

Knowledge and Awareness of Management of Dentaltraumatic Emergencies among Medical Professionals, Inmumbai.

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Abstract

AIMS AND OBJECTIVES:

To carry out a survey to study the knowledge and awareness of management of dental traumatic emergencies among medical professionals in the city of Mumbai. To establish the need (if required) to train medical professionals to tackle dental traumatic emergencies.

MATERIALS AND METHODS: A self-formulated and validated questionnaire consisting of 10 close ended questions filled out by 300 participants who were working in public hospitals with trauma centers.

RESULTS: With regards to dentofacial injuries, 64% of the doctors had encountered fracture of jaws, followed by soft tissue injuries (56%) of the face and fracture of other facial bones (49.3%).58.7% of the participants had come across cases of tooth avulsion. 77.3% of the participants believed that an avulsed tooth could not be salvaged.

Majority of the participants (93.3%) admitted to not having received adequate information regarding management of an avulsed tooth.

CONCLUSION: A low level of awareness regarding management of dental traumatic emergencies among medical professionals was noted. The importance of saving an avulsedtooth, if inculcated during the course of medical studies, so as to better enable them. Updated guidelines should be shared and publicized through more CDEs and CMEs conducted about this topic.

Keywords: Trauma Centers Traumatology

Cross-Sectional Studies Education, Medical, Continuing FacialInjuries
Esthetics

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I. Introduction:

Dental trauma is often accompanied by trauma of orofacial region. The extent of damage could range from mere chipping of crown to extensive soft and hard tissue trauma in the facialregion including avulsion oftooth

Studies have shown that among orofacial injuries, facial bone fractures account for 37%, dent alveolar injuries for 50% and soft tissue injuries for 62%. [1]

Among dental traumatic injuries avulsion of permanent teeth accounts for 0.5-16% of all injuries. [2]

Medical professionals may often face this emergency being the first health care professionals to attend to a patient with trauma. Management of the same requires following the recommended guidelines within a crucial time period. However, the success rate is dependent on factors such as extra-alveolar time, viability of periodontal ligament, storage and transport media, type of splinting, time of endodontic intervention, and oral

and general health status. [3]

Mobility or avulsion of a tooth could pose a lifelong loss for the patient, in terms of esthetics and function both, and hence requires prompt and organized treatment for good results. [4]

Studies conducted previously have shown that there is a general lack of awareness among medical practitioners / emergency care providers regarding management of dental traumatic emergencies. [5, 6]

Basic knowledge about dealing with a case of avulsed tooth, in terms of diagnosis and primary care can be pivotal in salvaging a tooth and thus the patient's confidence and oral health.

Hence, the present study aims to assess the knowledge and awareness of management of dental traumatic emergencies among medical professionals in Mumbai.

II. Method And Materials

The present study is a cross sectional, observational study. A questionnaire was formulated based on previous studies, with certain modifications [6]

It consisted of 10 close-ended, multiple choice questions apart from those pertaining to personal data (age, gender, qualification and work experience). The questionnaire was validated by three qualified dental professionals. An approval was obtained from the institutional ethics committee at Dr. R.N Cooper hospital and HBT medical college to conduct the study.

A total of 300 physicians participated in the study. They were selected based on convenience sampling. All the participants were working in hospitals that had a trauma center. The questionnaire forms were filled by the participants under the supervision of the authors and strict confidentiality of data was assured.

The questionnaire was divided into two parts, the first part consisted of the participant's personal data. It included the following information: Age, qualification, gender and work experience in years. The second part aimed at assessing the participant's knowledge and awareness regarding dentofacial trauma and immediate management of avulsed teeth.

Data obtained was compiled on a MS Office Excel Sheet (v 2010, Microsoft Redmond Campus, Redmond, Washington, United States). Data was subjected to statistical analysis using Statistical package for social sciences (SPSS v 21.0, IBM).

Descriptive statistics like frequencies and percentage for categorical data has been depicted. Comparison of frequencies of categories of variables with groups was done using chi square test. For all the statistical tests, $p < 0.05$ was considered to be statistically significant, keeping α error at 5% and β error at 20%, thus giving a power to the study as 80%.

III. Results

Of the 300 participants 156 were male, 144 were female. The mean age was found to be 27.25 years. 207 were M.B.B.S. graduates, while 93 were postgraduates.

72.7 % of the physicians came across 0-5 cases of dental emergencies in the past oneyear.

As per the results, 90% of the participants considered facial trauma as an emergency, followed by dental abscess (66.7%), tooth avulsion (63.3%), and soft tissue laceration (53.3%).

With regards to dentofacial injuries, 64% of the doctors had encountered fracture of jaws, followed by soft tissue injuries (56%) of the face and fracture of other facial bones (49.3%) 58.7% of the participants had come across at least one case of tooth avulsion, while 29.3% of them had seen a displaced tooth.

74% of the participants were of the opinion that prescription medications are not enough to curb dental pain.

Furthermore, in terms of diagnosis, only 10.7% of all the doctors reported that they can interpret oral radiographs confidently.

When it came to management of avulsed tooth, a staggering 77.3% of the participants believed that it could not be salvaged. While 22.7% (n=68) of them thought the tooth can be saved, only 38 of them were aware that an attempt must be made to save it within 30 minutes to one hour of avulsion.

Of those who believed that replantation is an option, 67.6 % chose Hank's Balanced Salt solution as a storage media, followed by 17.6% who chose milk.

Furthermore, splinting avulsed teeth to neighboring teeth was considered a treatment modality by only 20.6% of the participants who believed in salvaging an avulsed tooth, while 52.9% were not aware about the same.

However, when asked about acquiring information regarding management of avulsed teeth, a vast majority of all the participants (93.3%; n=280) admitted to not having received adequate information.

IV. Discussion

Maxillofacial and dental emergencies could present in various forms that include, trauma to the facial skeleton and accompanying soft tissue, space infections, dental pain, post-operative complications, fracture and

avulsion of teeth. [5]

Since these are generally complex and extensive injuries, the first people to attend to these are medical professionals at trauma centers of hospitals. [7]

Among dentofacial injuries, the incidence of avulsion of a tooth is 0.5-16%. [2]

Avulsion of a tooth leads to a myriad of consequences that may have functional, aesthetic, psychological as well as economic implications. Although several treatment modalities have been devised to replace a tooth missing due to avulsion, research has shown that if replanted in the socket immediately after avulsion, permanent teeth may survive for many years thereafter. [4, 8]

However, as per various studies, there's a general lack of awareness regarding management of dentofacial emergencies among medical professionals. [5, 6, 7, 9]

As per the findings of our study, about 72.3% of participants had come across 0-5 cases of dentofacial trauma in the last one year. 58.7% of them encountered cases of tooth avulsion and 63.3% do consider it as an emergency.

Following avulsion, the tooth may become dehydrated and PDL (periodontal ligament) cells may lose their viability. As per IADT guidelines, prognosis for a tooth with extra oral time more than 60 minutes is poor. However, if placed in a physiological medium within 60 minutes, the PDL cells, although compromised, may still be viable. [10]

As per our study, only 22.7% participants were aware that an avulsed tooth could be saved. Out of these only 38 participants were aware of the time sensitivity, that is, the tooth must be stored and replanted within 30-60 minutes of avulsion.

Since immediate replantation is not always possible at the site of injury, it is recommended to store the tooth in an appropriate storage medium, which will prolong the extra oral time of the tooth and lead to a better prognosis. Hank's balanced salt solution is regarded as the gold standard of storage mediums, though it may not always be easily available. However, milk is also considered as an acceptable medium. Another medium that is often used, is patient's own saliva. Nonetheless, HBSS and milk are preferred.[11]

Out of 22.7% of the participants who were aware that an avulsed tooth can be saved, 20.6% knew that splinting is a part of the treatment modality.

Of all the participants, only 6.6% had received information about management of dental emergencies via CDEs, medical curriculum or health talk shows on television. On the other hand, a staggering 93.3% responded by saying that they have not received adequate information. Hence there's an urgent need to raise awareness and educate medical professionals regarding dental emergencies.

The International Association of Dental Traumatology (IADT) has developed a series of guidelines with respect to dental traumatic injuries. These could be accessed on <http://dentaltraumaguide.org/>. [10]

Information available through these could be put up in the form of posters and charts. These could then be put up in Emergency Departments as a reminder for practicing physicians.

There is a pressing need to conduct CDE (Continuing Dental Education) and CME (Continuing Medical Education) programs to reach out to practitioners regarding dental traumatic emergencies.

Avulsion may be a part of other injuries but when the patient is not in a life-threatening situation, it is imperative that physicians understand the positive outcomes of saving an avulsed tooth in time. It would help in the long-term esthetics, and also minimize any prosthetic or orthodontic and thereby, economic implications for the patient.

V. Conclusion

As discussed, there seems to be a low level of awareness regarding management of dental traumatic emergencies among medical professionals. Government agencies and health care organizations should aim to develop a more multi-disciplinary approach, when dealing with any case of trauma. The importance of saving an avulsed tooth, should be inculcated right from during the course of medical studies, so as to prepare the physicians to keep the various consequences in mind. Updated guidelines should be shared and publicized through more CDEs and CMEs conducted about this topic.

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QUESTIONNAIRE

Name:

Age: Gender:

Qualification: Work Experience(Years):



I am hereby willing to participate in the study titled, 'Knowledge and Awareness of Management of Dental Traumatic Emergencies among Medical Professionals in Mumbai.'

1) Which of the following do you consider as dental emergencies? (Tick allthose appropriate)

- a) Soft tissuelaceration
- b) Facialtrauma
- c) Toothavulsion
- d) Dislodgedrestoration
- e) Dentalabscess
- f) Toothache
- g) Mouthulcer

2) How many cases of dental emergencies have you come across in the last 1year? a)0-5

- b) 5-10
- c)10-20

d) More than 20

3) Which of the following dentofacial injuries have you comeacross?

- a) Do notknow
- b) Soft tissue injuries offace
- c) Fracture ofjaws
- d) Fracture oftooth
- e) Fracture of other facialbones

4) Type of dental trauma injury you haveeseen

- a) Do notknow
- b) Avulsion(knocked outtooth)
- c) Displacedtooth
- d) Crown fracture oftooth
- f) Dent alveolar fracture

5) Are prescription medications enough to treat toothache?

- a) Yes
- b) No

6) Can you interpret oralradiographs?

- a) Yes
- b) No

- c) Notconfidently
- 7) Can an avulsed tooth besaved?
 - a) Yes, within 30 mins to 1 hour
 - b) Yes, within 12hours
 - c) Yes, within 24hours
 - d) No, it cannot besaved
 - e) Notsure
- 8) Which of the following storage media would you prefer to use in case of anavulsed tooth?
 - a) None, as it cannot bepreserved.
 - b) Patient’s saliva
 - c) Milk
 - d) Hank’s Balanced SaltSolution
 - e) Tapwater
- 9) Avulsed teeth are splinted to neighboring healthyteeth
 - a) True
 - b) False
 - c) Notsure
- 10) Have you acquired information about managing avulsedteeth?
 - a) Yes, through CDE/CMEprograms
 - b) Yes, through health talks on television orinternet
 - c) Yes, during the course of medicalstudies
 - d) No, I do not have adequateinformation.

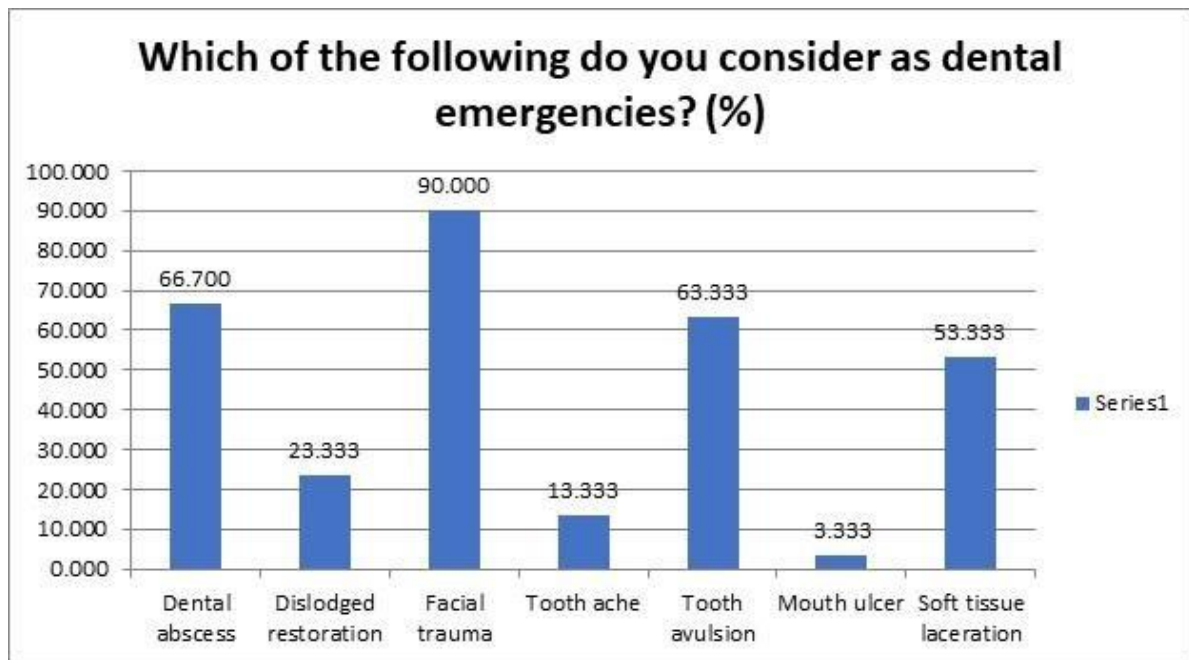


Fig 1. Distribution of answers to question number1

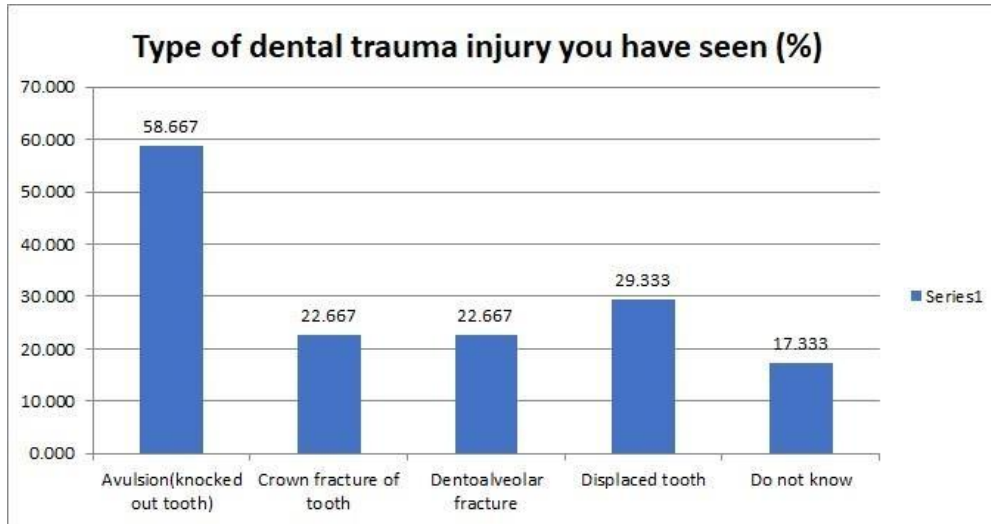


Fig 2. Distribution of answers to question number 4

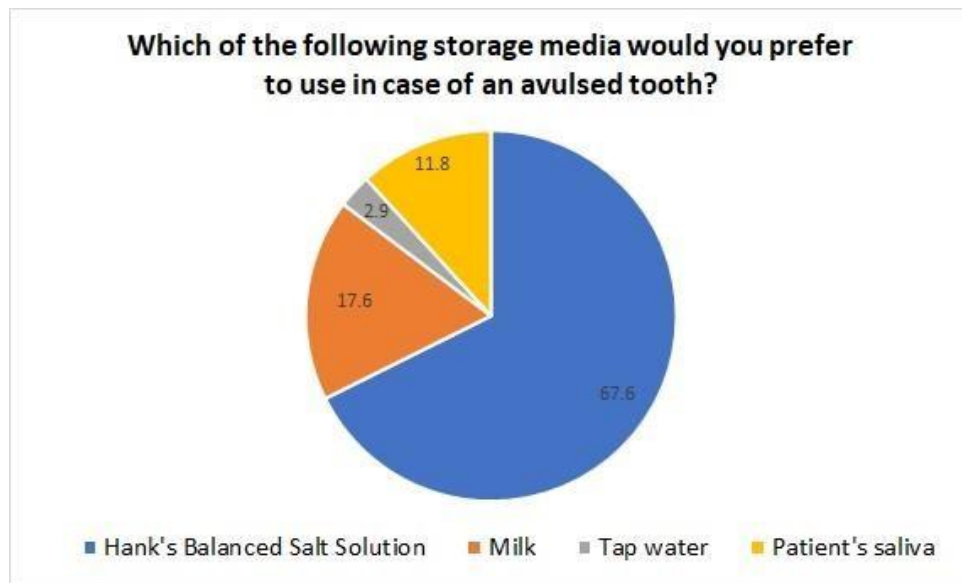


Fig.3 Distribution of answers to question number 8

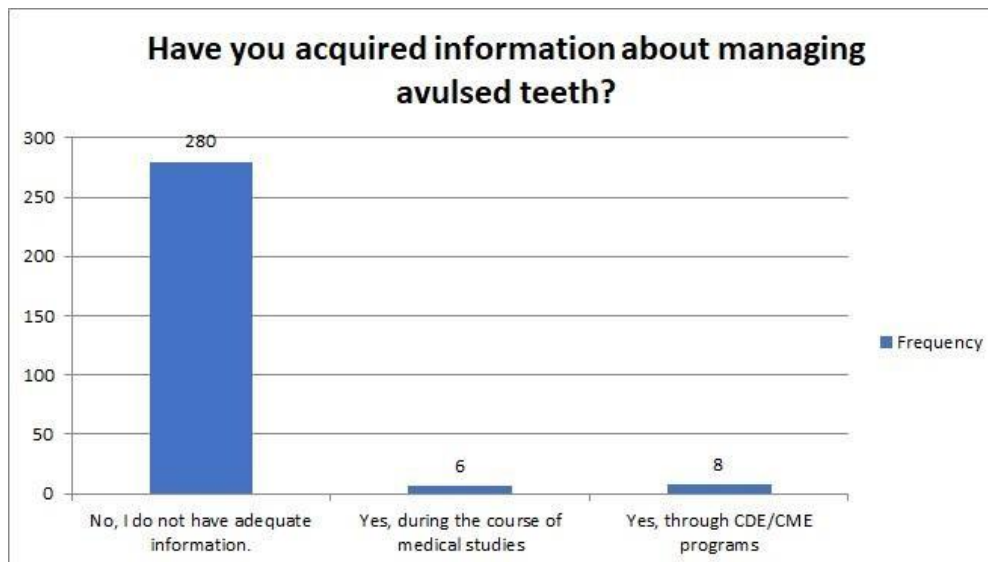


Fig 4. Distribution of answers to question number 10