

# AWARENESS OF THE EMERGENCY MANAGEMENT OF DENTAL TRAUMA IN CHILDREN AMONG PARENTS AND SCHOOL TEACHERS

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## **Abstract:**

### **Introduction:**

Avulsions are very common in children. Children suffer many accidents due to their usual activities like Running, playing, skating, or riding bicycle which can occur both in home as well as in the school. Parents and teachers play a significant role in such emergency situations. Thus, aim of the current study is to evaluate the knowledge on emergency management of dental trauma in children among parents and school teachers.

### **Materials and methods:**

A multi stage cluster sampling was employed dividing the study population into two groups. One group consists of one hundred school teachers from six elementary school in Chennai, Tamilnadu and in second group 100 parents of school going children were evaluated.

This was the modified questionnaire that was used in the study done by Pani SC, Alolaiwi LA, AlRukban LA, et al. The questionnaire was divided to three parts. Part 1 consisted of questions about personal and professional profiles of the parents and teachers. Part 2 consisted of questions about their knowledge to dental injuries. Part 3 was concerned with their medical knowledge assessment regarding dental trauma.

### **Results:**

Teachers had a slightly higher knowledge about the emergency management of dental traumatic injury when compared to parents. The difference in the mean knowledge score were found to be statistically significant with p value <0.05. The overall awareness percentage of the management of traumatic dental injuries was low among both parents and teachers.

### **Conclusion:**

The knowledge of traumatic dental injuries among parents was very low, when compared to teachers. Education was a significant factor in the knowledge for teachers but not parents.

Dental injury prevention and management is very important. Hence educational programs to improve the knowledge and awareness among the parents and teachers must be implemented.

**Keywords:** Traumatic dental injuries, Dental trauma, Parental knowledge, Emergency management, Teachers knowledge.

### **Introduction:**

Dental traumatic injuries occur due to any accidental event that involves the hard and the support structures of a tooth. [1] These injuries are the most common causes of oral morbidity in children. The pain and suffering caused by an injury have been a major

cause of concern for both the parents and school teachers. Emergency care following any dental injury is extremely essential, since longer delay for the treatment, the greater is the risk of de-vitalization of the tooth or bone resorption. [2] Thus prognosis of teeth relies highly on lay people such as the children parents and their school teachers who are present at the site of accident. [3] The literature shows that the knowledge of the correct procedures to follow in case of a dental trauma is not adequate both among parents and teachers of primary and secondary school. [4-7] To cope with the lack of information and the prevalence of traumatic events, in November 2012 the Ministry of Health published the “National guidelines for the prevention and clinical management of dental trauma in individuals during their developmental age”. [8-10]

In few studies it is shown that accidents in the school environment in the form of falls are most common and are the main cause for traumatic dental injuries. [11-14] In another study, it is reported that boys are more likely to suffer from traumatic dental injuries than girls, this may be because boys are likely to spend more time outdoors playing more frequent than girls. [15] In Wales, it has been recommended that the presence of individuals trained in dental first aid would be an effective way of reducing both the incidence and effects of dental trauma. [16]

Hence a survey was conducted among parents and school teachers, examining their awareness of the immediate management of dental trauma. The results obtained would be helpful for planning dental trauma education programmes which could provide baseline information.

Given these factors the aim of the current study is to evaluate the knowledge of first aid measures following any traumatic dental injuries and to assess their knowledge, attitudes and perceptions towards treatment.

### Materials and methods:

**Study type:** Cross sectional study.

**Study area:** Chennai.

**Study population:** Parents and school teachers residing in Chennai city.

### Inclusion criteria:

- Teachers from primary, middle and high schools in Chennai city are included.
- Parents of the school going children are included.
- Parents and teachers who agreed to participate in the study.

### Exclusion criteria:

- People who were not residents of Chennai are not included in the study.
- Parents and teachers who were not willing for the study are excluded.

**Scheduling:** Data collection was scheduled in the month of December, 2017.

**Sample size:** The sample size was calculated as 200. Which includes one hundred parents and one hundred school teachers.

**Survey instrument:** A pre-tested, structured questionnaire consisting of 20 questions was adapted from questionnaires used previously in studies done by Pani SC, Alolaiwi LA, AlRukban LA, et al.

The first section collected demographic information of the participants such as age, gender, marital status and socio demographic details. The second part of the questionnaire is to analyse the awareness of emergency management of dental trauma among parents and teachers. Advised the first aid training for dental trauma was used as an indicator for its management. The first aid training for dental trauma was assessed by the question: “Did you have first aid training? If yes, did it cover ‘Management of dental trauma’?” Prevention of dental injuries was assessed by the question: “Have you heard about the mouth guard used to prevent dental injuries? Do you recommend using it?”. Similarly, versions questions were enquired on Avulsed tooth, Medium for transport, and also time for seeking professional help.

**Statistical analysis:** Data was entered in Microsoft Excel spreadsheet and descriptive data were analysed using SPSS software (Version 20.0). Descriptive statistics were used. Independent sample test was done, for all statistical tests, a p- value of < 0.05 is to be considered statistically significant.

### Results:

Teachers had a slightly higher knowledge about the emergency management of dental traumatic injury when compared to parents. The difference in the mean knowledge score were found to be statistically significant with p value <0.05. The overall awareness percentage of the management of traumatic dental injuries was low among both parents and teachers.

	Parent	Teacher
	Count	Count
Male	61	23
Female	39	77
Employed	91	100
Unemployed	9	0
Family income		
7000-15000INR	4	65
15000-25000INR	21	21
>25000INR	75	14

**Table.1. Demographic characteristics of the population.**

Group Statistics					
	Category	N	Mean	Std. Deviation	Std. Error Mean
Knowledge scores	Parent	100	12.7216	1.39748	.14189
	Teacher	100	11.7353	2.77873	.27513

Table.2. Knowledge scores of the parents and teachers.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Knowledge score	Equal variances assumed	80.700	.000	3.139	197	.002	.98636	.31427	.36660	1.60611
	Equal variances not assumed			3.186	150.658	.002	.98636	.30957	.37470	1.59801

Table.3. Independent Samples Test on knowledge scores of the parents and teachers.

Questions:		Options:	Parents		Teachers		Percentage	
			n	%	n	%	N	%
1)	Had First-aid training?	Yes	6	0.6	21	2.1	100	13.5
		No	94	9.4	79	7.9	100	86.5
2)	Do you know First-aid measure to be taken?	Yes	2	0.2	33	3.3	100	18
		No	98	9.8	67	6.7	100	82
3)	Have you heard about the mouth guard?	Yes	18	1.8	42	4.2	100	30
		No	82	8.2	48	4.8	100	70
4)	Do you recommend your child to wear mouth guard?	Yes	18	1.8	42	4.2	100	30.5
		No	82	8.2	58	5.8	100	69.5
5)	Have you experienced an accident were tooth got knocked out?	Yes	6	0.6	12	1.2	100	10.5
		No	94	9.4	88	8.8	100	89.5
6)	Do you know the avulsed tooth can be saved?	Yes	8	0.8	26	2.6	100	17
		No	92	9.2	74	7.4	100	83
7)	If Child has tooth injury while playing, what will you do?	Visit a Dentist	74	7.4	63	6.3	100	68
		Visit a Physician	26	2.6	17	1.7	100	22.5
		Manage with Emergency kit	0	0	20	2.0	100	9.5
8)	The tooth is completely out of mouth, what will you do?	Replace it back or carry the tooth immediately to dentist	18	1.8	67	6.7	100	42.5
		Arrest the bleeding and discard the avulsed tooth	35	3.5	21	2.1	100	29
		Not sure what to do	47	4.7	12	1.2	100	28.5
9)	How will you carry a tooth to the dentist?	Cold milk	15	1.5	11	1.1	100	13.5
		Water	28	2.8	45	4.5	100	36.5

	Handkerchief/tissue	42	4.2	10	1.0	100	25.5
	Saline	10	1.0	20	2.0	100	15.0
	Tender coconut	2	0.2	8	0.8	100	5.0
	Contact lens solution	3	0.3	4	0.4	100	4.5
10) How you clean the tooth if it had fallen onto the ground and its covered by mud?	Scrub the tooth gently with a toothbrush	5	5.0	10	1.0	100	7.5
	Rinse the tooth under tap water	85	8.5	71	7.1	100	78
	Put the tooth straight back into the socket without any pre-treatment	3	0.3	18	1.8	100	10.5
	Rinse the tooth with detergent or soap	7	0.7	1	0.1	100	4.0
11) How urgent do you think it is to seek professional help if a permanent tooth has been knocked out?	Within 30 mins	19	1.9	20	2.0	100	25.0
	Within few hours	69	6.9	62	6.2	100	56.5
	Before next day	10	1.0	13	1.3	100	15.0
	Within 2 days	2	0.2	5	0.5	100	3.5
12) How would you hold the tooth?	Hold the crown	54	5.4	62	6.2	100	58.0
	Hold the root	69	6.9	17	1.7	100	14.0
	Hold in the centre	25	2.5	19	1.9	100	22.0
	Hold the tip of crown and the root	11	1.1	2	0.2	100	6.0

Table.4. Questions and answers given by the parents and teachers.

**Discussion:**

Our data confirm that the parents lack awareness, knowledge and skills in managing a dental trauma. This is important because most of the injuries occurs at school or at home. Although the use of mouth guards is not an ordinary habit of families, it is important to highlight that the majority of parents would turn to the dentist in case of trauma.

As in Q.01, when enquired about their sessions on first-aid training & Management of dental trauma (21%) of teachers responded with Yes, and (79%) responded No, among parents only (6%) said Yes while rest (94%) answered No. As in Q.02, when enquired about the first-aid measure to be taken when there is dental trauma, (33%) teachers said yes, while rest (66%) answered No, among parents (2%) said Yes, while rest (98%) said, No. As in Q.03, when enquired about knowledge about mouth guard used to prevent dental injuries, (42%) of teachers said Yes, while rest (48%) said No, among parents (12%) said Yes, remaining (82%) said No. As in Q.04, when enquired about the, the recommendation for their child to wear mouth guard during sports, (42%) of teachers said Yes, and (58%) said No, among parents just (18%) answered Yes, and (82%) answered No. As in Q.05, when questioned about whether they experienced any accident, where tooth got knocked out, (12%) of teachers answered Yes and (88%) said No, among parents (6%) said yes, while rest (94%) answered No. As in Q.06, when asked about the avulsed tooth that can be saved, (26%) of teachers answered Yes, (74%) of them said No, among parents (8%) said Yes, rest (92%) answered No. As in Q.07, when enquired about whether if a child has tooth injury, what they will do, (63%) of teachers answered visit a Dentist, (17%) answered visit a physician, while (20%) said they will manage with emergency kit, among parents (74%) said visit a dentist, and rest (26%) answered visit a physician. As in Q.08, when enquired about what will they do if the tooth is completely out of mouth at the time of trauma, (67%) teachers answered as replace it back or carry the tooth immediately to dentist, (21%) said to arrest the bleeding and discard the avulsed tooth, while rest (12%) were not sure what to do, among parents (18%) answered as replace it back or carry the tooth immediately to dentist, (35%) said to arrest the bleeding and discard the avulsed tooth, while rest (47%) were not sure what to do. As in Q.09, when enquired about how does they carry a tooth to dentist, (10%) teachers said to carry in Handkerchief/Tissue paper, (11%) said to carry in cold milk, (45%) answered to carry in water, (20%) said to carry in saline, (8%) said to carry in Tender coconut, while rest (4%) said to carry in contact lens solution, among parents (42%) said to carry in Handkerchief/Tissue paper, (15%) said to carry in cold milk, (28%) answered to carry in water, (10%) said to carry in saline, (2%) said to carry in Tender coconut, while rest (3%) said to carry in contact lens solution. As in Q.10, when enquired about was, if they decide to replace a tooth back into its socket but it had fallen onto the ground and was covered in dirt, what will they do? (10%) teachers said to scrub the tooth gently with a toothbrush, (71%) said to rinse the tooth under tap water, (18%) said to put the tooth straight back into the socket without any pre-treatment, while rest (1%) said to rinse the tooth with detergent or soap, among parents (5%) said to scrub the tooth gently with a toothbrush, (85%) said to rinse the tooth under tap water, (3%) said to put the tooth straight back into the socket without any pre-treatment, while rest (7%) said to rinse the tooth with detergent or soap. As in Q.11, when enquired about time to seek professional help if a permanent tooth has been knocked out, (20%) teachers answered with in 30 mins, (62%) said within few hours, while (13%) said before next day, rest (5%) answered said it to seek help within 2 days, among parents (19%) answered with in 30 mins, (69%) said within few hours, while (10%) said before next day, rest (2%) said to seek help within 2 days. As in Q.12 following a dental avulsion, how would they hold the tooth? (62%) teachers said to hold on the crown, (17%) said to hold the root, (19%) said to hold on the centre, while rest (2%) said hold the tip of crown and the root, among parents (54%) said



to hold on the crown, (69%) said to hold the root, (25%) said to hold on the centre, while rest (11%) said hold the tip of crown and the root. (Table.15.)

This data is comforting if we consider that the success of the recovery of the tooth is guaranteed at 90% when it occurs at least within hours which is similar in another study. [17,18] Ozer et al. [19] believe that such behaviour is due to the perception of the professionalism of the dentist and his appropriate equipment. In a study it was found that tap water is not compatible with PDL cells, hence is not a good storage medium at any time. As a result, it is not recommended as a possible storage medium. [20]

On the contrary, regarding to the preservation of the traumatized tooth our results are not satisfactory because a considerable number of the interviewed would keep it in a handkerchief. Management of traumatized teeth with conditions such as resorption and immature apex becomes tricky. Factors such as size of pulp exposure and duration of exposure are important for deciding the treatment plan. [21] In a study it is said that the first aid training given to teachers does not include management of an avulsed tooth. [22] Similarly, another study showed that knowledge level was low among parents. [23] The role of the parent and teachers in any dental injury is a critical one. A favourable prognosis and greater chance of treatment success following dental trauma are directly related to the time elapsed between injury and dental care. Parents and teachers are often the first responders and the information they give to dentist can greatly alter the prognosis of the tooth. [24] Injuries most often occur in educational institutions which playing sports and it is very important for teachers to have as good, if not a better knowledge of the management of TDI. Our results showed that teachers had better knowledge than the parents. The role of education in improving parent's knowledge has been previously documented. [25] The fact that education improved the overall ability of the teacher 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 as well as teachers could help allow them to make first aid decisions that could greatly reduce the morbidity associated with dental injuries.

### Conclusion:

There is a lack of dental awareness on the management of traumatic dental injuries among both parents and teachers. However, there is a greater lack of awareness among parents than teachers. Efforts need to be made to improve the education of teachers and to promote the overall education of parents in dental first aid across the city. The role of the dentist, in collaboration with the paediatrics, school teachers and the parents, becomes essential for the welfare of our children.

### Conflict of interest:

Nil

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