



Knowledge and Awareness of School Teachers in Respect to Management of Dental Trauma

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ABSTRACT

Background: Dental trauma among school-aged children is a significant health issue, making it essential for educators, especially school teachers, to be knowledgeable and skilled in providing immediate care. Although dental injuries are common, research has shown a considerable gap in assessing teachers' readiness to manage these situations effectively.

Materials and Methods: A cross-sectional survey targeting 35 school teachers in Chennai was conducted from October to November 2023. Demographic data, knowledge levels, and awareness regarding dental trauma management were assessed through a validated questionnaire. Statistical analysis was done using Google Forms, Excel, and VassarStat.

Results: Out of the 35 school teachers who completed the questionnaire, 51.4% were male and 48.6% were female. Almost 68.6% of the teachers had received training in dental injury management during their teacher training programs. Most teachers recognized the importance of primary teeth and were aware of replantation procedures. However, their knowledge varied, with significant gaps in identifying the age of permanent teeth eruption and their confidence in distinguishing between primary and permanent teeth.

Conclusion: While some positive aspects were noted, targeted educational initiatives and ongoing professional development are crucial to further enhance teachers' confidence and knowledge. Overall, they possess a fair understanding of dental trauma management among school children.

Keywords: Dental trauma, school teachers, knowledge, awareness, emergency management

I. INTRODUCTION

Dental trauma in school-aged children is a significant health concern with far-reaching consequences for oral health and overall well-being.¹ Accidents and injuries are inherent risks in the dynamic environment of educational institutions, making it imperative for educators, particularly school teachers, to possess adequate knowledge and awareness of the immediate management of dental trauma incidents.² The swift and appropriate response of teachers in the crucial moments following an oral injury can substantially influence the outcomes for affected students.

The incidence of traumatic dental injuries in children is notably high, particularly among those aged 8 to 11 years. About 60% of these cases involve damage to the teeth, with over 48% specifically affecting the upper maxillary teeth. Interestingly, 16% of these injuries take place within the school setting, while 19% result from falls in other locations. Thirty percent of affected children endure injuries to their primary dentition, while 20% suffer harm to their permanent dentition³.

The causes of these injuries encompass a range of scenarios, including falls, collisions, physical altercations, sports-related incidents, and instances of pushing. Despite the prevalence of dental injuries among school children, there is a notable dearth of research examining the preparedness of teachers in handling such situations.

Understanding the current landscape of teacher's preparedness is fundamental for implementing targeted educational initiatives and fostering a safer environment for students. The consequences of inadequately managed dental trauma extend beyond immediate discomfort, affecting the long-term oral health of the child. Prompt and correct actions in the initial stages following an injury can mitigate complications, reduce treatment costs, and enhance the overall quality of life for the affected individuals.⁴

As schools are not only centres of academic learning but also crucial hubs for the holistic development of children, the role of teachers in ensuring the health and well-being of their students becomes paramount. A significant enhancement in treatment outcomes can be observed if school teachers possess ample knowledge and awareness of first aid procedures, recognizing the urgency of promptly administering emergency treatment for dental injuries. Optimal treatment results are most likely achieved when injured teeth receive immediate and appropriate procedures.

There were huge number of questionnaire and cross sectional studies in India based on the awareness levels of school teachers regarding dental trauma management. However, no studies were found to have assessed the dental trauma knowledge of school teachers from Mogappair area in Chennai, Tamil Nadu. Hence, The objective



of the present study was to assess the knowledge and awareness levels of school teachers regarding dental trauma management. By evaluating the current state of teacher preparedness, the study seeks to provide valuable insights that can serve as a foundation for targeted interventions, ultimately improving both the immediate and long-term outcomes of dental trauma incidents in the school environment.

II. MATERIALS AND METHODS

The research spanned from October to November 2023 and specifically targeted school teachers in and around Mogappair schools in Chennai, Tamil Nadu. Approval and validation for the study were obtained from Thai Moogambigai Dental College and Hospital, along with clearance from the Institutional Review Board (IRB). Prior to participation, all individuals willingly provided informed consent, ensuring their voluntary involvement, and the study prioritized maintaining the confidentiality and anonymity of participants, refraining from collecting personally identifiable information. Employing a cross-sectional survey method, a total of 35 school teachers participated in the study. The survey questionnaire aimed to evaluate the knowledge and awareness of school teachers regarding the management of dental trauma in Mogappair, Chennai. Demographic information, including age group, gender, qualifications, and years of experience, was collected. The questionnaire validation process is detailed, with data collection conducted via Google Forms, accompanied by a briefing on the survey's intentions and explanations. The collected data were formatted in English and transferred to Excel, with statistical analysis performed using VassarStat. A significance level of $p < 0.005$ was used to determine statistical significance in the analysis.

III. RESULTS:

The study enlisted the participation of 35 school teachers, with a breakdown based on various demographic characteristics. Table 1 shows the demographic characteristics of the participating teachers. In terms of age distribution, 17.1% fell within the 20-30 years old category, 40% were in the 30-40 years old range, and 42.9% were above 40 years old (Fig 1). Gender-wise, the study comprised 51.4% males and 48.6% females (Fig 2). Regarding educational qualifications, 40% had completed their undergraduate studies, while 60% had accomplished postgraduate degrees. In terms of teaching experience, 28.6% had 5 years of experience, 34.3% had between 5 and 10 years, and 37.1% had more than 10 years of teaching experience (Fig 3). A substantial 74.3% (Fig 4) were aware of the significance of primary teeth in children. However, only 37.1% correctly identified the age at which permanent teeth typically begin to erupt in the oral cavity (Fig 5), citing 6-7 years old. Approximately 65.7% of teachers reported having received first aid training during their teaching training, with a corresponding 34.3% (Fig 6) stating that they learned about dental injury management as part of their first aid training during their teacher training program, at least in the preliminary levels. 60% (Fig 7) of respondents recognized the importance of saving a broken tooth piece if a tooth is fractured. Concerning avulsed teeth, 42.9% of teachers mentioned that they would manage such a situation by promptly seeking assistance from a near by dentist. Forty percent of participants asserted that milk is the optimal medium for storing an avulsed tooth. The majority of teachers, at 65.7%, reported rarely encountering dental trauma in school children. Regarding the most common teeth to be traumatized, 40% of respondents identified the upper front teeth.

TABLE:1 DEMOGRAPHIC DATA

CHARACTERISTICS		FREQUENCY [N]	PERCENTAGE [%]
AGE GROUP	20-30 YEARS OLD	6	17.1%
	30-40 YEARS OLD	14	40%
	ABOVE 40 YEARS OLD	15	42.9%
		FREQUENCY (N)	PERCENTAGE (%)
GENDER	MALES	18	51.4%
	FEMALES	17	48.6%
QUALIFICATION	UG COMPLETED	14	40%
	PG COMPLETED	21	60%



TEACHING EXPERIENCE	5 YEARS	10	28.6%
	5- 10 YEARS	12	34.3%
	> 10 YEARS	13	37.1%
	TOTAL	35	100.0

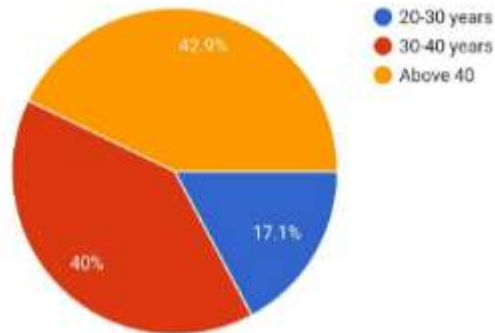


Fig 1: Age distribution among the School teachers.

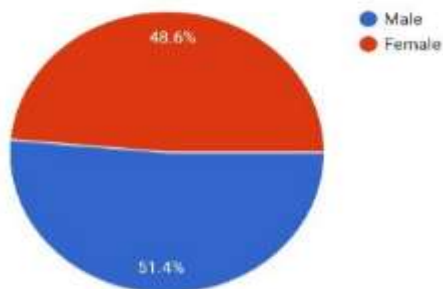


Fig 2: Sex prediction among school teachers.

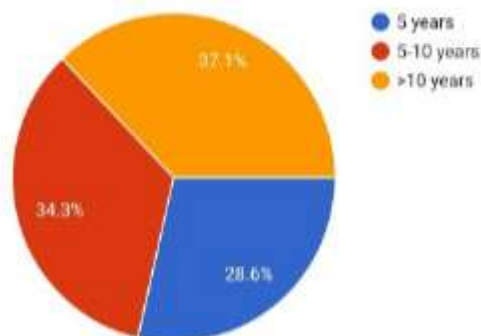


Fig 3: Years of teaching experience.

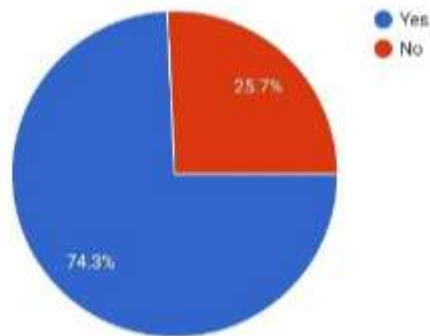


Fig 4: Knowledge about the importance of primary teeth in children.

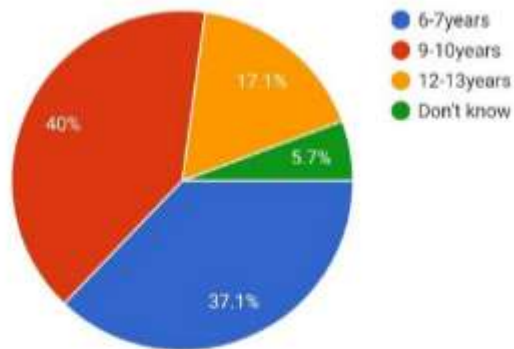


Fig 5: Age of permanent teeth eruption into oral cavity

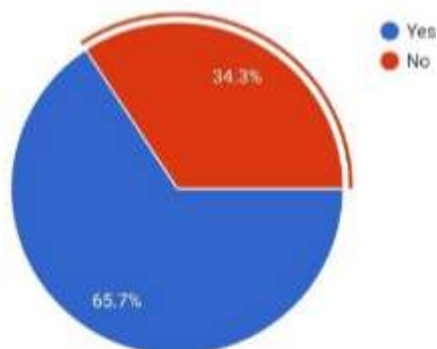


Fig 6: First aid training during the teaching training

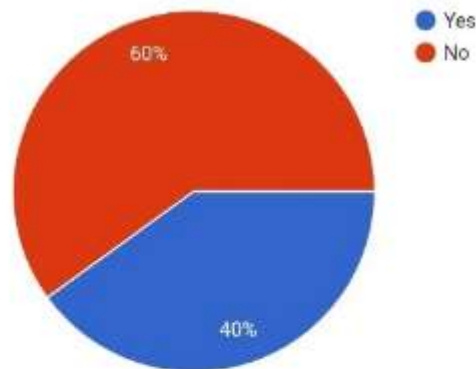


Fig 7: Knowledge about broken tooth fragment is needed or not

IV. DISCUSSION

This cross-sectional survey investigated the knowledge and awareness of school teachers regarding the management of dental trauma among school children in and around Mogappair, Chennai. In the present study only 34.5% had not undergone any first aid training and 65.7% received first aid training. Similarly in a study conducted by Suresh and Matthew, the majority of participants, specifically 88%, had not undergone any first aid training.⁶ Additionally Bhandary and Shetty found that 75.3% of teachers had not received training for handling dental trauma in their study.⁷ Khatge et al reported that a mere 6.6% of participants acknowledged having received prior training in dental trauma management.⁸ Karande et al's study revealed that 69% of teachers had received first aid training during their teacher training period, but only 17% of them received information about managing dental trauma. In a study by Al-Khalifa et al, 30% of teachers reported attending a first aid course, and one-third of those courses included information on dealing with dental trauma.^{9,10}

The high percentage of teachers who received first aid training and learned about dental injury management during their training underscores the role of teacher training programs in equipping educators with essential skills for handling emergencies, including dental trauma.

In our research, 60% of participants were aware of management of dental trauma in school children, while in Chandukutty et al study, the majority of teachers (85.5%) demonstrated accurate knowledge concerning the teeth that are most commonly avulsed. Recognizing the upper front

teeth as frequently traumatized indicates an acknowledgment of the susceptibility of these teeth.¹¹ This insight can guide the development of focused educational resources and training modules.

In our research, just 37.1% accurately pinpointed the age when permanent teeth typically emerge in the oral cavity, specifying the correct range as 6-7 years old. Recognizing these knowledge gaps, particularly regarding the precise age of permanent teeth eruption, offers valuable insights for crafting targeted educational initiatives to address particular misconceptions or information deficiencies.

Avulsion tends to occur more frequently in children due to the ongoing formation stage of their bones. Since the bone is not fully mineralized and possesses greater resilience, any injury or trauma to a tooth during this developmental phase is more likely to result in avulsion rather than fracture. In our study, 42.9% of teachers stated that they would address such a situation by promptly seeking assistance from a nearby dentist. Similarly, in a study by Nirwan et al., 36.4% of participants expressed the belief that an immediate dentist's opinion is necessary in the case of avulsed teeth.¹³ In a research conducted by Sharma et al, teachers, when queried about the possibility of tooth replantation, displayed a lack of awareness regarding its feasibility. In contrast both the studies highlighted a considerable portion of participants recognizing the importance of seeking professional dental assistance promptly for avulsion cases.

In our study, 40% of participants asserted that milk is the optimal medium for storing an avulsed tooth. Contrarily, a study by Suresh and



Matthew, only 3.72% of participants regarded milk as a suitable storage medium for avulsed teeth.⁶ As per Kaur et al., 53% of teachers opted for milk when asked about the storage medium for avulsed teeth.¹⁴ Shamarao et al. reported that 9.3% of school teachers selected milk as a storage medium.¹⁵ The acknowledgment that milk is an optimal medium for storing avulsed teeth is in line with dental first aid recommendations. Pacheco et al. reported that approximately 22–30% of children experienced dental trauma while they were attending school. The reported rarity of encountering dental trauma in school children may indicate that teachers may not perceive it as a prevalent issue. However, it's crucial to emphasize preparedness and awareness, given the potential severity of dental injuries.

Thus educational programs, dental camps, and media campaigns, including posters and leaflets, are crucial for creating awareness on the management of dental trauma. Integrating dental trauma management into basic teacher training programs is essential, and further studies can provide a broader perspective on knowledge and attitudes in this area.¹⁷

V. CONCLUSION

In conclusion, the study reveals that school teachers in Mogappair, Chennai, possess a foundational understanding of dental trauma management. While many teachers have received training and recognize the importance of primary teeth and replantation procedures, there are notable gaps in their knowledge, particularly regarding the identification of permanent teeth, eruption ages and differentiating between primary and permanent teeth. The study emphasizes several strengths in teacher's awareness and training in dental care while also identifying certain areas that need improvement.

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