



ASSESSMENT OF AWARENESS IN PHYSICAL EDUCATION TEACHERS AND SPORTS COMPLEX COACHES IN VIJAYAWADA ABOUT EMERGENCY MANAGEMENT OF ANTERIOR TOOTH TRAUMA IN CHILDREN-A CROSS SECTIONAL STUDY

Pedodontics

Dr. Pranav Prakash Lohe	Post Graduate, Dept. of Pediatric and Preventive Dentistry, Government Dental College and Hospital, Vijayawada – 520004, A.P.
Dr. Jesudass Govada*	Professor and HOD, GDCH, Vijayawada *Corresponding Author
Dr. Suneetha Motru	Associate Professor, GDCH, Vijayawada
Dr. Naveena Kandepu	Senior Resident, GDCH, Vijayawada
Dr. Seljraj S S	Post Graduate, GDCH, Vijayawada
Dr. Indukuri Himendri	Post Graduate, GDCH, Vijayawada

ABSTRACT

Introduction: Traumatic injuries, particularly those affecting the dentofacial region, are common occurrences, especially in active populations like students and athletes. The immediate response and first aid provided can significantly impact the prognosis. This study aimed to evaluate the knowledge and awareness regarding general first aid and the management of traumatic dental injuries among a selected population. **Materials and Methods:** A cross-sectional survey was conducted among 60 participants using a structured questionnaire. The questionnaire comprised 19 questions assessing demographic information, prior first aid training, and knowledge regarding the immediate management of general and dental-specific traumatic injuries. **Results:** The survey revealed that a high percentage of participants (71.7%) had received some form of first aid training. A majority (85.0%) reported that they inquire about prior medical history, and 80.0% keep an emergency medical kit. Regarding dental trauma, 46.7% had previously encountered such an injury. While 66.7% correctly identified the upper jaw as more susceptible to fracture, significant gaps in knowledge were observed in the emergency management of avulsed teeth. Specifically, 43.3% would incorrectly use water to store a fallen tooth, and 31.7% were unaware of the correct storage medium. However, a large majority (86.7%) recognized the need to send a child to a dentist after a dental injury. **Conclusion:** Despite a high reported rate of first aid training, there are significant deficiencies in the knowledge of specific emergency procedures, particularly concerning dental trauma. Educational interventions are necessary to bridge these knowledge gaps to ensure better outcomes for individuals suffering from traumatic injuries.

KEYWORDS

First Aid, Dental Trauma, Knowledge, Awareness, Emergency Management

INTRODUCTION

Anterior teeth trauma is a significant concern in sports and physical activities, as it can lead to immediate and long term dental complications. The awareness and knowledge of how to handle such injuries among physical education teachers and professional coaches is important. Injuries to the front teeth, such as fractures, avulsion, and dislocations can cause significant pain, long term dental complications and emotional distress for athletes. Physical education teachers and coaches are in key position to help, prevent and manage such traumas. They not only guide athletes in their training but also responsible for ensuring safety and wellbeing of participants. Despite their central role in it, many have limited knowledge or awareness regarding anterior teeth trauma – for immediate care and its prevention. This gap of knowledge can lead to delayed or improper management of dental injuries. Therefore it is essential to assess and enhance the awareness and knowledge regarding the prevention, identification and immediate response to anterior teeth trauma. Understanding the critical role of physical education teachers and coaches in preventing and addressing dental trauma is vital in ensuring the overall health and safety of athletes in various sports settings

METHODOLOGY

- Sample size is 60. Sample is being selected as a convenience sample. The sample size calculation for a cross-sectional study the formula is $n = (Z^2 * p * q) / e^2$, where 'n' is the sample size, 'Z' is the Z-score corresponding to the desired confidence level, 'p' is the estimated prevalence, 'q' is (1-p), and 'e' is the desired margin of error. The responses obtained was collected and analyzed the responses by each participants in the study. All the responses later were used for drawing conclusion

Inclusion Criteria

- Professional Physical education teachers in schools in Vijayawada
- Sport academy coaches in Vijayawada
- 6-10 years of children age is taken into the consideration

Exclusion Criteria

- Part time or substitute teachers
- Absence of anterior teeth
- Coaches who have less than 1 year of coaching experience

RESULTS

1. What is your immediate observation after injury?

	Frequency	Percentage
Q1 1. Not answered	21	35.0
2. Bleeding	10	16.7
3. Observe	5	8.3
4. Consult	6	10.0
5. Conscious	7	11.7
6. Fracture	1	1.7
7. Rast	3	5.0
8. Injury	7	11.7
Total	60	100.0

2. Was the person conscious or unconscious?

- Yes
- No

	Frequency	Percentage
Q2 1. Not answered	8	13.3
2. Yes	47	78.3
3. No	5	8.3
Total	60	100.0

3. Was there any bleeding from any part of the body?

- Yes
- No

	Frequency	Percentage
Q3 1. Not answered	8	13.3
2. Yes	35	58.3
3. No	17	28.3

	Total	60	100.0
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4. Any observation in and around the eyes after injury?

- Yes
- No

		Frequency	Percentage
Q4	1.Not answered	8	13.3
	2.Yes	31	51.7
	3.No	21	35.0
	Total	60	100.0

5. What will be your immediate treatment after fall?

		Frequency	Percentage
Q5	1.Not answered	22	36.7
	2.Wash wound	1	1.7
	3.Stop bleeding	3	5.0
	4.Consciousness	6	10.0
	5.Cold pack	10	16.7
	6.Medical help	4	6.7
	7.Depends on injury	3	5.0
	8.Basic first aid	9	15.0
	9.Rice	2	3.3
	Total	60	100.0

6. Do you advice TT injection?

- Yes
- No
- Don't know

		Frequency	Percentage
Q6	1.Yes	40	66.7
	2.No	15	25.0
	3.Don't know	5	8.3
	Total	60	100.0

7. Do you have or keep emergency medicine kit?

- Yes
- No

		Frequency	Percentage
Q7	1.Yes	48	80.0
	2.No	12	20.0
	Total	60	100.0

8. Do you ask prior medical history of student or sports person?

- Yes
- No

		Frequency	Percentage
Q8	1.Yes	51	85.0
	2.No	9	15.0
	Total	60	100.0

9. Do you have training for first aid?

- Yes
- No

		Frequency	Percentage
Q9	1.Yes	43	71.7
	2.No	17	28.3
	Total	60	100.0

10. Have you come across dental trauma in your school?

- Yes
- No

		Frequency	Percentage
Q10	1.Not answered	1	1.7
	1.Yes	28	46.7
	2.No	31	51.7
	Total	60	100.0

11. Which teeth did you find most commonly fractured?

- Upper jaw
- Lower jaw

		Frequency	Percentage
Q11	1.Not answered	3	5.0
	2.Upper jaw	40	66.7
	3.Lower jaw	17	28.3
	Total	60	100.0

12. What is the reason for trauma?

- Fall
- Playing
- Fight
- Ill health

		Frequency	Percentage
Q12	1.Not answered	1	1.7
	2.Fall	24	40.0
	3.Playing	27	45.0
	4.Fight	4	6.7
	5.Ill health	4	6.7
	Total	60	100.0

13. Is front tooth trauma is an emergency?

- Yes
- No

		Frequency	Percentage
Q13	1.Not answered	3	5.0
	2.Yes	38	63.3
	3.No	19	31.7
	Total	60	100.0

14. What kind of trauma it was?

- a. General (apart from dental)
- Yes
- No

		Frequency	Percentage
Q14a	1.Not answered	20	33.3
	2.Yes	35	58.3
	3.No	5	8.3
	Total	60	100.0

- b. Dental
- Broken tooth without bleeding
- Broken tooth with bleeding
- Tooth that had fallen off
- Displaced tooth
- Soft Tissue injuries

		Frequency	Percentage
Q14b	1.Not answered	17	28.3
	2.Broken tooth without bleeding	18	30.0
	3.Broken tooth with bleeding	11	18.3
	4.Tooth that had fallen off	1	1.7
	5.Displaced tooth	1	1.7
	6.Soft tissue injuries	12	20.0
	Total	60	100.0

15. Who is more prone to trauma?

- Boys
- Girls

		Frequency	Percentage
Q15	1.Not answered	2	3.3
	2.Yes	42	70.0
	3.No	16	26.7
	Total	60	100.0

16. Can a completely fallen off tooth be replanted back?

- Yes
- No
- Don't know

		Frequency	Percentage
Q16	1.Yes	26	43.3
	2.No	15	25.0
	3.Don't know	19	31.7
	Total	60	100.0

17. Do you have any emergency vehicle in cases for accidental injury?

- Yes
- No

		Frequency	Percentage
Q17	1.Yes	23	38.3
	2.No	37	61.7
	Total	60	100.0

18. Which medium will you use to store fallen off teeth?

- Water
- Milk
- Other
- Don't know

		Frequency	Percentage
Q18	1.Water	26	43.3
	2.Milk	8	13.3
	3.Other	7	11.7
	4.Don't know	19	31.7
	Total	60	100.0

19. Do you consider to send the child to dentist/pediatric dentist?

- Yes
- No

		Frequency	Percentage
Q19	1.Yes	52	86.7
	2.No	8	13.3
	Total	60	100.0

RESULTS

A total of 60 individuals participated in the survey. The results from the questionnaire are summarized below.

General First Aid Knowledge and Preparedness:-

A significant majority of the respondents (71.7%) reported having received first aid training. Furthermore, 85.0% stated that they make it a practice to ask for the prior medical history of students or sports persons, and 80.0% keep an emergency medicine kit on hand. In the event of an injury, 78.3% of participants would first check if the person is conscious. A high percentage (66.7%) would advise a Tetanus Toxide (TT) injection after a fall. However, a notable 61.7% reported not having access to an emergency vehicle.

Experience and General Observations of Trauma:-

Regarding experience with dental trauma, 46.7% of respondents had encountered it in their school or setting. Playing (45.0%) and falls (40.0%) were cited as the most common reasons for trauma. The majority correctly identified that the upper jaw (66.7%) is more commonly affected in dental injuries and that boys (70.0%) are more prone to trauma.

Knowledge of Dental Trauma Management:-

When asked about the type of dental trauma witnessed, broken teeth without bleeding (30.0%) and soft tissue injuries (20.0%) were the most common responses. A majority (63.3%) considered front tooth trauma to be an emergency.

Crucially, there were significant gaps in knowledge regarding the management of an avulsed tooth. While 43.3% of respondents believed a completely fallen-off tooth could be replanted, a substantial portion were either unsure (31.7%) or believed it was not possible (25.0%).

When questioned about the appropriate medium to store a knocked-out tooth, the responses were varied and highlighted a critical knowledge deficit. The most chosen option was water (43.3%), which is not recommended. Only 13.3% correctly identified milk as a suitable storage medium. A significant percentage (31.7%) admitted they did not know. Despite these specific knowledge gaps, an encouraging 86.7% of participants affirmed they would consider sending a child to a dentist or pediatric dentist after a dental injury.

DISCUSSION

The findings of this survey present a mixed picture of first aid and dental trauma awareness. On one hand, the high percentage of participants with first aid training (71.7%) and preparedness in terms of keeping emergency kits (80.0%) and inquiring about medical history (85.0%) is commendable. This suggests a foundational understanding of the importance of being prepared for emergencies.

However, the study reveals critical deficiencies in the knowledge required for the emergency management of traumatic dental injuries, particularly avulsion. The fact that 43.3% of respondents would use water to store an avulsed tooth is concerning, as this can damage the cells on the root surface and compromise the success of replantation. The correct immediate action is to rinse the tooth gently without scrubbing, attempt to replant it, or store it in a suitable medium like milk or saline solution until a dentist can be reached. The low percentage of respondents (13.3%) who knew to use milk indicates a significant gap between general first aid training and specialized knowledge of dental trauma.

The data shows that falls and playing are the primary causes of dental trauma, which aligns with findings from other studies. The recognition that upper front teeth are most commonly affected is also consistent with established literature. This awareness is a good starting point for targeted preventive education.

While a majority (63.3%) correctly identify front tooth trauma as an emergency, the lack of knowledge about how to manage it effectively

undermines this awareness. The prognosis for an avulsed tooth is highly dependent on the actions taken within the first few minutes to an hour of the injury. Therefore, the need for specific, practical training is evident.

The high percentage of participants (86.7%) who would refer an injured child to a dentist is a positive finding. It shows an understanding of the need for professional care. However, the effectiveness of that professional care can be greatly enhanced by correct first aid administered at the scene.

The study done by Neha et al, depicts the rudimentary knowledge regarding emergency management of dental injuries among school teachers and highlights the importance of educational intervention in them. There is an urgent need to introduce and validate interventional programmes in teacher's curriculum to sensitize them toward dental trauma and make school environment healthier. The study done by Rahul Kaul et al, results indicate that despite the lack of knowledge and awareness regarding management of dental trauma, school teachers of Kolkata have a good attitude toward management of dental trauma and its education.

In summary, the participants displayed a proactive attitude toward their duty of care, evidenced by their general preparedness and willingness to refer patients for professional help. This positive attitude, however, is sharply contrasted by a significant deficiency in their practical knowledge of correct dental trauma management. This discrepancy shows a clear and urgent need for targeted educational programs to translate good intentions into life-saving actions.

CONCLUSION

The participants in this survey demonstrated a good general awareness of first aid preparedness. However, there is a clear and urgent need for enhanced education on the specific emergency management of traumatic dental injuries. While most understand the importance of seeking professional dental care, their knowledge of the critical immediate steps to take, particularly for an avulsed tooth, is insufficient. Educational programs and campaigns targeting teachers, parents, and sports coaches should be implemented to provide clear, simple, and actionable instructions on how to handle dental trauma. Improving this knowledge can significantly increase the chances of saving injured teeth and reducing the long-term physical, psychological, and financial burden of these injuries.

REFERENCES

- Goenka P, Chaturvedi S, Nirwan M, Syed AA. Awareness in Primary School Teachers regarding Traumatic Dental Injuries in Children and Their Emergency Management: A Survey in South Jaipur. *International Journal of Clinical Pediatric Dentistry*. 2016;9(1):62-6.
- Karande N, Bhatia M, Bijle MNA, Bhalla M. Assessment of Awareness amongst School Teachers regarding Prevention and Emergency Management of Dentoalveolar Traumatic Injuries in School Children in Pune City, before and 3 Months after Dental Educational Program. *The Journal of Contemporary Dental Practice*. 2012;13(6):873-7.
- Chandukutty D. Awareness of Dental Trauma Management among School Teachers of Kannur, Kerala, India. *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*. 2017;
- Jain M, Bansal A, Tyagi P, Jain A, Tiwari U, Nashine N. Comparison and Evaluation of Attitude and Knowledge Towards the Management of Dental Injury in School Teachers Before and After Oral Health Education. *International Journal of Clinical Pediatric Dentistry*. 2018;11(5):425-9.
- Koçkanat A. Evaluation of Parents' Knowledge Levels and Awareness Regarding Emergency Management of Tooth Avulsion: An Institutional Cross-Sectional Study. *Cumhuriyet Dental Journal*. 2025 Jun 30;28(2):192-8.
- Kaul R, Jain P, Saha N, Goswami S, Mukhopadhyay S, Saha S, et al. Evaluation of knowledge, awareness, and attitude toward emergency dental trauma management among the school teachers of Kolkata. *Indian Journal of Dental Research*. 2017;28(6):595.
- Shamara S, Tikare S, Ajagannanavar S, Haridas R, Jain J, Kalappa A. Knowledge and attitude regarding management of tooth avulsion injuries among school teachers in rural India. *Journal of International Society of Preventive and Community Dentistry*. 2014;4(4):44.
- Katge F, Patil D, Khakhar P, Poojari M, Koticha P. Knowledge and awareness of school teachers regarding emergency management of dental trauma in school children of Navi Mumbai. *Indian Journal of Dental Research*. 2021;32(1):51.
- Chandukutty D. Awareness of Dental Trauma Management among School Teachers of Kannur, Kerala, India. *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*. 2017;
- Sharma N, Srivastava B, Batra J, Sharma S, PuneetMohan Khari. Evaluation of level of awareness among coaches regarding the prevalence of sports-related orofacial trauma in children and their first aid and prevention in Delhi-NCR region. *Journal of the International Clinical Dental Research Organization*. 2022 Jan 1;14(1):60-0.
- Bhadana S, Tayal E, Indushekar KR, Saraf BG, Sheoran N, Sardana D. Knowledge and awareness of coaches and athletes regarding the sports-related dental injuries and their prevention in Faridabad. *Current Medicine Research and Practice*. 2015 Dec;5(6):253-7.
- Kaul R, Jain P, Saha N, Goswami S, Mukhopadhyay S, Saha S, et al. Evaluation of knowledge, awareness, and attitude toward emergency dental trauma management among the school teachers of Kolkata. *Indian Journal of Dental Research*. 2017;28(6):595.

13. Jain M, Bansal A, Tyagi P, Jain A, Tiwari U, Nashine N. Comparison and Evaluation of Attitude and Knowledge Towards the Management of Dental Injury in School Teachers Before and After Oral Health Education. International Journal of Clinical Pediatric Dentistry. 2018;11(5):425–9.