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Original Research Article

Evaluation of awareness of physical instructors in schools of Bidar city about the management of avulsed tooth

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ABSTRACT

Objective: This study aimed to assess the knowledge and awareness among school physical education teachers in Bidar city regarding the emergency management of avulsed teeth.

Materials and Methods: A self-administered questionnaire comprising 10 closed-ended questions was developed to evaluate teachers' understanding of tooth avulsion and management practices. The questionnaire ensured anonymity and voluntary participation. Teachers were informed in advance, and all willing participants were included in the study.

Results: The findings revealed that while some teachers had a basic understanding of avulsed teeth, many lacked comprehensive knowledge on managing such injuries. Studies cited showed varying levels of awareness, with previous research indicating that awareness could improve significantly with appropriate educational interventions. Notably, a lecture combined with a discussion proved effective in enhancing teachers' knowledge about dental first aid.

Conclusion: The study observed a significant lack of awareness among school physical education teachers regarding the management of dental trauma. To improve outcomes for avulsed teeth, it is crucial to implement awareness campaigns and training programs for school staff. Educating teachers on proper first-aid procedures can significantly increase the chances of successful replantation and recovery of avulsed teeth.

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1. Introduction

Dentoalveolar trauma involves damage to the teeth, the periodontium, and the supporting alveolar bone.¹ Such injuries are most frequently observed in children between the ages of 7 and 11, with boys being affected twice as often as girls.^{2,3} The severity of dentoalveolar trauma ranges from minor bruising of the tooth to a complete displacement, also known as avulsion, which is a rare and severe dental injury.

Tooth avulsion is a dental emergency that necessitates swift intervention, ideally within 20 to 40 minutes,

to enhance the tooth's prognosis. Among school-aged children, the occurrence of dental avulsion constitutes 0.5% to 16% of all dental trauma cases.⁴ The optimal treatment is the immediate replantation of the avulsed tooth to achieve the best possible outcome.⁵

Schools are environments where children face a heightened risk of dental trauma and avulsion, primarily due to falls, collisions, and sports activities like cycling and soccer. Dental avulsion greatly affects both the functional and aesthetic aspects of a child's dental health, often due to its poor prognosis. A significant challenge in the emergency management of an avulsed tooth is preserving the vitality of the periodontal cells.⁶

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These types of dental injuries predominantly occur during school hours and often in the presence of teachers. Consequently, it is crucial for teachers, coaches, and physical education students to be educated about the appropriate first-aid measures for such incidents. Having the right knowledge and taking prompt action can greatly enhance the likelihood of successful replantation and recovery of the avulsed tooth.⁷

When immediate replantation is not feasible, the tooth should be stored in an appropriate medium, such as milk or a specialized storage solution, to preserve the viability of the periodontal ligament cells.⁸ Educating school staff and students on these emergency procedures is essential for maintaining the health and functionality of avulsed teeth.

Furthermore, raising awareness about the importance of wearing protective gear during sports activities is crucial for preventing dental injuries. Using mouthguards, helmets, and face shields can significantly reduce the risk of avulsion and other dental traumas, ensuring greater safety for children participating in physical activities.

Avulsion has a detrimental effect on both the functional and aesthetic aspects of children's dental health due to its poor prognosis. Conducting regular training sessions and workshops for teachers and coaches on dental first aid can improve their ability to effectively manage dental emergencies. Additionally, ensuring easy access to first-aid kits equipped with the necessary materials for handling avulsed teeth can be highly beneficial.

This study aimed to evaluate the knowledge and awareness of school physical education teachers in Bidar city regarding the emergency management of avulsed teeth.

2. Materials and Methods

This study was conducted using a questionnaire designed to ensure the anonymity of responses and the voluntary nature of participation. The questions focused on the management and knowledge of avulsed teeth. The self-administered questionnaire consisted of 10 closed-ended questions. Each teacher was informed beforehand, and all available subjects who were willing to participate were included in the study. The questions were as following:

1. Can the teeth be repositined? (or) Did you know that it is possible to replant an avulsed tooth (knocked-out tooth)?
Yes / No
2. You find the knocked-out tooth on the ground. The tooth:
 - (a) Can be used again
 - (b) Cannot be used anymore
 - (c) You don't know whether it can be used or not
3. If the broken tooth can be used this should be stored in
 - (a) Dry environment

- (b) Wet environment
- (c) Do not know

4. Do you think it is important to store the avulsed tooth?

Yes / no

5. How would you store the teeth until the child visits a dentist?

- (a) In child's mouth inside
- (b) An antimicrobial solution
- (c) Inside a clean handkerchief/napkin

6. What is the immediate emergency action you would take in a case of tooth avulsion?

- (a) Find the tooth, wash it, and put it back in its place
- (b) Store the tooth in a suitable liquid and seek a professional who will help
- (c) Throw away the tooth

7. How do you consider your knowledge about dental trauma?

- (a) I Don't Know
- (b) I Know Little
- (c) I Know Enough

8. Have you or did you have any experience with dental trauma?

Yes / no

9. After dental trauma, which medical professional would you visit of the following:

- (a) General physician
- (b) Dentist
- (c) Neither

10. When do you visit a dentist after dental trauma?

- (a) Immediately
- (b) Within 24 hours
- (c) More than 24 hours

Data were entered and analyzed. The number of accurate responses for each individual question and investigated aspect was presented in the form of frequency and percentage.

3. Results

The questionnaire was completed by 20 different physical education teachers of schools in Bidar city.

Further findings shows that 50% of teachers reported that they have come across the incident where dental trauma happened and 95% of teachers knew that the child should be referred to the dentist in case of an avulsed tooth. But 30% among them did not know about immediate action.

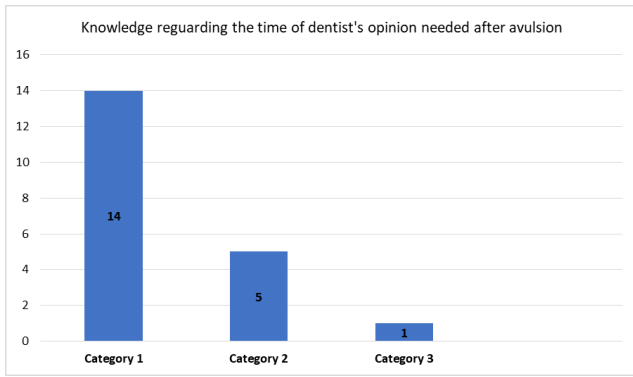


Figure 1: Shows the knowledge of teachers to take the opinion of the dentist after avulsion

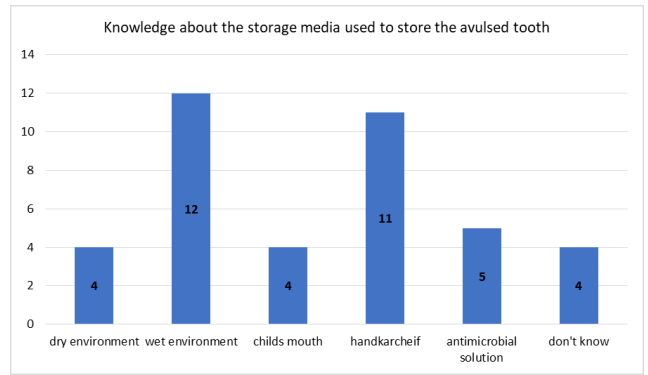


Figure 4: Shows the knowledge about storage media used to store the avulsed tooth till dentist's opinion

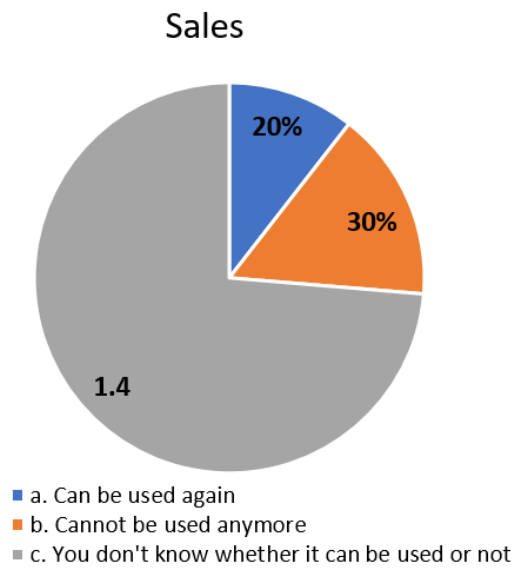


Figure 2:

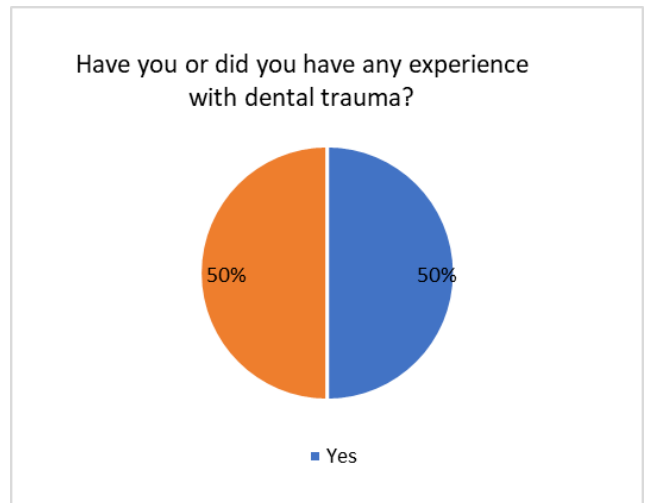


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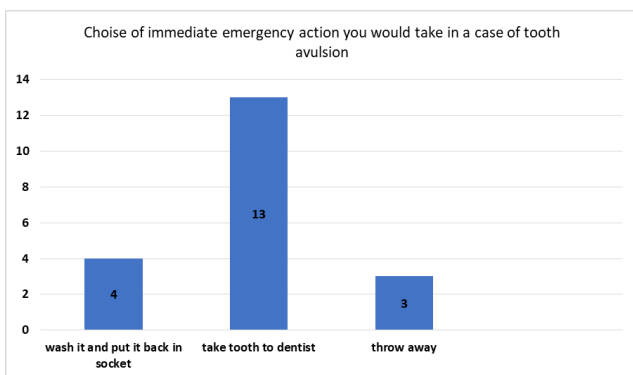


Figure 3: Shows the choice of immediate action after avulsion of tooth by physical education teachers

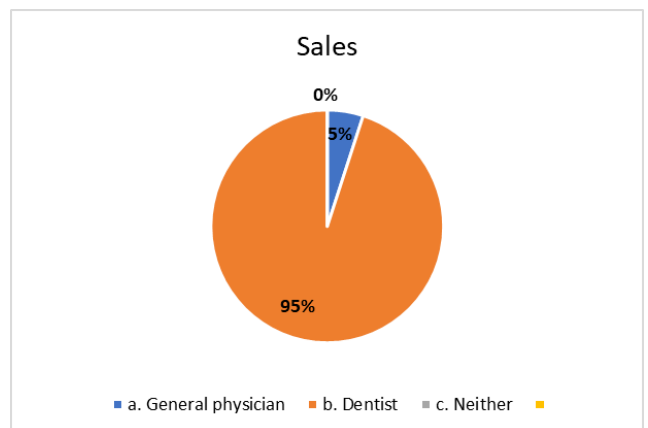


Figure 6:

4. Discussion

Proper management is crucial for the future prognosis of teeth affected by traumatic injuries, particularly in young children. Physical instructors are often the first responders at the site of an injury. An effective emergency management and treatment plan is essential for a favorable prognosis in dental trauma cases. However, immediate and appropriate treatment is frequently not administered due to a lack of knowledge among teachers.⁹

The knowledge and awareness of school teachers regarding the management of dental trauma is generally inadequate. A study by Khan S et al. on teachers in Saudi Arabia revealed that 59% of teachers were unaware of how to manage tooth avulsion.¹⁰

Another study done in Navi Mumbai by Katge F et al. found that only 6.6% of school teachers received prior training in dental trauma management.¹¹

A study by Vergotine RJ et al. reported low awareness levels, with only 12% of academic teachers and 7% of physical education teachers providing correct responses regarding the immediate management of an avulsed tooth.¹² In contrast, studies by Mesgarzadeh AH et al., Caglar E et al., and Sae-Lim V et al. reported higher levels of awareness, with 50%, 43%, and 74% of participants demonstrating knowledge of proper management, respectively.^{13,14}

A study by Al-Asfour et al. assessed school teachers' knowledge of tooth avulsion and dental first aid before and after receiving information about avulsed teeth and replantation. The study found that the general knowledge improved significantly, increasing from 39% to 97% following the informational intervention.¹⁵

A lecture combined with a discussion has been shown to be an effective and efficient method for improving teachers' knowledge, enabling them to perform proper dental first-aid procedures.

5. Conclusion

The study indicated that while some school teachers have a basic understanding of avulsed teeth, many lack knowledge on how to manage such injuries. Replantation could save many avulsed teeth in school children if teachers are educated on the appropriate procedures. The study highlighted a significant lack of awareness among school physical education teachers regarding dental trauma management. To address this gap, awareness campaigns are needed to educate school teachers on the proper management of avulsed teeth.

6. Source of Funding

None.


7. Conflict of Interest

None.


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