

Association of Etiology and Dental Trauma in South Indian Population

AUTHORS (WITH AFFILIATION):

1. Sowbaraniya.S.M

Saveetha Dental College and hospitals
Saveetha Institute of Medical and Technical Sciences (SIMATS) Saveetha University
Chennai-600077,
Tamil Nadu, India.
Email.id:151801094.sdc@saveetha.com
Ph.No:+91 9940797087

2. Dr Ganesh Jeevanandan

Reader,
Department of Pedodontics,
Saveetha Dental College and hospitals
Saveetha Institute of Medical and Technical Sciences (SIMATS) Saveetha University
Chennai-600077,
Tamil Nadu, India.
Email id: helloganz@gmail.com

3. Dr Lavanya Govindaraju

Senior lecturer,
Department of Pedodontics,
Saveetha Dental College and hospitals
Saveetha Institute of Medical and Technical Sciences (SIMATS) Saveetha University
Chennai-600077,
Tamil Nadu, India.
Email id: glaavuu@gmail.com

ABSTRACT:

Dental trauma refers to trauma to the teeth and or periodontium and often other soft tissues. Trauma occurs due to various etiology such as accidents, fall, striking against objects etc. Dental trauma is more common among young adults and children and the most common place to occur dental trauma was found to be schools, houses and streets. The study aims to find the most common etiology associated with the dental trauma in the South Indian population. The Data was collected from the Private Dental college and data was transferred to excel sheet. Statistically it was analysed by using spss software. Total 120 datas collected among which etiology of accident being the highest percentage of 35% and etiology of striking against the object has the lowest percentage of 1.67% with the p value 0.415, which was not statistically significant. From study, it is concluded that accidents were found to be common etiology associated with dental trauma which is more common among male population.

INTRODUCTION:

Dental trauma refers to the trauma occurring in the teeth or periodontium and other soft tissues including lips, buccal mucosa etc. The study of dental trauma is named as dental traumatology which aids with the etiology and management of dental trauma(1). Trauma to the teeth often occurs due to accidents, falls, Injury from the sports, striking against objects, physical violence etc (2). Dental trauma may cause headache, ear ache, fracture of jaw bones, severe dental trauma may cause disorientation, lapse of memory, concussion(3). Traumatic dental injuries are common in young adults and children as they tend to learn to walk at this age group between 12-18 months of age (4). Dental trauma in adult are more likely to cause by bike accident which comprises of 50% and 20% are caused by sports injury and remaining trauma is caused by physical violence, striking against objects etc (5).

Dental trauma is not considered as a worldwide health risk but may be considered as serious social dental problems(6). Demographic evaluation indicates a higher prevalence for dental trauma in males compared to females(7). Falling, fight, sports, accident and hitting against items or people are the most common etiologic factors(8). Most common place such as schools, house, streets are considered most common place for dental trauma which is most commonly include enamel fracture, dentin fracture, pulp exposure etc (9). Other countries than India, high cost and their low standard of living and lack of knowledge regarding emergency treatment for dental trauma may result in failure and delaying of the treatment(10). The challenges faced in other studies where data collected does not have specifically mentioned the type of dental trauma which was difficult to compare the data and conclude the result (11). Our team has extensive knowledge and good research experience that has translated into high quality publications (12–24)(25–31)

Previous research has found that traumatic injuries are more likely to impact the maxilla than the mandible due to the position of the maxillary anterior teeth (32). The maxillary central incisors are the teeth that are most usually damaged, and this could be because of their central location, which makes them more vulnerable to direct assault and trauma. Furthermore, the upper central incisors are more proclined than the lower centrals and are more likely to be struck directly during trauma(33). The upper jaw is also locked to the skull, making it inflexible, but the lower jaw, being a flexible portion, tends to lessen the impact forces directed on the lower anterior teeth as a result of movement (34). Traumatic injuries to primary teeth can result in changes in physical appearance, speech abnormalities, tooth morphology loss, and mental effects, all of which can negatively impact a child's quality of life (35). Dental trauma in primary teeth can lead to hypoplasia, discolouration, delayed eruption time, tooth deformity, and poor aesthetics in permanent teeth. Due to their weak stability, slow reactions, and indeterminate motions, school-aged youngsters are especially susceptible to TDI. In many countries, high costs and low living standards, as well as a lack of awareness about prompt treatment for dental injuries, can lead to treatment failure and tooth deformity in the permanent dentition, affecting a child's aesthetics

This research is needed to obtain information regarding the most common etiology associated with dental trauma. It could be useful in management of the trauma and prevention of it. Aim of the study is to find the association of etiology and dental trauma among the South Indian population.

MATERIALS AND METHODS:

This retrospective investigation was carried out in a hospital setting, mostly at a private dental college. Prior to the start of the trial, the Institutional Review Board granted ethical approval.

Study design :

The study was meant to encompass the South Indian population aged 3 to 30 years old who were suffering from a current trauma disease. Patients who did not meet the trauma criteria were excluded from the study.

Sampling technique:

The study was based on the Random sampling method. To minimise the sampling bias, all the cases were reviewed previously.

Data collection And Tabulation:

Data collection was done using the patient database with a time frame work of 1st March 2020 to 31st the February 2021. About 120 OPGs were reviewed and those fitting under the inclusion criteria were included. Cross verification of data was done by a reviewer. The collected data was tabulated based on the following parameters:

- *Patients Gender

- *Various etiology of trauma

- * Association between Gender and various etiology

Statistical Analysis:

The data was entered into SPSS after the variables were coded. Categorical variables were reported in terms of numbers and bar graphs were generated using SPSS version 20.0. The Chi Square test was used to test the statistical analysis of the associations.

RESULTS:

The collected data were analyzed using spss software and were used for the discussion. A total of 120 out patients were categorized as history of fall, accident, sports and striking against objects and compared with each make and female population. From the fig 1, mentioned bar chart represents the count of male and females with the history of accidents. Among 120 patients, patients reported with the history of accident which is found to be a major etiology and from the data collected it is noticed that 65.83% were male (violet color) and 34.17% were female (yellow color) patients reported. Many studies suggested that male patients reported to dental clinics causing any type of dental trauma due to accidents (36). From the fig 2, bar chart represents the count of male and females reported to the clinics with the history of fall and patients reported with a clear history of fall in which male comprises 70% and female of 30%. The major age group comprises young children between the ages of 2-6 years and old age people. From the Fig 3, the percentage of male and females reported to the clinics with the

history of striking against .Patients reported with a clear history of striking against objects in which male comprises 80% and female of 20% .The data collection on history of striking against objects were comparatively less due to improper history taking which needed to be avoided in further cases.

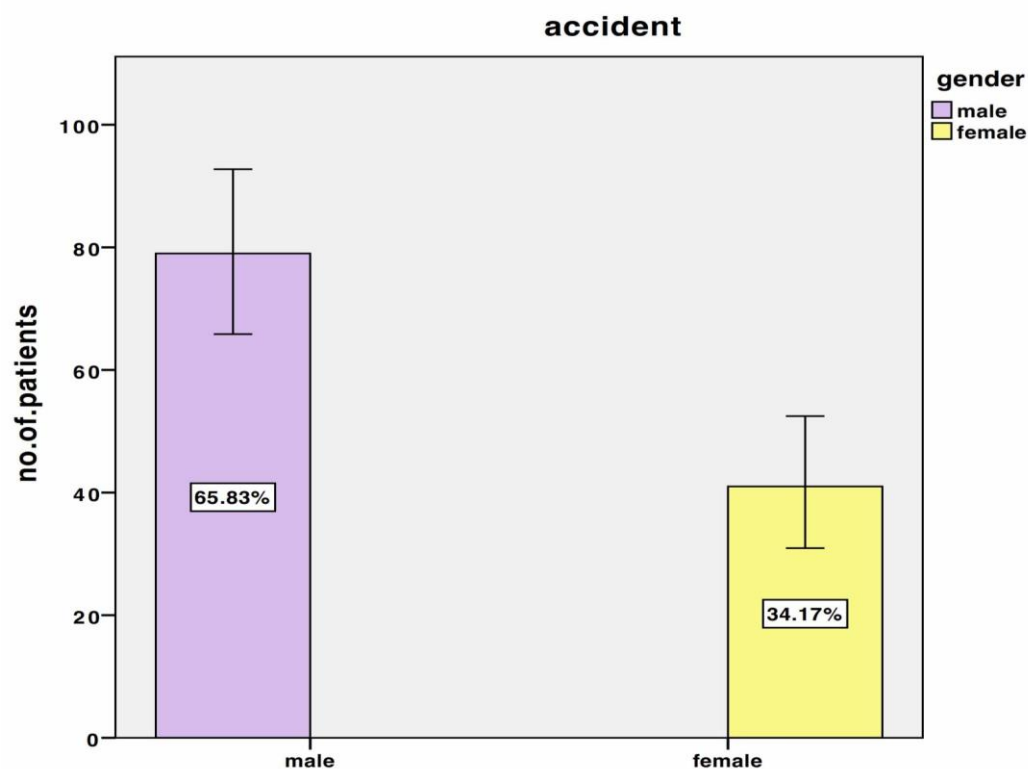
From fig 4, the bar chart represents the count of male and females reported to the clinics with the history of sports . Patients reported the history of sports among which 75% male(violet color) and 25% female (yellow color). Majority of the patients reported were male between the age group of 12-19 years of the age. Most common tooth structure affected is the maxillary anterior tooth crown structure and least affected is the posterior tooth structure as the cheeks help in preventing it(37).

From the fig 5, correlation chart represents the gender and the etiology associated with dental trauma.Among male population, accident is found to be the most common etiology for the dental trauma which comprises 35% patients whereas among females the accident rate is twice less than that of

male ratio. From the correlation chart, it is seen that male is most common to have accidents and have a high prevalence rate.Statistical analysis was carried out with the Chi -Square test ; p value = 0.415, which was not statistically significant .

Figure 1:

Figure 1 represents major etiology in dental trauma in the teeth .Violet color denotes the male population(65.83%)which is the highest percentage and yellow represents female(34.17%) comparatively less percentage with the etiology of accident causing dental trauma.



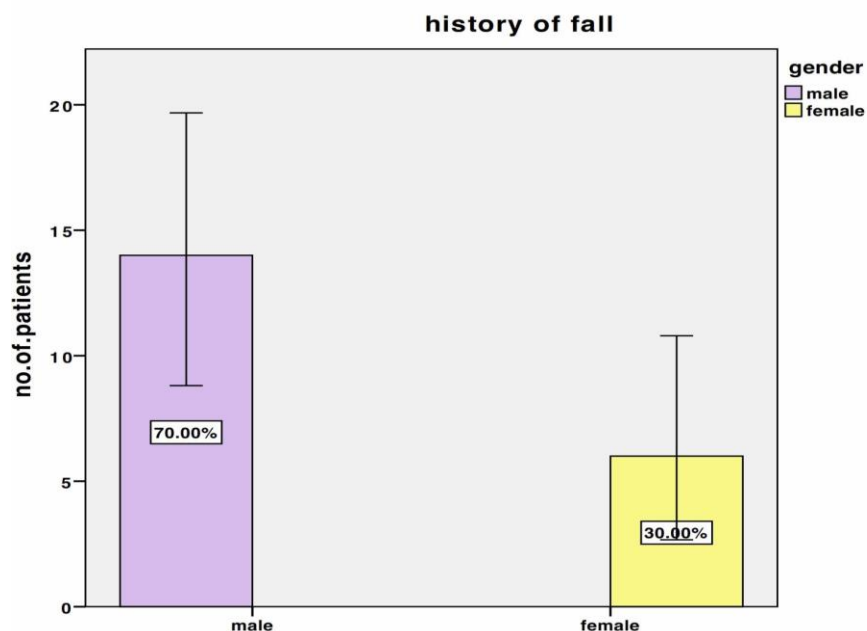


Figure 2:

Figure 2 represents etiology in dental trauma in the teeth .Violet colour denotes the male population (70%) which is the highest percentage and yellow represents female(30%)comparatively less percentage with the etiology of fall causing dental trauma.

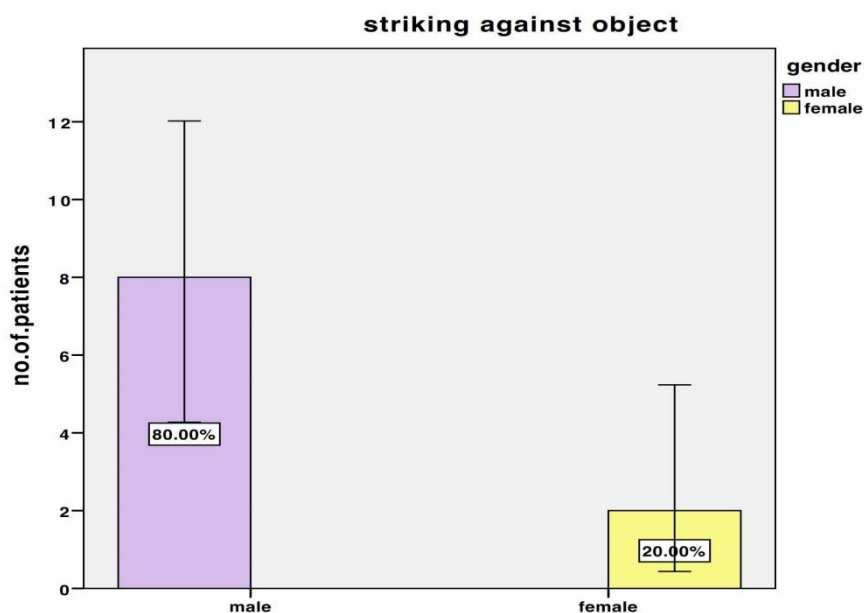


Figure 3:

Figure 3 represents etiology in dental trauma in the teeth .Violet colour denotes the male population (80%)which is the highest percentage and yellow represents female(20%)which is comparatively lowest percentage with the etiology of striking against the objects causing dental trauma.

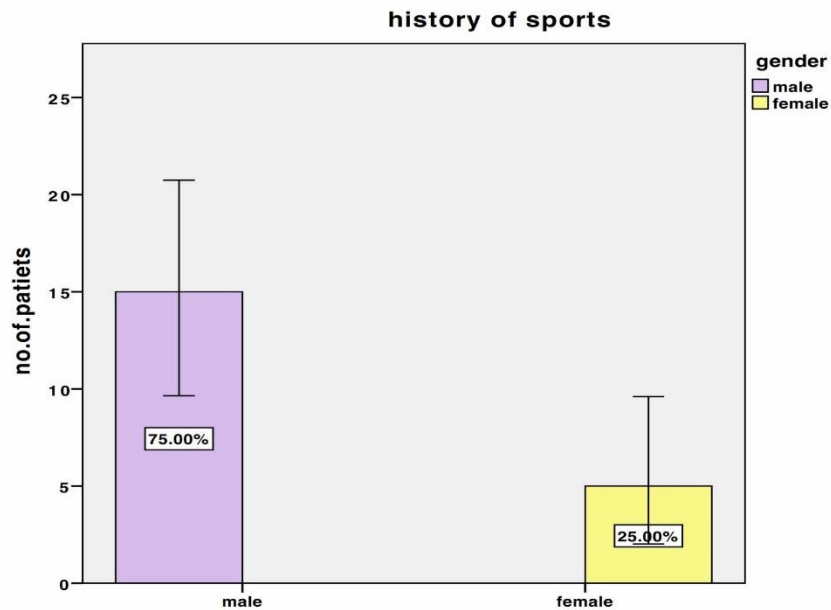


Figure 4:

Figure 4 represents major etiology in dental trauma in the teeth .Violet color denotes the male population (75%)which is the highest percentage and yellow represents female(25%)comparatively lowest percentage with the etiology of sports causing dental trauma.

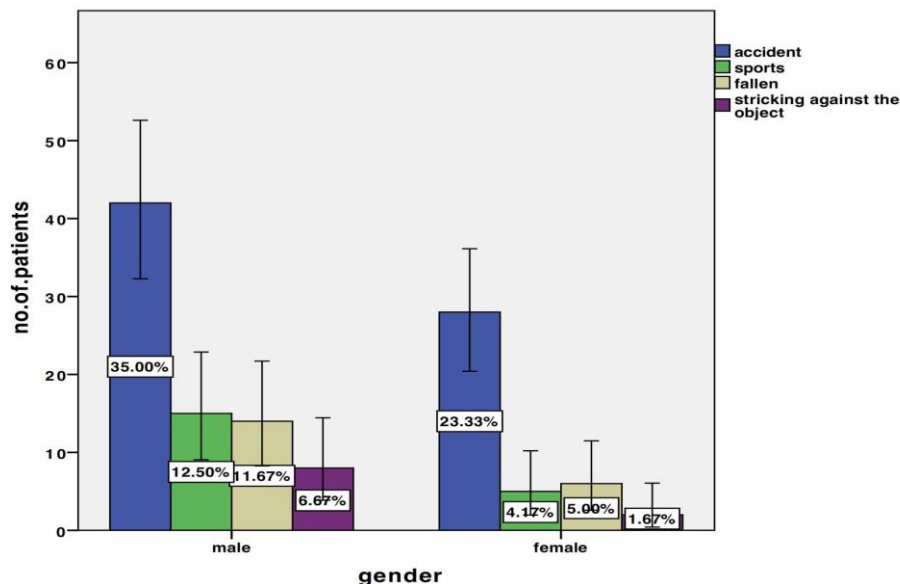


Figure 5:

Figure 5 represents association between etiology and gender in dental trauma in the teeth .Blue color denotes the etiology of accident which comprises of 35% of the male and 23.33% female- and green color denotes with etiology of sports causing trauma which includes 12.5% in male and 4.17% in female. Yellow color denotes with the history of fall includes 11.67% in male and 5% in female. Violet color denotes striking against objects causing 6.67% in males and 1.67% in females. Etiology of accident being the highest percentage of 35% and etiology of striking

against the object has the lowest percentage of 1.67%. Statistical analysis was carried out with the Chi-Square test ;and the p value = 0.415, which was not statistically significant .

DISCUSSION:

According to a prior study, the most common type of facial trauma is traumatic dental injury, which has been previously highlighted in articles (38). According to an article by Alla et al, regardless of dental injuries, 95.5 percent of the patients did not receive any dental treatment or control of the condition, which could lead to future difficulties and demonstrates a lack of understanding about dental therapy(39).Trauma prevention and the need for therapy after a traumatic incident are both critical in order to avoid potentially negative outcomes and, more interestingly and critically, to avoid the need for treatment. The findings of the study by Awad et al. demonstrated a poor degree of knowledge among the general public about the care of traumatic oral injuries, which is comparatively greater than other traumatic injury treatments(40).Males are more impacted than females, with enamel fracture being the most prevalent form and maxillary

central incisors being the most damaged; no link was discovered between the cause of overbite and the magnitude of the overjet (41). According to Sheikh et al., dental trauma can result in a poor smile and oral health, which has been linked to poor social connections and lasting deficits that affect the ability to learn and grow, resulting in lower self-esteem and a diminished desire to socialise with others(42).Self-esteem is a crucial component to consider when predicting the prognosis of severe dental damage, according to the current research (43). Low self-esteem is thought to be linked to a poorer aesthetic appearance of the oral cavity, implying that personality qualities could explain one of the major consequences of traumatic dental injuries (44). According to one report, oral trauma can lead to a decrease in appetite, sadness, and impaired concentration and distractibility, all of which can have a bad effect on one's confidence(45).Males suffer from tooth trauma about twice as often as females, according to the current study, which is consistent with the findings of many other studies(46). Another study found that males are four times as likely than girls to experience dental damage (47). This is most likely due to the fact that boys are more active and participate in more aggressive sports than girls(48).

CONCLUSION:

Thus from the preliminary study we can hypothesize that most common etiology associated with dental trauma is accident which is more prevalent among male population and it's twice than that of female accident rate.We anticipate that this study will serve as a scaffold for further breakthrough and better precise history taking regarding history of presenting illness helps in more accurate method of data collection and arriving at a still more accurate results .

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