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Evaluation of awareness, attitude, and knowledge about emergency management of avulsed tooth in rural people: A questionnaire based study

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Abstract

Introduction: Tooth avulsion is a typical dental trauma requiring emergency treatment plan. The aim of the study is to evaluate the knowledge and perception of the rural population regarding tooth avulsion and its management.

Materials and method: The patients from the outpatient department were screened for a period of two months. A 13 question questionnaire was given to the participant to mark option of their choice. Informed consent along with demographic data was signed. All the sheets were collected and responses were fed in MS Excel sheet (v.2007) to analyze the data.

Results: Total 454 among 500 were included in the study. It was found that not all people wear helmet and mouth protective guard. The rural population had lack of knowledge and awareness in management of avulsed tooth. Around 85% people would consult the dentist in case of dental avulsion. About 76% people were unaware regarding carrier media used to carry avulsed tooth and majority preferred it to carry it dry to the dentist. Majority (81%) of the people were interested to gain the knowledge regarding same.

Conclusion: There is necessity to raise public awareness about tooth avulsion, carrier media, and treatment options. There is need make people aware about importance of wearing helmets and mouth guards that lowers the chances of dentofacial trauma.

Keywords: Avulsion, Awareness, Dental trauma, Knowledge, Management, Questionnaire

1. Introduction

An avulsion is the total separation of a tooth from its alveolus caused by a traumatic injury; it is most typically used to describe dental injuries caused by acute trauma. It's a complicated and uncommon injury that affects the periodontal ligament, cementum, alveolar bone, gingiva, and tooth pulp, among other tissues. The gingival epithelium and periodontal ligament have been disrupted, resulting in injury to these tissues. There could be a break in the neurovasculature of the dental pulp^[1]. Automobile accidents and violence have been much more common in recent years, resulting in oral trauma, especially in children and teenagers. Dental trauma and mouth injuries are known to affect between 14 to 27 % of children, with boys having a higher prevalence than girls^[2-4]. Permanent dental injuries account about 0.5 percent to 3% of all traumatic injuries. 0.5 % -3 % of all traumatic injuries occur in the permanent dentition, while 7 % -13 % occur in the primary dentition. Anterior teeth, particularly the maxillary central and lateral incisors, are frequently involved in traumatic injuries. The maxillary anterior teeth are important for facial aesthetics and smile maintenance. A patient's total personality and development may be impacted by the loss of an anterior tooth, which can have a functional, social, psychological, and aesthetic impact^[5].

The importance of saving an avulsed tooth must be understood by rural people. People with avulsed teeth frequently arrive too late for treatment, resulting in a poor long-term prognosis. This is due to a lack of awareness and information among the general public^[6, 7]. Its prognosis is totally dependent on proper preservation, conditioning, and tooth maintenance, all of which are influenced by a patient's understanding. People in rural areas are less aware of dental

improvements. As a result, the aim of the study to analyse the rural population's knowledge and perceptions of tooth avulsion and its care, as well as to raise awareness among them.

A survey is a simple, straightforward, and cost-effective research approach. It is effective for a specific cohort and covers a large geographic area in a short amount of time. A question-based survey can be used to examine patient perceptions of avulsion and knowledge of how to treat it.

Materials and Methods

In this questionnaire-based survey study, a questionnaire of 13 questions were framed and validated by experienced professionals of the Department of Conservative Dentistry and Endodontics after conducting a short valid and reliable short study. The institutional ethical committee approved the screening of 500 patients from the outpatient Department of Conservative Dentistry and Endodontics. After appropriate sampling, a total of 454 people between the ages of 18 and 70 were chosen. Each participant signed a consent form before receiving the questionnaire. Closed-ended questions are included in the survey.

Name, age, sex, address, occupation, and education were among the demographic data. No usage of the patient's name without their permission was considered and noted in the consent form.

To indicate the option of their choice, the questionnaire and consent form were distributed. The questionnaire was written in both English and local regional languages so that patients could fully comprehend the question and select the appropriate response. The sheets were then gathered and put together for descriptive statistical analysis. People were then given the correct responses and informed about the proper protocol for dealing with avulsed teeth. The survey papers were distributed and collected during a three-month period.

Results

According to the demographic data, 50% of the sample population was between the ages of 18 and 30, 36% was between the ages of 30 and 50, and 14% was between the ages of 50 and 70. It was discovered that the male population (69%) outnumbered the female population (31 %). Only 52% of rural inhabitants agreed that wearing a helmet

when driving is important, and only 15% agreed that mouth guards are necessary. In total, 57% of rural people had previously experienced dental trauma in themselves or others, whereas 43 % had not (fig 1a). Only 33% of participants were confident in the possibility of re-implantation of an avulsed tooth as part of a first-aid treatment approach, while 67% had no idea (fig 1b). When given the option of treatment modalities, 48% chose prosthesis, 43% decided to have their avulsed tooth re-implanted, and 9 % chose none of the above (fig 1c).

Altogether, 40% of persons were aware of the necessity of saving an avulsed tooth, whereas 60% were not (fig 1d). The majority of persons (72%) had no prior experience in dealing with dental avulsions, and just 28% were aware of the condition. (fig. 1e)

In the figure 1f, around 85% of people would like to consult the dentist in case of tooth avulsion on a priority basis, 13% would consult a general physician or a medical doctor while 2% would contact to their any family member or a friend. In the figure 2a, 27% of the rural people had an opinion that re-implantation should be done immediately, 32% people had an opinion that it should be done within one hour, 10% people had an opinion of doing it after 1 hr and 31% people told it can be done any time.

The majority of respondents (76%) were unaware of the necessity of carrier media in storing avulsed teeth until they could see a dentist, whereas only 24% claimed they were aware of its value (fig 2b). 35 % of people would wrap the avulsed tooth in paper or a handkerchief for dry storage, 28 % would place the tooth in disinfecting solution, 16 percent would place the tooth in water, 10 % in milk, 5 % in the patient's mouth, 2 % in saline solution, 2 % in coconut water, and 2 % in Hank Balanced Salt Solution (HBSS). (fig. 2c)

Doctors were the source of information for 41% of the people, newspapers or media for 27% of the people, books and magazines for 17% of the people, and others (friends, neighbors, etc.) for 15% of the people. (fig. 2d) The majority of rural people (81%) were interested in getting information on how to treat an avulsed tooth in an emergency, whereas 19 % were not. (fig. 2e)

Figure format

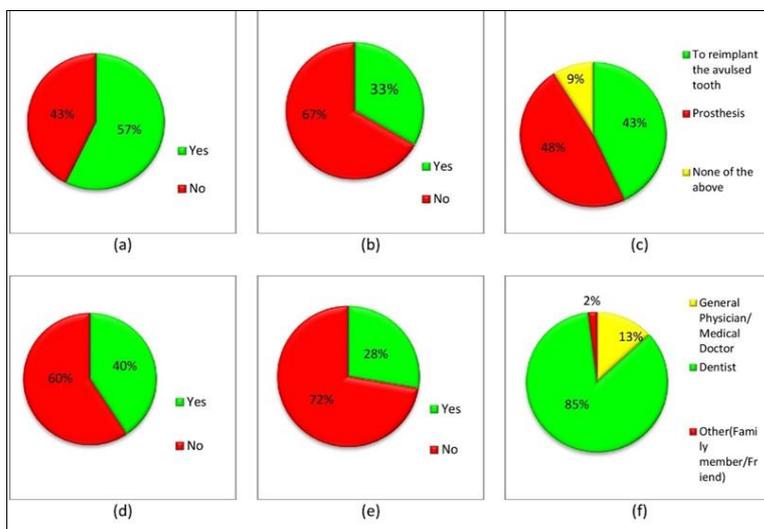


Fig 1: Pie charts are depicting a) Responses given for any previous experience of dental trauma. b) Responses for awareness regarding possibility of re-implantation. c) Responses given to the preference or treatment modality. d) Responses given on knowing the importance of saving avulsed tooth. e) Responses to any previous experience in managing dental avulsion. f) Responses given for consultation in case of avulsion of tooth on priority basis.

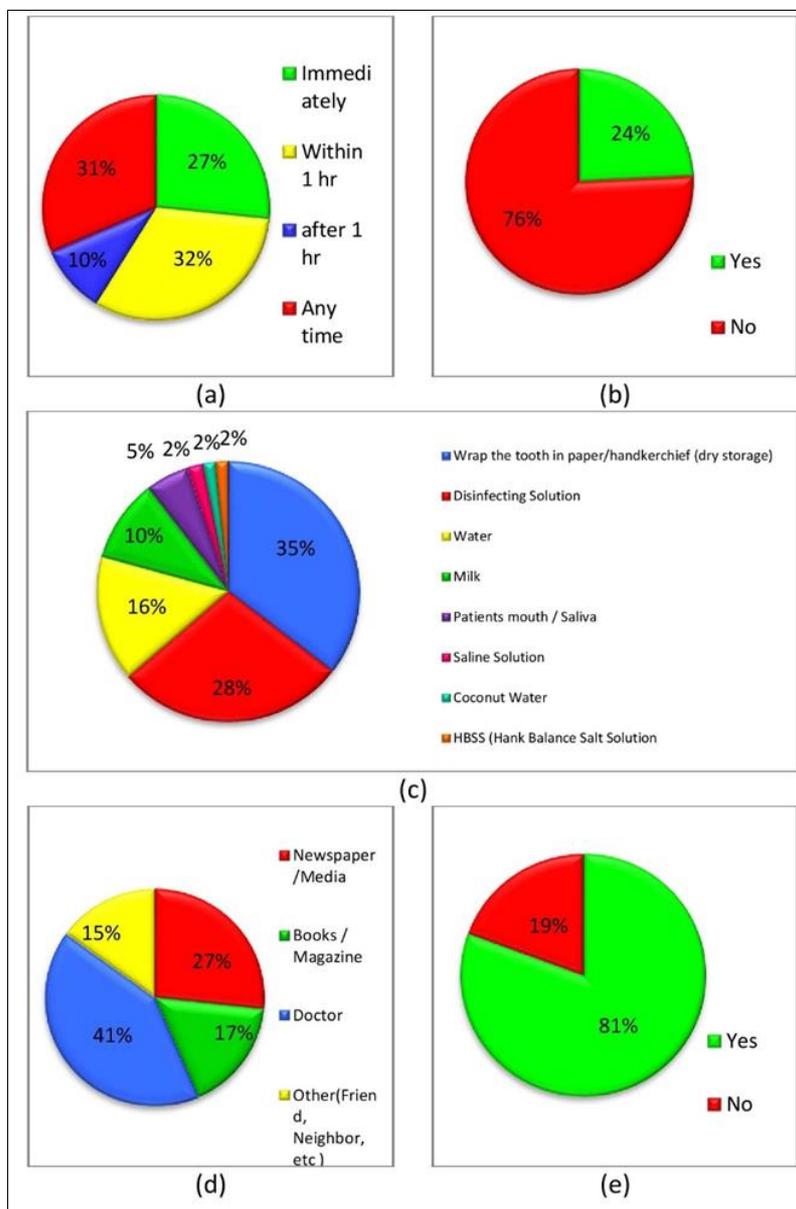


Fig 2: Pie charts are depicting a) Responses to how soon re-implantation of avulsed tooth should be done. b) Responses to knowing importance of carrier media. c) Responses to media for caring avulsed tooth. d) Responses to the source of information. e) Responses for interest in receiving information about emergency management of avulsed tooth

Discussion

Avulsion of a permanent tooth is a dental emergency that must be treated immediately. The goal is to achieve successful re-implantation, hence the tooth should be reimplanted as soon as possible [8]. Population plays an important role in the management and prognosis of saving an avulsed tooth. Untreated dental trauma damages social, functional, and emotional characteristics of life [9], which was consistent with other studies [10]. The rural population is unaware of the need of saving and managing avulsed teeth due to a lack of education, communication, and modern sources of information.

The survey serves as a tool to know the awareness of these people about dental avulsion and how to treat it. The pooled pre-valence of traumatic dental damage was found to be 13% in the literature, with a higher rate in children under the age of 6 years. One of the risk factors was an increase in overjet [11]. Among the population that was surveyed, 69% were male and 31% were female. The majorities among them were young adults, educating them will help us to educate the society. According to studies conducted across the country, 44.5 %

(Wadhwanaya S *et al.*), 31.4 % (Shreedharan J *et al.*), and 39.4 % (Malhul *et al.*) knew the need of wearing a helmet [12-14]. Among the study population, 52 % use to wear helmet while driving, which is more than in previous studies. Despite the fact that wearing a helmet is required by law, more than half of the population does not do so on a regular basis. This is one of the risk factors for people suffering more catastrophic injuries.

Only 4.25 % of youngsters employed mouth protective guards to protect themselves from dental injuries, according to a study by Sethi HS *et al.* [15]. In the current study, 15 % used mouth guards. Few people are aware of it, and just a few athletic academies make it mandatory to use it on a regular basis. One of the traumatic injuries that might develop during such actions is dental avulsion.

The majority of participants reported they had previously experienced dental trauma, either with themselves or with someone they knew. These findings are consistent with a research by Nikkam *et al.* [6]. These findings are in contrast with those of a study by Bhagwat SA *et al.* [5], in which the participants had no prior dental trauma, however this study

focused on the urban population. This indicates that the rural population has a higher rate of dental trauma.

In the present study 67% of the rural people were unaware regarding re-implantation of avulsed tooth showing consistent result with other studies [5]. Also in a study conducted on practitioners and parents, there was less awareness regarding tooth re-implantation [16]. In the study, 48% of the people preferred prosthesis in place of re-implantation as they were unaware of tooth re-implantation. Around 60% of the rural people did not know its importance which was a consistent finding with the other surveys also [5, 16]. It was found that people themselves have no experience in managing dental avulsion, similarly even in a survey conducted on dental practitioners, it was found that they had less experience in managing situation of dental avulsion [17]. In a study by Jain A *et al.* [16] in which parents were asked whom they will contact in case of avulsion, 65% of the people opted for a dentist. Utmost (85%) of the people consulted a dentist in the present study and around 94% in a study by Bhagwat SA *et al.* [5]. Rather than consulting a medical physician if the patient directly approaches the dentist as soon as possible there are higher chance of saving the avulsed tooth or if not proper management of the dental injury can be considered.

Re-implantation can be done immediately, according to only 27% of those surveyed. Even literature claims that if it is completed in one hour, it has a better prognosis. The findings contrasted with those of Bhagwat SA *et al.* [5], who found that 48% of participants thought it should be done immediately [18-19]. Because most people are unaware of the importance of carrier media, they are unable to present their teeth to the dentist in proper condition. In this study, the majority of the participants preferred to wrap the tooth in a handkerchief or dry storage paper, which is comparable to what was reported in another study [5]. In surveys of parents, the majority of them preferred to carry their child's teeth without any media, in saline, or in water, whereas practitioners preferring saline are more [6, 16, 17, 20].

The choice of selecting the carrier media depends on the early and easy availability of the carrier media. Dry storage and saline were easily available. Storage media include the patient's own saliva and milk, both of which are easily available but unknown to most people, particularly in rural areas. If extra-oral duration is more than 15 to 20 minutes, coconut water was found to be as beneficial as HBSS in a study by Thomas T *et al.* [21]. For re-implantation of the tooth as a therapy modality, selecting proper carrier media is very important.

In this study, 41% of participants received information from their doctor about how to manage avulsed teeth. In the study by Nourwali IM *et al.* [20], the majority of participants learned from television. Parents got knowledge from books. Participants in this study are interested in learning more about avulsion and how to treat it, which is in accordance with previous findings [5, 6, 20].

Conclusion

Within the limitations of study, it can be concluded that there is necessity to raise public awareness about tooth avulsion, carrier media, and treatment options. It can also be inferred that there is need of spreading knowledge about wearing helmets and mouth guards to lower the chances of dentofacial trauma.

Conflicts of Interest

There is no conflicts of interest.

Questionnaire

1. Do you wear helmet while driving?
 - a) Yes
 - b) No
2. Do you or your children use mouth protective guard while playing ground sports?
 - a) Yes
 - b) No`
3. Do you have any previous experience of dental trauma with self or your known ones (broken, avulsed & others)?
 - a) Yes
 - b) No
4. Are you aware of possibility of re-implantation of avulsed tooth as part of first-aid in treatment modality?
 - a) Yes
 - b) No
5. In case of avulsion which of the following treatment modality will you prefer?
 - a) To reimplant the avulsed tooth
 - b) Prosthesis
 - c) None of the above
6. Do you know the importance of saving the avulsed tooth?
 - a) Yes
 - b) No
7. Do you have previous experience of managing dental avulsion?
 - a) Yes
 - b) No
8. To whom will you consult in case of avulsion of tooth ?
 - a) General physician/ Medical doctor
 - b) Family member/ Friend/ Neighbor
 - c) Dentist
 - d) other
9. How soon do you believe re-implantation of avulsed tooth should be done?
 - a) Immediately
 - b) Within 1 hr.
 - c) After 1 hr.
 - d) Any time
10. In case of avulsion do you find the importance of carrier media to store the tooth, till you reach the dentist?
 - a) Yes
 - b) No
11. How will you carry the avulsed tooth?
 - a) Wrap the tooth in paper/ Handkerchief (dry storage)
 - b) Disinfecting solution
 - c) Water
 - d) Milk
 - e) Patient's mouth/ saliva
 - f) Saline solution
 - g) Coconut water
 - h) HBSS
12. What is the source of your information about avulsed tooth?
 - a) Books
 - b) Media
 - c) Doctor
 - d) Others (friend, neighbor etc.)
13. Are you interested in receiving more information about the emergency management and reimplantation of avulsed tooth?
 - a) Yes
 - b) No

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