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Assessment of knowledge of parents towards paediatric dental traumatic injuries

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Abstract
Introduction: A high percentage of children with dental trauma present late for treatment, possibly because of lack of awareness and knowledge among related adults, resulting in unfavourable long-term prognosis. Forty-one percent of dental injuries occur at home, so parents play an important role in appropriate decision making. The aim of the present study is an evaluation of parental knowledge of and attitude towards dental traumatic injuries in children.
Materials & Methods: Approximately 1000 parents accompanying children seeking dental treatment at the Department of Paediatric Dentistry. The present study was a descriptive, questionnaire study. The questionnaire was composed of different objective type questions for the assessment of parental knowledge of and attitude towards emergency management of paediatric dental traumatic injuries.
Results: Parents who belongs to higher age groups significantly ($p \leq 0.05$) given answer that they should Visit a Dentist instead of other places. Parents who had better education think that they will put the tooth back into socket in compare to who are unemployed and had primary education, and this association was found to be highly statistically significant. ($p \leq 0.05$). Majority of the parents who belongs to lower socioeconomic status significantly believed that tooth cannot be save once come out of the socket.
Discussion & Results: The role of education in improving parents' knowledge of both first aid and dental first aid has been previously documented. The fact that education improved the overall ability of the parent to deal with dental trauma was a significant observation in our study. This has implications for public health professions across the region. There is a need to improve education of parents towards the management of dental trauma.

Keywords: Trauma, knowledge, attitude, paediatric dental, Ahmedabad

Introduction
Traumatic dental injuries (TDIs) are frequent in children's and adolescent's affecting teeth, their supporting structures, and adjacent soft tissues. Dental trauma may cause both functional and esthetic problems with possible impact on the patient's quality of life [1]. Primary and permanent anterior teeth are not only important for esthetics but also are essential for phonetics, mastication, integrity of supporting tissues, as well as psychological and mental wellbeing of children. The greatest incidence of trauma to the primary teeth occurs at 2-3 years of age, when motor coordination is developing. Most dental injuries occur to permanent teeth with incomplete root development in children in mixed dentition [2, 3]. Due to their immature motor coordination, these young children are predisposed to fall and hence are at a risk of sustaining TDIs. When teeth and their supporting structures are subjected to impact trauma, the resultant injury manifests either as a separation or a crushing injury or a combination of both [4]. Separation injuries are exemplified by displacement of teeth during which there is a cleavage of tissues, such as the periodontal ligament (PDL). This occurs during avulsion and extrusive luxations. TDI are usually a combination of trauma to the perioral soft tissues, teeth, and their supporting tissues [5]. Dental injuries can be classified into: enamel fracture, crown fracture without pulp involvement, crown fracture with pulp involvement, root fracture, crown-root fracture, luxation, avulsion, and fracture of the alveolar process [6].
Epidemiological studies indicate that dental trauma is a significant problem in young people, and that in the near future, the incidence of trauma will exceed that of dental caries and periodontal disease in young population. According to Andreasen and Andreasen, oral injuries are the fourth most common bodily injuries among the 7-30 year age group [7]. Traumatic injuries can thus have a significant effect on a child's quality of life.

High percentage of children with dental trauma present late for treatment, possibly because of lack of awareness and knowledge among related adults, resulting in unfavorable long-term prognosis. Mother plays a significant role in a child's life, as they are the primary source of information to impart their knowledge. Forty-one percent of dental injuries occur at home, so mothers play an important role for appropriate decision making [8, 9].

The main cause of traumatic dental injuries among school-age children are accidental falls in the school environment. Epidemiological studies have shown that approximately 50% of schoolchildren have sustained traumatic dental injuries prior to graduation [10]. This places a high level of responsibility on emergency-care providers in schools in terms of proper management of traumatic dental injuries. Through immediate appropriate action, classroom teachers, physical education teachers, school nurses, secretaries and other school personnel can help to improve the prognosis of traumatic dental injuries [11].

Considering the above, the present descriptive questionnaire study conducted to assess the knowledge, attitude and perception of mothers and school teachers towards emergency management of traumatic dental injuries in children of Ahmedabad city.

Materials & Methods

Approximately 1000 parents accompanying children seeking dental treatment at the Department of Pediatric Dentistry, from October 2015 to September 2016 were included in the present study.

The present study is a descriptive, questionnaire study.

Inclusion criteria: Parents accompanying children seeking different types of dental treatment, Parents, who are willing to participate in the questionnaire study.

Questionnaires in English and Hindi, based upon Raphael and Gregory's study was designed for parents accompanying children, seeking different types of dental treatment at the Department of Paediatric Dentistry. A questionnaire was designed and distributed to all mothers/fathers of children between 7 – 11years of age.

The questionnaire was composed of different objective type questions for the assessment of parental knowledge of and attitude towards emergency management of pediatric dental traumatic injuries. The nature and purpose of the study was explained to the parents and its voluntary nature emphasized along with assurance of strict confidentiality. The Parents willing to participate in the study was interviewed and the questionnaire filled. Results obtained from answers provided by parents were expressed in frequency distribution. Chi-square test was used to test the influence of different variables such as age, sex, level of education etc on knowledge and attitude of the participants.

Results

Table 1 describes Demographic date of the participants. Among al mean age of the child was 7.73±2.85 and mean age of the parents were 32.23± 3.95. Table 2 describes Distribution of the patients according to place. Among all the participants rural population had higher percentage of population compared to urban and semi urban.

Table 3 describes relationship of age of the parents, place, education, socioeconomic status and occupation with knowledge and attitude of the participants. When asked about the number of previous dental trauma cases encountered? Significant association was found for persons who are living more in rural areas and persons who are government servants. ($p \leq 0.05$). When asked about Have you received any information regarding emergency management of dental trauma in children previously? It was observed that parents of children who had higher age groups had significantly more information regarding emergency management and who had education primary and secondary had more information compared to other groups. (Have you received any information regarding emergency management of dental trauma in children previously?($p \leq 0.05$)

When question Do you think milk tooth is as important as the permanent? Was asked than parents who belong to higher age groups, who had better education up to graduate level, who had high socioeconomic status and who had occupation like government servant or private firm had significantly understood that milk tooth is as important as the permanent. ($p \leq 0.05$). During the previous dental truma encountered parents who had occupation like private firm had significantly ($p \leq 0.05$) given answer yes compared to unemployed and other groups, Regarding the question Do you think that emergency/first aid measures to be taken when there is dental trauma in children? parents who are living in urban areas and had better education thinks significantly that emergency/first aid measures to be taken when there is dental trauma in children. Parents who belongs to higher age groups significantly ($p \leq 0.05$) given answer that they should visit a Dentist instead of other places. Parents who had better education think that they will put the tooth back into socket in compare to who are unemployed and had primary education, and this association was found to be highly statistically significant. (p $p \leq 0.05$). Majority of the parents who belongs to lower socioeconomic status significantly believed that tooth cannot be save once come out of the socket. Most of the parents are willing to required receive complete knowledge regarding emergency management of dental traumatic injuries in children in future regarding age, education, SES, Occupation and Place and it was found to statistically significant. When asked about A 9 – year old girl fell and broke her upper front tooth. The broken tooth is likely to be? Parents who are unemployed and had no education gave the answer put the tooth in a solution and send the girl to the dentist and this answer was statistically significant. When asked about A 10 year old child fell down while playing and lost consciousness. The immediate emergency action, parents who belongs to urban area, who had higher socio economic stats and had occupation like private firm and government servant gave significant answer of send the child to hospital immediately compared to rural population and who are unemployed. ($p \leq 0.05$)

Table 1: Demographic date of the participants

Variable	Mean	Std. Deviation
Age of the child	7.73	2.85
Age of the parents	32.23	3.95

Table 2: Distribution of the patients according to place

Place	Number	Percentage
Urban	200	20
Semi urban	240	24
Rural	560	56
Total	1000	100

Table 3: Relationship of age of the parents, place, education, socioeconomic status and occupation with knowledge and attitude of the participants.

Knowledge and attitude questions	Age of the parents (p value)	Place (p value)	Education (p value)	Socioeconomic status (p value)	Occupation (p value)
The number of previous dental trauma cases encountered?	0.09	0.04*	0.05	0.2	0.01*
Have you received any information regarding emergency management of dental trauma in children previously?	0.001*	0.09	0.003*	0.05*	0.54
If the answer for the question no.10 is 'yes', then the source of information	0.14	0.05*	0.002*	0.47	0.05*
Do you think milk tooth is as important as the permanent?	0.05*	0.23	0.01*	0.04*	0.02*
Have you experienced dental trauma previously?	0.87	1.23	0.6	0.07	0.03*
Did your child ever experience dental trauma?	1.0	0.001*	0.09	0.002*	1.0
Do you think that emergency/first aid measures to be taken when there is dental trauma in children?	0.08	0.03*	0.04*	1.0	0.005*
If your child experiences a tooth injuries while playing what will you do?	0.04*	0.07	0.02*	0.001*	0.87
When do you think a professional treatment is required for a child, who experienced dental trauma?	1.0	0.04*	0.07	0.25	0.001*
What will you do if the permanent tooth is in child's socket, however out of place?	0.05*	0.0001*	0.009*	0.07	0.84
Do you think that the avulsed tooth (tooth out of mouth after trauma) can be saved?	0.98	0.09	0.04*	0.001*	0.05*
What will you do with the avulsed tooth fallen to the ground, before being taken to the dentist?	0.78	0.15	1.0	0.05*	0.78
How will you hold an avulsed tooth before being taken to the dentist?	0.4	0.05*	0.12	1.0	0.45
How will you carry the avulsed tooth to the dentist?	0.78	1.0	0.05*	0.04*	0.08
What do you think about the time duration for replantation of an avulsed permanent tooth after dental trauma?	0.01*	0.04*	1.0	0.14	0.54
Do you think you require further and complete knowledge regarding emergency management of dental traumatic injuries in children?	0.05*	0.001*	0.002*	0.05*	0.004*
Are you willing to receive complete knowledge regarding emergency management of dental traumatic injuries in children in future?	0.04*	0.001*	0.005*	0.04*	0.001*
A 9 – year old girl fell and broke her upper front tooth. The broken tooth is likely to be?	0.87	0.04*	0.45	0.65	0.001*
Your immediately emergency management of the case is?	0.78	0.54	0.70	0.05*	0.65
A 12 year old girl was hit on the face and her upper front tooth fell out of her mouth. The immediate emergency action you would take is?	1.0	0.06	0.04*	0.61	0.47
A 10 year old child fell down while playing and lost consciousness. The immediate emergency action you would take is	0.001*	0.02*	0.75	0.03*	0.01*

Discussion

Dental trauma is a serious health problem that is steadily increasing in recent decades. Among the factors that pose the greatest risk of dental trauma is that of sport injury [12]. Playing sports is a way of promoting health as well as a powerful instrument for the promotion of social skills. However, when an athlete is injured, the consequences include emotional stress and frustration. Anyone who participate in sports activities have a risk for dental injuries. Dental trauma is an emergency and requires a rapid response; any delay reduces the chance of successful treatment. Handball and basketball are among contact sports with high level of contact; therefore, protection via a mouth guard and good education for emergency treatment should be provided to coaches, parents and athletes [13, 14].

When the parents were asked if they had any information regarding emergency management of dental trauma, to which more than 50% that is 57% had no knowledge in this aspect. Few of them who had the knowledge, were provided by the dental professional during their visit to the previous dental trauma experience or any other dental problems, few had obtained knowledge from the general physician of their family.

One third of the parents did say that they had experience dental trauma in the past. 40% of the total participants agreed that first aid measures are necessary during the dental trauma. Whereas 36% denied that there was no need of first aid treatment, rest of them were not aware of any knowledge. To the question that what will they do when their child will experience tooth injury, 38% percent told that they will take them to dentist, 32% to their family physician, 18% will provide self medication and rest 12% agreed that they won't provide any treatment.

Preference of the avulsed tooth was to be saved in 30% of the parents whereas 36% did not thought of saving avulsed tooth, rest had no idea of it. So majority of the parents were lack of knowledge in relation to the saving the avulsed tooth, this was in relation to the previously done study conducted by Hegde

et al. [8] (64.8%) and was much higher than the study conducted by Oliveira *et al*. [9] (10%). This may be due to the fact that they consider avulsed tooth as an infected material which needs to be thrown out.

In the present study, 33% of parents would leave the avulsed tooth inside the mouth and it was similar to the study conducted by Oliveira *et al*. [9] (32%), which indicates the lack of awareness among mothers.

In the present study, only 30% of the mothers were aware of the immediate reimplantation of an avulsed tooth, similar to a study reported by Al-Jundi [10], and to the reports by Oliveira *et al*. [9] (39%), Raphael and Gregory [11] (66.6%), and Hegde *et al*. [8] (66.5%) showed that some of the mothers would reimplant the avulsed tooth, which clearly indicates the insufficiency in the knowledge about the immediate management of avulsed tooth. Therefore, the mothers need to be educated more in this aspect.

Cleaning of avulsed permanent teeth must be performed with saline solution just when visible dirt is observed [12]. Unfortunately, about 29% of the mothers in the present study answered that they will clean it with tap water and 18% will not clean the avulsed tooth before going to the dentist and it was found to be slightly less (31%) when compared with the study by Oliveira *et al*. 22% said they would prefer to clean with tissue paper and 10% would clean them with clothes or cotton.

When the immediate reimplantation is not performed, storage mediums that can aid in pulpal and periodontal healing are milk, sterile saline solution, saliva, etc. In the present study, most of the parents responded that they would keep the tooth into saliva or cold milk, which was found to be much less when compared to the studies reported by Oliveira *et al*., (45%) and Hegde *et al*. (35.8%).

Although many of the parents gave correct response to the need of the dental trauma management, it was good and positive sign that 42% believed that their knowledge was not sufficient and they still require complete further knowledge regarding emergency management of dental trauma injuries in children. More than 50% of the parents were willing to receive more knowledge regarding emergency management of dental trauma injury in children in future.

Conclusion

The fact that education improved the overall ability of the parent to deal with dental trauma was a significant observation in our study. This has implications for public health professions across the region. There is a need to improve education of parents towards the management of dental trauma. Directing these efforts towards the parents could help allow them to make first aid decisions that could greatly reduce the morbidity associated with traumatic dental injuries. Additionally, educational campaigns and preventive programs on dental trauma must be organized to improve caregivers' knowledge on emergency management of dental avulsion.

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