Training and awareness of managing dental trauma emergencies among dental students in tertiary care hospitals of Pakistan

ABSTRACT

Objective: The aim of the study was to assess and investigate the dental students’ level of educational knowledge and awareness regarding the emergency care management of dental trauma.

Materials and Methods: It is a cross-sectional study where several questionnaire forms were given to the first and final year students of the dental departments in local tertiary care hospitals of Karachi. A total of 200 students working at departments of dental trauma were involved in this study from the period of February 2018 to November, 2018.

Results: The results show that there was a significant association between the gender, age and the knowledge of the students regarding trainings in dental trauma and exposure to a dental emergency. The first year students have significantly less (6 vs 30%) trainings and exposure (10 vs 25%) to the tooth avulsion trauma accidents when compared to final year students. Even though final year students were far better in answering correctly still significantly higher number of students answered incorrect to scenario based questions when compared to first year students.

Conclusion: Data at hand suggested that knowledge of first aid training for accidents that occur outside dental hospitals and clinics is insufficient. Also there is a lack of awareness among dental students regarding their role in dental trauma management, stressing towards the execution of guidelines for dental injury and the education of undergraduate students and patients in the emergency management of dental trauma.

Key words: Avulsed tooth, Dental trauma, Student trainings, Emergency management

DISCUSSION

In this study the knowledge of first year students was taken as the knowledge possessed by general population, close to layman which showed more than 100% of the students have no idea how to manage dental trauma related emergencies. The educational policy of Pakistan is very similar to the guidelines provided in “The Competences for the New General Dentists, 2008” by the House of Delegates of the American Dental Education Association (ADEA) that states graduates must be skilled in the prevention, identification, and management of trauma, oral diseases, and other disorders.
The present study showed that only six (6%) first-year student had gotten first aid training, proposing that no such preparing for the administration of dental management had been given in numerous primary schools, middle school schools, and secondary schools. On the other hand 30 final year students (30%) had previously taken first aid dental training. The lack in the training and management of dental emergencies in colleges has initiated an urgent need to introduce public seminars/lectures about dental trauma in the fourth year course of dental schools. These lectures should follow the model core curriculum established by the Pakistan medical and dental council (PM&DC).²

According to the guidelines for the management of dental trauma published by the International Association for Dental Traumatology (IADT) and the American Academy of Paediatric Dentistry (AAPD), an immediate replantation of a tooth is necessary to obtain the best prognosis.³,⁴,⁵ As this prevents further damage to the PDL cells and also initiates tissue regeneration ⁶ and it must be washed under cold water for max 10 sec.³,⁴ Previously many unsuccessful replantation has taken place due to lack of knowledge about what to do to an avulsed tooth.⁷,⁸,⁹ Therefore, 47 % of the first year and only 20 % of final year students considered an instant transportation of the tooth to a dentist more appropriate rather than replantation of the tooth by themselves. This has suggested that even though final year student's first-aid knowledge is better than first year still many students lack the basic knowledge of tooth avulsion.

About 64 final year students (64%) knew how to deal with the avulsed tooth covered with dirt and gave the correct response. Moreover, the largest number of respondents believed that the best way to transport an avulsed tooth to the dental clinic was to “seal the tooth in plastic wrap”, signifying that they did not know there is an increasing risk of ankylosis after an extra oral drying time of 20 minutes of an avulsed tooth.⁴,¹⁰,¹¹,¹² These results reflect the level of knowledge about dental emergencies among laypeople and dental students.

Even though the majority of the final year students possessed the basic knowledge of an avulsed tooth when compared to first year students nonetheless only 20 % of the final year students provided correct response (correct response: replant an avulsed tooth into socket).
Guidelines provided by IADT and AAPD for the management of dental trauma state that the physiological transportation media for avulsed teeth include HBSS (tissue culture medium), saline, and cold milk. In the present study, 81% of first-year students and 10% of final-year students selected physiological saline as the best transportation medium for avulsed teeth. In addition, 61% of final-year students selected milk, showing that they know milk and saline are the most reasonable transport mediums for the storage of avulsed teeth because pH and osmolality of them are like those of extracellular fluid. Therefore, we need to educate regarding the appropriate storage solutions of avulsed teeth to laypeople, dental students, and general dentists. Different types of answers provided by the students reflect the level of knowledge they acquired during their studies. This imposes an urgent need to introduce novel strategies that help students regardless of age and gender to manage dental trauma related health problems. The limitations of education in the management of dental trauma in many colleges may also be due to not following the guidelines for the management of dental trauma and the diversity of opinions about appropriate management methodologies. Regardless of the age, education level or other factors, student’s knowledge of tooth avulsion management was found to be low. While the important epidemiologic findings from this study may serve as a warning, they also represent a useful source of information to improve the knowledge level of students by introducing new novel teaching technologies such as problem-based learning or 3D video illustrations.

**CONCLUSION**

After detailed consideration and analysis, it is observed that in many Pakistani colleges there is a great need of immediate improvement among dentist and dental education regarding the application of the guidelines for dental trauma. Another fact that is drawn out from the study is that there is a lack of awareness among the dentists and students regarding their role in cases of avulsion of permanent teeth, so that the complications associated with such injuries could be minimized. One possible way to achieve this goal is through education during and after training and introduction of a formal protocol for treatment of avulsed permanent teeth and other dental injuries.
Tayyaba Rasool\textsuperscript{1}, Aroosa Tariq\textsuperscript{2}, Khawer Saeed Jamali\textsuperscript{3}, Muhammad Asad Choudhary\textsuperscript{4}, Shahrkh Ali Khan\textsuperscript{1}, Waseel Ahmed Siddiqui\textsuperscript{1}, Aasia Maroof\textsuperscript{1}, Sonia Siddiqui\textsuperscript{5}
\textsuperscript{\textsuperscript{\textcopyright}Ziva Antolin (Slovenia)}

\textsuperscript{1}Karachi Medical and Dental College, Pakistan. Email: tayyabarasool06@gmail.com, shahrakhali95@gmail.com, waseelsidd@outlook.com, aasiamaroof3@gmail.com
\textsuperscript{2}Dr. Ishrat ul ebad Khan Institute of Oral Health Sciences, Dow University of Health Sciences, Karachi, Pakistan. Email: dr.aruza.tariq@gmail.com
\textsuperscript{3}Department of Surgery, Dow University of Health Sciences, Karachi, Pakistan. Email: khawerjamali@gmail.com
\textsuperscript{4}Riphah College of Rehabilitation Sciences, Riphah International University, Lahore. Email: asad chaudhary97@gmail.com
\textsuperscript{5}Institute of Biomedical Sciences, Dow University of Health Sciences, Karachi, Pakistan. Email: sonia.siddiqui@dhus.edu.pk, ORCID: 0000-0002-8883-5242
\textsuperscript{Correspondence should be addressed to: tayyabarasool06@gmail.com}

\section*{References}