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Parental Knowledge, Attitude and Awareness Regarding the Emergency Management of Dental Trauma in Ghaziabad, Uttar Pradesh

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Abstract:

Introduction: Parents can play an important role in improving the prognosis of traumatic dental injuries of children if they are informed about the first aid steps to be taken at the time of an accident.
Aim: The aim of this study is to assess the knowledge, attitude and awareness of parents regarding dental trauma and its management in Ghaziabad, Uttar Pradesh.
Materials and Method: A total of 2000 parents were surveyed using a self-administered structured questionnaire. The questionnaire was divided into two parts. The tabulated data was statistically analyzed using the Chi-square test.
Results: This study suggest that there is a lack of proper knowledge on emergency management of traumatic dental injuries first-aid among the study participants. The results of this study indicated low level of knowledge regarding tooth avulsion and replantation procedures to be followed in emergency. The residing area and age of parents did not affect the knowledge and awareness of parents. Well educated parents had lack of proper knowledge about emergency management of dental trauma first aid.
Conclusion: Regardless of the age, education level or other factors, parental knowledge of traumatic dental injuries was found to be low in the present study.
Keywords: Dental Trauma, Attitude, Knowledge, Awareness, Children, Avulsion

INTRODUCTION

Dental trauma in children is a significant oral health issue worldwide.[1] They range from minor enamel chipping to extensive maxillofacial damage involving the supporting structures and

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displacement or avulsion of teeth.[2]Dentoalveolar injuries are usually the result of sports and games, falls at home, car accidents, andfights.[3] These traumatic dental injuries have been associated with feeling of being embarrassed to smile, laugh, difficulty in mastication and an inability to maintain a healthy emotional state. Therefore, traumatic dental injuries is considered to have a negative impact on the quality of life.[4] Dental injuries are also considered to be an emergency situation that requires immediate care.[5] Such injuries are disturbing experiences that affect both children and the parents or caregiver, whose ability to manage such problems requires adequate understanding, immediate exercise of judgment, and prompt action. Both the parents or caregiver and the pediatric dentist who sees the child play an important role in restoring oral and emotional health.[6]

The greatest incident of trauma to the primary teeth occurs at 2 to 3 years of age, when motor coordination is developing.[7] The most common injuries to permanent teeth occurs due to a fall, followed by traffic accidents, violence, and sport activities. The AAPD encourages the use of protective gear including mouthguards, which help to distribute forces of impact, thereby reducing the risk of severe injury.[8]

The prognosis of traumatized teeth depends on prompt and appropriate treatment, which often depends on the knowledge of nonprofessional people, who are usually are present at the site of the accident, prior to the initial professional dental care.[9]As 41% of dental injuries occur at home, family members are frequently required to provide prompt and proper action.[3]

Since most dental injuries occur at home, followed by school, parents are required to take immediate and correct actions. Parents can play an important role in improving the prognosis of traumatic dental injuries in permanent teeth of children if they are informed about the first-aid steps to be taken at the time of accident. Awareness and knowledge of the parents in the handling of these emergency situations can influence the prognosis of the teeth.[9]

Previous studies from various countries have shown insufficient knowledge of lay person regarding emergency dental trauma management.[1,10] Despite the importance of this problem, there is no study available in the literature, that was conducted in Ghaziabad district, U.P. to access the knowledge of parents about the emergency management of dental trauma.

The aim of this study is to assess the knowledge and attitude of parents towards the emergency management of dental trauma. Before planning educational campaigns for parents, it is necessary to be aware of the knowledge level of parents.

MATERIAL AND METHOD

The study population consists of 2000 parents who accompany their children, aged between 6-12 years, for receiving dental care for the first time in the Department of Pediatric and Preventive Dentistry, Shree Bankey Bihari Dental College and Research Center, Ghaziabad. The protocol was approved by the Institutional Ethical Committee. The objective and nature of the study was explained to the participants, while the voluntary nature of the participation was emphasized and strict confidentiality was assured. A written informed consent form according to the ethical guidelines was subsequently obtained from the participating parents. A two part questionnaire which is a modified form of that used by Raphael and Gregory (1988) was used in the current study. The questionnaire was provided to the participating parents in both English and Hindi. Part 1 was consisting of questions on demographic information, including age, educational background, number of children. Part 2 was consisting of self assessment and multiple choice questions about knowledge, attitude and awareness regarding the emergency management of dental trauma.

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All parents were interviewed by the examiner herself and asked to fill the questionnaire. In case of illiteracy or failure to understand the questionnaire the examiner orally explained the questions to the participants. The participants were requested to mark the option which they perceive to be the most appropriate answer. Collection of the completed questionnaire was done on the same day, immediately after the parents completed the questionnaire. The data obtained was tabulated and statistical analysis was done using SPSS.

RESULT

Demographic characteristics of participants are shown in Table 1. A total of 2000 parents participated in this study, of which 49.6%were from urban area and 50.40% were from rural area. Amongst the respondent parents, 67.00% were less than high school, 30.30% had their schooling till higher secondary and 2.7% were graduates. The number of different answers to part 2 of questionnaire is shown in table 2, table 3, table 4 and table 5. Despite the fact that most parents had previous self experience of a dental trauma, their knowledge about traumatic dental injuries management was inadequate.

Table – 1: Demographic data of responding parents

	Frequency (n)	Percentage (%)
Total Respondents	2000	
Gender		
Male	965	48.30
Female	1035	51.70
Place of residence		
Rural	1009	50.4
Urban	991	49.6
Educational Level		
Less than high school	1339	67.0
High school	607	30.3
Graduate	54	2.7
No. of children		
1	568	28.4
2	1075	53.8
3	329	16.5
4	22	1.1
5 or more	6	0.3
Personal experience of dental trauma		
Yes	414	20.17
No	1586	79.3

Table 2: Response of parental knowledge (K) and attitude (A) of different gender towards first-aid management of dental trauma

Questions	Answers	Male	Female	Total	Chi-square	p-value

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		n(%)	n(%)	N(%)	Test (X)	
K1- Did your child ever had any dental trauma in past?	Yes	238(24.7%)	254(24.5%)	492(24.6%)	0.004	0.949
	No	727(75.3%)	781(75.5%)	1508(75.4%)		
K2- If your child fell and broke an upper front tooth, do you think the broken piece of the tooth should be saved?	Yes	56(5.8%)	64(6.2%)	120(6.0%)	0.154	0.926
	No	314(32.5%)	332(32.1%)	646(32.3%)		
	Don't know	595(61.7%)	637(61.7%)	1234(61.7%)		
K3- Do you think a tooth can be completely knocked out?	Yes	314(32.5%)	315(30.4%)	629(31.5%)	1.025	0.311
	No	651(67.5%)	720(69.6%)	1371(68.60		
K4- Do you think primary teeth should be put back in, after they were knocked out?	Yes	16(1.7%)	14(1.4%)	30(1.5%)	0.315	0.575
	No	949(98.3%)	1021(98.6%)	1970(98.5%)		
K5 -Do you think permanent teeth should be put back in, after they were knocked out?	Yes	311(32.3%)	320(30.9%)	631(31.6%)	0.397	0.529
	No	654(67.8%)	715(69.1%)	1369(68.50		
A1- In case of dental	Hospital	00(0.0%)	00(0.0%)	00(0.0%)	No statistics are	No statistics
	Physician's	00(0.0%)	00(0.0%)	00(0.0%)		

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trauma which would be the right place for seeking treatment?	office				computed because answer is constant.	are computed because answer is constant.
	Dental clinic	965(100%)	1035(100%)	2000(100%0		
	Don't know	00(0.0%)	00(0.0%)	00(0.0%)		
A2- How urgent do you think is it necessary to seek professional help?	Immediately	862(89.3%)	913(88.2%)	1775(88.8%'0	0.621	0.431
	Next day	00(0.0%)	00(0.0%)	00(0.0%)		
	Later	00(0.0%)	00(0.0%)	00(0.0%)		
	Only if any pain or other symptoms are noticed.	103(10.7%)	122(11.8%)	225(11.3%)		
	Don't know	00(0.0%)	00(0.0%)	00(0.0%)		
A3- What would you do if the tooth was completely out of the socket, but still in the child's mouth?	Put the tooth back into the socket	59(6.1%)	83(8.0%)	(142(7.1%)	2.843	0.241
	Leave the tooth inside the mouth	00(0.0%)	00(0.0%)	00(0.0%)		
	Remove the tooth from the mouth	671(69.5%)	711(68.7%)	1382(69.1%)		
	Don't know	235(24.4%)	241(23.3%)	476(23.8%)		
A4 -What will you do with a knocked out tooth that has fallen on the ground and become dirty?	Wash with water/other liquid	560(58.0%)	599(57.9%)	1159(58.0%)	1.478	0.687
	Clean it with a tissue or a piece of paper	54(5.6%)	47(4.5%)	101(5.1%)		
	Don't clean it	84(8.7%)	88(8.5%)	172(8.6%)		
	Don't know what to do	267(27.7%)	301(29.1%)	568(28.4%)		
A5- Will you attempt for self-	Yes	174(18.0%)	791(82.0%)	338(16.9%)	1.699	0.192
	No	164(15.8%)	871(84.2%)	1662(83.1%)		

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reimplantation?						

Table 3: Response of parental awareness (P) of different gender towards first-aid management of dental trauma

Questions	Answers	Male n (%)	Female n(%)	Total N (%)	Chi-square Test (X)	p-value
P1- Do you think use of mouthgaurd is appropriate for your child during sport activity?	Yes	832 (86.2%)	895 (86.5%)	1727 (86.4%)	0.028	0.868
	No	133 (13.8%)	140 (13.5%)	273 (13.7%)		
P2- Is the follow-up of the child by dentist important?	Yes	949 (98.3%)	1008 (97.4%)	1957 (97.9%)	2.145	0.143
	No	16 (1.7%)	27 (2.6%)	43 (2.2%)		
P3-Have you ever received any information regarding traumatic dental injuries previously?	Yes	708(73.4%)	707(68.3%)	1415 (70.8%)	6.175	0.013
	No	257 (26.6%)	328 (31.7%)	585 (29.3%)		
P4- If yes, what is your source of information?	No information	258(26.7%)	328(31.7%)	586(29.3%)	12.505	0.028
	Dentist	171(17.7%)	179(17.3%)	350(17.5%)		
	Physician	61(6.3%)	56(5.4%)	117(5.9%)		
	Friend	271(28.1%)	232(22.4%)	503(25.2%)		
	Internet /social network	116(12.0%)	142(13.7%)	258(12.9%)		
	others	88(9.1%)	98(9.5%)	186(9.3%)		
P5 -Would you be	Yes	965(100.0%)	1035 (100.0%)	2000 (100.0%)	No statistics	No statistics

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willing to do your part to make other parents aware of the same?	No	00(0.0%)	00(0.0%)	00(0.0%)	are computed because answer is constant	are computed because answer is constant

Table 4: Response of parental knowledge (K) and attitude (A) of parents of previous experience to dental trauma

Questions	Answers	Experience of dental trauma n(%)	No experience of dental trauma n(%)	Total N(%)	Chi-square Test (X)	p-value
K1- Did your child ever had any dental trauma in past?	Yes	106(25.6%)	386(24.5%)	492(24.6%)	0.284	0.594
	No	308(74.4%)	1200(75.7%)	1508(75.4%)		
K2- If your child fell and broke an upper front tooth, do you think the broken piece of the tooth should be saved?	Yes	18(4.3%)	102(6.4%)	120(6.0%)	4.571	0.102
	No	148(35.7%)	498(31.4%)	646(32.3%)		
	Don't know	248(59.9%)	986(62.2%)	1234(61.7%)		
K3- Do you think a tooth can be completely knocked out?	Yes	129(31.2%)	500(31.5%)	629(31.5%)	0.020	0.886
	No	285(68.8%)	1086(68.5%)	1371(68.6%0		
K4- Do you think primary teeth should be put back in, after they were knocked out?	Yes	12(2.9%)	18(1.1%)	30(1.5%)	6.911	0.009
	No	402(97.1%)	1568(98.9%)	1970(98.5%)		
K5 -Do you think permanent	Yes	130(31.4%)	501(31.6%)	631(31.6%)	0.005	0.942
	No	284(68.6%)	1085(68.4%)	1369(68.5%0		

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teeth should be put back in, after they were knocked out?						
A1- In case of dental trauma which would be the right place for seeking treatment?	Hospital	00(0.0%)	00(0.0%)	00(0.0%)	No statistics are computed because answer is constant.	No statistics are computed because answer is constant.
	Physician's office	00(0.0%)	00(0.0%)	00(0.0%)		
	Dental clinic	414(100%)	1586(100%)	2000(100%0		
	Don't know	00(0.0%)	00(0.0%)	00(0.0%)		
A2- How urgent do you think is it necessary to seek professional help?	Immediately	371(89.6%)	1404(88.5%)	1775(88.8%)	0.390	0.532
	Next day	00(0.0%)	00(0.0%)	00(0.0%)		
	Later	00(0.0%)	00(0.0%)	00(0.0%)		
	Only if any pain or other symptoms are noticed.	43(10.4%)	182(11.5%)	225(11.3%)		
	Don't know	00(0.0%)	00(0.0%)	00(0.0%)		
A3- What would you do if the tooth was completely out of the socket, but still in the child's mouth?	Put the tooth back into the socket	41(9.9%)	101(6.4%)	142(7.1%)	6.323	0.042
	Leave the tooth inside the mouth	00(0.0%)	00(0.0%)	00(0.0%)		
	Remove the tooth from the mouth	275(66.4%)	1107(69.8%)	1382(69.1%)		
	Don't know	98(23.7%)	378(23.8%)	476(23.8%)		
A4 -What will you do with a knocked out tooth that has fallen on the ground and become dirty?	Wash with water/other liquid	235(56.8%)	924(58.3%)	1159(58.0%)	1.539	0.673
	Clean it with a tissue or a piece of paper	19(4.6%)	82(5.2%)	101(5.1%)		
	Don't clean it	33(8.0%)	139(8.8%)	172(8.6%)		
	Don't know what to do	127(30.7%)	441(27.8%)	568(28.4%)		

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A5- Will you attempt for self-reimplantation?	Yes	85(20.5%)	253(16.0%)	338(16.9%)	4.902	0.027
	No	329(79.5%)	1333(84.0%)	1662(83.1%)		

Table 5: Response of parental awareness (P) of parents of previous experience to dental trauma

Questions	Answers	Experience of dental trauma n (%)	No experience of dental trauma n(%)	Total N (%)	Chi-square Test (X)	p-value
P1- Do you think use of mouthgaurd is appropriate for your child during sport activity?	Yes	353 (85.3%)	1374 (86.6%)	1727 (86.4%)	0.521	0.471
	No	61 (14.7%)	212 (13.4%)	273 (13.7%)		
P2- Is the follow-up of the child by dentist important?	Yes	403 (97.3%)	1554 (98.0%)	1957 (97.9%)	0.638	0.424
	No	11 (2.7%)	32 (2.0%)	43 (2.2%)		
P3-Have you ever received any information regarding traumatic dental injuries previously?	Yes	302(72.9%)	1113(70.2%)	1415 (70.8%)	1.218	0.270
	No	112 (27.1%)	473 (29.8%)	585 (29.3%)		
P4- If yes, what is your source of information?	No information	113(27.3%)	473(29.8%)	586(29.3%)	5.894	0.317
	Dentist	66(15.9%)	284(17.9%)	350(17.5%)		
	Physician	27(6.5%)	90(5.7%)	117(5.9%)		
	Friend	119(28.7%)	384(24.2%)	503(25.2%)		
	Internet	47(11.4%)	211(13.3%)	258(12.9%)		

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	/social network					
	others	42(10.1%)	144(9.1%)	186(9.3%)		
P5 -Would you be willing to do your part to make other parents aware of the same?	Yes	414(100.0%)	1586 (100.0%)	2000 (100.0%)	No statistics are computed because answer is constant	No statistics are computed because answer is constant
	No	00(0.0%)	00(0.0%)	00(0.0%)		

DISCUSSION

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 are often the first responders and the action they take and the information they give to the dentist can greatly alter the prognosis of the tooth. The role of the parents has been studied in detail in other states of India but is relatively under explored in Uttar Pradesh.

The study included 2000 parents attending OPD of Pedodontics and Preventive Dentistry, Shree Bankey Bihari Dental College and Research Centre, Ghaziabad, U.P. India, who were assessed with the help of a questionnaire.

The age, gender, education level, residing area and previous experience of dental trauma were recorded in part 1 of questionnaire. In part 2 of questionnaire, an imaginary case of dental trauma was presented and questions were designed to test the parent's knowledge.

In present study, 88.30% parents immediately seek professional help in case of dental trauma. This was lesser than the study conducted by Oliveria et al.,[12] (98%) and was much higher than the study conducted by Namdev et al.,[9] (63.17%).

In present study, 61.70% parents did not know that broken piece of the tooth should be saved or not. Al –Sehaibany et al.[6] also reported that the respondent were unaware of the importance of saving the broken piece of tooth. In present study, 69.10% parents would be removing the tooth from the mouth if the tooth was completely out of the socket, but still in the child's mouth. The study conducted by Loo et al.,[15] and Namdev et al.,[9] reported that 27.6% and 31.8% parents respectively were aware of reimplantation, which was in contrast to our study.

Raphael and Gregory[10] had reported that 62.1% of respondent in their study were willing attempting self-reimplantation. Loo et al.[15] (27.6%), Namdev et al.[9] (31.8%) also reported 27.6% and 31.8% were aware of reimplantation, which was in contrast to our study. Regarding cleaning of contaminated avulsed tooth in present study, 5.1% respondents stated that they clean it with a tissue or a piece of paper while 58% clean with water or other liquid. While 28.4% don't know what to do. Loo et al.,[15] which reported in contrast to our study that 43.8% of the respondents have opted plain water. However, in contrast to our study, Namdev et al.,[9] reported in their study that 51.3% did not have any clue what to do and how to clean the tooth before reimplantation. This indicate many parents don't know the correct method to clean the contaminated avulsed tooth. When the immediate reimplantation is not performed, storage medium that can aid in pulpal and periodontal healing are HBSS, saliva , milk, sterile saline

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solution etc . 24.3% parents opted for a liquid transport medium (water), whereas 54.1% parents opted 'paper' because it is easily available. Dry storage during transport seriously prejudice normal healing and repair following replantation. In contrast to our study, Loo et al.[15] reported that a total of 43.8% of the respondents have opted plain water, which is followed closely by salt water (43.3%). Namdev et al.[9] also reported 37.7% of parents favoured paper tissue as storage medium for avulsed tooth. Similarly, Murali et al,[3] 2014 reported that majority of the parents were unaware of proper storage medium.

On enquiring about source of information about tooth avulsion and its immediate treatment, was found to be most by from friends (25.2%) followed by dentist (17.5%) and internet/social media(12.9%) in participants. In contrast to this study, Loo et al.[15] reported that participating parents have opted for internet as their most preferred source.

A total of 86.4% of parents responded that the use of mouth guards was appropriate for their children during sports activities. This was much lesser than the study conducted by A. Quaranta et al.,[4] (62.9%) reported that more male than female parents were likely recommend the use of mouth guards for their children while playing sports. To prevent sport related dental trauma, it is important to promote the use of mouth guards.

The result of this study indicated low level of knowledge regarding dental trauma and its emergency management. The residing area and sex of parents did not affect their knowledge and awareness. Moreover, well-educated parents also had very little or no information about dental trauma first-aid. The lack of significance in correct answers between those with and without such experience indicated that past experience did not seem to have increase the knowledge of the correct emergency procedures. This is because very little or no information about tooth avulsion and reimplantation had been given to most of them.

Providing information is a way to increase knowledge of dental first-aid. It would be beneficial if instructions regarding how to manage dental injuries are more widespread in society. Efforts should be made through population based preventive measures to insure uniform knowledge about dental trauma. Majority of the parents in our study were willing to attend an educational program on dental trauma.

CONCLUSION

From the present study, it is concluded that both urban and rural parents in and around Ghaziabad are lacking in knowledge regarding emergency management of dental trauma in their children. These people need advice and training regarding emergency management in dental trauma. Educational programs would be necessary to improve awareness of the immediate management of dental trauma. Further studies to assess and compare the knowledge and attitude among urban and rural parents in other areas, regarding emergency management of dental trauma would give a broader perspective.

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