries are gaining recognition as one of the major public health concerned in

the world today. Approximately five millions death and disabilities and injuries are observed annually [1] [2].

Injuries and disabilities in students takes place 95% in middle income countries. [3] [4].The highest injury rate of 53.1 per 100,000 is found in Africa. While children in Australia,Sweden and UK have the lowest rates of injuries. [5].Pakistan, a low income country has 43% injuries in students between 0 and 14 years of age. [6] Injuries occurring within school environment are well documented all over the world [7] [8]. But in Karachi there is no such trend found regarding proper documentation of injuries to the students. Nearly 3.7 million children are injured in America School annually [9] . Canadians students have been estimated at approximately 5.4 injuries events per 100 children [10] . In Pakistan it constitutes about 43% children [11] . Information about student injuries within schools are not documented properly this situation can not be changed without the implementation of surveillance and a substantial epidemiological background in effective injury prevention [12] . In Pakistan the resources are largely focused on communicable diseases and nutritional problems, injuries in children [13]. National health survey of Pakistan conducted in 1990-1994 documented unintentional injuries [14] . Another national injury survey of Pakistan (NISP) conducted in 1997-1999 showed that estimated injury rate for children under 15 years in Pakistan is about 35.3 per thousand children year [15] .

The aim of study is to find out the frequency and types of injuries among students of school irrespective of Govt. or private school's students. The availability of doctor helps in initial and immediate management of injuries. Even though par-medical staff could also help in management of injuries occurred to students. First aid medical services should be available in each school irrespective of Govt. or private schools. Students with minor injuries should be dealt by doctor /para-medical staff, if available in school, otherwise student should be immediately referred to nearest clinic /hospital alongwith teacher. The parents of the student should be informed about the type and nature of injury occurred to their son or daughter. Students with major injuries should immediately be referred to hospitals alongwith doctor/para-medical staff, if available or with senior teacher. Parents should be informed immediately. Documentation of minor or major both injuries should be done properly and should be sent to town health officers for official record keeping of Government.

In the absence of doctors / para-medical staff, it is quiet difficult to handle any injury. Absence of first aid medical services enhances the intensity of injury till student should be managed by doctor. Sometime major injuries lead to disabilities or minor injury could become major because of un-availability of health services in school. Proper health facilities should be available in each school so that the prevention of injuries and quick and immediate management of injuries may become possible immediately. Preventive measures should be adopted in every school by organizing awareness programs or by taking helps of NGOs even in absence of doctors / para-medical staff.

The burden of school injuries is greater in low and middle income countries including Pakistan as compared to rich income countries, usually the ages of student ranges between 4 to 16 years. The information about injuries in general and specifically within school were not properly documented.

PATIENT & METHOD

It is the prospective study carried out in Karachi during 1st January 2010 to 31st May 2011. 50 schools were selected. 25 were private schools while 25 were government schools. 19 schools were co-educational schools. Schools upto higher secondary levels were chosen in this study. Minimum 750 students irrespective of sex were included in the study from each school. The majority of government schools have both morning and afternoon shifts for

A PLAIN LANGUAGE STATEMENT QUESTIONNAIRE

School Name: _____ Private Or Government_____

Students Name:_____ Weight :_____

Male / Female _____ Height _____

Age_____ Type of injury: _____

Cause of Injury _____ Intentional or un-intentional injury _____

Injury because of punishment of teacher _____

First Aid Medical Facility supplied in Schools _____

Presence of doctor or well trained medical staff in school _____

Student referred to hospital/clinic _____

Remarks of Parents about management of Injury ___ _____

Verification of Doctor /Para-medical Staff / Principal /Head_____







Supracondylar fractures of Humerus

Epiphyseal injury

students. Principal or heads, doctors or para-medical staff if available in schools were approached with an invitation or a request to participate in study. A plain language statement questionnaire written in English describing the objective of the study was compiled with the help of principals or heads, doctors or para-medical staff. This plain language statement questionnaire is distributed to the principals / head/ doctors/ para-medical staff to document injuries and the types of injuries in students. Any student who had suffered any sort of injury is asked to document and fill the plain language statement questionnaire, if student is unable to understand English properly than our Medical students helped them by explaining the plain language statement questionnaire in Urdu or any regional language. 37500 students were included in this study irrespective of sex. Three different Towns of Karachi were selected for this study among 18 Towns of Karachi. Population of each Town is variable. Parents were also requested to help our research team. The plain language statement questionnaire was filled by principal /head, doctor/para-medical staff if available. Complete information about the type and nature of injury alongwith causes of injuries are included in plain language questionnaire. Finally the plain language questionnaire was verified by doctor/para-medical staff, if available otherwise principal /head of school.

RESULTS

Out of 50 schools surveyed 25 were private school and 25 were government school. 19 schools were co-educational schools. Schools upto higher secondary levels were chosen in this study. Minimum 750 students irrespective of sex were included in the study from each school. There were 37500 students included in this study. The mean number of students in each class is 37. 1520 students were suffered from different types of injuries. Boys are affected twice to Girls [16]. Boys are affected 67% while Girls are affected 33%. The ages of students are from four years to sixteen years. Soft tissues injuries are found 65% while fractures and ephyseal injuries were found 35%. 69% of the injuries were occurred in Govt. Schools, while 31% of injuries were occurred in private schools. 87% of injuries were un-intentional, 6 % of injuries were intentional and 7 % of injuries were found corporal because of punishments of teachers.

Types of injuries are divided into soft tissue injuries and bony injuries.

TABLE I

Total No. of Schools	50
Govt. Schools	25
Private Schools	25
Co-education Schools	19

TABLE II

Total No. of Students	37500
% of Boys	67%
% of Girls	33%

TABLE III

No. of Injuries	1520
Soft Tissue Injuries	65%
Fracture & Epiphyseal Injuries	35%

TABLE IV

Un-Intentional Injuries	87%
Intentional Injuries	6%
Injuries due to punishment of teachers	7%

TABLE V

Fracture & Epiphyseal Injuries	35%
Epiphyseal Injuries associated with fractures	5%
Supra condylar fracture of Humerus	15%
Fractures of radius / ulna	4%
Fractures of Tbia and fibula	4%
Fracture of Metatarsals	2%
Fracture of Metacarpals and Phalynx	2%

TABLE VI

First Aid Medical Services in Private School	80%
First Aid Medical Services in Govt. School	18%

Soft issue injuries are found in 65% of students. Fractures and epiphyseal injuries are found in 35% of students.

The most common fractured found is supra condylar fracture of Humerus is 15%.

Epiphyseal injuries are found in 8% of student.

Epiphyseal injuries associated with fractures are found 5%.

Fractures of radius / ulna is found 4%.

Fractures of Tbia and fibula are found 4%.

Fracture of Metatarsals are found 2%.

Fracture of Metacarpals and Phalynx is found 2%.

It is also found that First Aid Medical Services are found 80% in Private schools

7 private schools have the facility of doctors or well trained medical staff.

In Government School First Aid Medical Services were found 18%.

35% of students are referred to hospitals for proper management as they were diagnosed as cases of fractures or Epiphyseal injuries Remarks of parents were documented. 32% of the parents were found satisfied with the health services provided by schools, which are the parents of students of private schools only, while 68% of parents were found unsatisfied.

DISCUSSION

The present studies found that record keeping of injuries of students in school was almost non existent. Student injury surveillance should be conducted in schools. Majority of the student in our studies have suffered from mild to moderate injuries. Minor injuries are usually treated initially in private schools while the students with fractures are sent to hospital.

In Government school it is found very poor First Aid Medical Services are provided and usually students are sent to clinics or hospitals with their parents.

Need for recording of injuries of children at school is further emphasize by Laflamme (1998) [17] .

The proportion of serious injury are found during falls, sports such as cricket, hockey and football in which rates of fracture are high, fights resulting in soft tissue injuries in majority.

Injuries vary according to whether such abused takes form of slapping, punching or more aggressive punishment [18] [19] .

Although corporal punishment is more strictly found in public school in many countries [20] [21] [22] .

In a local study conducted by S.M.Mobin , Abbas Subhani etl [23] have shown the facts that falls during play/activities will found to be the most frequently occurring injury followed by injuries sustained in fights among the students. These findings are similar findings of the students in China [24]. Same findings are also found in the study conducted in Iran on the students of school [25].

A physical therapist and a teacher in school always play a key role to avoid injuries in students by providing them safe places and grounds and by monitoring the activities of students vigilentlly.Corporal punishment is found more in government schools rather than private schools. The study conducted in Saudi Arabia has also seconded that corporal punishments are found common in government sector rather than private sector [26].

A pilot injury surveillance study was conducted at the EDs of three major tertiary care hospitals of rawalpindi from july 2007 to june 2008 and included the students less than 15 years injured at schools.There were 923 school injury cases repoted.Mean age of student involved was 8.3 years with the male: female ratio 2.9:1 [27]

The rates of school injuries were examined by means of a prospective study of 212 schools during 1981 to 82. The result showed an annual incidence rate of 5.4 injury events/100 children [28].

Pakistan is a low income country which constitutes 43% of children between 0-14 years of age [29]. The national injury survey of Pakistan conducted in 1997-99 showed that injury rate is 35.3/1000 students [30].

Another study conducted by Nukhba Zia, Uzma R.Khan etl has given the figures that out of 409 students injured 66% were males and 34% were females. And the ages of the students are mostly between 5-11 years. Injuries commonly occurred due to falls and playing games [31].

A comparative study among asian, Africans,north American and European population are also found falls as a principal cause of injury among school childrens.So, our research also second the facts and figures to the local researches and the international researches [32].

CONCLUSION

It is concluded that better first aid training of student by well trained staff could reduce rate of injuries. Doctors should be appointed for management of injuries. If injuries are serious student should be sent to hospitals immediately after having First Aid Medical Services. This study will also help policy maker in Pakistan to consider and take prompt step for reduction of injuries in schools. Awareness programs should be conducted for the safety of the students in school. It is also recommended to have proper documentation of injuries in schools.

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