

INCIDENCE OF TRAUMA TO ANTERIORS AND ITS ASSOCIATED ETIOLOGICAL RISK FACTORS:

MARZIYA, JAVARIA INAM, MARYAM VIRDA, BADER MUNIR
Department of Operative Dentistry, De'Mont Morency College of Lahore

ABSTRACT

Objectives: Aim of this study was to see the incidence of TDIs particularly to anteriors and their associated presenting complaints, etiological and risk factors reported to OPD of Operative Department of De 'Mont Morency College of Dentistry. **Methods:** A proforma comprising of pre designed questions was used to do a cross- sectional survey, which included all the incoming patients having a history of dental trauma particularly to anterior teeth over a period of 7 months from Jan 2017 till July 2017. **Results:** Total number of 129 trauma patients were considered. In these patients, 58.9% were males and 40.3% females. 10-20 years age group was considered as most common. N= 53.5% patients got greater than normal overjet which is more than half. And competency of lip was found in 67.4% of patients and absent in 31.8% of patients.

Conclusion: The concept behind studying various etiological and risk factors is to facilitate the planning of preventive measures for traumatic dental injuries.

INTRODUCTION

Traumatic dental injuries (TDIs) which include fractured, displaced or even lost teeth are a major concern as well as a challenge for both dentists as well as patients. Prompt and quick management can become a stressful task for the dentist which can be minimized with better understanding of its causative factors. TDI is considered as a public health problem due to the high prevalence rate (25.6%-62.1%) and its long term consequences which takes place throughout the patient's life¹⁻⁴. Importance of dental traumatic injuries can be asserted with point that they not only involve local injuries but can also affect the life of the patient due to their influence on the appearance, speech and position of teeth which is related to the esthetic, psychological and the social factors of the patient.⁵

As stated by Glendor⁶, significance of (TDIs) arises from the conditions and the consequences associated with them and they generally occur at young ages when growth and development takes place. Studying and observing the various etiological risk factors associated with dental injuries can help the planning of preventive measures. In this present observational cross sectional study, various factors are studied like 'age' which is a well-known risk factor for TDI and usually children and adolescents are found to be susceptible due to their involvement in sports and other physical activities. 'Site of injury' another etiological factor has an importance as risk of contamination is associated with it. 'Cause of injury' is

also included and several studies have been made to see the contribution of this factor as by Thomson et al⁷ has shown results to the increase in the number of Dental Maxillofacial traumas due to increase in the accidental falls during road traffic accidents. Another risk factor, 'overjet' which is one of the main risk factor and suggested to increase the frequency of dental trauma proportionally in relation to an increased overjet⁸. Inadequate lip coverage is considered as a factor associated with TDI in children^{9,10} as considered in this study as well to see their relationship in both young and adults. Andreasen Classification is included to see the most common type of injury which may be complicated (enamel, dentin, and pulp) and uncomplicated (non-pulpal involvement) and here we have classified it into 5 codes according to WHO criteria.

RESEARCH METHODOLOGY

A proforma comprising of pre-designed questions was used to do a cross- sectional survey at OPD of Operative department of De' Montmorency College of Dentistry that included all the incoming patients having a history of dental trauma particularly to anterior teeth over a period of 7 months from Jan 2017 till July 2017. Proforma comprising of three sections:

1. Bio data,
2. History pertaining to trauma and
3. Clinical examination.

Inclusion criteria:

- Patients having history of trauma
- Less than 45 years of age
- All teeth i-e Primary as well permanent teeth are included.

Exclusion criteria:

- Anterior teeth fracture cases other than traumatic cause.
- Elderly patients (50 years and above)

Various questions about the site of trauma, cause of trauma and time of trauma were recorded. Clinical Examination included lip closure, overjet and type of trauma according to Andreasen's Classification was noted.

Overjet measured with a WHO probe as well as with help of scale and classified as:

Greater than normal (>3mm),

Normal (3mm) and

Less than normal (<3mm).

Lip coverage was classified as 'adequate' when the lips covered the anteriors teeth at rest position and as 'inadequate' when they did not. Andreasen's Epidemiological Classification including WHO codes were used to classify the trauma which are as follows:

Code 0: No injury

Code 1: Treated dental injury

Code 2: Enamel fracture only

Code 3: Enamel/dentin fracture

Code 4: Pulp injury

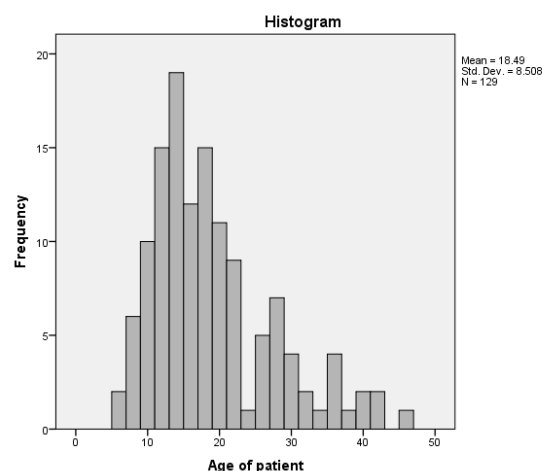
Code 5: Missing tooth due to trauma

All results were analyzed using Statistical Package for Social Science SPSS 20. Frequency distributions and means were calculated.

RESULTS

Total number of 129 traumatic patients were considered. In these patients, 58.9% were males and 40.3% females as shown in the table. Age group 10-14 years was considered as most common. Most common site of injury "RTAs" was considered as most common cause of injury. 49.6% of traumatic teeth were sensitive on presenting complaint. N= 53.5% patients got greater than normal overjet which is more than half. And competency of lip was found in 67.4% of patients and absent in 31.8% of patients. Most common traumatic teeth are maxillary Central Incisors. And most common Andreasen Classification of dental injury was found to be code 4= Pulp injury.

Frequency tables, Bar charts and pie charts are given as:

Figure 1:**Figure 2: Gender of patient**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	52	40.3	40.3	40.3
	Male	77	59.7	59.7	100.0
	Total	129	100.0	100.0	

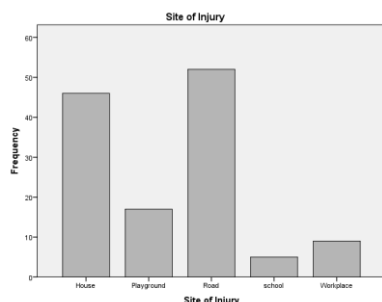
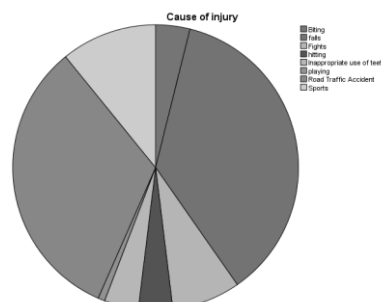
Figure 3:**Figure 4:**

Figure 5

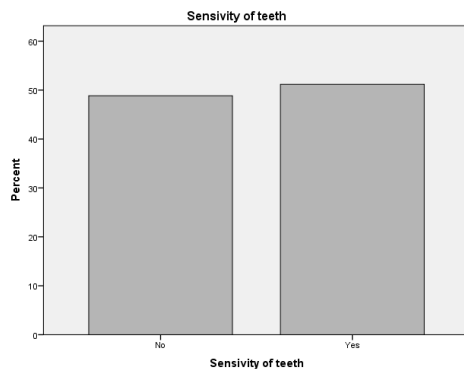


Figure 6

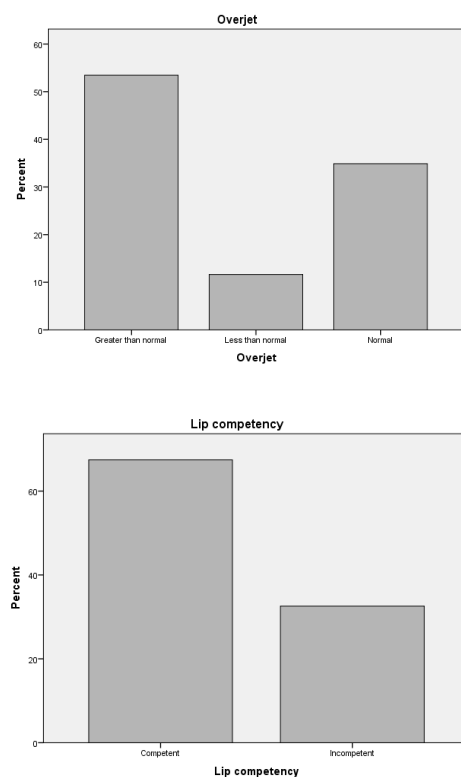


Figure 7

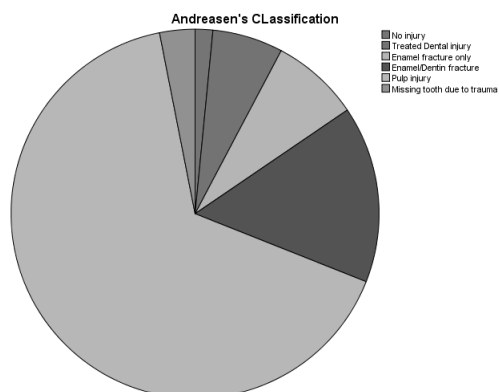
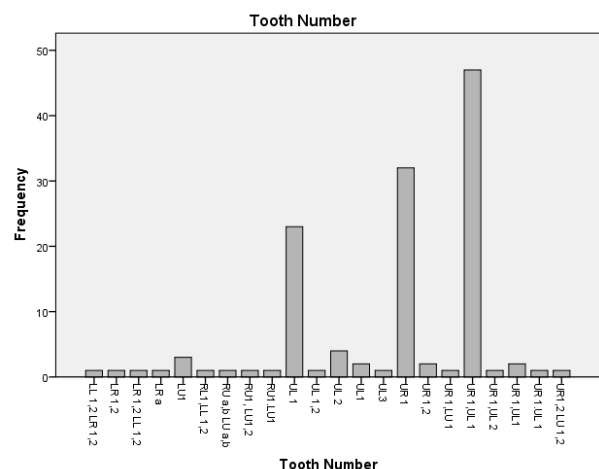


Figure 8:



Where;
UR=Upper Right
UL=Upper Left
LL=Lower Left
LR=lower Right

DISCUSSION

Aim of this study was to see the incidence of TDIs particularly to anteriors and their associated presenting complaints, etiological and risk factors reported to OPD of operative Department of De Mont Morrency College of Dentistry. Total number of dental trauma patients included in this sample was 129. 90% lies in the age group of 10-20 years age group. Different results among different researches on this topic varies due to multiple factors like population type, age group taken and cultural and environmental factor.¹¹ Mostly children and adolescents are susceptible these injuries. According to the literature, boys are found to be more prone to dental injuries than to girls because they participate more in sports and physical activities like fights than girls and in this study, boys are more in number than girls which is in accordance with most of other studies.^{12,13,14,15,16,17,18,19,20,21,22}

Most common site of injury was found to be road 40%, because of increase rate of Road Traffic Accidents now-a-days. Rash driving and overspending due to lack of tolerance as well as discipline are the causative agents for these incidents. Similar study conducted also gave the higher percentage results for RTA in age group 9-11 years and falls due to RTA were found to be around 67%²³. Immediate presentation was also found to be less as a result of status of dental pulp got compromised and squealae as discoloration is mostly seen as presenting complaint of the patients. Maxillary CI and LI is found to be the most frequent tooth # involved in the dental trauma as it lies at the most

prominent and the most vulnerable position in the face as compared to the lower teeth²⁴. This is in accordance with a similar study conducted in India²⁵ and Pakistan. In present study, 'overjet' in more than half of the dental trauma cases recorded was found to be more than normal (3mm) and seconded by many other researches²⁶. Different authors have recognized that from the results, it can be concluded that patients with an overjet larger than 3 mm are approximately twice as much at risk of injury to anterior teeth than with an overjet lesser than 3 mm.²⁷ Bonini et al 2012 observed that increased overjet with inadequate lip coverage presented high prevalence to TDIs as compared to those with adequate lip coverage.²⁸ Significant number of trauma patients n=41 has inadequate lip coverage which is in accordance with other studies. Andreasen Classification including WHO codes was used to find out the most prevalent type of injury which came out to be code 4 that is pulp injury. Other code frequencies are also given in bar chart with Code 3 (Enamel and Dentin fracture) being the second most common. The reason behind involvement of pulp injuries as higher percentage can also be attributed to the lack of compliance and delayed presentation to the OPD which has a major impact on the prognosis of the tooth and also been noted in the proformas. So awareness programs for improving the response to dental injuries on the patients end must be conducted in order to avoid further hazards of such injuries.

CONCLUSION

The concept behind studying various etiological and risk factors is to facilitate the planning of preventive measures for traumatic dental injuries. Anterior teeth plays a vital role in the esthetics of the patient and a pleasing smile can add to the person's personality contrary to which broken, lost and discolored teeth has a bad impact on the overall appearance of the patient so we must put emphasis on management of Dental Traumatic Injuries (TDIs). Like use of mouthguards and awareness related to the first aid management of avulsed tooth at the site of trauma can help facilitate the decrease in traumas during sports and avulsed tooth management respectively. Moreover, timely management of the overjet which is one of the six dento alveolar measurement for the clinical assessment of malocclusion by Kowalski and Prahl Andreasen (1976) can decrease the risk factor for having trauma to anteriors. Like control RTA via minimizing the chances of it through proper legislation and through decrease in violent behaviours to lessen the percentage of trauma due to falls during fights and sports which has shared a lot of percentage in this study as well.

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