

Evaluation Of Traumatic Dental Injuries In Visually Impaired Children

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ABSTRACT:

Background: Visually impaired children suffer from many health problems which include orofacial trauma, dental caries, and periodontal disease. Out of these, orofacial trauma is the most common health hazards. The present study was conducted to assess traumatic dental injuries in children.

Materials & Methods: 64 visually impaired children age ranged 4-14 years of both genders were recruited. The cause of the injury and the type of TDI was classified, according to the system described by Ellis classification.

Results: The main cause of injury was fall was 24, cycling in 10, sports injury in 16 and accident in 14 children. Ellis class I fracture was found in 10, class II in 18, class III in 12, class IV in 8, class V in 4, class VI in 1, class VII in 2, class VIII in 5 and class IX in 4 children. The difference was significant ($P < 0.05$).

Conclusion: There was higher prevalence of traumatic dental injuries in visually impaired children.

Key words: Ellis fracture, Traumatic dental injuries, Visually impaired children

1. INTRODUCTION

The term disability is defined as any impairment that limits daily activity. Out of the various handicapped condition, blindness is most prevalent worldwide. According to the WHO (2014), 285 million people are visually impaired worldwide.¹ It is estimated that in India, 200,000 children had severe visual impairment, out of which only 15,000 are in schools for blind children. Corneal scarring and inadequate sanitation are the main causes of blindness. Visually impaired children suffer from many health problems which include orofacial trauma, dental caries, and periodontal disease. Out of these, orofacial trauma is the most common health hazards.² The prevalence of traumatic dental injury (TDI) of permanent anterior teeth is high worldwide ranging from 4.1% to 58.6%. Upper incisors are the most frequently affected teeth by trauma (90%). Incisors play an important role in esthetics, phonation, and

psychological impact which affect the behavior of a child on a daily basis. Falls, increased overjet, and inadequate lip coverage are one of the major risk factors for dental trauma. Out of these, falls are frequently reported due to collisions, sports, violence, and traffic accidents.³ Dental injuries may occur throughout life, but traumatic dental injuries (TDI) are a very significant problem among children. The main etiology being accidents such as falls, fights, and during sports.⁴ They are associated with biological, socioeconomic, psychological, and behavioral factors. The predisposing dental risk factors include increased incisal overjet, open bite, protrusion, and lip incompetence.⁵ The present study was conducted to assess traumatic dental injuries in children.

2. MATERIALS & METHODS

The present study was conducted among 64 visually impaired children age ranged 4-14 years of both genders. The consent of the study was obtained from parents.

Data such as age, gender, cause of the injury, type of injury, and teeth injured was recorded. The type of TDI was classified, according to the system described by Ellis classification. Results of the study was tabulated and subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

3. RESULTS

Table I Distribution of patients

Total- 64		
Gender	Boys	Girls
Number	34	30

Table I shows that out of 64 children, boys were 34 and girls were 30.

Table II Cause of injury

Cause	Number	P value
Fall	24	0.05
Cycling	10	
Sports injury	16	
Accident	14	

Table II, graph I shows that main cause of injury was fall was 24, cycling in 10, sports injury in 16 and accident in 14 children. The difference was significant ($P < 0.05$).

Graph I Cause of injury

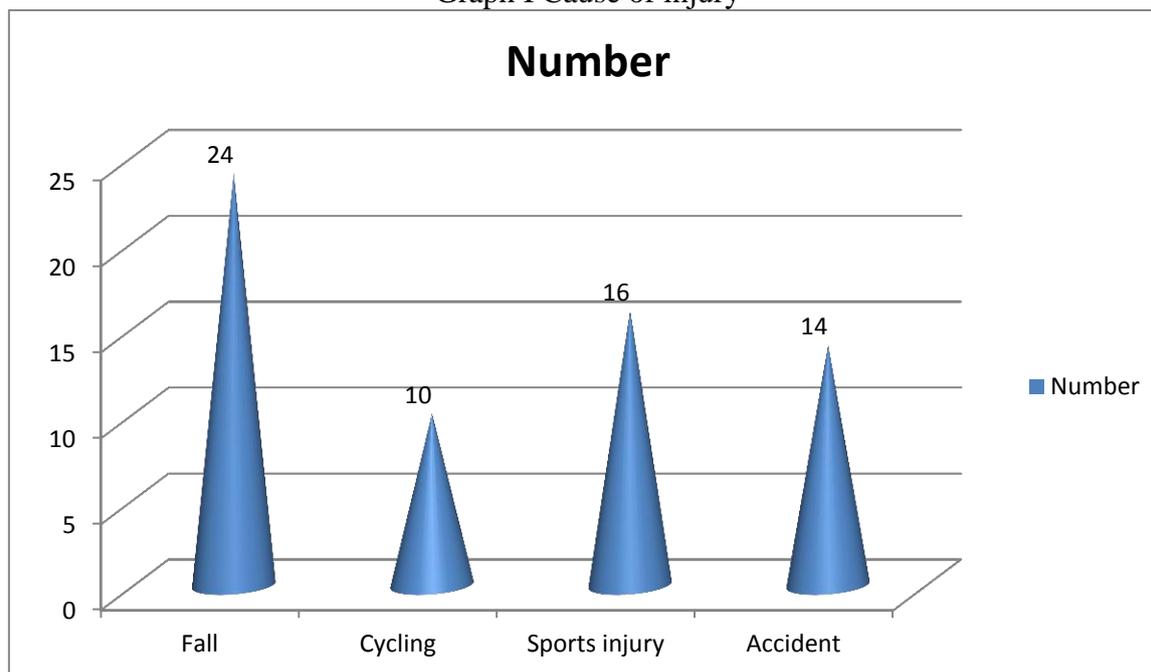


Table III Pattern of fracture

Ellis fracture	Number	P value
Class I	10	0.01
Class II	18	
Class III	12	
Class IV	8	
Class V	4	
Class VI	1	
Class VII	2	
Class VIII	5	
Class IX	4	

Table III, graph II shows that Ellis class I fracture was found in 10, class II in 18, class III in 12, class IV in 8, class V in 4, class VI in 1, class VII in 2, class VIII in 5 and class IX in 4 children. The difference was significant ($P < 0.05$).

4. DISCUSSION

Special health care needs” children also known as “disabled child.” According to WHO blindness is defined as “visual acuity of $<3/60$ or corresponding visual field loss in the better eye with the best possible correction.”⁶ Dental trauma is a serious problem in visually impaired child. Despite its high prevalence, it is a neglected oral condition. Traumatic dental injuries (TDIs) are more prevalent in visually impaired children compared to normal children.⁷ The prevalence of TDI among visually impaired children ranges from 27.4 to 36.4%. Besides lack of acquisition of movement skills, blind children tend to move and play like healthy children during the 1st year of life. However, as compared to sighted children visually impaired child are more prone to an accident which leads to dental trauma. It is a dental emergency situation in young patients and requires immediate assessment and management because many permanent teeth continue their development in those ages.⁸ The

improvement of TDI in permanent teeth illustrates important aspects that must be carefully planned, requiring several follow-up appointments, mainly due to the possible appearance sequels in the developing permanent dentition. The importance of assessing the prevalence of traumatized teeth by the survey was pointed out by Andreasen and Andreasen in 1994. Epidemiological data provide a basis for evaluating the concepts of effective treatment, resource allocation, and planning within any health environment.⁹ The present study was conducted to assess traumatic dental injuries in children.

We found that out of 64 children, boys were 34 and girls were 30. The main cause of injury was fall was 24, cycling in 10, sports injury in 16 and accident in 14 children. Munot et al¹⁰ among 400 children from various special schools of visually impaired children was selected. The results showed that out of 400 children, 39% suffered from TDIs. Permanent maxillary central incisors were most commonly injured teeth with injuries involving enamel (53%) being most frequently observed. Increased overjet and inadequate lip coverage were significantly associated with the occurrence of trauma.

We found that Ellis class I fracture was found in 10, class II in 18, class III in 12, class IV in 8, class V in 4, class VI in 1, class VII in 2, class VIII in 5 and class IX in 4 children. Reddy et al¹¹ determined the prevalence of TDI among 324 patients aged between 3 and 18 years. The highest frequency of TDI was in the 10–12-year-old participants and lowest frequency was in 3–6-year-old children. The etiology of TDI was analyzed; highest were caused by falls, followed by sports activities and then striking objectives and then followed by accidents and cycling. The most common type of injury was uncomplicated crown fracture (without pulp exposure) followed by avulsion and complicated crown fracture (with pulp exposure).

Visual incompatibility is one of the most important risk factors contributing higher prevalence of TDIs. Thus, special attention is needed in visually impaired children by the caregivers. It is also important to establish preventive measures for avoiding future injuries. A great improvement is needed in the education of caregiver and parents. Health promotion strategies should aim at providing safer environment as well as awareness toward the health hazards.¹² Appropriate orthodontic treatment is needed in case of increased overjet which is one of the major risk factors. Educational programs focusing on the prevention as well as conservation of the injured tooth should be conducted at community level.

5. CONCLUSION

Authors found that there was higher prevalence of traumatic dental injuries in visually impaired children.

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