



Awareness on the Emergency Management of Dental Trauma among Parents and Medical Professionals in Greater Noida, India: A Questionnaire study

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(Received: 04 August 2023

Revised: 12 September

Accepted: 06 October)

KEYWORDS

Dental Trauma,
questionnaire,
Medical Professionals

ABSTRACT:

Dental trauma can cause extreme distress and pain to the individual. Awareness and knowledge about management of dental injury plays critical role in predictable outcome. The purpose of the study is to establish the level of knowledge with the help of a questionnaire on the management of dental trauma among parents and medical professionals in Greater Noida, Uttar Pradesh, India.

Introduction:

Dental trauma is among one of the commonly occurring accidental injuries and the success of the treatment greatly depends on the immediate protocols followed thereafter. Dental injuries are now considered as public health problem due to the growing rates of road accidents, violence and injuries to children^{1,2}. Several studies state that dental trauma may surpass dental caries and periodontal problem in incidence^{3,4}.

Individuals managing dental trauma individuals must be familiarized with dental emergency maneuvers.^(1,2) Multiple studies conducted in different regions of the world have reported that there is inadequate awareness regarding emergency measures for traumatized teeth. Bearing in mind the importance of this issue and the lack of information the survey was conducted.

Multiple studies conducted in different regions of the world have reported that there is inadequate awareness regarding emergency measures for traumatized teeth. The purpose of the study is to establish the level of knowledge with the help of a questionnaire on the management of dental trauma among parents and medical professionals in Greater Noida, Uttar Pradesh, India.

Material and Methods

According to 2011 census greater noida population, Sample size for both Medical Professional and parents was calculated. The sample size for parents were 500 and for medical professionals came out to be 201. Data was collected by means of questionnaire. The questionnaire comprised of 3 Parts objective questions. The first part of the questionnaire mentioned general information about personal and professional profiles of the participants. The second part consisted of questions with reference to knowledge about dental trauma and the last part included dental emergency management protocols by hypothesizing situations that could occur. (ANNEXURE IA & IB). The questionnaire was checked for the content validity by two professors in the Department of Conservative Dentistry and Endodontics. The frequency of responses given by both Medical professional and parents were compared by means of chi-square test ($P > 0.05$).

RESULTS:

The educational status was compared between parents using the chi-square test. Post-Graduate, PHD and Others were significantly more among Medical professionals (Table 1).

The knowledge about the first aid measures to be taken in dental trauma and any formal training of first aid was



compared between parents using the chi-square test. Knowledge about the first aid measures to be taken in dental trauma and any formal training of first aid were significantly more among Medical professionals (Table 2). The knowledge about the first aid measures to be taken in dental trauma and any formal training of first aid was compared between parents using the chi-square test. Knowledge about the first aid measures to be taken in dental trauma and any formal training of first aid were significantly more among Medical professionals (Table 3).

The knowledge about a 9-year-old girl fell and broke her upper front tooth - The broken tooth is likely to be and the immediate emergency management of the case was compared between parents using the chi-square test. Knowledge about a 9-year-old girl fell and broke her upper front tooth - The broken tooth is likely to be and the immediate emergency management of the case was significantly more among Medical professionals (Table 4).

The knowledge about the immediate emergency action you would take is, a 10-year-old child fell down while playing and lost consciousness - The immediate emergency action you would take is and urgent do you feel that a dentist's opinion is needed was compared between parents using the chi-square test. Put the tooth back in its place in the mouth, or in a solution and send the girl to the dentist immediately, sending the child to hospital immediately and taking immediate opinion was significantly more among Medical professionals. (Table 5)

The knowledge about broken tooth piece be reattached and can a completely fallen off tooth be replanted back

was compared between parents using the chi-square test. Knowledge about broken tooth piece be reattached and can a completely fallen off tooth be replanted back was significantly more among Medical professionals. (Table 6)

The knowledge about how to keep the tooth till you reach the dentist was compared between parents using the chi-square test. Knowledge about to keep the tooth till you reach the dentist was significantly more among Medical professionals. (Table 7)

The knowledge about heard of mouth guards used to prevent traumatic injuries to the teeth and recommend your child/children to wear mouth guards while playing games was compared between parents using the chi-square test. Knowledge about heard of mouth guards used to prevent traumatic injuries to the teeth and recommend your child/children to wear mouth guards while playing games were significantly more among Medical professionals. (Table 8)

The knowledge about educational program in 'Management of dental trauma', satisfied with your knowledge on 'the management of dental trauma' and attending an educational program on 'management of dental trauma' was compared between parents using the chi-square test. Knowledge about educational program in 'Management of dental trauma', satisfied with your knowledge on 'the management of dental trauma' and attending an educational program on 'management of dental trauma' were significantly more among Medical professionals. (Table 9)

Table 1 :

Ques 1	Parents		Medical professionals		Chi-square value	p-value
Illiterate	20	4.0%	0	0.0%	10.258	< 0.001*
High school	100	20.0%	0	0.0%		
Graduate	380	76.0%	167	83.1%		
Post Graduate	0	0.0%	19	9.5%		
PHD	0	0.0%	4	2.0%		
Others	0	0.0%	11	5.5%		

Chi-square test

* Significant difference

**Table 2:**

		Parents		Medical professionals		Chi-square value	p-value
Ques 2	Yes	60	12.0%	156	77.6%	8.146	< 0.001*
	No	440	88.0%	45	22.4%		
Ques 3	Yes	3	0.6%	58	28.9%	9.288	< 0.001*
	No	497	99.4%	143	71.1%		
Ques 4	Yes	80	16.0%	133	66.2%	8.019	< 0.001*
	No	420	84.0%	68	33.8%		

Chi-square test

* Significant difference

Table 3:

Ques 5	Parent		Medical Professional		Chi-square value	p-value
Broken tooth without bleeding	289	57.8%	109	54.2%	9.124	< 0.001*
Broken tooth with bleeding	17	3.4%	37	18.4%		
Tooth that had fallen off	12	2.4%	13	6.5%		
Displaced tooth (intrusion)	98	19.6%	21	10.4%		
Soft tissue injuries	77	15.4%	14	7.0%		
Others	7	1.4%	6	3.0%		

Chi-square test

* Significant difference

Table 4:

Q6 (1)A	Parents		Medical Professional		Chi-square value	p-value
Permanent tooth	233	46.6%	167	83.1%	6.475	0.001*
Baby tooth	128	25.6%	23	11.4%		
Do not know	139	27.8%	11	5.5%		
Your immediate emergency management of the case is						
Send child to the dentist immediately	209	41.8%	191	95.0%	7.108	0.001*
Reassure the child and put her to rest	239	47.8%	8	4.0%		
Not sure what to do	52	10.4%	2	1.0%		

Chi-square test

* Significant difference

Table 5:

		Parent		Medical Professional		Chi-square value	p-value
9	Put the tooth back in its place in the mouth, or in a solution and send the girl	174	34.8%	178	88.6%		



	to the dentist immediately					8.288	< 0.001*
	Stop oral bleeding then put the child to rest	106	21.2%	0	0.0%		
	Put the tooth in a solution and send the child to the dentist immediately	127	25.4%	21	10.4%		
	Not sure what to do	93	18.6%	2	1.0%		
Ques - 8	Awaken the child and put him to rest	269	53.8%	32	15.9%	8.958	< 0.001*
	Send the child to hospital immediately	179	35.8%	169	84.1%		
	Not sure what to do	52	10.4%	0			
Ques - 9	Immediate	189	37.8%	187	93.0%	6.475	0.001*
	Within 30 min	143	28.6%	10	5.0%		
	Within few hours	59	11.8%	4	2.0%		
	Before next day	82	16.4%	0	0.0%		
	Others	27	5.4%	0	0.0%		

Chi-square test

* Significant difference

Table 6:

		Parent		Medical Professional		Chi-square value	p-value
Ques 10	Yes	173	34.6%	163	81.1%		< 0.001*
	No	327	65.4%	38	18.9%		
Ques 11	Yes	166	33.2%	167	83.1%		< 0.001*
	No	334	66.8%	33	16.4%		

Chi-square test

* Significant difference

Table 7:

Q-12: How would you keep the tooth till you reach the dentist	Parent		Medical Professional		Chi-square value	p-value
Ice	19	3.8%	2	1.0%	8.928	< 0.001*
Tap water	88	17.6%	7	3.5%		
Wet handkerchief	109	21.8%	9	4.5%		
Sterile saline	17	3.4%	4	2.0%		
Cotton pad	67	13.4%	11	5.5%		
Child's mouth	13	2.6%	147	73.1%		
Any aseptic solution	139	27.8%	13	6.5%		
Milk	40	8.0%	7	3.5%		

Chi-square test

* Significant difference

**Table 8:**

		Parent		Medical Professional		Chi-square value	p-value
Ques -13	Yes	231	46.2%	188	93.5%	11.256	< 0.001*
	No	269	53.8%	13	6.5%		
Ques 14	Yes	211	42.2%	164	81.6%	9.987	< 0.001*
	No	289	57.8%	37	18.4%		

Chi-square test

* Significant difference

Table 9:

Part 3		Parent		Medical Professional		Chi-square value	p-value
Ques 15	Yes	389	77.8%	199	99.0%	8.958	< 0.001*
	No	83	16.6%	2	1.0%		
	Don't know	28	5.6%	0	0.0%		
Ques 16	Yes	93	18.6%	143	71.1%	8.173	< 0.001*
	No	407	81.4%	58	28.9%		
Ques 17	Yes	354	70.8%	183	91.0%	7.904	< 0.001*
	No	139	27.8%	18	9.0%		
	Don't know	7	1.4%	0	0.0%		

Chi-square test

* Significant difference

Discussion:

The present survey was conducted with intention of creating understanding ,retrieving data about knowledge and awareness of people who are generally the first one to deal with dental trauma patients. One of the major reason to conduct the survey in greater noida is the high incidence of road accidents in this region.

It is worth noting that 16% of parents have experienced a kind of dental trauma. This finding reinforces the need for parents to be well informed in a dental emergency management

An even more disturbing fact is that the knowledge about use of mouth guards to prevent traumatic injuries to the teeth and recommending your child/children to wear mouth guards while playing games were significantly less among parents. A delay in emergency treatment dramatically reduces the long-term prognosis, especially in avulsed cases while the response for immediate treatment was 93% among medical professionals and only 37.8% among parents Extra-oral time and storage media are two of the most important factors preserving the periodontal ligament (PDL) cells and improving the prognosis for an avulsed

tooth and management . The knowledge about the immediate emergency action was significantly less among parents. The results of our survey and various studies ; have suggested future dental emergency education efforts should be directed toward continuing educational programs for parents as well as medical practitioners who mostly assist children under scenarios where traumatic dental injuries are likely to occur.

Conclusion:

A multidisciplinary interaction between dentists and parents as well as medical practitioners from other fields as well is necessary for positive interference in health promotion and prevention of more severe complications of dental trauma and sequelae.

1. Problems and consequences of dental trauma.
2. Availability of after-office hour emergency services
3. Specific storage media for avulsed teeth
4. Critical timing for replantation of permanent avulsed teeth for long success
5. Current concepts of management of fractured teeth



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ANNEXURE I A

Questionnaire Form Regarding the Awareness on Dental Trauma (Parents)

Part 1

1. Parents education
 - Graduate
 - Higher Secondary Schooling
 - Illiterate
2. Do you know about the first aid measures to be taken when there is dental trauma?
 - Yes
 - No
3. Do you have any formal training of first aid?
 - Yes
 - No

Part 2

4. Have you come across or witnessed any kind of dental trauma?
 - Yes
 - No



5. What kind of trauma it was?
- Broken tooth without bleeding
 - Broken tooth with bleeding
 - Tooth that had fallen off
 - Displaced tooth (intrusion)
 - Soft tissue injuries
 - Others
6. A 9-year-old girl fell and broke her upper front tooth
The broken tooth is likely to be
- Permanent tooth
 - Baby tooth
 - Do not know
- Your immediate emergency management of the case is
- Send child to the dentist immediately
 - Reassure the child and put her to rest
 - Not sure what to do
7. A 12-year-old girl was hit on the face & her upper front tooth fell out of her mouth
The immediate emergency action you would take is
- Put the tooth back in its place in the mouth, or in a solution and send the girl to the dentist immediately
 - Stop oral bleeding then put the child to rest
 - Put the tooth in a solution and send the child to the dentist immediately
 - Not sure what to do
8. A 10-year-old child fell down while playing and lost consciousness
The immediate emergency action you would take is
- Awaken the child and put him to rest
 - Send the child to hospital immediately
 - Not sure what to do
9. How urgent do you feel that a dentist's opinion is needed?
- Immediate
 - Within 30 min
 - Within few hours
 - Before next day
 - Others
10. Can a broken tooth piece be reattached?
- Yes
 - No
11. Can a completely fallen off tooth be replanted back?
- Yes
 - No
12. How would you keep the tooth till you reach the dentist?
- Ice
 - Tap water
 - Wet handkerchief
 - Sterile saline



- Cotton pad
 - Child's mouth
 - Any aseptic solution
 - Milk
 - Others, Please state.....
13. Have you heard of mouth guards used to prevent traumatic injuries to the teeth?
- Yes
 - No
14. Do you recommend your child/children to wear mouth guards while playing games?
- Yes
 - No

PART 3

15. Do you think it is important to have an educational program in 'Management of dental trauma'?
- Yes
 - No
 - Do not know
16. Are you satisfied with your knowledge on 'the management of dental trauma'?
- Yes
 - No
17. Would you like to attend an educational program on 'management of dental trauma'?
- Yes
 - No
 - Do not know

ANNEXURE I B

Questionnaire Form Regarding the Awareness on Dental Trauma (Medical Professionals)

18. Medical Professional
- Graduate-167
 - Post Graduate-19
 - PHD-4
 - Others, Please State11.....
19. Do you know about the first aid measures to be taken when there is dental trauma?
- Yes-156
 - No-45
20. Do you have any formal training of first aid?
- Yes-58
 - No-143
21. Have you come across or witnessed any kind of dental trauma?
- Yes-133
 - No-68



- 22.** What kind of trauma it was?
- Broken tooth without bleeding-109
 - Broken tooth with bleeding-37
 - Tooth that had fallen off-13
 - Displaced tooth (intrusion)-21
 - Soft tissue injuries-14
 - Others-6
- 23.** A 9-year-old girl fell and broke her upper front tooth
The broken tooth is likely to be
- Permanent tooth-167
 - Baby tooth-23
 - Do not know-11
- Your immediate emergency management of the case is
- Send child to the dentist immediately-191
 - Reassure the child and put her to rest-8
 - Not sure what to do-2
- 24.** A 12-year-old girl was hit on the face & her upper front tooth fell out of her mouth
The immediate emergency action you would take is
- Put the tooth back in its place in the mouth, or in a solution and send the girl to the dentist immediately-178
 - Stop oral bleeding then put the child to rest-0
 - Put the tooth in a solution and send the child to the dentist immediately-21
 - Not sure what to do-2
- 25.** A 10-year-old child fell down while playing and lost consciousness
The immediate emergency action you would take is
- Awaken the child and put him to rest-32
 - Send the child to hospital immediately-169
 - Not sure what to do-0
- 26.** How urgent do you feel that a dentist's opinion is needed?
- Immediate-187
 - Within 30 min-10
 - Within few hours-4
 - Before next day-0
 - Others-0
- 27.** Can a broken tooth piece be reattached?
- Yes-163
 - No-38
- 28.** Can a completely fallen off tooth be replanted back?
- Yes-167
 - No-33
- 29.** How would you keep the tooth till you reach the dentist?
- Ice-2
 - Tap water-7
 - Wet handkerchief-9
 - Sterile saline-4



- Cotton pad-11
 - Child's mouth-147
 - Any aseptic solution-13
 - Milk-7
 - Others, Please state.....
- 30.** Have you heard of mouth guards used to prevent traumatic injuries to the teeth?
- Yes -188
 - No-13
- 31.** Do you recommend your child/children to wear mouth guards while playing games?
- Yes-164
 - No-37
- 32.** Do you think it is important to have an educational program in 'Management of dental trauma'?
- Yes-199
 - No-2
 - Do not know
- 33.** Are you satisfied with your knowledge on 'the management of dental trauma'?
- Yes-143
 - No-58
- 34.** Would you like to attend an educational program on 'management of dental trauma'?
- Yes-183
 - No-18
 - Do not know