

Knowledge and Attitude of School Teachers Towards Tooth Avulsion in Rural and Urban Areas

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Abstract

Introduction: School teachers are most likely to be in the vicinity of the child at the time of the injury in the school. Thus they should be well prepared to intervene when such dental emergencies arise.

Purpose: The purpose of this study was to assess the knowledge and attitude regarding tooth avulsion and dental first aid among school teachers in Chandigarh (urban area) and Barwala (rural area).

Material & Methods: The study was performed by administering a self-designed questionnaire on a sample of 50 school teachers of Chandigarh and 50 school teachers of Barwala.

Results: Results showed poor knowledge in the management of avulsed teeth among the school teachers of both Chandigarh and Barwala.

Conclusion: School teachers, being one of the child managers, need to have the basic knowledge to recognize and manage oral emergencies avulsed teeth to prevent its consequences in the child's development.

Keywords: Child managers, Dental emergencies, Knowledge, School teachers, Tooth avulsion

INTRODUCTION

Dental trauma involves injuries to the tooth, periodontium and supporting alveolar bone.^{1,2} Traumatic dental injuries can have a significant impact on the life of children, affecting them both emotionally and physically.³ Dental injuries may cause intrusion, extrusion, avulsion, luxation and subluxation of the tooth.⁴ Every year a large number of dental injuries are reported especially among children belonging to 7-15 year age group.⁵ Studies show that males are injured twice as often as females.⁶ The most commonly traumatised tooth is the maxillary central incisor.⁷

In children, sports were found to be responsible for 13% of overall oral traumas.⁸ Tooth avulsion is a result of trauma in which a tooth comes out of the socket. It comprises 0.5 to 16% of all traumatic dental injuries.⁵ Tooth avulsion leads to disintegration of pulp and periodontal ligament. This

is due to the effects of a lack of blood supply to the cells and environmental factors (example: drying or bacterial contamination).⁹

Successful replantation of an avulsed tooth depends solely on extraoral drying time and the storage medium of the avulsed tooth.¹⁰ Clinical outcome studies have demonstrated that the immediate replantation of avulsed tooth is essential for regeneration of periodontal ligament after replantation.¹¹

People most likely to be in contact with the child at the time of the injury in school are school professionals, thus their knowledge of emergency procedure is important for the better prognosis of the injured tooth.² This study was aimed to assess the knowledge and attitude regarding tooth avulsion and dental first aid among school teachers in rural and urban areas.

MATERIALS AND METHODS

The study was conducted among 50 school teachers of Chandigarh (urban area) and 50 school teachers of Barwala (rural area). Permission for the study was obtained from the concerned authorities. The objectives of the study were explained to all the school teachers who participated in the study and also a written informed consent was obtained from all teachers. A self-designed questionnaire containing demographic details and specially framed 9 questions in English language were administered to the teachers. The respondents were then asked to tick the most appropriate answer from the given list of answers. Filled questionnaire were collected on the same day. Information regarding the tooth avulsion and its emergency management, as a health talk was given in both English and local language in order to improve the awareness among school teachers. Data collected was statistically analyzed, subjected to chi-square test and represented in the form of tables.

RESULTS

The results showed that when teachers were asked about knocked-out tooth 25 (50%) teachers in urban area knew what it meant as compared to 33 (66%) teachers in rural area (Table 1).

Table 1: Do you know, what is knocked-out tooth? (Question 1)

Options	Urban area (Chandigarh)	Rural area (Barwala)	p-value (< 0.05)
Yes	25 (50%)	33 (66%)	0.104
No	25 (50%)	17 (34%)	

Regarding question of information on tooth replantation, 34 (68%) teachers knew what tooth replantation is in urban area, while 16 (32%) teachers in rural area were aware of the same (Table 2).

Table 2: Do you know, what tooth replantation is? (Question 2)

Options	Urban area (Chandigarh)	Rural area (Barwala)	p-value
Yes	34 (68%)	16 (32%)	0.0003
No	16 (32%)	34 (68%)	

When teachers were asked what should be done if knocked out tooth falls on the ground, in urban area 22 (44%) teachers knew what should be done as compared to 13 (26%) teachers in rural area (Table 3).

Table 3: If the tooth is knocked out and falls on the ground, do you know what should be done? (Question 3)

Options	Urban area (Chandigarh)	Rural area (Barwala)	P value
Yes	22 (44%)	13 (26%)	0.059
No	28 (56%)	37 (74%)	

Knowledge of teachers about placement of tooth back into its socket showed that 27 (54%) urban school teachers answered 'yes', while 32 (64%) teachers in rural area gave this answer (Table 4).

Table 4: Should the knocked out tooth be placed back into the socket? (Question 4)

Options	Urban area (Chandigarh)	Rural area (Barwala)	p-value
Yes	27 (54%)	32 (64%)	0.310
No	23 (46%)	18 (36%)	

Information of teachers on ideal time within which avulsed tooth should be replanted showed that the number of teachers not aware about this was 18 (36%) in urban area and 30 (60%) in rural area, in urban area 15 (30%) teachers in and 17 (34%) in rural area answered that the optimum time is within 24 hours, 6 hours was the right answer for 5 (10%) teachers in urban area and 1 (2%) in rural area, 2 (4%) teacher in urban area said 5 and 30 min (Table 5).

Table 5: How immediately the tooth replantation should be performed after the tooth comes out of the socket? (Question 5)

Options	Urban area (Chandigarh)	Rural area (Barwala)	p-value
5 min	1 (2%)	0 (0%)	0.495
30 min	1 (2%)	0 (0%)	
1 hour	3 (6%)	1 (2%)	
6 hour	5 (10%)	1 (2%)	
24 hour	15 (30%)	17 (34%)	
72 hour	7 (14%)	1 (2%)	
Do not know	18 (36%)	30 (60%)	

When the teachers were asked about their knowledge on handling and cleaning of the avulsed tooth, the number of teachers who were unaware of this procedure was 14 (28%) in urban area and 19 (38%) in rural area, 9 (18%) teachers in urban area and 6 (12%) in rural area suggested that the tooth should not be kept or washed, milk was chosen by 1 (2%) teacher in rural area, 7 (14%) teachers in urban area and 16 (32%) in rural area answered washing it in the tap water, in urban area 9 (18%) teachers gave their opinion to brush the roots and crown (Table 6).

Table 6: If the tooth falls on the ground and gets dirty, what should you do? (Question 6)

Options	Urban area (Chandigarh)	Rural area (Barwala)	p-value
Brush crown and root	9 (18%)	0 (0%)	0.032
Wash with tap water	7 (14%)	16 (32%)	
Wash with milk	0 (0%)	1 (2%)	
Wash with saline	11 (22%)	8 (16%)	
Do not wash	9 (18%)	6 (12%)	
I do not know	14 (28%)	19 (38%)	

For the treatment of the knocked-out tooth, 48 (96%) teachers in urban area and 33 (66%) in rural area chose a nearby dentist for treatment, in urban area 1 (2%) teacher and in rural 10 (20%) teachers opted for General hospital, 4 (8%) teachers in rural area suggested on visiting a Dental college for treatment (Table 7).

Table 7: First place to seek for treatment? (Question 7)

Options	Urban area (Chandigarh)	Rural area (Barwala)	p-value
Emergency hospital	1 (2%)	3 (6%)	0.0002
General hospital	1 (2%)	10 (20%)	
Dentist nearby	48 (96%)	33 (66%)	
Private doctor	0 (0%)	0 (0%)	
Medical College	0 (0%)	0 (0%)	
Dental College	0 (0%)	4 (8%)	
Others	0 (0%)	0 (0%)	

When asked about the most suitable transport media for storing the tooth, 18 (36%) urban school teachers and 17 (34%) teachers in rural area were not aware of the appropriate media, cotton rolls were chosen by 15 (30%) teachers in urban area and 4 (8%) in rural area, tissue paper was chosen by 6 (12%) teachers in urban area and 3 (6%) in rural area, 2 (4%) teachers in urban area and 10 (20%) in rural area answered tap water, saline water was the right answer for 6 (12%) teachers in urban area and 4 (8%) in rural area, 1 (2%) teacher in rural area opted for milk and other medium (Table 8).

Table 8: Transport media? (Question 8)

Options	Urban area (Chandigarh) (%)	Rural area (Barwala) (%)	p-value
Napkin	1 (2)	4 (8)	1
Tissue paper	6 (12)	3 (6)	
Cotton rolls	15 (30)	4 (8)	
Pocket	1 (2)	1 (2)	
Poly bags	1 (2)	5 (10)	
Tap water	2 (4)	10 (20)	
Saline water	6 (12)	4 (8)	
Milk	0 (0)	1 (2)	
Saliva	0 (0)	0 (0)	
Others	0 (0)	1 (2)	
I do not know	18 (36)	17 (34)	

The answer to the question on any prior information received by the teachers on this subject, 50 (100%) teachers in both rural and urban area had not received any information regarding the management of avulsed tooth (Table 9).

Table 9: Have you ever received any kind of information on management of knocked-out tooth? (Question 9)

Options	Urban area (Chandigarh)	Rural area (Barwala)
Yes	0 (0%)	0 (0%)
No	50 (100%)	50 (100%)

DISCUSSION

The results of the study showed insufficient knowledge regarding tooth avulsion and its first aid treatment among school teachers of Chandigarh (urban area) and Barwala (rural area), these results were comparable with previous similar studies.¹²⁻¹⁵ In present study, many teachers in both rural and urban area did not know what was knocked-out tooth or tooth replantation. This is very surprising, since tooth avulsion occurs commonly in school children between 7 and 11 years old.¹⁶ However, the teachers themselves cannot be blamed for, since hardly any campaigning or exposure regarding tooth avulsion had been done in Chandigarh or Barwala.

Successful prognosis for avulsed tooth depends on immediate replantation with minimal further damage to cells of the root surfaces. In this study, 32 (64%) teachers in rural areas were aware that the avulsed tooth can be placed back into its socket while 27 (54%) of them were aware of this in urban areas. However, in a study conducted by Hamilton et al only 10.7% of the respondents knew that the knocked-out tooth can be replaced back into its socket but they feared being sued for replanting the tooth incorrectly.¹⁷

Time is one of the important factor for avulsed tooth to preserve their vitality after replantation. Two teacher in urban area answered that tooth should be replanted within 5 and 30 minutes while none in rural area answered correctly. This result could be attributed to lack of knowledge and information regarding management of tooth avulsion.

In most of tooth avulsion cases, the avulsed tooth would fall on the ground and get dirty. The knowledge to clean a dirty avulsed tooth is also very important. In the present study, 25 teachers in rural areas responded that they would clean the tooth in saline water, milk or tap water as compared to 18 teachers in urban areas. However, nine teachers in urban area reported that they will brush the tooth root and crown unaware that they would severely decrease the chance of successful replantation. Similar

response was obtained in a study conducted by Hamilton et al, where 2.2% respondents wanted to scrub the tooth prior tooth replantation while only 8% washed it with milk.¹⁷

On review of literature, the appropriate storage media to permit periodontal and pulpal healing are milk, saline water and saliva.¹⁶ 6 teachers in urban areas opted for these as compared to 5 teachers in rural areas. 15 teachers in urban area and 4 teachers in rural areas chose cotton rolls. In contrast, in another study teachers of Porto Rico statistically had more correct answer for transportation media for avulsed tooth.¹⁶

Regarding procedures to be followed in case of tooth avulsion, 48 (96%) teachers in rural areas would take the child to the dentist nearby as compared to 33 (66%) teachers in rural areas. No teachers in rural or urban area were given any information on management of knocked-out tooth.

CONCLUSION

This study concluded that, school teachers of both rural and urban area had insufficient information about the management of knocked out tooth. Due to lack of their knowledge on this subject, they are incapable to handle the avulsed tooth. Hence, school teachers should be given appropriate information to handle the child and the tooth during various dental emergencies and this can be accomplished by conducting school educational programmes for teachers and other child supervisors.

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