# PREVALANCE OF DENTAL TRAUMATIC INJURIES IN YOUNG CHILDREN IN PUBLIC SCHOOL OF LAYYAH

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## ABSTRACT

*Epidemiological investigations demonstrate that dental injury is a big issue in youngsters. Traumatic dental injuries are common in childhood and adolescent. Traumatic dental injury are now growing problem and have a prevalence of 11.5%. It was a cross sectional survey done at AR Rahman Public School of girls and boys in Layyah city. Sample size was 241 children. Traumatic dental injury was found to be present in 33/241 (13.7%). Among those who had the injury, mean age was 12.97 + 1.42 years.. Males were 24/33 (72.7%) while females were 9/33 (27.3%). The study showed the prevalence of TDI to be 13.7%. Prevalence of class I fracture was 44%. Conclusion of the study was that the boys were more prone to traumatic dental injuries compared to girls and class I dental fracture was most common.*

**Key Words:** *Anterior teeth, Fractures, Prevalence, Traumatic Dental injuries.*

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## INTRODUCTION

One of the best resources an individual can have is a smile that demonstrates delightful, normal teeth.[1] Fractures or cracked anterior teeth of a human being can have a bad influence on his/her daily life. [2] Epidemiological investigations demonstrate that dental injuries are a growing issue in youngsters.[3] Traumatic dental injuries are common in childhood[4] and adolescent. It is a growing problem in public health and has a prevalence of 11.5%[5-8]. Teeth have not only great impact on the personality but are important for speaking, chewing, psychological and emotional wellness of youngsters. Trauma of the face can impact on dentition also cause psychosocial problems.[9] Males are more effected than females due to their intense participation in physical activities and contact sports.[10-14] The maxillary central incisors are mostly offected by facial trauma followed by upper lateral incisors and mandibular central incisors.[11-17] Dental injuries are more prevalent in children who have incisal overjet of more than 7 millmetre.[18] Increased overjet and incompetent lips are important predisposing element to dental injuries.[18-19]

Injury to the teeth can be uncomplicated (only enamel and dentine involved) or complicated(pulp involved).[12-16] It varies in severity from enamel fracture to avulsion(18%), while uncomplicated crown fracture(29%) is most common among dental trauma.[12-17] According to WHO if only enamel is involved it is Class I trauma, if enamel and dentine are involved it is Class II trauma and Class III when pulp involvement is there.[13-17]

In one study the occurrence of dental trauma in schoolchildren was 6%.[8] In school children most frequent causes of traumatic dental injuries(TDI) are falls(57%) and sports injuries (15%).[8, 11-14,17] Children participating in sports like basket ball have more traumatic injuries.[18] Awareness about the management of traumatic dental injuries is very important.[9]

Objective of the study was to assess the prevalence and type of common dental fractures in children. Rationale of the study was to inform the community about common type of dental traumatic injuries and their risk

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factors so that incidence of dental traumatic injuries could be reduced.

## MATERIALS AND METHODS

It was a cross sectional study done in AR-Rahman Public School, Layyah. Total 241 students of both genders between 11-15 years were included in the study. Students with orthodontic appliance and hypomineralized teeth were excluded from the study. Consent was taken from school authorities and parents. Examination of permanent teeth was done in accordance with the W.H.O classification using standard mouth mirrors and probes under normal daylight. All the students were examined for the type of injury and site of injury. Collected data were entered in statistical package for social sciences (SPSS) version 17. Descriptive statistics were used for analyzing the data. Qualitative /categorical variables in the demographic data i.e. gender, traumatic injury and its types and site were presented as percentages and proportions, whereas quantitative/ continuous data i.e. age were presented as mean and standard deviation. Chi-square test was applied to see the effect of these on outcome variable. P value < 0.05 was taken as significant.

## RESULTS

There were 241 participants in total. Out of 241 participants, 136(56%) were males and 105(43%) were females. Participants were divided into two age groups (11-13 years and 14-15 years). Majority of the participants (136) were in age group 11-13 years and (105) were in age group of 14-15 years. Table 1 showed that prevalence traumatic dental injury was found to be present in 33/241 (13.7%). Table 1 showed that p value was significant in case of gender on dental traumatic injuries while p value was insignificant when dental traumatic injuries was seen in different age groups. Figure 4 showed that maxillary anterior teeth (54.5%) were more affected than mandibular anterior teeth (45.5%). Class I dental fracture prevailed the situation (Table 1).

## DISCUSSION

In present study prevalence of traumatic injuries was 13.7%. There was a marked male predominance. This is similar to those found in other studies.[1,20] In another study prevalence was 14.9%.[21] In two Indian studies prevalence of dental traumatic injuries were 10.77%[19] and 10.2%[1] which was less than that of present study because in Indian studies sample size was very high and range of age group (8-15 years) was also more than that of this study (11-15 years). Prevalence of dental traumatic injuries in a Kuwaiti study (18.7%) was higher than that of present study (13.7%) because age group in Kuwaiti study was 3-5 years. Frequency of traumatic dental injuries in current study was less than those reported by Jafferson Trabert et al[22] (18.7%) because Jafferson studies only on the twelve year age group patients and in current study age group was 11-15 years. Prevalence rate in study of Oyedele(7.9%) was less than that of present study because sample size was more in the study of Oyedele.[23]

According to present study males (72%) were likely to have more traumatic dental injury than females (28%). Prevalence of dental traumatic injuries was high in males because they were more involved in the sports and violent behaviors like quarrels and fights than females. Male's predominance is similar to another study which stated that males were more affected by dental traumatic injuries than females.[1] Another Indian[19] researcher agreed with results of current study that males had more tendency toward dental traumatic injuries than females. Study of Jafferson and Oyedele also demonstrated the males predominance in dental traumatic injuries.[22,23] Abad, Sadozai and Khan also emphasized that more male children were seen with dental traumatic injuries than female children.[11,24,25]

In present study class I dental fracture (43%) was predominant than class II (39%) and class III (18%) dental fractures which was similar to the results of other studies.[1,19] Class I dental fracture only involviesg the enamel. Enamel is a brittle part of tooth and first protected layer on the tooth that is why more enamel

TBLE 1: EFFECT OF AGE AND GENDER ON TYPE OF DENTAL TRAUMATIC INJURIES

| Category | Age groups | | Total | Gender Distribution | | Total | P-value |
|---|---|---|---|---|---|---|---|
| | Age Group 11-13 years | Age Group 14-15 years | | Male | Female | | |
| Type I | 11(68%) | 3(32%) | 14(43%) | 11(68%) | 3(32%) | 14(43%) | 0.46 |
| Type II | 10(77%) | 3(23%) | 13(39%) | 8(61%) | 5(39%) | 13(39%) | |
| Type III | 4(67%) | 2(33%) | 6(18%) | 5(83%) | 1(17%) | 6(18%) | |
| Total | 25(76%) | 8(24%) | 33/241(13.6%) | 24(72%) | 9(28%) | 33/241(13.6%) | |
| p-value | | 0.37 | | | 0.031 | | |

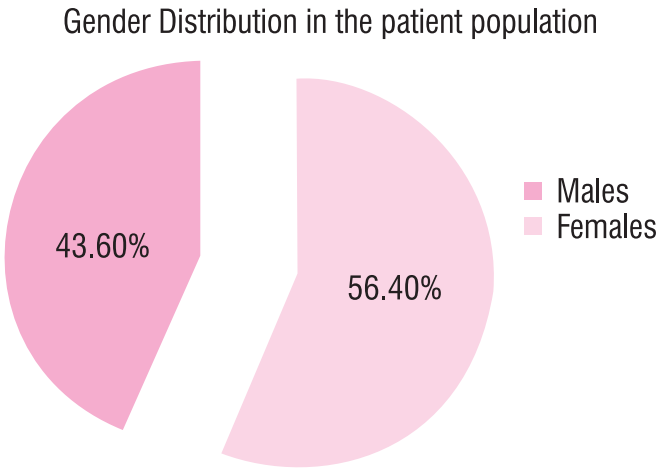


Fig 1: Gender Distribution in the study groups.

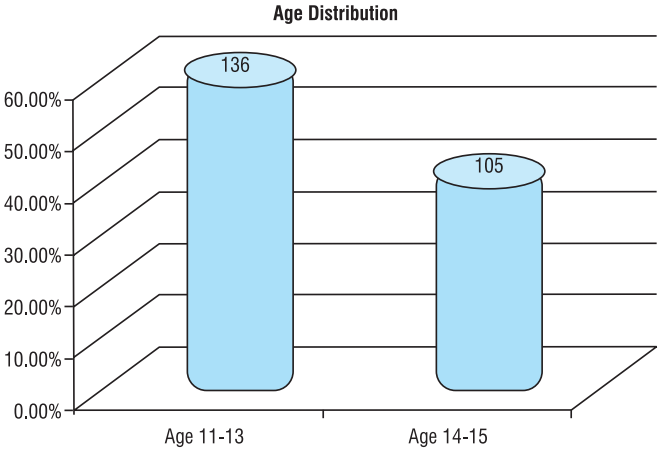


Fig 2: Age Distribution in the study groups.

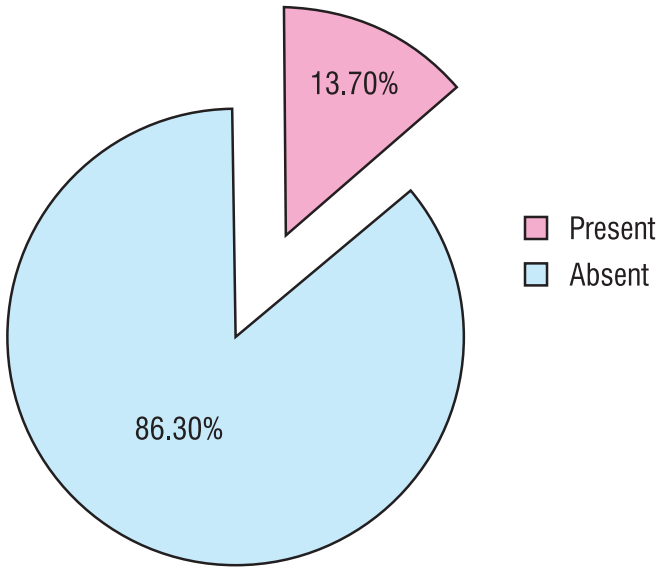


Fig 3: Proportion of patients with traumatic dental injuries in the study groups.

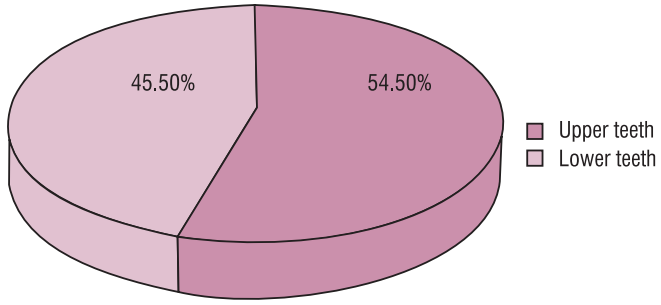


Fig 4: Proportion of patients with traumatic dental injury involving upper and lower anterior teeth.

fractures are observed in dental traumatic injuries. Other studies also supported the observation of current study that class I dental fractures were more common among children.[22,23] Study of Khan showed that Class III dental fractures were more common.[24] The reason of difference is that the cases of class III dental fractures suffer pain and Class I dental fracture remain are symptomless they are not report. Study of reported and Khan was conducted in the hospital while current study was conducted in a school.

In current study maxillary anterior teeth were more involved than mandibular teeth. This was also found in the study of Juneja and Kulkarni.[1] Sadozai also found that maxillary incisors were predominant in traumatic dental injuries.[25] More maxillary involvement in traumatic dental injuries is due to increased overjet in children and maxillary prominence.[4,8,11,23,24]

In present study age group 11-13 years (76%) were more affected by traumatic dental injury which was similar to the study where eleven year old children were more affected[23]. Prevalence of trauma decreased with increasing age group. Age group 14-15 years children were more mature than age group 11-13 years children. That is why prevalence of trauma decreased in increasing age group. Khan has also agreed with the current study that eleven years age group was more notorious for dental traumatic injuries.[24]

## CONCLUSION

Conclusion of the present study was that prevalence of dental traumatic injuries was 13.7 % and males were significantly more affected than females.

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**CONTRIBUTIONS BY AUTHORS**

| | |
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| **1 Mustafa Sajid:** | Idea and Execution of the study, Abstract, Introduction, Methodology, Discussions. |
| **2 Romana Noreen:** | Substantial contributions to the design of the work and the acquisition of data for the work. Drafting the work and revising it critically |
| **3 Muhammad Jamil:** | Acquisition, analysis and interpretation of data for the work. Revising it critically. |
| **4 Mohsin Javed:** | Substantial contributions to the conception. Reviewed it critically. |
| **5 Ehsan Haider:** | Reviewed & took part in the discussion. |
| **6 Muhammad Ahmad:** | Wrote introduction. |