

## Original Article

## EVALUATION OF AWARENESS OF FIRST AID OF AVULSED TOOTH AMONG PHYSICIANS AND NURSES OF HOSPITAL EMERGENCY DEPARTMENTS: A SHORT SURVEY

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### ABSTRACT:

**Introduction:** Traumatic injuries of teeth and their supporting structures have been one of the most important oral health problems in children. Apart from these serious outcomes of dental trauma, Loss of specially anterior teeth can be more psychologically distressing for both the child and parents as well. The prognosis of traumatized teeth depends on prompt and appropriate treatment. In the emergency care and hospital, physicians and nurses are the first responders to provide primary treatment in such cases. Aim: The study was undertaken to assess and evaluate the knowledge of the physicians and nurses hospital emergency departments on the management of Traumatic dental injuries specially avulsed tooth. **Material And Methods:** this is a cross-sectional questionnaire-based survey conducted in 15 emergency departments of the hospital. The survey included close-ended 20 multiple-choice questions involving 15 questions on basic knowledge about dental avulsion and 5 questions on case-based scenarios to assess the awareness and readiness to address the situation. **Results:** we reported 100% response rate from the participants. Results showed lack of knowledge in both physicians and nurses. There was confusion regarding reimplantation, storage/transport media and handling of avulsed tooth. they all showed interest in requirement of knowledge based seminars to gain knowledge regarding such emergencies. **Conclusion:** As we know that dental avulsions or emergency injuries can cause serious consequences if not handled properly, thus it is not just the responsibility of a dentist but also the general physicians and various health care providers to have a knowledge regarding proper handling of these emergencies. thus proper educational lectures and seminars should be provided to them as well thus raising overall standard of emergency care.

**Key words:** Avulsed tooth, reimplantation, traumatic injury.

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### INTRODUCTION

Traumatic injuries of teeth and their supporting structures have been one of the most important oral health problems in children. It has become a global public health problem because of it being associated with high morbidity and disability. In 2011, WHO projected that more than 6,30,000 children under the age of 15 were killed by an injury.<sup>1</sup> Various epidemiological studies have also reported an overshoot in incidence of the problems related to dental trauma.<sup>2</sup> Apart from these serious outcomes of dental trauma, Loss of specially anterior teeth can be more psychologically distressing for both the child and parents as well. It effects both on esthetics and function which affect overall personality development of the child. Dental injuries may range from minor enamel chipping to extensive maxillofacial damage involving the supporting structures and displacement or avulsion of teeth. Children in the age group of 1–2.5

years sustain injury to primary dentition whereas injury to permanent dentition is noted mainly in 8–10 years of school going children. Its reported that the frequency of tooth avulsion varies from 0.5% to 16% of traumatic injuries in the permanent dentition<sup>3,4</sup> and from 7% to 13% in the primary dentition.<sup>5</sup> The prevalence of avulsion is three times more in boys than girls mainly attributed to participation in active sports. The prognosis of traumatized teeth depends on prompt and appropriate treatment. In the emergency care and hospital, physicians and nurses are the first responders to provide primary treatment in such cases. It is primarily due to lack of first aid and ignorance among these group of people that avulsed teeth are lost. Its been reported that success rate in immediate reimplantation ranges from 85% to 97% depending on the stage of root development. From the available data, it is clear that a high percentage of the emergency personels which

include physicians and nurses, have insufficient information on management of Traumatic dental injuries (TDIs). So bearing in mind the importance of this issue, the prime objective of this study was to assess and evaluate the knowledge of the physicians and nurses in general hospital of MNR Dental College and Hospital, Sangareddy, Andhra Pradesh, India, on the management of Traumatic dental injuries specially avulsed tooth.

**MATERIAL AND METHODS:**

This being a cross-sectional questionnaire-based survey conducted in 15 emergency department of the hospital of MNR Dental College and Hospital, Sangareddy, Andhra Pradesh, India. We included 100 emergency personals which consisted of both physicians and nurses who voluntarily agreed to be a part of the study, with a promised anonymity. Prior permission from the hospital authorities was obtained and an informed consent was obtained from all the participants of the study. The survey included close-ended 20 multiple-choice questions involving 15 questions on basic knowledge about dental avulsion and 5 questions on case-based

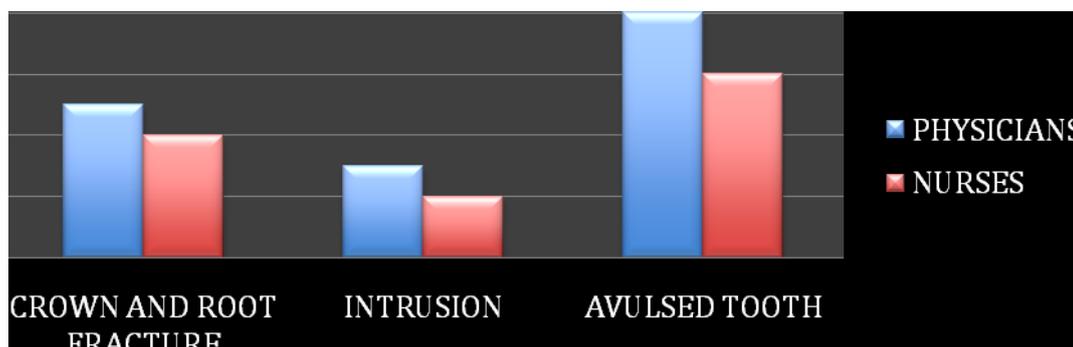
scenarios to assess the awareness and readiness to address the situation. The participants were asked to fill the questionnaire and were collected immediately after answering. The obtained data was collected and tabulated and was statistically analyzed using SPSS version 16.0 (SPSS Pvt. Ltd., Chicago, IL, USA). Descriptive statistics was employed in terms of percentages.

**RESULTS**

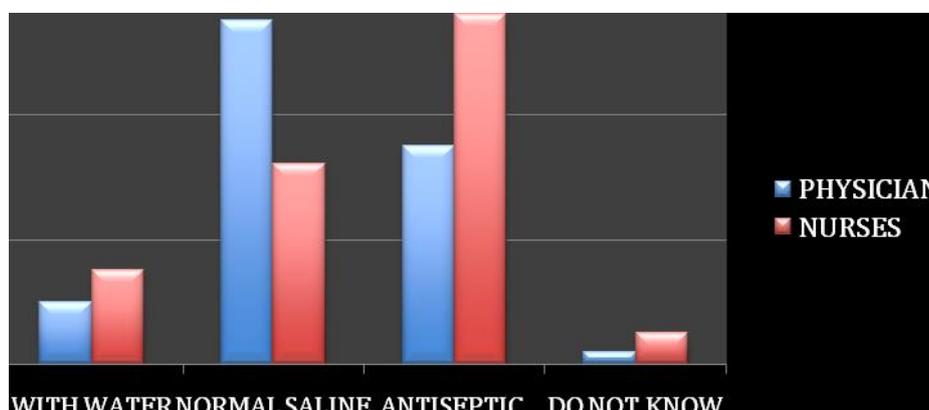
The present study included 100 emergency department personals (physicians and nurses) out of which 58% were nurses and 42 % were physicians. All of them filled the questionnaire forms and were collected.

Out of total data collected it was seen that 70% physicians and 60% nurses have had previous experience with dental trauma and had a knowledge of various different types severe dental injuries including tooth eruption. ( FIGURE 1) Rest had a fair knowledge regarding this. Out of these 30% of the physicians and 25% of the nurses had previous experience of immediate handling of tooth avulsion cases as well.

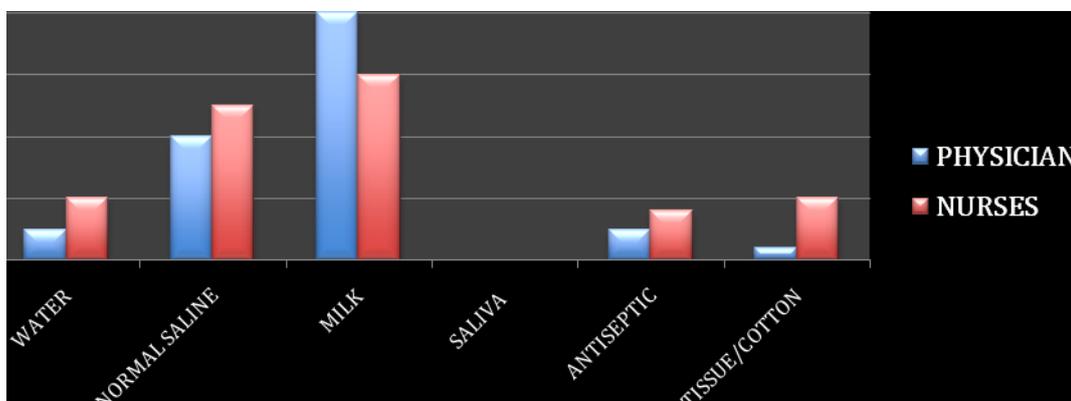
**FIGURE 1:** Graph showing knowledge about various types of dental trauma by physicians and nurses



**FIGURE 2:** Graph showing knowledge of handling the avulsed tooth by physicians and nurses



**FIGURE 3:** Graph showing knowledge regarding transport medium for avulsed tooth by physicians and nurses



The Response regarding handling and storage of avulsed tooth showed that 55% physicians considered saline and 35% suggested antiseptic/alcohol as suitable for cleaning the tooth, whereas among nurses responses 32 % suggested saline and 68% said antiseptic/alcohol. (FIGURE 2)

Regarding knowledge if transport media used, 40% physicians and 20% nurses suggested milk and 30% physicians and 28% nurses said saline. No body knew about saliva as transport medium if all these above medium were not available. About 64% physicians and 58% nurses were aware of the concept of reimplantation but lack of knowledge regarding factors affecting prognosis.

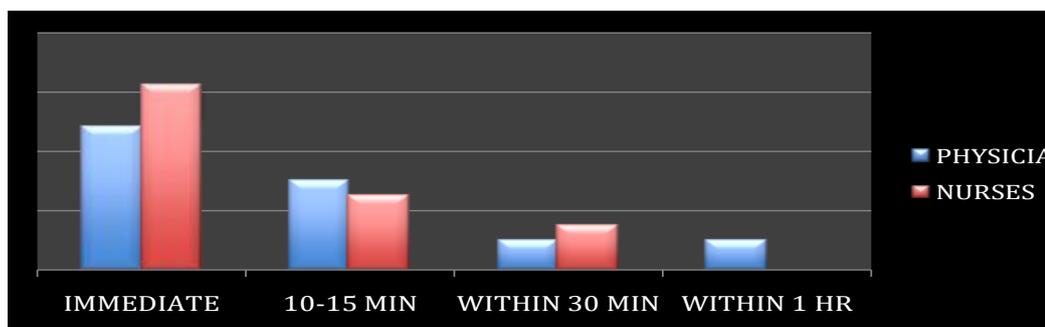
48.3% nurses and 62.5% physicians said that avulsed tooth should be treated immediately whereas 28% had a knowledge that it does not require an urgent attention. (FIGURE 4)

Almost 98% physicians and 95% nurses were interested in educational programmes regarding handling of dental emergencies.

**DISCUSSION**

In the present study, knowledge and attitude toward dental traumatic injury among emergency health care providers which include physicians and nurses were assessed. Most healthcare providers and educators agree that it is better to prevent injury rather than dealing with the consequences of the injury. In the dental field however, more interest is shown towards the prevention and control of other dental diseases rather than towards creating awareness regarding emergency management of dental trauma. Even though number of dental clinics and hospitals has increased over the past decade, still medical hospital remains the first reporting point following orofacial injury. Most of the parents chose

**FIGURE 4:** Graph showing knowledge regarding duration of reimplantation for avulsed tooth by physicians and nurses



dental hospital as the first place of contact after dental trauma, which was in accordance with the study done by Loo et al.<sup>6</sup>As the emergency department personnel including physicians and nurses are in the front arena for providing the primary treatment, their knowledge and awareness regarding first aid measures in tooth avulsion is detrimental in predicting the outcome. There are a few reports of knowledge among and nurses. Keeping the above points, this questionnaire survey was undertaken to assess and evaluate the awareness and knowledge among emergency department personnel regarding first aid in tooth avulsion. This study came out with 100% response rate from the participants who atleast had a some knowledge about tooth avulsion. These results were in accordance with the previous study results of by trivedi C et al.<sup>7</sup>It was seen that 30% of the physicians and 25% of the nurses had a previous experience of immediate handling of tooth avulsion cases as well. this was encouraging that these emergency personels were not only aware but also had an experience in handling the dental emergencies like tooth avulsion. Regarding the most important question of reimplantation, majority of the participants were of opinion that natural teeth should be preserved rather than artificial replacement. when handling of avulsed tooth was considered it was observed that 55% physicians considered saline and 45% suggested antiseptic/alcohol as suitable for cleaning the tooth, whereas among nurses responses 32 % suggested saline and 68% said antiseptic/alcohol. This showed that there was a lack of knowledge regarding how to immediately handle the avulsed tooth. this was in accordance with the previous reported studies in literature.<sup>8,9</sup> For the response of next question regarding knowledge of transport medium milk and saline were the commonly opted options. Saliva as a transport medium was not considered as an option by any participant though it was mentioned in the options provided to them. This finding was similar to as reported by some authors.<sup>10,11</sup> Almost majority of the participants showed interest and positive response regarding taking educational knowledge about management of tooth avulsion injuries. The limitations of this study included less sample size and inclusion of pre and post educational training response of the participants. More such surveys should be done to evaluate and educate the emergency health care providers so that adequate emergency treatment should be provided to the patient and to prevent later complications. More such surveys should be done to evaluate and educate the emergency health

care providers so that adequate emergency treatment should be provided to the patient and to prevent later complications.

## CONCLUSION

As we know that dental avulsions or emergency injuries can cause serious consequences if not handled properly, thus it is not just the responsibility of a dentist but also the general physicians and various health care providers to have a knowledge regarding proper handling of these emergencies. thus proper educational lectures and seminars should be provided to them as well thus raising overall standard of emergency care.

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