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Aesthetic Ignorance: The Prevalence of Traumatized Anterior Teeth among Adolescents in Ghaziabad District, Uttar Pradesh, India

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INTRODUCTION: Trauma to the anterior teeth, which having various harmful sequelae, also can damage one's self-esteem and confidence.

AIM: To document the prevalence of traumatized anterior teeth among adolescents in Ghaziabad District, Uttar Pradesh, India

MATERIALS AND METHODS: Patients aged between 12-19 years were screened for traumatic injuries to their anterior teeth were selected as study subjects and their type of fracture was recorded according to the standard questionnaire from Oral Health Survey WHO format 2013. Apart from Descriptive statistics, the t-test and Odd's Ratio (OR) was calculated for statistical analysis.

RESULTS: The prevalence of trauma was found out to be 16.10 % while most anterior trauma was seen in adolescents aged 18-19 (105) years, followed by 12-15 years (101) and 16-17 Years (87). The highest fracture was enamel only and males were more affected than females. The maximum trauma was attributed to Accidents (103,37.2%) followed by fall (94, 32.1%) and this was statistically significant

CONCLUSION: There is a need for patient education in Ghaziabad District to treat their fractures, lest it leads to further dental complication, apart for being aesthetically unpleasant.

KEYWORDS: Trauma, Fracture, Anterior, Teeth

INTRODUCTION

Trauma to the anterior teeth has a high prevalence rate, yet remains untreated in a large number of people, especially in rural population which can be due to a number of reasons.^{1,2} There are various complex factors like sports, recreational activities, accidents, violence, etc, that can lead to trauma in teeth, especially anterior ones.³ In permanent dentition, they are frequently seen as enamel fractures and enamel and dentine fractures and have the potential of causing pain, loss of function with the potential for developing into a serious periapical sequelae.⁴

Any injury causing any disfigurement of the patient's appearance imparts a deep psychological impact; can adversely affect the development of the permanent teeth and also has the ability to hamper the developing occlusion.^{5,6}

Statistical data published by various researchers indicates that an approximate of 6% to 34% of children suffer from Traumatic Dental Injuries (TDI) during childhood or adolescence.⁷ Petti S et al., in their meta-analysis on Traumatic Dental Injuries (publication years 1996-2016 through a literature search) stated that more than one billion living people are suffering from TDI, which is quite an alarming figure.⁸ The risks, severity and magnitude of TDIs vary according

to the age, sex, and geographic location of the tooth and it is generally reported that a significant higher degree of prevalence of trauma among anterior teeth exists as compared to posterior teeth of an individual.^{9,10}

There are few or scarce literature studies that document the prevalence of trauma to anterior teeth among adolescents in Ghaziabad District, Uttar Pradesh and hence, this current study was undertaken to document the prevalence of traumatized anterior teeth among adolescents in Ghaziabad District, Uttar Pradesh.

MATERIALS AND METHODS

The present study was conducted among patients aged between 12-19 years visiting various screening camps organised between February 2018 and July 2018 in Ghaziabad District, Uttar Pradesh, India and duly obtaining an ethical clearance from the institutional educational board. The sampling adopted was convenience sampling and based on 15% prevalence found in our pilot study, an estimated sample size of 214 children with TDIs needed to be included in the study. However, to incorporate the maximum sample and to prevent attrition of the sample, maximum number of children were included.

Patients who were undergoing any type of orthodontic treatment, mentally challenged, suffering from any systemic disease and not willing to participate in the study were excluded from the study.

An ADA type III examination under artificial light while the patient was sitting in the clinical chair was carried out. After obtaining informed consent, the anterior tooth fractures were documented in a standard questionnaire from Oral Health Survey WHO format 2013 whose scoring criteria is depicted in table 1.

SCORE	CRITERIA
0	No Sign of Injury
1	Treated Injury
2	Enamel Fracture Only
3	Enamel and Dentin Fracture
4	Pulp Involvement
5	Missing tooth due to trauma
6	Other damage
9	Excluded tooth

Table 1. Scoring Criteria of tooth fractures

Statistical Analysis

The data was entered in Microsoft excel wherein descriptive data was analyzed. For statistical comparisons, the student’s t-test was applied for comparisons along with calculation of the Odds’ Ratio (OR).

RESULTS

Figure 1 depicts the patients screened among whom, the sample of those having anterior tooth trauma was obtained. It was seen that a total of 1819 adolescents were screened, 293 (16.10%) suffered from Anterior tooth trauma.

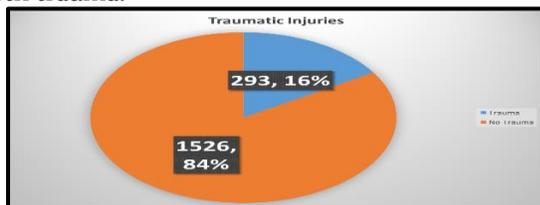


Figure 1. Distribution of the study group

The distribution of the study group according to age is shown in table 2. Most anterior trauma was seen in children aged 18-19 (105) years, followed by 12-15 years (101) and 16-17 Years (87). The presence of anterior trauma among adolescents aged 12-15 was proven to be significant in comparison to the ones without any trauma in the same age group (p=.001).

Age Group	N,%	Trauma	No Trauma	T-test [p value calculated from t score obtained]
12-15 years	758	101	657	.001*
16-17 Years	639	87	552	0.58
18-19 Years	422	105	317	0.45
	1819	293	1526	

Table 2. Distribution of the study group according to age and trauma

Gender wise distribution of the traumatic anterior teeth among the adolescents is shown in figure 2. The maximum score seen was 2, which depicted enamel fracture only(147), followed by score 3 (Enamel and dentin fracture (98). Among all fractures, Males(176,9.67%) were seen to be more affected as compared to females (117,6.43%) and this difference was found to be non-significant.

Table 3. shows the cause of trauma of anterior tooth fracture and the maximum fractures were observed due to accidents (103) with males 1.2 times more prone to accidents as compared to females. Interestingly, It was observed that females(51) were more prone to falls as the reason of anterior trauma as compared to males (43), which was found to be significant (p=005). Another statistical observation was that males were 2.4 times more prone to anterior trauma due to sports (59) as compared to females (14)(p=0.01).

DISCUSSION

The present study, with the aim to document the prevalence of traumatized anterior teeth among

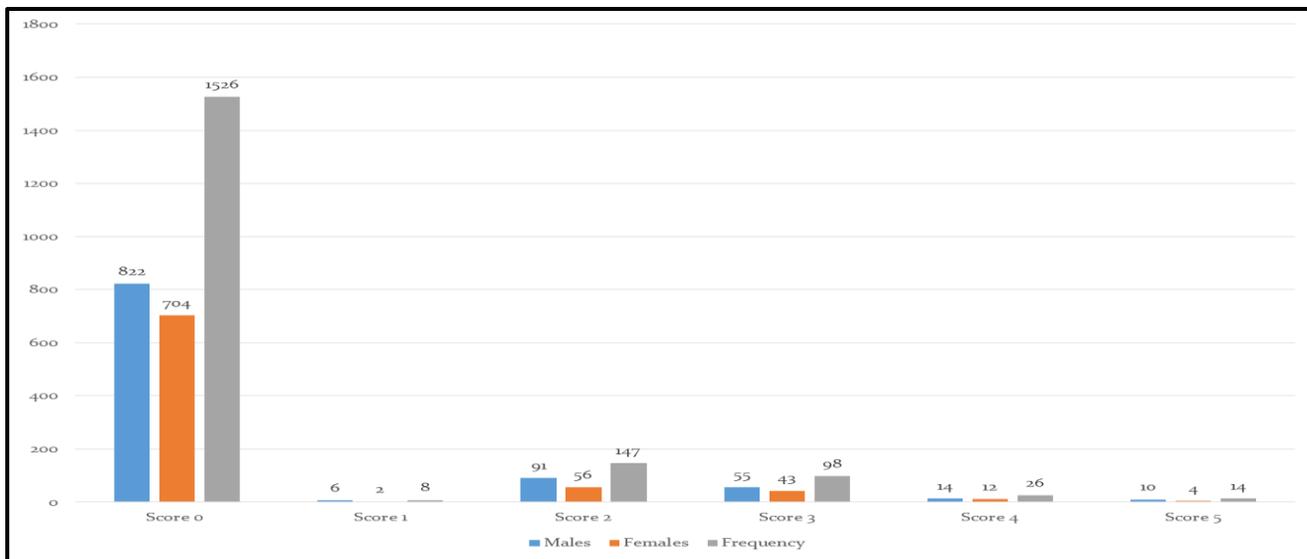


Figure 2. Gender wise distribution of the traumatic anterior teeth among the adolescents

Cause of trauma	Males	Females	Total	T-test [p value calculated from t score obtained]; OR
Fall	43	51	94	0.05*; Constant
Sport-related Injury	59	14	73	0.01*, OR:2.41
Violence (Fight with sibling/peers etc)	15	8	23	0.5 OR: 1.41
Accident	59	44	103	0.45 OR:1.21
	176 (9.67%)	117 (6.43%)	293 (16.10%)	

Table 3. Cause of trauma of anterior tooth fracture among the study population

adolescents in Ghaziabad District, Uttar Pradesh screened a total of 1819 adolescents, of which 293 (16.1%) were found to be suffering from anterior trauma. This finding is lower in comparison to Teixeira et al. (34.97%, Brazil)¹¹ and Sgan-Cohen et al. (33.8% Israel)¹², higher as compared to Noori and Al-Obaidi (6.1%, Iraq)¹³ and in agreement to Baldava P et al. (14.9%, India).¹⁴ Such differences in prevalences could be attributed to different practices among people living across the globe. Also, the motivation and attitudes for dental treatment could also vary as per their customs, traditions and the accessibility of dental services.

Among all fractures, Males(176,9.67%) were seen to be more affected as compared to females (117,6.43%) and this difference was found to be non-significant. This is in agreement with a number of researchers who document a higher prevalence of fractures among males.¹⁵⁻¹⁷ The reason for such a difference could be due to lesser involvement of females in activities that makes their teeth more prone to fracture.

In the present study, the maximum trauma was attributed to Accidents (103, 37.2%) followed by fall (94, 32.1%) and the results agree with Bendoand et al. (43.6% trauma from falls, Brazil)¹⁸ and Altun et al, Turkey (40.03% Trauma from Falls, Turkey).¹⁹ At this age, it can be speculated that an adolescent’s mind is pre-occupied with many other things that can increase his/her chances of falling.

Enamel Fracture only (score 2, 147, 50.17%) was the most prevalent fracture seen in the present study, and is in agreement with Navabazam A et al.²⁰ and Dua R et al(50%).⁴ This study hence, solves its purpose of providing exploratory data on the prevalence of trauma to anterior teeth and provides the path for more studies and treatment based campaigns in this region.

CONCLUSION

The percentage of population suffering from trauma to anterior teeth in Ghaziabad District is on the higher side and combined efforts are required to motivate the

patients to get their treatment done to avoid any further complications.

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