PREPAREDNESS AMONG TEACHERS IN HANDLING EMERGENCY DENTAL NEEDS AMONG CHILDREN – A COMPARATIVE STUDY BETWEEN GOVERNMENT AND PRIVATE SCHOOL TEACHERS IN ASSAM

Angshumita[1], Sindhu R[2], Savitha S[3], Sathiyapriya S[2], Prabu D[4], Raj Mohan M[5], Bharathwaj V V[2], Dinesh Dhamodhar[5]

[1]Undergarduate student, SRM dental college, Ramapuram, Chennai, India

[2]Senior Lecturer, Department of Public Health Dentistry, SRM dental college, Ramapuram, Chennai, India.

[3]Postgraduate student (Master of Dental Surgery), Department of Public Health Dentistry, SRM Dental College, Ramapuram, Chennai, India.

[4]Professor and Head of the Department, Department of Public Health Dentistry, SRM dental college, Ramapuram, Chennai, India.

[5]Reader, Department of Public Health Dentistry, SRM dental college, Ramapuram, Chennai, India.

Corresponding Author:

Dr. Prabu D, Master of Dental Surgery, Professor and Head, Department of Public Health Dentistry, SRM Dental College, Ramapuram, Chennai, India-600089

Contact Number: +91 8072019608

Email: researchphdsrm@gmail.com

ABSTRACT: -

Aim: This study compares government and private school teachers to assess their knowledge, awareness and attitude in handling dental emergencies among school children. Methodology: A comparative study was conducted among teachers from the government and private schools of Assam.150 participants from government and private schools participated in the study. The data of government school teachers were compared to the data of private school teachers. The study was statistically analysed using the chi-square test to compare the two groups of teachers. Results: The study found that Government school teachers are better at managing a toothache in an 8-year-old child than private school teachers. A significant difference (p=0.02) is observed where most private teachers (52.1%) choose to notify the parents, while most government school teachers (66.7%) take the child to the dentist. Comparing the teachers' understanding of the age of incisor eruption, a significant difference (p=0.013) was observed, where private school teachers had a better understanding of eruption than government school teachers. Conclusion: The study found that there are few significant differences between teachers in public and private schools when it comes to managing oral crises. Both groups lack the necessary expertise to do so well. As a result, it is important to conduct more awareness campaigns about TDIs so that teachers have greater understanding and better attitudes when treating dental emergencies.

Keywords: Dental emergency, Management, School Teachers, Children.

INTRODUCTION: -

A dental emergency is a condition or issue in which there is trauma, fracture or any other problem involving the tooth and surrounding supporting structures, jaw or face that needs immediate treatment in

order to prevent further damage or progression of the condition [1], [2]. Dental emergencies include conditions like toothache due to underlying conditions like pulpitis or periapical abscess, orofacial pain, dental trauma, fractured tooth, fracture of the jaw, avulsed tooth etc. [3]

Both adults and children face a range of dental emergencies on a day-to-day basis. As children are involved in some or other physical activities like playing games in the open air, they encounter various dental emergencies like knocked out teeth, chipping of enamel or any other dental trauma which later leads to various other complications such as the delayed eruption of a permanent tooth, developmental disorders such as fusion, gemination, etc. in a permanent tooth, occlusion problems and aesthetic problems. All this ends up affecting the child on the physical, mental and even social levels [4], [5].

A 2016 study shows boys are more likely to deal with dental emergencies because of their active involvement in sports [6]. The most commonly affected teeth during dental emergencies are the maxillary central incisor (37%), mandibular central incisor (18%), mandibular lateral incisor (6%) and maxillary lateral incisor (3%) [6], [7]. In addition, studies have shown that the prevalence of traumatic dental emergencies ranges between 11% to 30% in primary dentition and 4% to 58% in permanent dentition and in this luxation, injuries are most commonly seen in the primary dentition. In contrast, crown fractures are more commonly reported for permanent teeth [8], [9], [10].

The most common places where children encounter dental emergencies are the schools, house or playgrounds near and outside these schools is the most common place because children have spent most of their time here and, consequently, during dental emergencies in schools, teachers will be the first to be contacted [8],[11].

Since the prognosis of any dental emergencies depend upon immediate and appropriate primary measures taken Hence teachers' knowledge and attitude about dealing with these emergencies and counselling the child in such situations become very important as ignorance of such conditions not only leads to poor prognosis, but affects the child's mental health as well [11],[12],[13]. Therefore, this study is done between Government and Private school teachers to know their knowledge, awareness and attitude while handling dental emergencies.

Dental emergencies can occur at any point of time during school hours. Suppose the school is successful in addressing such problems quickly and efficiently. In that case, it will definitely have a great outcome for the child physically, mentally and socially because, according to a study in 2012, dental emergencies hinder the learning process of a child, whether it is academically or socially and focusing on these situations and treating them early will provide the child with a safe and healthy school environment [14]. Hence, the aim of this study is to understand the awareness, knowledge, attitude and preparedness of teachers in the event of a dental emergency, whether private or Government schools are further advanced or better prepared to deal with such emergencies. In case of a lack of

facilities and awareness in dealing with these emergencies, what must be done to improvise in the future and to sensitize people to such situations.

METHODOLOGY: -

The present study is a comparative study conducted between government and private school teachers in Assam, India. This included teachers from both rural and urban areas. A total of 150 school teachers from both Government and Private Schools participated in the study, including teachers from primary, secondary and higher secondary sections. The objective of the study was explained to all those who participated in the study. A multiple-choice questionnaire consisting of 26 questions in English in the format of Google form was distributed among the teachers who participated in the study. The questionnaire is based on the needs of the study by referring to studies conducted in different parts of the world [15], [16]. The questionnaire comprised of demographic details such as name, age, designation, the name of the school they work in, whether the school organise annual oral health programmes or not etc, following a set of imaginary cases and a set of questions regarding dental knowledge and emergencies such as an avulsed tooth, tooth fractured, eruption age, swelling of jaw etc. was given to evaluate their knowledge, attitude and preparedness in handling dental emergencies. The participants then chose the most relevant options from the given options in the questionnaire. The completed questionnaire was collected and then statistically analysed using the Chi-square test with Microsoft Excel. The data of the government school teachers were compared to the data of private school teachers.

RESULT: -

Table 1 shows the demographic details of both Private and Government School Teachers, which include their school type and designation. A total of 150 schools participated in the survey, among which 75 were government school teachers, and 75 were Private school teachers. Out of 150 School Teachers, 71 were Secondary or Higher Secondary teachers, 50 were Primary teachers, 13 were Head Masters, 4 were Vice principals, and 12 were Principals.

Table 2 evaluates the attitude and awareness of school teachers towards oral health and a dental emergency. It is revealed in the study that only 50.4% of Government and 49.6% of private school teachers have received basic first-aid training. It is also revealed that only 51.0% of Government and 49.0% of Private schools conduct annual oral health programs.

About 48.3% of Government and 51.7% of private school teachers have witnessed dental emergencies in their schools. When asked about which group of students were more prone to such crises, 54.4% of government school teachers chose Primary students, while 73.7% of Private school teachers chose higher secondary students. About 53.8% of private and about 46.2% of government school teachers have encountered mobile tooth conditions in their schools.

The study revealed that 57.6% of private and 42.4% of government schools have a school infirmary with personnel with knowledge of handling dental emergencies. When inquired about if they have ever experienced of handling shaking or mobile teeth in children, only 46.2% of Government and only 53.8% of Private school teachers responded positively. 55.3% of Government and 44.7% of Private

school teachers feel that their schools don't have adequate staff/material for handling dental emergencies. There is no significant difference seen between Private and Government school teachers in the above table.

Table 3 evaluates the knowledge and awareness of both private and Government school teachers. For this, they were presented with various imaginary situations and asked questions related to general dental knowledge. When asked what measures they would take to manage toothache in an 8-year-old, 66.7% of government teachers opted to take the child to the nearest dental clinic, while 52.1% opted to inform parents. A significant difference is noted between the responses from both government and private school teachers.

Regarding how they would arrest bleeding from a socket in a child, 52.3% of government teachers opted for the correct option, while only 47.7% of Private school teachers opted for the same. No significant difference is noted among the responses of government and private school teachers. Based on their understanding of the age of the eruption, 68.0% of private school teachers opted for the correct option, while only 32.0% of government school teachers opted for the right option. A significant difference ($p = 0.013$) is noted in the distribution of responses from government and private school teachers.

Regarding how they would handle a fractured tooth, 54.1% of government school teachers chose to inform the parents regarding this, while 53.8% of private school teachers chose to ask the child to rinse their mouth and look for the fractured part. According to a study on Avulsion, milk is considered one of the best mediums while transporting an avulsed tooth [17]. Our study revealed that most private school teachers (56.8%) opted to transport the tooth in normal water as a medium, while most of the government school teachers (62.5%) opted to transport the tooth by keeping it in ice. When asked how long an avulsed tooth can be out of the mouth, private and Government school teachers didn't know the correct option. When they were asked how they would calm an anxious child during any dental emergency, private and Government school teachers were confused about what to do. There is a significant difference between Government and private school teachers regarding their knowledge and awareness in handling dental emergencies.

DISCUSSION: -

The present study was conducted among 150 school teachers in Assam to assess the preparedness among school teachers in handling a dental emergency. As dental emergency emergencies are highly prevalent from infancy to adolescence and mostly it is common in schools, it is important to assess teachers' knowledge, attitude and preparation while handling such emergencies because teachers are the first individual to be contacted when such a situation occurs and secondly these situations not only it affects the child physically it can also alter facial development, psychological behaviour etc. Hence, it is crucial to assess how school teachers' council the child and manage these emergencies for a better prognosis [6].

In the present-day study, a questionnaire consisting of 26 Questions was distributed among 150 school teachers

of Government and Private school teachers, which included their demographic details, questions that evaluate their attitude and awareness towards oral health, and some imaginary situations were given to assess their knowledge, awareness and attitude while handling dental emergencies.

The current study found that only 50.4% of the Government and only 49.6% of the private school teachers in Assam have received basic first aid training, and only 51% of government schools and 49% of private schools conduct annual oral health programs. No significant difference was noted among the responses of private and Government school teachers. This contradicts a study conducted in Bangalore in 2009, where it was reported that 90% of school teachers had basic first-aid training [23]. This disappointingly indicates that even though a majority of government and private school teachers have basic training in first aid, it is still low compared to other states. The reason might be due to a lack of awareness or ignorance, inaccessibility to proper resources etc. Hence more teachers should be encouraged to take basic first aid training along with appropriate resources and training.

The study revealed that 48.3% of Government and 51.7% of Private school teachers have encountered or had an experience of handling dental trauma. No significant differences were noted between the responses of government and private school teachers. A nearly similar outcome was recorded in a study conducted in Kannur, Kerala [18], where 48.25% of teachers had experienced or witnessed a dental emergency. Our studies also observed that private schools have about 57.6 % of school infirmary staff with knowledge of handling dental emergencies, while the Government schools have 42.4% for the same. Again, no significant differences are noted between the responses from private and Government school teachers. These results are approximately similar to a study conducted in Boston Public School [19] done to assess the knowledge of school nurses in handling dental emergencies where, unfortunately, a very low percentage of the participants, less than 35%-40% participants in the study had a proper knowledge of handling dental emergencies in schools. This might be due to the limitation of dental first aid courses in higher studies and courses and a lack of confidence and supervision while approaching such situations. This implies the need for proper facilities, upskilling and in-depth education to prevent and treat dental emergencies.

When evaluated on their knowledge of permanent anterior tooth eruption age, most of the private school teachers (68%) opted for the correct option. In comparison, only 32% of government school teachers opted for the correct option. A significant difference is observed between the responses received from both government and private school teachers. Studies conducted in Kolkata [16], Hong Kong [20] and the United Arab Emirates [21] yielded similar results where only a handful of teachers, 56.6% of participants in Kolkata and 44.1% of participants in United Arab and only 29.6% of respondents could distinguish between permanent and deciduous dentition. This could be due to training programs and workshops lacking properly planned sessions containing all the necessary topics. The reason for the significant difference between Government and private school teachers' responses may be due to the paucity of appropriate resources and fewer school-led oral health programs. Hence to enhance the dental

knowledge of teachers, more oral health programs and training should be conducted, making sure that these programs consist of proper planning sessions along with updating their healthcare knowledge.

When they are evaluated on how they will handle toothache in an 8-year-old student, only 66.7% of Teachers in government schools have chosen to send the child to the closest dental clinic, while only 33.3% of private school teachers opted for the same. A significant difference is noted between the responses from both government and private school teachers. When asked how they would arrest bleeding from a socket, 52.3% of the Government and 47.7% of private school teachers opted for the correct option. A study carried out in Urban schools in Bangalore yielded about approximately results [23], where teachers were confronted about the management of avulsed teeth and the majority (49.6%) and (35.3%) of them chose to send the child to the nearest dental clinic immediately or within 30 minutes respectively, this could be due to the availability of private and public dental clinics within the city. In our study, the reason for the large difference could be attributed to the availability and accessibility of government services in government schools compared to private schools. Hence private schools should be provided with more accessibility to these services, or the schools should be provided with resources and healthcare personnel to handle these emergencies.

Regarding dental fracture management, the majority of the Government (54.1%) chose to inform parents, while most private school teachers (53.8%) opted for rinsing the mouth to control bleeding. These results were in agreement with the study conducted in South Jaipur [6], where most teachers opted to just arrest bleeding, and only a handful of responders (1.4%) gave importance to finding the fractured part. But in, contrary to the present study, a study conducted in Kannur, Kerala, revealed that the majority of school teachers (23.4%) had the knowledge of taking immediate and appropriate actions in case of a fractured tooth [18]. These differences in the results might be due to the availability of more advanced resources, frequent dental camps hosted by colleges and advanced training sessions for the management of TDIs in Kerala compared to Assam. Hence consideration should be given to enhance their knowledge of the management of TDIs, along with providing advanced resources and training sessions for better prognosis and prevent further complications.

According to a study on Avulsion, milk is considered one of the best mediums while transporting an avulsed tooth [17]. In the present study, when participants were assessed about their knowledge regarding avulsed teeth, it was revealed that most government school teachers opted for transporting the tooth in normal water as a medium, while most of the private school teachers opted for transporting the tooth by keeping it in ice. These findings are in agreement with a study conducted in Kerala, where many teachers opted for transporting the avulsed tooth in normal bottled water as a medium [18]. When assessed about how much duration can an avulsed tooth can be out of the mouth, both Private and Government school teachers didn't know the correct option, which is

similar to the findings conducted in Saudi Arabia back in 2011, where only 6% and 10% of teachers opted for immediate reimplantation and knew about the duration of time a tooth can stay out of mouth [22]. Interestingly another study done in Dammam, Saudi Arabia, in 2022 [12] contradicts our present study findings where the majority of the teacher, about one-third of respondents, responded correctly. The difference between both Saudi Arabian is probably due to advanced training and upgrading the healthcare knowledge of school teachers through the years, and the same must be done for both the Private and Government School teachers in Assam as most of them lack a thorough knowledge and training of addressing TDIs.

Surprisingly, our study found that 44.7% of private and 55.3% of government school teachers feel and acknowledge that their school lacks staff, an infirmary and materials for handling dental emergencies.

This study concludes that there is not much of a significant difference between government and private school teachers in Assam for handling dental emergencies. There needs to be more proper guidance and awareness, inaccessibility to proper and advanced resources and services, and inadequate training sessions giving importance to oral health and TDIs. Hence all these aspects should be taken into account and must be covered in the future for better prognosis of TDIs and contributing to building a better and safe environment for children in schools.

Due to several limitations of this study being restricted to only to a small portion of school teachers in Assam from both Private and Government schools, a full representation of their level of knowledge regarding dental emergencies could not be covered. Hence more studies must be conducted in the region in future which cover all the aspects to fully analyse their knowledge, and attitude towards dental emergencies and improve areas where there are insufficient resources, materials, etc., to improve TDI prognosis among school children.

CONCLUSION: -

The present study comes to the conclusion that there is not much of a significant difference observed among the knowledge of handling dental emergencies between government and private school teachers in Assam. It is evident that both government and private school teachers have insufficient knowledge and attitude while managing TDIs among school children. It is suggested that an awareness campaign including all aspects of TDI management be carried out in the future. Particular attention should be paid to TDI management training to improve their skills, knowledge and attitude while approaching a dental emergency case. In addition, more programs should be promoted that provide access to resources that support the management of TDIs. Finally, more dentists should step up and educate the general public about the importance of oral health and TDI management.

ACKNOWLEDGMENTS: Nil

CONFLICT OF INTEREST: Nil

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Table 1: Demographic Details

School Type	
Government	75
Private	75
Designation	
Primary Teacher	50
Secondary or Higher Secondary Teacher	71
Head Master	
Vice Principal	13
Principal	4
	12

Questions	***Options***	**School type**		***P-Value***
		Government **N (%)**	***Private*** **N (%)**	
1. School provide First Aid Training/ Have basic training in First Aid	Yes	61 (50.4%)	60 (49.6%)	0.836
	No	14 (48.3%)	15 (51.7%)	
2. School conducting annual Oral Health Awareness Program	Yes	50 (51.0%)	48 (49.0%)	0.864
	No	25 (48.1%)	27 (51.9%)	
3. Ever witnessed any Dental Emergency	Yes	43 (48.3%)	46 (51.7%)	0.618
	No	32 (52.5%)	29 (47.5%)	
4. Group of students more prone to dental emergencies	Primary students	37 (54.4%)	31(45.6%)	0.836
	Secondary Students	33(52.4%)	30(47.6%)	
	Higher Secondary Students	5(26.3%)	14(73.7%)	
5. School infirmary has staff with knowledge of handling dental emergencies	Yes	36(42.4%)	49(57.6%)	0.099
	No	22(61.1%)	14(38.9%)	
	Don't know	17(58.6%)	12(41.4%)	
6. Ever encountering a shaking tooth among children	Yes	42(46.2%)	49(53.8%)	0.242
	No	33(55.9%)	26(44.1%)	
7. If their school have adequate staff/materials to handle dental emergencies	Yes	33(44.6%)	41(55.4%)	0.191
	No	42(55.3%)	34(44.7%)	

Table 2: - Awareness and attitude towards oral health and dental emergency

* Significant at the level P- Value less than 0.05.

Questions	Options	School type		P-value
		Government	Private	
1. Measures taken if an 8-year-old suddenly starts having toothache	Take them to the nearest dental clinic	34 (66.7%)	17 (33.3%)	0.02*
	Call Parents/Guardians immediately	23 (47.9%)	25 (52.1%)	
2. Primary approach taken to arrest bleeding	Put a Cotton/Gauze in the bleeding area and ask them to bite	23 (52.3%)	21(47.7%)	0.995
3. Age of Eruption of Permanent anterior tooth	4-5 years	22 (52.4%)	20(47.6%)	0.013*
	6-8 years	16 (32.0%)	34(68.0%)	
4. Measures taken to handle a child with a fractured tooth before sending them to professional care	Inform parents regarding this	20 (54.1%)	17(45.9%)	0.81
	Ask them to rinse the mouth and look for the fractured part	18 (46.2%)	21(53.8%)	
5. Duration of time tooth can stay out of the mouth without any damage	Don't know	39 (50.0%)	39(50.0%)	0.098
6.Transporting an avulsed tooth to a Dentist	Put it normal water	19 (43.2%)	25(56.8%)	0.06
	Ice	20 (62.5%)	12(37.5%)	
7. Situation considered calming an anxious child during a dental emergency	Don't know	24 (48.0%)	26 (52.0%)	0.098

Table 3: - Knowledge and Awareness of handling Dental emergency