ISSN: 0975-5160

Available online on www.ijtpr.com

International Journal of Toxicological and Pharmacological Research 2021; 11(4); 18-23

Original Research Article

Prevalence of Traumatic Dental Injuries to the Permanent Anterior Teeth Among 7-12 year Old Schoolchildren of Darbhanga Town.

Shagufta Syreen[1], Ahtasham Anwar[2], Bimleshwar Kumar[3]

[1]Senior Resident, Department of Dentistry, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India.

[2]Assistant Professor Department of Dentistry, Jannayak Karpoori Thakur Medical College and Hospital,Madhepura,Bihar, India

[3]Ex Associate Professor, Department of Dentistry, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India.

Received: 17-06-2021 / Revised: 21-07-2021 / Accepted: 19-08-2021
Corresponding author: Dr. Ahtasham Anwar
Conflict of interest: Nil

Abstract

A traumatic dental injury has become a major key hole of a public health. Before dealing with such problem its extent, type and severity of injury should be kept in mind.

Aims And Objective:

To assess the prevalence and distribution of dental injuries to anterior teeth among 7-12 years old school children in Darbhanga town.

Material And Methods: Total of 200 participants was taken. Information regarding sex, age, cause, number & type of teeth were recorded.

Result: The Prevalence rate of trauma was found to be 14%. Also, the prevalence rate was found more in male as compared to female. Maximum number of trauma was found in the age group of 11-12 years.

Conclusion: A special consideration must be given to traumatic dental injuries as it may disturb the masticatory function and phonation. Also, it might affects the physical appearance of a well being. Educational programmes must be implemented by keeping in mind to prevent dental trauma so that the prevalence is reduced in children. The programs should be conducted in schools and in community. For managing traumatized teeth, educational program plays a major role in reducing the prevalence rate.

Keywords: Dental trauma, Caries, Periodontitis. Educational program

Introduction

Complete oral examination and developing a correct treatment plan based on findings is the

first and foremost thing of dentist.

Traumatic dental injuries is a serious problem in young people and its occurrence will lead to dental caries and periodontal problems.[1]

Overall health condition of an individual in strongly influenced by their quality of life. With reference to dental heath, bodily control may be influenced by their speech, social interaction, self esteem and psychology.[2]

Factually, the position and appearance of anterior teeth will have psycologial and social impact on children.[3] Therefore, dental problems can leads to psychological and emotional well being of an individual. The characteristics of dento-facial in terms of personality, self-esteem and physical appearance has been well documented.[4] In literature review traumatic dental injuries is concern with the classification, incidence, prevalence, and treatment of fractured teeth. Regardless of severity, the main etiology of dental trauma were falls, collision, RTA, physical assaults, struck by an object.[5]

Oral injuries occur most oftenly during first decade of life which gradually decreases with age. On the other hand, traumatic dental injuries are least seen in adolescents and young adults.[6,7]

In permanent dentition 8-12 years are most accident prone.[8] Various studies has been conducted in different countries regarding prevalence rates of dental trauma among children,adolescent and adults.[9] Ajayi DM et al in his study found that prevalence of trauma was more in male than in female.[10]

The most common places of traumatic injuries are home, school and streets which mostly include enamel fracture and enamel dentin fracture without pulp exposure.[11]

Dental injuries mostly affects one or more teeth and maxillary central incisors are commonly affected both by aesthetically and fuctionally.[12]

The study conducted by Kahabuka et al[13] reported maxillary incisors the most commonly involved around 78% while the rest anterior (lateral, canine) and premolar as well were least affected.

Material and Methods:

The present study was undertaken in Darbhanga town with the aim of assessing the prevalence rate of dental injuries to anterior teeth among 7-12 years old school children. The survey was carried out in total 200 students aged 7-12years old school children. Children from both private and government schools were included in the present study. The selection criteria for traumatic injuries is taken from the most accepted classification of traumatic dental injuries i.e Ellis & Davis classification. Parents and caregivers of children were informed about the study and the related examination. Prior to examination, written consent was taken from their respected guardian as well as school authorities. Examination was performed under daylight with children being seated on a chair using disposable mirror, explorer, probe, and cotton rolls.

Inclusion Criteria:

1.Children aged between 7-12 years

2. Children whose anterior teeth or at least 3/4th crown has been erupted

3. Children who were resident of Darbhanga town.

Exclusion Criteria:

1. Children below the age of 7 years

2. Those receiving orthodontic treatment.

Results:

Table 1: Prevalence & Distribution of Traumatic Dental Injuries by Age & Gender

SEX		AGE(in years)		TOTAL
	7-8	9-10	11-12	
MALE	4(25%)	5(31.25%)	7(43.75%)	16(57.14%)
FEMALE	3(25%)	4(33.3%)	5(41.6%	12(42.8%)
TOTAL	7	9	12	28(14%)

Table 2: Prevalence & Distribution of Traumatic Dental Injuries According to Etiology

ETIOLOGY	BOYS	GIRLS	%
Fall	6	6	42.8%
Sports	4	3	25%
Collision against object or people	3		10.71%
Traffic accidents	1	1	7.14%
Fight	2	0	7.14%
Others	0	2	7.14%
TOTAL	16	12	

Table 3: Prevalence & Distribution Of Traumatic Dental Injuries According To Classification (ELLIS & DAVIS)

CLASS	% OF OCCURRENCE AMONG BOTH GENDER
I	9(32.14%)
II	7(25%)
III	5(17.8%)
IV	4(14.2%)
V	3(10.71%)
TOTAL	28(14%)

Table 4: Prevalence & Distribution Of Traumatic Dental Injuries Teeth Based On Dental Arches-

ARCH INVOLVED	% OF OCCURENCE
MAXILLARY	19(67.8%)
MANDIBULAR	09(32.17%)
TOTAL	28(14%)

The present survey include 200 children of different background. In among 200 children, prevalence of traumatic dental injuries was found to be 14%. Also, the rate of prevalence was found to be higher in boys in respect to girls. Also, the Prevalence rate was found to be higher in maxillary arches especially incisors in respect to others.

Discussion:

The present survey was done in order to look over the prevalence, causes, and risk factors of traumatic dental injuries in permanent anterior

teeth in a school going children aged 7-12 years in Darbhanga town. It has been seen that the prevalence rate of dental trauma was reported around 14% in 200 school going children. Dearing SG[14] in his study found that mostly the prevalence of traumatic dental injuries among children is found to be 10% and 20% which corroborates the assertion to the present study. the prevalence of dental trauma was found to be 14% in the present study which was found to be higher than those found in the studies done by Mohan Govindram et al[15] i.e. 10.13%, Tangade P.S[16] (4.41%), Tandon S[17](13.8%), Soriano E P[18] et al. Also, the prevalence rate in present study was found to be lower(14%) than those of the studies conducted by Tovo(17%)[19], Saraswathi & Kumar et al[20], Traebert et al[21](17.3%). the variation may be due to the age, sample size and criteria used.

In the present survey the prevalence of trauma was found to be more in male child(57.14%) as compared to female child(42.8%). This may be due to the fact that the girls are more untangled and matured in their behavior as compared to boys who are more aggressive in their behavior and are more leaned towards outdoor activities.

In present study 42.8% of the children suffering from traumatic dental injuries irrespective of gender comes under the age group of 11-12 years while the younger age group between 7-8years and 9-10years were less i.e. 25% & 32.14% respectively. This results corroborates with the study done by Saraswathi & Kumar et al[20]. Saroglu I and Sonmez[22]et al in their study reported that the trauma mostly occur at the age group of 11 years which are in corrobortion with the present study. Also, the study was in contrast with the study done by Oikarinen K[23] et al who reported that the prevalence rate was high in the age group 11-15 years boys and among girls it was 7-10 years.

In present study we found the “FALL” to be the most frequent cause of trauma irrespective of gender variation(42.8%). This finding is quite similar with the study done by Rai[24]et al i.e. 45.40% and Soriano[18] et al (30%). The etiology differs according to age, gender, and the level of activity of the child. The next most common etiology was found to be sports(25%) followed by collision(10.7%) which are in comparision with the study done by Saraswathi & Kumar et al[20](15%) and Soriano[18]et al(18.2%).

In our study it was found that maxillary arch is more prone to traumatic dental injuries as compared to mandibular arch which is due to the protrusive nature of maxillary arch. The finding is very much similar to the study done by most of the authors.

Ellis and Davis is a simple classification and has been used in many studies[24] for recording dental trauma. As in this survey we did not recorded about the injuries to the alveolar socket, jaw fracture or gingival or oral mucosa laceration. Thus we preferred this classification. The commonest type of injury noted in present survey was Type I fracture which was in accordance with earlier studies.[1,25]

Conclusion:

A special consideration must be given to traumatic dental injuries as it may disturb the masticatory function and phonation. Also, it might affects the physical appearance of a well being.

Educational programmes must be implemented by keeping in mind to prevent dental trauma so that the prevalence is reduced in children. The programs should be conducted in schools and in community. For managing traumatized teeth, educational program plays a major role in reducing the prevalence rate.

Bibiliography

1. Navabazam A, Farahani Ss. Prevalence of traumatic injuries to maxillary permanent teeth in 9-14 year old school children in Yazd, Iran.Dent Traumatol 2009;26:154-7.

2. Traebert J, Lacerda JT, Foster Page LA, Thomson WM, Bortoluzzi MC. Impact of traumatic dental injuries on the quality of life of schoolchildren. Dent Traumatl 2012 Dec;28(6):423-428.
3. Cortes MI, Marcenes W, Sheihman A. impact of traumatic injuries to the permanent teeth on the oral health-related quality of life in 12-14 year old children. Community Dent Oral Epidemiol 2002 Jun;30(3):193-198.
4. Andreasan, JO.; Andreasan, FM.; Andreason, l.textbook and color atlas pg traumatic injuries to the teeth. 4th ed. Oxford: Blackwell Munksgaard; 2007. p.217-254.
5. Harrington MS, Eberhart AB, Knaoo JF. Dentofacial trauma in children. ASDC J Dent Child 1988 Sep-Oct;55(5):334-338.
6. Petersson EE, Andreasan L, Sorensen S. Traumatic oral vs non oral injuries. Swed Dent J. 1997;21:55-68.
7. Glendor U, Andreasson L. Public health aspects of oral diseases and disorders. Dental trauma. In: Pine C, Harris R, editors. Community Oral Health. London: Quintessence Publishing;2007:203-211.
8. Alexander M, Kida IA. Traumatic dental injuries and their management among children aged 6-12 years in Dar es salaam, Tanzania. Tanz Dent J. 2005;12:1-5.
9. Enabulele J, Oginni A, Sede M, Oginni F. Pattern of traumatized anterior teeth among adult Nigerians and complications from late presentation. BMC Res Notes. 2016; 9(1):1-6.
10. Ajayi DM, Abiodun Solanke IM, Sulaiman AO, Ekhalufoh EF. A retrospective study of traumatic injuries to teeth at a Nigerian tertiary hospital. Nigeri J Clin Pract. 2012; 15:320-325.
11. Locker D. Prevalence of traumatic dental injury in grade 8 children in six Ontario communities. Can J Pub Health. 2005;1:73-76.
12. Adekoya-Sofwora CA. Traumatized anterior teeth in children: a review of the literature. Niger J Med. 2001;10(4):151-157.
13. Kahabuka FK, Willemson W, van't Hof M, Natbaye MK, Plasschaert A, Frankenmolen F et al. Oro-dental injuries and their management among children and adolescents in Tanzania. East Afr Med J.1999;76(3):160-162.
14. Dearing SG. Overbite, overjet, lip drape and incisor tooth fracture in children. N Z Dent J.;80:50-2(1984).
15. Mohan Govindaram, Venugopal N.Reddy, Krishnakumar Ramalingam, Kaliyamoorthy Sugumaran Durai, Prasad Arun Rao, Anand Prabhu. Contemporary Clinical Dentistry|Apr-Jun 2012;3(2).
16. Tangade PS. The prevalence of Anterior teeth Fracture and its Relation to Malocclusion in 12-15 years old school children Belgaum city, India. J Oral Health Comm. Dent.;2007;1:7-11.
17. Gupta K, Tandon S, Prabhu D. Traumatic injuries to the incisors in children of south Kanara district. A prevalence study. J Indian Soc Pedod Prev Dent.;2002;20:107 13.
18. Soriano EP, Caldas AF, Carvalho MVD, Filho HDAA. Prevalence and risk factors related to traumatic dental injuries in Brazilian schoolchildren. Dent Traumatol,; 2007;23:232-40.
19. Tovo MF, dos santos PR, Kramer PF, Feldens CA, Sari GT. Prevalence of crown fractures in 8-10 years old schoolchildren in Canoas, Brazil. Dent Traumatol,;2004; 20:251-4.
20. Saraswathi & Kumar. Biomed & Pharmacol. J.,2018;11(1), 469-475(2018).
21. Traebert J, Bittencourt DD, Peres KG, Peres MA, de Lacerda JT, Marcenes W. Aetiology and rates of treatment of traumatic dental injuries among 12 year old school children in a town in southern Brazil. Dent Traumatol.;2006;22: 172-8.
22. Saroglu I, Sonmez H. The prevalence of traumatic injuries treated in the pedodontic clinic of Ankara University, Turkey,

during 18 months. Dent Traumatol,;2002; 18:299-303.
23. Oikarinen K, Kassila O. Causes and types of traumatic tooth injuries treated in a public dental health clinic. Endod Dent Traumatol.;1987;3:172-7.
24. Rai. SB, Munshi AK. Traumatic injuries to the anterior teeth among south Kanara school children. A prevalence study. J Indian Soc Pedod Prev Dent.;1998;16:44-51.
25. Granville-Gracia AF, de Menezes VA, de Lira PI. Dental trauma and associated factors in Brazilian preschoolers. Dental Traumatology 2006,;22:318-22.