



Gender differences in patients who underwent root canal treatment in anterior teeth after trauma

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ABSTRACT

Anterior tooth fractures are more commonly found in younger patients than in adults. Kids in school accidentally fall and break their anterior tooth. It not only has an impact on aesthetics but physiological disturbances due to their friends. The aim of this study is to assess the gender difference in patients who underwent root canal treatment in anterior teeth after trauma. The data was collected from the dental information archiving software of saveetha dental college, from June 2019 to March 2020. The parameters collected were age, gender, a tooth which had undergone trauma. The data was collected and tabulated in the excel sheet and was transferred to the SPSS software by IBM for statistical analysis like chi-square test between trauma teeth and age and gender and traumatized tooth. This study reveals that males had a higher incidence of fracture than females and they belonged to the age group of 2-4 years with a P-value of 0.213 > 0.05 (statistically insignificant). This study concludes that male children are more prone for anterior tooth fracture than the female children, and they must be educated on the importance of teeth and safety during sporting or any other physical activities.



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INTRODUCTION

Traumatic injury is a challenging public health problem which has been seriously neglected (Craddock, 2009). The majority of dental injuries involve

the anterior teeth, especially the maxillary incisors because of their exposed position in the dental arch and dental trauma in most cases causes damage to the crown. Traumatic dental injuries are prevalent in clinical practice, and their management is a challenge for the clinician, who, depending on the type of injury, will have to choose among several possibilities to approach the problem (Jeevanandan, 2017). Traumatic injury that involves a permanent tooth can sometimes create a difficult situation for the child, the parents, and the dentist, who may opt for treatment that aims to save the original traumatized tooth (Christabel, 2015). Complicated traumatized anterior teeth require quick functional and esthetic repair (Govindaraju *et al.*, 2017a).

Such traumatized teeth can be saved primarily by an endodontic therapy followed by composite buildup, cast post, prefabricated post, and veneering and full

coverage crowns for functional and esthetic purposes. The incidence of dental trauma among the primary school is an emerging dental health problem (Packiri, 2017). Several studies indicate that traumatic dental injury has increased over the last few decades (Somasundaram, 2015). Dental trauma can result in fracture or loss of a tooth (Jeevanandan and Govindaraju, 2018).

The consequences of TDI include alteration in physical appearance, speech defects and emotional impacts and thus affecting a child's quality of life (Panchal et al., 2019; Subramanyam, 2018). Preschool children are more prone to TDI due to their poor stability, passive reflexes, and indefinite movements (Govindaraju et al., 2017b; Mahesh et al., 2018).

There are many cases of anterior dental trauma. At the age of 1 or 2, it's mainly caused by falling when learning to walk (Gurunathan and Shanmugaavel, 2016). At preschool age, 2-6 falls during lack of attention during playing and sports activity. After road traffic accidents and physical fights, sporting injury is one of the main causes of TDI (Subramanyam, 2018).

Anterior dental trauma is often caused by accidents. It can also cause limb fracture or life-threatening injuries (Gurunathan and Shanmugaavel, 2016). As a result, it often becomes impossible to provide appropriate treatment that would allow the affected teeth to be treated (Govindaraju, 2017). Preservation of an intact permanent tooth which, unlike deciduous teeth, will not be naturally replaced by the body (Ravikumar et al., 2017).

It's extremely important for further physiological problems to be treated for the affected person. These problems can lead to both exclusions by peers because of visible flaws, which can lead to social deprivation and a feeling of embarrassment when laughing and leading to avoid peers (Nair, 2018).

The present study aims to evaluate the gender differences in patients who underwent root canal treatment in anterior teeth after trauma.

MATERIALS AND METHODS

This was a retrospective study for which patients who attended saveetha dental college for the past one year were included. They were between the age group of 2-7 years and 14-18, including male and female children. Informed consent obtained from children's parents and was explained completely.

Ethical approval was obtained from the scientific review board of saveetha university. The inclusion criteria included patients who were willing to study,

and exclusion criteria were, patients with systemic conditions.

The data were collected from dental information archiving software {DIAS} which included age, gender tooth that had trauma followed by root canal treatment. A record of 60 patients was selected randomly.

Photographs were also used for reconfirmation of the treatment done. The collected data were further segregated based on age, gender and added in excel sheets.

Statistical Analysis

The data was segregated according to age and entered in an excel sheet. The data were analyzed in SPSS software. The independent variable included age, gender and caries and the dependent variable included root canal treatment and behavioural management.

RESULTS AND DISCUSSION

The result showed that males have high incidence when compared to female children. Fifteen male children had an incidence of fracture in 51 and 8 of them in 52, and other anterior teeth involving a total of 40 male children. 7 Female children had an incidence of fracture in 61 and 4 of them with an incidence of fracture in 52,62 and other anterior teeth involving a total of 29.

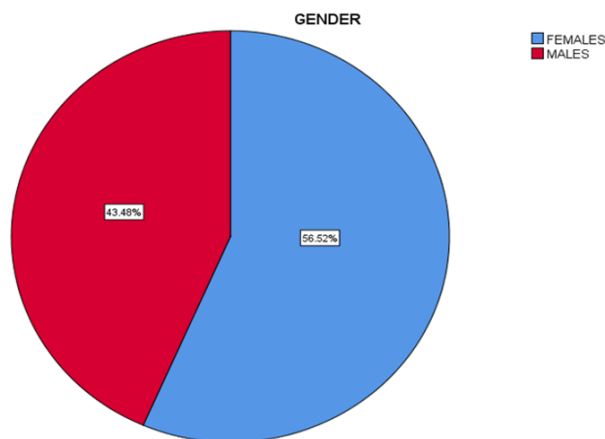


Figure 1: Shows the gender-wise distribution of study population in which 56.52% were females(blue) and 43.48% were males (red)

Figure 1 shows the study had a female population of 56.52% and the male population of 43.48%. Figure 2 shows patients belonging to the age group of 2 to 4 were 49.28%, age group of 5 to 7 were 27.54%, Age group of 14 to 17 were 13.0%, and age group of 18 to 20 were 10.14%. Figure 3 shows results based on the fractured tooth and age of the population, the

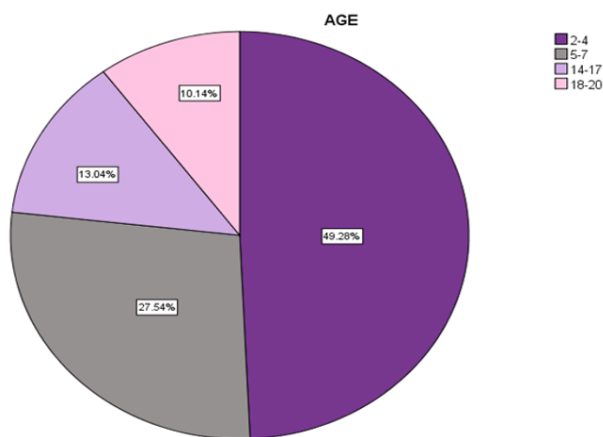


Figure 2: Shows the age-wise distribution of the study population.

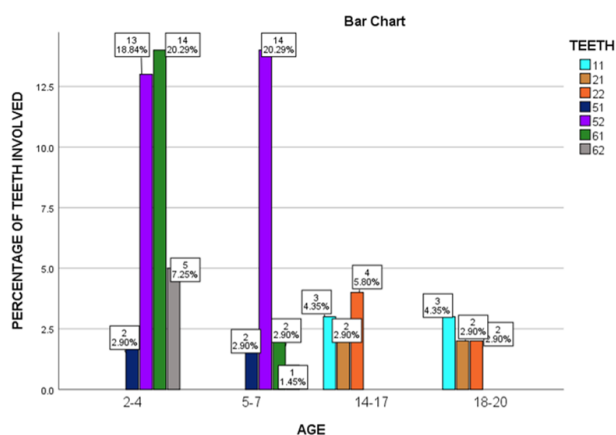


Figure 3: Shows the association between tooth and age of the patients.

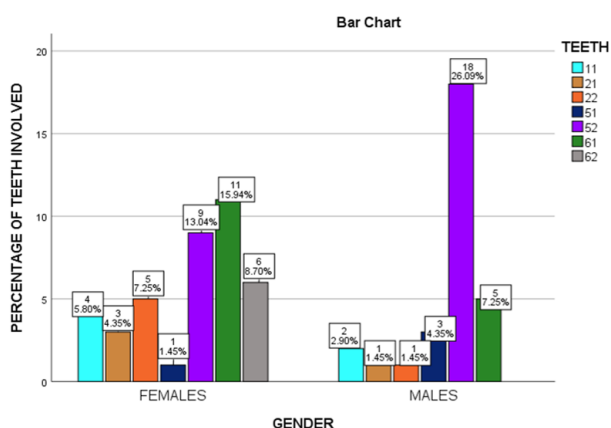


Figure 4: Shows the association between tooth and gender of the patients.

age group of 2 to 4 had a high incidence of fracture of the maxillary left primary central incisor (61) with a percentage of 20.9%. The age group of 5 to 7 had 20.29 % fracture in 52. The age group of 14 to 17 had 4.35% fracture of 11, 2.90% fracture of 21 and 5.80% of fractures in 22 and the 18 to 20 age group had 4.3% of fractures in 11.

Figure 4 shows results based on the gender and fracture, females had a high incidence of 15.94% fracture in 61, 13.04% fracture in 52 and 7.2% fracture in 22 and 5.80% fracture in 11. 26.09% of males had a high incidence of fracture in 52, 7.25% fracture in 61 and 4.35% fracture in 51, 2.90% fracture in 11, and 1.45% of fracture in 21 and 22

Our study revealed age group of 2 to 4 showed 49.3% male instances for fractures. In a study by Mitra Hegde it all 53.9% had anterior tooth fracture of the age group 15 to 30 followed by 20.2% in the age group less than 15 (Govindaraju *et al.*, 2017a; Hegde and Sajjani, 2015).

In our study revealed, high prevalence of mail involving the tooth 51 with 21.6%, 52 of 11.6%, and 61 Of 13.0%. In a study by Tarritani *et al.*, there was high prevalence in maxillary central incisors of 74.6% (Petti and Tarsitani, 1996).

In our study, females had a high incidence of 42.0% and mails had 58.0 people with no significant value. In a study by Alaa Gamaleldin Sulaiman Atal, the prevalence of 45% in boys and 55 % in girls (Sulie-man and Awooda, 2018).

In our study, the incidence of maxillary lateral incisors were 37.7% and left maxillary central incisors were 29.0%. In a study by Sulaiman, right maxillary central incisors were 35.1% and left maxillary central incisors were 19.8%. In our study, 51 had a high significance of 29.0% fracture. In a study by Swati Sharma, 75% of the maxillary central incisor is highly prone for fractures (Brüllmann *et al.*, 2011).

In our study, the incidence of fracture of age group 5 to 17 was 40.6% while in a study by Dan Bullman, it ranged from 6.7% to 37.9% fractures (Brandt, 1995; Brüllmann *et al.*, 2011).

The prevention of trauma and the need for the treatment following traumatic dental injuries are very important to avoid possible unfavourable consequences that may precipitate.

The fracture of the anterior tooth is taken lightly which leads to loss of the natural integrity of the tooth—limitation of the study, less population and confined to a single college in the city. Adding up on a few important information and sample size would yield better understanding.

CONCLUSION

This study reveals that males were highly prone to anterior tooth fracture when compared to females. Among the most fractured teeth, the right primary maxillary lateral incisor [52] was higher. Both the age groups of 2-4 and 5-7 years were highly prone to anterior fractures. This might be because of their interests in sports and other physical activities. Educating parents, teachers and students the importance of teeth, that the teeth are as important as the other parts of the body is paramount. This can be achieved by conducting seminars and other related programmes in school levels, to create awareness among the parents, teachers and students.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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