



**AWARENESS OF DENTAL TRAUMA AND IT'S MANAGEMENT AMONG SCHOOL TEACHERS IN KOLKATA**

**Sunita Agarwalla, Shruti Subhash Shah, Biswaroop Chandra, Gautam Kumar Kundu and Shankhanil Dev**

Department of Pedodontics and Preventive Dentistry, Guru Nanak Institute of Dental Sciences and Research

**ARTICLE INFO**

**Article History:**

Received 06<sup>th</sup> June, 2019

Received in revised form 14<sup>th</sup> July, 2019

Accepted 23<sup>rd</sup> August, 2019

Published online 28<sup>th</sup> September, 2019

**Key words:**

XXXXX

**ABSTRACT**

**Aim:** The present study was done to evaluate the knowledge and awareness regarding the management of dental trauma among school teachers in North Kolkata.

**Objective:** To assess the awareness and identify the factors associated with teachers' knowledge related to dental trauma and to describe them the importance of immediate attention and prompt treatment in cases of traumatic dental injuries (TDI's).

**Methodology:** The study was executed by administering a questionnaire in 7 randomly selected schools of north Kolkata.

**Results:** A total of 107 teachers from different schools participated in the study. Data collected was subjected to statistical analysis. The results showed that most of the participants had poor/inadequate knowledge regarding traumatic injuries and its management.

**Conclusion:** Among the school teachers surveyed it was observed that there was significantly very low knowledge of emergency management of dental trauma.

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**INTRODUCTION**

Traumatic dental injury is one of the most common dental problem in the field of pediatric dentistry. Traumatic dental injuries to both primary and permanent dentition and their supporting structures has been one of the major health problem in children. TDI's are highly prevalent from infancy to adolescence. Children of age group 8-12 years most commonly encounter TDIs either at school or at home.<sup>1,7</sup> Boys usually report more TDI's than girls because of their active participation in sports and physical activities.<sup>8</sup> TDI can result in fractured, displaced or lost anterior teeth and this could have significant functional, aesthetic, speech and psychological effects on children thus affecting their quality of life.<sup>2</sup> In early 90s And reasen hypothesized that dental trauma, in the future, will probably exceed dental caries and periodontal diseases since that hypothesis was made, several studies have been conducted in different populations and reported 7%-50% of the child population has sustained an orodental injury by the age of 15 years.<sup>3</sup> The International association of dental traumatology reports that one out of every two children sustains a dental injury. They suggest that in most cases of dental trauma a rapid and appropriate treatment can lessen its impact from both an oral and an aesthetic standpoint.

Prompt emergency management at the site of injury can be provided by the parents and teachers only if they are aware of the management protocols.<sup>9-12</sup>

**MATERIALS AND METHODS**

This cross-sectional study was conducted in different schools of North Kolkata (both private and government schools). The study included 107 teachers from 7 randomly selected schools. The participation was voluntary with informed permission obtained from their respective school administration. The study was executed by administering a questionnaire delivered directly by hand to the respondents at their respective schools. The questionnaire was divided into three sections:

**Part I:** Personal and professional profile of the respondents.

**Part II:** Questions assessing participants knowledge with regard to dental trauma.

**Part III:** Questions aimed at evaluating the attitudes of the teachers towards dental trauma and their experience.

In this study pamphlets which included information regarding the emergency management of TDI were distributed. The data collected was used to investigate gender wise distribution of awareness of TDI and its management according to the response of the school teachers to the different questions in the questionnaire.

\*Corresponding author: Sunita Agarwalla

Department of Pedodontics and Preventive Dentistry, Guru Nanak Institute of Dental Sciences and Research

**RESULTS**

**Analysis:** Descriptive and analytical statistics were done. The data is presented as number with percentages and mean with standard deviation. The normality of data was analyzed by the Shapiro-Wilk test. As the data followed normal distribution, parametric tests were used to analyze the data. The independent sample t-test was used to check mean differences. The difference in proportions was calculated by chi-square test. The level of significance was set at  $p < 0.05$ .

**Software:** SPSS (Statistical Package for Social Sciences) Version 24.0 (IBM Corporation, Chicago, USA)

One fourth (25.2%) of the study participants encountered dental trauma cases during their teaching experience. Only 19.6% study participants experience in managing trauma cases. Most of the study participants (88.8%) came across soft tissue injury. When enquired about most common type of dental injury, 7.5% answered fracture, 8.4% mobile tooth, 14.0% knocked out tooth and 70.1% soft tissue injury. (Table:1)

**Table 1** Experience of child dental injury among the study participants

S.N.	Experience of child dental injury	N	%
1.	Did you encounter any trauma cases during your teaching experience?		
	a) Yes	27	25.2
	b) No	80	74.8
2.	Any previous experience in managing trauma cases?		
	a) Yes	21	19.6
	b) No	86	80.4
3.	Which type of injury you most often came across in children?		
	a) Soft tissue injury	95	88.8
	b) Hard tissue injury	12	11.2
4.	Most common type of dental injury you come across in children?		
	a) Fracture	8	7.5
	b) Mobility	9	8.4
	c) Knocked out tooth	15	14.0
	d) Soft tissue (lip, chin) injury	75	70.1

Twenty nine percent participants were satisfied with the level of the knowledge in managing traumatic injuries. 61.7% participants thought that tetanus toxoid (tt) injection is necessary in dental trauma cases. When enquired about most common soft tissue injury 79.4% answered lip injury, 18.7% chin injury and 1.9% tongue injury. Twenty nine participants came across dental injury every 3 months, 25.2% every 6 months, 4.7% every 9 months and 40.2% every 12 months. Forty percent study participants believed that dental injury is an emergency.

When enquired about knowledge on managing soft tissue injury, 21.5% responded wiping area and applying turmeric, 54.2% applying ointment, 12.1% each visiting a medical practitioner and dentist. When asked regarding first place of contact to seek treatment, 1.9% answered medical practitioner, 44.9% dentist, 19.6% government hospital and 33.6% district hospital. When asked about time to seek treatment, 74.8% answered immediately, 9.3% within next 30 minutes, 11.2% within next few hours and 4.7% answered next day.

Around 19.1% believed in replanting (put back) the tooth into the socket from which it came. Regarding transportation of avulsed tooth, 22.4% answered ice, 29.9% in any liquid, 1.9%

child's mouth, 43.9% in paper/ tissue/ cloth and 1.9% answered other materials. When enquired about what will you do in such cases, 17.8% answered sending the child to school nurse / physician if available, 80.4% contacting parents and advising them to send child to the dentist, and 1.9% answered reassuring the child and send her / him to the class. (Table:2)

**Table 2** Responses of study participants on knowledge of child dental injury

.N.	Are you satisfied with the level of the knowledge you are having in managing traumatic injuries?		
	a) Yes	31	29.0
	b) No	76	71.0
1.	Do you think tetanus toxoid (tt) injection is necessary in dental trauma cases?		
	a) Yes	66	61.7
	b) No	41	38.3
2.	Most common type of soft tissue injury?		
	a) Lip tear	85	79.4
	b) Chin injury	20	18.7
	c) Tongue injury	2	1.9
3.	How frequently do you come across these injuries?		
	a) Once in 3 months	32	29.9
	b) Once in 6 months	27	25.2
	c) Once in 9 months	5	4.7
	d) Once in 12 months	43	40.2
4.	Is it an emergency treatment?		
	a) Yes	43	40.2
	b) No	64	59.8
5.	Knowledge about managing these soft tissue tears?		
	a) Wipe area apply turmeric	23	21.5
	b) Apply an ointment	58	54.2
	c) Visiting dentist	13	12.1
	d) Visiting physician	13	12.1
6.	If your child /student came to you with a knocked out tooth in the hand after an accident, which would be the first place you would contact and seek treatment?		
	a) Medical practitioner	2	1.9
	b) Dentist	48	44.9
	c) Government hospital	21	19.6
	d) District hospital	36	33.6
	e) Others		
7.	How urgent do you think it is to seek professional help if a permanent tooth has been knocked out?		
	a) Immediately	80	74.8
	b) Within 30 mins	10	9.3
	c) Within few hrs.	12	11.2
	d) Next day	5	4.7
8.	Would you replant (put back) the tooth into the socket from which it came?		
	a) Yes	21	19.6
	b) No	86	80.4
9.	If you did not replant (put back) the tooth, how would you transport it to the dentist?		
	a) Ice	24	22.4
	b) Any liquid	32	29.9
	c) Child's mouth	2	1.9
	d) Child's hand	0	0.0
	e) Paper/tissue/clean handkerchief	47	43.9
	f) Others	2	1.9
10.	What will you do in such cases?		
	a) Send the child to school nurse / physician if available	19	17.8
	b) Contact parents and advise them to send child to the dentist	86	80.4
	c) Reassure the child and send her / him to the class	2	1.9
	d) Not sure what to do	0	0.0

The experiences of child dental injury among the study participants were compared between male and female participants. More male (50.0%) study participants encounter dental injury cases than the female counterparts (16.5%) in

their teaching experience. This difference was statistically significant ( $p < 0.001$ ). No difference was seen in previous experience in managing trauma cases ( $p = 0.780$ ). More female (92.4%) study participants came across soft tissue injury cases than the male counterparts (78.6%) in their teaching experience. This difference was statistically significant ( $p = 0.046$ ). Statistically significant difference was also seen in response for common type dental injury ( $p < 0.001$ ) (Table:3)

**Table 3** Comparison of experiences of child dental injury among the study participants

S.N.	Experience of child dental injury	Male N (%)	Female N (%)	P-value
1.	Did you encounter any trauma cases during your teaching experience?			
	c) Yes	14 (50.0)	13 (16.5)	<0.001 <sup>†</sup>
	d) No	14 (50.0)	66 (83.5)	
2.	Any previous experience in managing trauma cases?			
	c) Yes	6 (21.4)	15 (19.0)	0.780
	d) No	22 (78.6)	64 (81.0)	
3.	Which type of injury you most often came across in children?			
	c) Soft tissue injury	22 (78.6)	73 (92.4)	0.046 <sup>†</sup>
	d) Hard tissue injury	6 (21.4)	6 (7.6)	
4.	Most common type of dental injury you come across in children?			
	e) Fracture	6 (21.4)	2 (2.5)	<0.001 <sup>†</sup>
	f) Mobility	4 (14.3)	5 (6.3)	
	g) Knocked out tooth	10 (35.7)	5 (6.3)	
	h) Soft tissue (lip, chin) injury	8 (35.7)	67 (84.8)	

<sup>#</sup>P-value derived from chi-square test; <sup>†</sup>significant at  $p < 0.05$

## DISCUSSION

With respect to teacher's experience with dental trauma it was found that 17.8% of school teachers have previous experience in managing trauma cases. Similar results were obtained in studies conducted by Feldens EG et al 2010, Baginska J et al, 2012. This indicated that the respondent's personal experience of dental trauma may exert positive effects in some aspects of trauma management.

In the present study, the overall knowledge regarding management of avulsed tooth the response rate was poor, whereas in a study conducted by Divya et al 2017 (Kerala),<sup>4</sup> Chan AW et al 2001(Hong Kong)<sup>5</sup>, it was found that teachers knowledge in this regard was good. Regarding the promptness of replantation of an avulsed tooth most of the school teachers (male) responded correctly. There is a significant difference between male and female responses with regard to emergency management of TDI.

The awareness regarding storage media for avulsed tooth was low in our study, most of them opted for tissue paper option, which was similar to studies conducted by Mesgarzaden AH et al.,<sup>6</sup> and by Pithon MM et al,2009.

According to Kahabuka *et al*,<sup>13</sup> a single educational input to school teachers is not enough to promote childhood self care. This is in parallel with the study conducted in Iran where knowledge level of participants who had formal first-aid training at least once in their career and those who did not have. Most likely the information has to be repeated before any long-standing effect can be noted and such repetition can

be performed in other ways such as brochures and posters. Feldens *et al*, had suggested the inclusion of management of TDI in the teachers' curricular training.<sup>14</sup>

## CONCLUSION

Among the school teachers surveyed it was observed that there was significantly low knowledge of emergency management of dental trauma. It has been noticed that management regarding dental trauma is not included in the teaching curriculum. So educational programs should be developed for teachers to encourage them to seek treatment immediately when a dental injury occurs to a child in school. First aid training with dental content and acquisition of dental injury information from other sources has shown to increase knowledge regarding emergency management of dental trauma.

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**How to cite this article:**

Sunita Agarwalla *et al* (2019) 'Awareness of Dental Trauma and it's Management Among School Teachers in Kolkata', *International Journal of Current Advanced Research*, 08(09), pp.19824-19827.

DOI: <http://dx.doi.org/10.24327/ijcar.2019.3852.19827>

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