

Knowledge, Awareness and Attitude towards Emergency Management of Dental Trauma among the Parents of Kolkata-An Institutional Study

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ABSTRACT

Introduction: Traumatic dental injuries are one of the commonly encountered dental emergencies. Missing anterior tooth in children due to any injury can be a source of considerable physical and psychological discomfort for the child. The prognosis of some dental injuries depends to a great extent on parents' knowledge of correct and prompt emergency measures.

Aim: The purpose of this cross-sectional study was to assess the knowledge, attitude and awareness level of parents regarding the emergency management of dental trauma and to find out the relation of the responses to social variables.

Materials and Methods: A total of 2000 parents were surveyed over a period of three months using a pretested close ended questionnaire prepared in English, Hindi as well as in the

regional language which was divided into three parts: Part 1 contained questions on personal information, Part 2 on an imaginary case of trauma to assess their knowledge regarding trauma management and Part 3 related to their attitude towards dental trauma management education. The data was statistically analysed using descriptive and chi-square statistics.

Results: The overall knowledge of parents regarding emergency management of trauma was not satisfactory. Although most of the people were in favour of taking professional consultation for emergency management of trauma but most of them were unaware of the steps that need to be taken on their part so as to minimize complications and improve prognosis.

Conclusion: Educational campaigns are the need of the day to increase the knowledge of parents regarding emergency management of dental trauma.

Keywords: Broken tooth, Dental injury, Lost tooth, People, Treatment

INTRODUCTION

Injuries in children have become a global public health problem. In 2011, WHO projected that more than 6,30,000 children under the age of 15 were killed by an injury. Childhood injuries are associated with high morbidity: for every injured child who dies, there are several thousand others who live on with varying degrees of disability [1].

Dental traumatic injuries remain one of the important oral health problems of childhood. They range from minor enamel chipping to extensive maxillofacial damage involving the supporting structures and displacement or avulsion of teeth.

The frequency of tooth avulsion following traumatic injuries varies from 0.5% to 16% of traumatic injuries in the permanent dentition [2-5] and from 7% to 13% in the primary dentition [3].

The tooth most commonly involved in avulsion in both primary as well as in permanent dentition is the maxillary central incisor [6-9]. Avulsion injuries are three times more common in boys than girls because of their active participation in sports and games and occur most commonly at the age of 7-9 years when permanent incisors are erupting [6-9].

Loss of anterior teeth can lead to an extreme psychological trauma in children, along with functional and aesthetic debilitation. Correct emergency intervention can greatly help in improving the prognosis of a traumatized tooth, ultimately helping us in preserving the smile of a child.

Prognosis of an avulsed tooth is largely determined by the viability of the periodontal ligament left on the root prior to replantation. This in turn is determined by the extra-oral dry time and the storage media [7-9]. Epidemiological studies on dental trauma have shown

that most of the dental accidents in children occur in or around home (41%) [10], and therefore, the ultimate prognosis of an avulsed tooth occurring in a child may depend on knowledge of the correct emergency procedures by his/her parents.

The aim of this study was to assess the knowledge and attitude of parents towards the emergency management of dental trauma and to evaluate the effect of variables like age, sex, residence, educational qualifications, past experience of trauma on the responses. Before planning educational campaigns for parents, it is necessary to be aware of the knowledge level of parents. The objective was to enable the clinician to formulate a set of instructions which can be given to parents, so as to make them aware and increase their knowledge, which will help them to promptly and properly manage an emergency case of dental trauma.

MATERIALS AND METHODS

This cross-sectional study was carried out over 2000 parents in the Outpatient Department of Pedodontics and Preventive Dentistry, Dr. R Ahmed Dental College and Hospital, Kolkata, India over a period of three months. Sample size was determined on the basis of previous studies [11-13]. Prior to conducting this study; ethical approval was taken from the institutional ethical committee.

A pre tested close ended questionnaire taken from previous studies [11-13] and then modified which contained 17 questions was used in the study. The questionnaire consisted of three different parts: Part 1-questions pertaining to personal information, Part 2 - questions based on an imaginary case of dental trauma to evaluate the knowledge and awareness of parents and Part 3 - questions related to attitude towards dental trauma management and its education.

It was first prepared in English and then translated to Hindi as well as Bangla language using 'forward and backward blind translation' method. Two professional translators each fluent in English and having Hindi and Bangla as their native languages forward translated the questionnaire from English to Bangla and Hindi respectively. The services of two other professionals were used to back translate the Bangla and Hindi translated versions of questionnaire. The blinding process thus helped reduce bias in translation.

The first and second authors reviewed the back translated versions. Any mismatch between the original version and the back translated version was rectified with the help of translators. A pre test was conducted on a target Bangla and Hindi speaking population with a sample of 20 patients attending the out patient department, who were given the final back translated version (i.e., Bangla and Hindi) of the questionnaire. As they were filling up the questionnaire, a few questions were asked so that it could be confirmed if they understood the questions in the questionnaire. Any confusion or difficulty in comprehension so highlighted was rectified instantly and the final version (in all 3 languages English, Bangla and Hindi) was used for the study.

Kappa statistics were applied to determine the intra-examiner reliability and its value was found to be 0.81 which was deemed satisfactory.

Parents accompanying children to visit OPD, aged more than 18 years and who gave their consent to participate in the survey were included in the study. Parents of special children (Children with any physical, developmental, mental, sensory, behavioural, cognitive, or emotional impairment, medically compromised children, etc.) and those who did not give their consent were excluded.

Those 20 parents who completed the questionnaire on their first visit, were given an appointment after a week. All of them reported after one week and completed the same questionnaire. After the final version of the questionnaire was made in all three languages, the study was extended to include 2000 parents.

The nature and purpose of the study was explained to the parents in the preferred language. Its voluntary nature was emphasized and strict confidentiality was assured. Two pre-trained investigators were available throughout to make any required clarifications to the participants. Filled questionnaires were collected on the same day.

STATISTICAL ANALYSIS

Descriptive and inferential analysis was done for the data using SPSS version 20.0. The results were tabulated and expressed as both number and percentage. Chi-square test was employed to evaluate the effect of different variables such as age, level of education, residing area, gender and previous dental trauma experience on each question.

RESULTS

The demographic characteristics of the participating parents as shown in [Table/Fig-1] which indicate that 43.3% parents were from rural area, 51% were females and 65.6% belonged to >than 30 years of age group. A total of 71.9% of parents were educated below graduate level and 30.1% had a previous experience of trauma to self or others.

[Table/Fig-2] shows overall results.

Knowledge & Awareness: It was seen that majority of parents were not able to correctly identify the damaged front tooth in an eight-year-old child. Most of them considered it an emergency treatment and were willing to seek professional advice immediately. Majority of them were aware of methods to control bleeding which was quite encouraging.

VARIABLES		N	%
Age	<30 years	688	34.4
	>30 years	1312	65.6
Education	Below Graduate	1438	71.9
	Above Graduate	562	28.1
Area	Rural	866	43.3
	Urban	1134	56.7
Gender	Male	980	49.0
	Female	1020	51.0
Past History	Yes	602	30.1
	No	1398	69.9
Total		2000	100.0

[Table/Fig-1]: Descriptive data of the study population.

Question	Correct Responses (n)	n%	Incorrect Responses (n)	n%
Correct identification of tooth	728	36.4	1272	63.6
Wether dental trauma is an emergency treatment or not	1839	91.9	161	8.1
How to control bleeding	1268	63.4	732	36.6
1 st tetanus toxoid necessary	1470	73.5	530	26.5
Urgency to seek professional advice	1688	84.4	312	15.6
Professional advice in absence of pain	1692	84.6	308	15.4
1 st place to contact	1581	79.1	419	20.9
Look for lost tooth	1034	51.7	966	48.3
Attempt reimplantation on their own	428	21.4	1572	78.6
How to clean dirty tooth	813	40.7	1187	59.3
What to do if knocked out tooth was broken	707	35.35	1293	64.65
Correct-medium for storage of tooth till approaching a dentist	413	20.65	1587	79.35
Follow up by dentist necessary	1880	94	120	6
Question	Yes (n)	n%	No (n)	n%
Ever received advice on what to do or not to do in case of dental trauma	564	28.2	1436	71.8
Importance of educational program	1774	88.7	226	11.3
Satisfied with knowledge of trauma	1025	51.3	975	48.7
Wether you would like to attend educational program on trauma management	1694	84.7	306	15.3

[Table/Fig-2]: Overall results of whole sample.

Another finding was that most of the parents were willing to seek professional advice even if the child doesn't have any pain after injury and for them the first place to take the child was to dental hospital after dental trauma to seek professional advice.

It was observed that half the population would search for the lost tooth after control of bleeding but most of them would not go for re-implantation of tooth by their own. Majority of the respondents were unaware of the proper method of cleaning tooth before placing it back into its socket if the tooth was dirty.

Most of the people did not know what to do if the knocked out tooth was broken similarly only a few people were aware of the correct medium to store the tooth before reaching the dentist. Most of the parents considered follow-up of the child by dentist necessary.

Attitude: Most of the parents had not ever received any advice on do's and don'ts in case of dental trauma and they were of the opinion that it is necessary to have an educational program on management of dental trauma.

	Male		Female		Chi-square value	p-value
	n	%	n	%		
Is the damaged tooth likely to be						
Correct Response	358	36.5	370	36.3	0.0142	.905278
Incorrect Response	622	63.5	650	63.7		
Is it an emergency treatment?						
Correct Response	901	91.9	938	92.0	0.0003	.985571
Incorrect Response	79	8.1	82	8.0		
What would you do to control bleeding?						
Correct Response	618	63.1	650	63.7	0.095	.757864
Incorrect Response	362	36.9	370	36.3		
Do you think Tetanus toxoid is necessary in case of dental trauma?						
Correct Response	747	76.2	723	70.9	7.3231	0.006808*
Incorrect Response	233	23.8	297	29.1		
How urgent do you think is it necessary to seek professional help if a permanent tooth has been knocked out?						
Correct Response	832	84.9	856	83.9	0.3619	0.547459
Incorrect Response	148	15.1	164	16.1		
If the child doesn't have any pain after injury, would you still go for professional advice?						
Correct Response	866	88.4	826	81.0	20.9332	<0.00001*
Incorrect Response	114	11.6	194	19.0		
Where will you take the child i.e., the first place to contact?						
Correct Response	727	74.2	854	83.7	27.4772	<0.00001*
Incorrect Response	253	25.8	166	16.3		
After control of bleeding will you search for the lost tooth?						
Correct Response	511	52.1	523	51.3	0.1509	0.697658
Incorrect Response	469	47.9	497	48.7		
Would you prefer to put back the knocked out tooth into the socket immediately?						
Correct Response	207	21.1	221	21.7	0.088	0.766729
Incorrect Response	773	78.9	799	78.3		
If you decide to put back the knocked out tooth back into its socket but that had fallen onto the ground and is covered with dirt, what would you do?						
Correct Response	188	19.2	206	20.2	0.3238	0.569312
Incorrect Response	792	80.8	814	79.8		
What would you do if the 'knocked out' tooth was broken?						
Correct Response	343	35.0	364	35.7	0.103	0.74826
Incorrect Response	637	65.0	656	64.3		
How would you keep the tooth till you approach a dentist?						
Correct Response	215	21.9	198	19.4	1.9478	0.162825
Incorrect Response	765	78.1	822	80.6		
Is the follow up of child by the dentist necessary?						
Correct Response	931	95.0	949	93.0	3.407	0.064919
Incorrect Response	49	5.0	71	7.0		
Have you ever received any advice on what to do and what not to do in case if any tooth has been knocked out?						
Yes	287	29.3	277	27.2	1.1187	0.290199
No	693	70.7	743	72.8		
Do you think it is important to have an educational program regarding management of trauma?						
Yes	866	88.4	908	89.0	0.2121	0.64509
No	114	11.6	112	11.0		
Are you satisfied with your knowledge regarding the management of dental trauma?						
Yes	459	46.8	402	39.4	13.5391	0.00114*
No	437	44.6	538	52.7		
Don't Know	84	8.6	80	7.8		

Would you like to attend an educational program on the management of dental trauma?

	Yes	No	Don't Know	Chi-square value	p-value	
Yes	845	86.2	849	83.2	3.5238	0.171719
No	76	7.8	99	9.7		
Don't Know	59	6.0	72	7.1		

[Table/Fig-3]: Distribution of parent's response based on gender.
* Significant at p<0.05

	<30 years		>30 years		Chi-square value	p-value
	n	%	n	%		
Is the damaged tooth likely to be						
Correct Response	256	37.2	472	36.0	0.2967	0.58594
Incorrect Response	432	62.7	840	64.0		
Is it an emergency treatment?						
Correct Response	627	91.1	1212	92.4	0.9441	0.331228
Incorrect Response	61	8.9	100	7.6		
What would you do to control bleeding?						
Correct Response	446	64.8	822	62.7	0.9185	0.33785
Incorrect Response	242	35.2	490	37.3		
Do you think Tetanus toxoid is necessary in case of dental trauma?						
Correct Response	524	76.2	946	72.1	3.8179	0.050708
Incorrect Response	164	23.8	366	27.9		
How urgent do you think is it necessary to seek professional help if a permanent tooth has been knocked out?						
Correct Response	522	75.9	1136	86.6	36.5415	<0.00001*
Incorrect Response	166	24.1	176	13.4		
If the child doesn't have any pain after injury, would you still go for professional advice?						
Correct Response	591	85.9	1101	83.9	1.3639	0.243039
Incorrect Response	97	14.1	211	16.1		
Where will you take the child i.e., the first place to contact?						
Correct Response	544	80.1	1037	79.0	0.0002	0.987449
Incorrect Response	144	20.9	275	21.0		
After control of bleeding will you search for the lost tooth?						
Correct Response	355	51.6	679	51.8	0.0043	0.947727
Incorrect Response	333	48.4	633	48.2		
Would you prefer to put back the knocked out tooth into the socket immediately?						
Correct Response	144	20.9	285	21.7	0.1638	0.68175
Incorrect Response	544	79.1	1027	78.3		
If you decide to put back the knocked out tooth back into its socket but that had fallen onto the ground and is covered with dirt, what would you do?						
Correct Response	122	17.8	253	19.3	0.7127	0.398564
Incorrect Response	566	82.2	1059	80.7		
What would you do if the 'knocked out' tooth was broken?						
Correct Response	256	37.2	445	33.9	2.148	0.142751
Incorrect Response	432	62.8	867	66.1		
How would you keep the tooth till you approach a dentist?						
Correct Response	168	24.4	245	18.7	9.0903	0.00257*
Incorrect Response	520	75.6	1067	81.3		
Is the follow up of child by the dentist necessary?						
Correct Response	640	93.0	1240	94.5	1.7741	0.182881
Incorrect Response	48	7.0	72	5.5		
Have you ever received any advice on what to do and what not to do in case if any tooth has been knocked out?						
Yes	209	30.4	355	27.1	2.4569	0.117009
No	479	69.6	957	72.9		
Do you think it is important to have an educational program regarding management of trauma?						
Yes	591	85.9	1183	90.2	8.1967	0.004197*
No	97	14.1	129	9.8		

Are you satisfied with your knowledge regarding the management of dental trauma?						
Yes	306	44.5	555	42.3	14.7877	0.000615*
No	306	44.5	669	51.0		
Don't Know	76	11.0	88	6.7		

Would you like to attend an educational program on the management of dental trauma?						
Yes	564	82.0	1130	86.1	7.5313	0.023153*
No	76	11.0	99	7.6		
Don't Know	48	7.0	83	6.3		

[Table/Fig-4]: Distribution of parent's response based on Age.
* Significant at p<0.05

	Rural		Urban		Chi-square value	p-value
	n	%	n	%		
Is the damaged tooth likely to be						
Correct Response	344	39.7	384	33.9	7.2845	0.006955*
Incorrect Response	522	60.3	750	66.1		
Is it an emergency treatment?						
Correct Response	799	92.3	1040	91.7	0.20205	0.652701
Incorrect Response	67	7.7	94	8.3		
What would you do to control bleeding?						
Correct Response	557	64.3	711	62.7	0.555	0.456061
Incorrect Response	309	35.7	423	37.3		
Do you think Tetanus toxoid is necessary in case of dental trauma?						
Correct Response	691	79.8	779	68.7	31.0456	<0.00001*
Incorrect Response	175	20.2	355	31.3		
How urgent do you think is it necessary to seek professional help if a permanent tooth has been knocked out?						
Correct Response	745	86.0	943	83.2	3.0734	0.79581
Incorrect Response	121	14.0	191	16.8		
If the child doesn't have any pain after injury, would you still go for professional advice?						
Correct Response	753	87.0	939	82.8	0.0985	0.753609
Incorrect Response	113	13.0	195	17.2		
Where will you take the child i.e., the first place to contact?						
Correct Response	664	76.7	917	80.9	5.2049	0.022524*
Incorrect Response	202	23.3	217	19.1		
After control of bleeding will you search for the lost tooth?						
Correct Response	438	50.6	596	52.6	0.7709	0.3979953
Incorrect Response	428	49.4	538	47.4		
Would you prefer to put back the knocked out tooth into the socket immediately?						
Correct Response	206	23.8	222	19.6	5.176	0.022901*
Incorrect Response	660	76.2	912	80.4		
If you decide to put back the knocked out tooth back into its socket but that had fallen onto the ground and is covered with dirt, what would you do?						
Correct Response	116	13.4	259	22.8	28.7503	<0.00001*
Incorrect Response	750	86.6	875	77.2		
What would you do if the 'knocked out' tooth was broken?						
Correct Response	291	33.6	416	36.7	2.040	0.153188
Incorrect Response	575	66.4	718	63.3		
How would you keep the tooth till you approach a dentist?						
Correct response	173	20.0	240	21.2	0.4233	0.51592
Incorrect Response	693	80.0	894	78.8		
Is the follow up of child by the dentist necessary?						
Correct Response	822	94.9	1058	93.3	2.2879	0.130382
Incorrect Response	44	5.1	76	6.7		

Have you ever received any advice on what to do and what not to do in case if any tooth has been knocked out?						
Yes	280	32.3	296	26.1	9.2948	0.002298*
No	586	67.7	838	73.9		

Do you think it is important to have an educational program regarding management of trauma?						
Yes	753	87.0	1021	90.0	4.6587	0.030897*
No	113	13.0	113	10.0		

Are you satisfied with your knowledge regarding the management of dental trauma?						
Yes	390	45.0	471	41.6	24.455	<0.00001*
No	435	50.2	540	47.6		
Don't Know	41	4.8	123	10.8		

Would you like to attend an educational program on the management of dental trauma?						
Yes	754	87.1	940	82.9	18.4695	0.000098*
No	83	9.6	104	9.2		
Don't Know	29	3.3	90	7.9		

[Table/Fig-5]: Distribution of parent's response based on Location.
* Significant at p<0.05

	Below Graduate		Above Graduate		chi-square value	p-value
	n	%	n	%		
Is the damaged tooth likely to be						
Correct Response	492	34.2	236	42.0	10.5614	0.001155*
Incorrect Response	946	65.8	326	58.0		
Is it an emergency treatment?						
Correct Response	1321	91.9	518	92.2	0.0515	0.820489
Incorrect Response	117	8.1	44	7.8		
What would you do to control bleeding?						
Correct Response	886	61.6	382	68.0	7.0398	0.007972*
Incorrect Response	552	38.4	180	32.0		
Do you think Tetanus toxoid is necessary in case of dental trauma?						
Correct Response	1114	77.5	356	63.3	41.3826	<0.00001*
Incorrect Response	324	22.5	206	36.7		
How urgent do you think is it necessary to seek professional help if a permanent tooth has been knocked out?						
Correct Response	1254	87.2	434	77.2	30.569	<0.00001*
Incorrect Response	184	12.8	128	22.8		
If the child doesn't have any pain after injury, would you still go for professional advice?						
Correct Response	1190	82.8	502	89.3	13.388	0.00025324*
Incorrect Response	248	17.2	60	10.7		
Where will you take the child i.e., the first place to contact?						
Correct Response	1099	76.4	482	85.8	21.283	<0.00001*
Incorrect Response	339	23.6	80	14.2		
After control of bleeding will you search for the lost tooth?						
Correct Response	729	50.7	305	54.3	2.068	0.150399
Incorrect Response	709	49.3	257	45.7		
Would you prefer to put back the knocked out tooth into the socket immediately?						
Correct Response	321	22.3	107	19.0	2.5901	0.107536
Incorrect Response	1117	77.7	455	81.0		
If you decide to put back the knocked out tooth back into its socket but that had fallen onto the ground and is covered with dirt, what would you do?						
Correct Response	255	17.7	120	21.4	3.4746	0.062319
Incorrect Response	1183	82.3	442	78.6		

What would you do if the 'knocked out' tooth was broken?						
Correct Response	470	32.7	237	42.2	15.9119	0.000066*
Incorrect Response	968	67.3	325	57.8		
How would you keep the tooth till you approach a dentist?						
Correct Response	299	20.8	114	20.3	0.0637	0.800807
Incorrect Response	1139	79.2	448	79.7		
Is the follow up of child by the dentist necessary?						
Correct Response	1342	93.3	538	95.7	4.146	0.041733*
Incorrect Response	96	6.7	24	4.3		
Have you ever received any advice on what to do and what not to do in case if any tooth has been knocked out?						
Yes	386	26.8	178	31.7	4.655	0.0303096323*
No	1052	73.2	384	68.3		
Do you think it is important to have an educational program regarding management of trauma?						
Yes	1255	87.3	519	92.3	1.3401	0.247018
No	183	12.7	43	7.7		
Are you satisfied with your knowledge regarding the management of dental trauma?						
Yes	657	45.7	204	36.3	15.23	0.000493*
No	673	46.8	302	53.7		
Don't Know	108	7.5	56	10.0		
Would you like to attend an educational program on the management of dental trauma?						
Yes	1200	83.4	494	87.9	9.313	0.009499*
No	143	9.9	32	5.7		
Don't Know	95	6.7	36	6.4		

[Table/Fig-6]: Distribution of parent's response based on Education.
* Significant at p<0.05

	Yes		No		chi-square value	p-value
	n	%	n	%		
Is the damaged tooth likely to be						
Correct Response	210	34.9	518	37.1	0.8553	0.355057
Incorrect Response	392	65.1	880	62.9		
Is it an emergency treatment?						
Correct Response	552	91.7	1287	92.1	0.076	0.782734
Incorrect Response	50	8.3	111	7.9		
What would you do to control bleeding?						
Correct Response	366	60.8	902	64.5	2.5141	0.112832
Incorrect Response	236	39.2	496	35.5		
Do you think Tetanus toxoid is necessary in case of dental trauma?						
Correct Response	465	77.2	1005	71.9	6.1932	0.012824*
Incorrect Response	137	22.8	393	28.1		
How urgent do you think is it necessary to seek professional help if a permanent tooth has been knocked out?						
Correct Response	528	87.7	1160	83.0	7.1563	0.00747*
Incorrect Response	74	12.3	238	17.0		
If the child doesn't have any pain after injury, would you still go for professional advice?						
Correct Response	520	86.4	1172	83.8	2.091	0.148169
Incorrect Response	82	13.6	226	16.2		
Where will you take the child i.e., the first place to contact?						
Correct Response	481	79.9	1100	78.7	0.376	0.53975
Incorrect Response	121	20.1	298	21.3		
After control of bleeding will you search for the lost tooth?						
Correct Response	336	55.8	698	49.9	5.837	0.0156925*
Incorrect response	266	44.2	700	50.1		
Would you prefer to put back the knocked out tooth into the socket immediately?						

Correct Response	143	23.8	285	20.4	2.8386	0.092081
Incorrect Response	459	76.2	1113	79.6		
If you decide to put back the knocked out tooth back into its socket but that had fallen onto the ground and is covered with dirt, what would you do?						
Correct Response	108	17.9	267	19.1	0.3707	0.54261
Incorrect Response	494	82.1	1131	80.9		
What would you do if the 'knocked out' tooth was broken?						
Correct Response	251	41.7	456	32.6	15.1683	0.000098*
Incorrect Response	351	58.3	942	67.4		
How would you keep the tooth till you approach a dentist?						
Correct Response	159	26.4	254	18.2	17.4949	0.000029*
Incorrect Response	443	73.6	1144	81.8		
Is the follow up of child by the dentist necessary?						
Correct Response	573	95.2	1307	93.5	2.136	0.143874
Incorrect Response	29	4.8	91	6.5		
Have you ever received any advice on what to do and what not to do in case if any tooth has been knocked out?						
Yes	195	32.4	369	26.4	7.475	0.0062571*
No	407	67.6	1029	73.6		
Do you think it is important to have an educational program regarding management of trauma?						
Yes	535	88.9	1239	88.6	0.025	0.87436
No	67	11.1	159	11.4		
Are you satisfied with your knowledge regarding the management of dental trauma?						
Yes	276	45.8	585	41.8	6.093	0.0475249*
No	289	48.0	686	49.1		
Don't Know	37	6.2	127	9.1		
Would you like to attend an educational program on the management of dental trauma?						
Yes	515	85.5	1179	84.3	3.808	0.148972
No	57	9.5	118	8.5		
Don't Know	30	5.0	101	7.2		

[Table/Fig-7]: Distribution of parent's response based on past history.
* Significant at p<0.05

Almost half of the parents were not satisfied with their knowledge on management of dental trauma and most of them were willing to attend an educational program on management of dental trauma. [Tables/Fig-3-7] shows the number of correct and incorrect responses to Part 2 of questionnaire based on different variables and their opinion regarding Part 3 of questionnaire.

DISCUSSION

The study was carried out at Dr. R Ahmed Dental College and Hospital, Kolkata, India and included 2000 parents attending the Outpatient Department of Pedodontics and Preventive Dentistry; oldest tertiary dental care institution of India. Their knowledge, attitude and awareness regarding emergency management of trauma were assessed by virtue of a questionnaire.

Out of 2000 participants, only a few number of parents were aware that maxillary incisor is a member of the permanent dentition in an eight-year-old child. Similar results have been reported by Namdev et al., [12].

It was found that most of the parents would look for the lost avulsed tooth. It shows that many people are aware that there is a possibility of replantation following avulsion of tooth. It can also be assumed that parents want to make sure that the child didn't accidentally swallow or ingest the tooth. In similar studies [12,14], it was found that many attendants would look for the lost tooth. These findings were contrary to those of Murali et al., and Hegde et al., where only few parents were aware of a possibility of reimplantation [15,16].

Majority of parents considered it an emergency treatment and most of them wanted to seek professional advice immediately following trauma, which was similar to results obtained from other studies [11,12]. This shows that parents are aware of the importance of emergency management, but further responses revealed that they have limited knowledge of the subsequent procedures.

Most of the parents chose dental hospital as the first place of contact after dental trauma, which was in accordance with the study done by Loo et al., [14]. Reports have indicated that there is a lack of knowledge amongst the professionals expected to deal with trauma such as physical education teachers, medical professionals and sports coaches [17-23].

Most of the times, pain is the main reason for seeking professional advice. The results of this study showed that majority of parents would seek professional advice even if the child doesn't complain of pain. This was contrary to the findings of Namdev et al., [12].

It was found that only few parents would attempt replantation of the avulsed tooth on their own. Most of them were not willing to replant the tooth on their own. This might be due to lack of knowledge about what all has to be done at that particular point of time and place. Underconfidence, fear of hurting the child and moreover fear of bleeding prevents them from taking prompt action. Similar results have been reported by others [12-14].

Regarding cleaning of contaminated avulsed tooth, only a few parents knew the correct method to clean the tooth. Many parents chose scrubbing of the tooth and were unaware of the fact that they can severely hamper the prognosis of the tooth. Results of other studies by [11-13], suggested that most of the parents knew the correct method of cleaning the contaminated tooth.

The storage of avulsed tooth in a medium compatible with cell viability till replantation is a critical procedure. Only a small number of parents opted for milk as storage medium. Most of the others preferred ice box or ice water as storage medium. This was in accordance with findings of study by Loo et al., where only a few parents opted for milk as storage medium while most of the parents opted for water as storage medium [14]. Similarly, Murali et al., reported that majority of the parents were unaware of proper storage medium [15].

Most of the parents understood the importance of follow up and also realized the importance of an educational program on management of dental trauma. Loo et al., reported that most of people were looking forward to attend educational programs regarding management of dental trauma [14].

Educational background reflected positively on the attitude and perceived importance of immediate management of dental trauma, but it did not reflect on the knowledge of management of dental trauma. Even among the parents who were above graduate, surprisingly only a few had received some advice on what all to do in case of avulsion of a tooth. An overwhelming number of parents had never received any advice on emergency management of an avulsed tooth. Similarly other researchers [13,14] reported that only a few parents had received some advice on what to do in case of avulsion.

Dental injury accompanied by bleeding is an alarming situation which worries parents. Controlling bleeding along with maintenance of sterilization is of utmost importance at the site of injury. Interestingly, majority of parents were aware of this fact. They knew the correct method to control bleeding simultaneously maintaining sterilization and most of them were well aware of the significance of tetanus vaccination. These key issues were not included in previous studies.

A large number of parents were dissatisfied with their knowledge and were willing to attend educational programs related to management of dental trauma. This indicates the need for educational programmes, which by providing information, will help

improve parental awareness and increase their knowledge of the procedures required for the emergency management of an avulsed tooth.

[Table/Fig-8] shows comparison of various studies.

Most healthcare providers and educators agree that it is better to prevent injury rather than dealing with the consequences of the injury. In the dental field however, more interest is shown towards the prevention and control of other dental diseases rather than towards creating awareness regarding emergency management of dental trauma.

A simple replantation of an avulsed permanent tooth in a child can make a huge difference in the prognosis of that tooth. It results in retention of that tooth for a significant number of years, thereby not compromising with speech and aesthetics of the child; thereby preventing social and psychological trauma. In addition to this, it also allows the development of alveolar bone up to its full growth potential during the critical years of growth, which also reduces the economic burden of prosthetic rehabilitation of that tooth.

Till date, in India, little has been done to educate people about this emergency situation.

Steps need to be taken to broaden the knowledge of parents. This can be done by organizing educational campaigns, mounting posters or distributing leaflets at public places. Posters depicting flow charts of what to do in case of dental trauma should be put

Parameter	Present Study, Kolkata, India	Raphael & Georgey, Australia [11]	Namdev et al., Rohtak, India [12]	Shashikaran et al., Davan-gere, India [13]	Loo et al., Chennai, India [14]	Murali et al., Salem, India [15]
Correct identification of tooth	36.4%		32.6%			
Possibility of reimplantation/ looking for lost tooth	51.7%		43%		43.3%	7%
Emergency treatment	82.9%	92%	63.17%	17.3%		
Seeking professional advice immediately	84.4%	91.8%	32.5%			
Dentist as first person to contact	79.1%	62.5%	27.2%	50.95	59.7%	
Seeking professional advice in absence of pain	84.6%		32.5%			
Attempting reimplantation on their own	21.4%	62.1%	31.8%	20%	27.6%	
Correct method of cleaning tooth	18.75%	54.9%	46.4%	54.3%		
Milk as storage media of avulsed tooth	9.95%	5%	24.3%	2.25%	10%	6%
Attending educational program on trauma management	94%		95.13%		87.9%	
Ever received advice on what to do in case of trauma	31.7%	7.9%		18.85%	25.4%	

[Table/Fig-8]: Comparison with different studies.

up in all emergency departments of all hospitals and even primary health centres. In addition to this gynaecologists and pediatricians need to play a role as well. If such posters and pamphlets are there in the offices of pediatricians and gynaecologists this will help in creating more awareness; since parents and their children are in contact with them more often. Audio-visual, multimedia aids do have a significant role to play in creating such awareness. School camps can be held in which both children as well as teachers can be educated in this regard. Further studies to assess and compare the knowledge and attitude of people regarding emergency management of trauma at other places would be helpful in giving a broader perspective.

LIMITATION

1. It was an institutional study; a field survey including more institutes should have been covered to get a better idea.
2. No previous studies of this region were available for comparison.
3. Study should have involved other people like teachers, doctors etc., who deal with dental trauma.

CONCLUSION

Within the limitations of this study, it can be concluded that despite the lack of proper knowledge on emergency management of dental trauma among the participants of this survey, there was willingness among parents to gain knowledge regarding emergency management of dental trauma.

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