

Investigation of Knowledge and Practices Managing Traumatic dental injuries among dental Professionals of Sindh Pakistan

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ABSTRACT

Background: The rise in prevalence and complications associated with dental traumatic injuries among Pakistani population is considered a topic of discussion at International Association of Dental Traumatology nowadays. Understanding the multifactorial etiology, therapeutic techniques and choosing management approaches are vital to dental traumatic injuries.

Aim: To assess the knowledge, qualification and practices followed by dental professionals from a tertiary healthcare centers based in Sindh Pakistan.

Methodology: The study population of this cross-sectional descriptive study comprised of dental care providers attending the seminar on World Oral Health Day at Bibi Aseefa Dental College, Larkana, Sindh, Pakistan. A self-administered questionnaire consisting of two parts; demographic and knowledge about management of trauma was administered to participants on 20 March 2021. The detailed demographic details of research participants were collected and further analyzed by using SPSS 20 and MS Office 2010 tools.

Results: Out of total 134 participants, 40(29.9%) were males while, 94(70.1%) were females with mean age of 24.31 ± 4.088 . Among them 45(33.6%) were undergraduate dental students; in them 4(8.9%) were in 1st year dental students, 17(37.8%) in 2nd year, 10(22.2%) in 3rd year and 14(31.1%) were in final year of their undergraduate studies. 31(23.1%) were house officers, 19(14.2%) were post graduate residents and 39(29.1%) were general dental practitioners (GDP).

Conclusion: Lack of qualified dental experts with post-residency trainings dealing dental traumatic complexity in Sindh Pakistan is considered a major underlying associated with heightened case rates of pediatric dental injuries.

Keywords: tooth injuries, Dentists, Restorative, Pediatric

INTRODUCTION

Traumatic dental injuries have multifactorial etiology. Their occurrence is intractable to ascertain because many are asymptomatic and go overlooked while other are managed at the sites where documentation is not available such as rural clinics or private clinics. Despite this Liran et al¹. reported traumatic dental injuries comprise 5% of all injuries and 25% to 33% children and adults; respectively, have suffered dental trauma below 19 years of age with luxation injuries to be the most common form of dental trauma sustained². Ahmed S³ has reported traumatic dental injuries to be the 2nd most common dental disorder found in pediatric population of Pakistan.

Isolated dental injuries are uncommon and in majority of cases adjacent oral and facial structures are also involved in the injury. It is not uncommon for the toddler to sustain trauma to their anterior teeth during learning for walk or running and playing and in this growing period if the trauma to dentition is not promptly management can result in serious social and psychological consequences on the child among their peers⁴.

In Pakistan, patients sustaining dental trauma are usually consulted at nearest emergency departments where dental care providers of different levels are called

upon to manage and for this reason dental community must be equipped with knowledge to manage and advise appropriate treatment to patient sustaining dental injury. Studies have failed to demonstrate adequate knowledge of managing traumatic dental injuries among dental care providers^{5,6,7,8}. Management of injuries to primary and permanent teeth is different and International Association of Dental Traumatology provides guidelines for their management. Therefore, the objective of our study was to evaluate the knowledge about the management of dental trauma among dental health care providers visiting seminar on World Oral Health Day at Bibi Aseefa Dental College, Larkana, Sindh, Pakistan.

METHODOLOGY

The study population of this cross-sectional descriptive study comprised of dental care providers attending the seminar on World Oral Health Day at Bibi Aseefa Dental College, Larkana, Sindh, Pakistan. A self-administered questionnaire consisting of two parts; demographic and knowledge about management of trauma was administered to participants on 20 March 2021. All participants signed the consent to volunteer for the survey. This study did not require financial support. Demographics consisted of

occupation, year of study in case of dental student, gender, specialty in case of postgraduate resident, area of practice, years of experience post house job, history of managing a dental trauma case followed by 12 questions assessing the knowledge and management strategies by them.

Data was analyzed using IBM SPSS 20 for descriptive frequency and percentages of responses by the participants. A Knowledge score of 0 – 12 was given based on correct answer to question or scenario. Stratification was done for association of demographic data with mean correct score with level of significance of 0.05.

RESULTS

Questionnaire response population consists of 134 participants; of them 40(29.9%) were males while, 94(70.1%) were females with mean age of 24.31±4.088. Among them 45(33.6%) were undergraduate dental students; in them 4(8.9%) were in 1st year dental students, 17(37.8%) in 2nd year, 10(22.2%) in 3rd year and 14(31.1%) were in final year of their undergraduate studies. 31(23.1%) were house officers, 19(14.2%) were post graduate residents and 39(29.1%) were general dental practitioners (GDP). On enquiring about management, 66(49.3%) did not managed a case traumatic dental injury while 68(50.7%) dealt with dental injury case. 74(55.2%) did not obtained a formal training in management of traumatic dental injuries.

Regarding management of luxation dental injuries, 64(47.8%) responded with correct answer for spontaneous repositioning when deciduous upper anterior tooth displaced labially. 55(41%) responded correctly that tooth should be left alone for spontaneous repositioning in cases where immature maxillary permanent tooth is intruded into the socket. 58(43.3%) responded repositioning and

stabilizing using semirigid splint for 2 weeks in conjunction with root canal therapy if pulp necrosis has occurred for the scenario in which permanent upper anterior tooth is extruded and 43(32.1%) responded with correct answer using semirigid nylon splint for stabilizing extruded tooth.

When asked about the management of crown fracture, 62(46.3%) responded correctly to treatment by pulp capping in a patient with an immature permanent maxillary tooth injury with pinpoint pulp exposure coming to the clinic within 3 hours after the trauma. However, when a patient with an immature permanent maxillary tooth injury with large pulp exposure visited for more than 24 hours after the trauma, partial pulpotomy was advised by 41(30.6%) participants and 76(56.7%) responded with pulpectomy in case of Mature permanent upper tooth with large exposure more than 24 hours after trauma.

When asked about proper storage medium for avulsed tooth 60(44.8%) responded for milk, 39(29.1%) in patient's own mouth or socket, 14(10.4%) in tap water, 10(7.5%) tissue paper and 8.2% mentioned other storage medium with majority of them 7(5.2%) reported using Hank's balanced salt solution as best medium for storage (Table 1).

When asked about management of the avulsed immature tooth before reimplantation in patients reported within 60 minutes of trauma, majority of them said tooth should be kept in doxycycline for 5 minutes or fluoride solution for 20 minutes; 34(25.4%), 33(24.6%) respectively. 19(14.2%) said tooth should be rinsed with water, 15(11.2%) any type of disinfecting solution can be utilized to clean the avulsed tooth, 8(6%) said they will replant in situ without modification and 11(8.2%) said they will scrub the root of tooth before reimplantation.

Table 1: knowledge of Storage Medium for Avulsed Tooth.

Storage Medium for Avulsed Tooth	Undergraduate Dental Students	House Officers	PG Trainees	Dental Surgeons	
Ice	2	0	0	0	2
Tap Water	11	2	0	1	14
Milk	15	17	8	20	60
Tissue Paper	8	1	0	1	10
Patient's Mouth	8	8	9	14	39
HBSS	1	2	2	2	7
Normal Saline	0	1	0	1	2
Total	45	31	19	39	134

Table. 3.2. Management of the avulsed immature tooth before reimplantation.

Management of the avulsed immature tooth before reimplantation	Undergraduate Dental Students	House Officers	PG Trainees	Dental Surgeons	Total
Rinsed with Tap water	6	1	2	10	19
Cleaned with any type of solution	5	4	3	3	15
Left unwashed	3	4	1	0	8
Place in doxycycline for 5 minutes	6	9	8	11	34
Scrub gently	6	4	0	1	11
Place in fluoride solution for 20 minutes	10	8	5	10	33
Do not know	9	1	0	4	14
Total	45	31	19	39	134

DISCUSSION

The relative assessment of dental professional knowledge and practices dealing dental traumatic injuries suggest higher heterogeneity. Intriguingly, we found lack of proper trainings and standard qualifying criteria set forth by the dental authorities. Our survey report recorded 34 % dental professionals dealing traumatic dental injuries were undergraduate students. About 50 % dental professionals never managed dental traumatic injuries before and did not completed a formal training as well. Our outcomes are consistent with a Hong Kong based research finding where only 48 % dental professionals have formal trainings and knowledge managing dental injuries. In our outcomes 47.6 % dental professionals were able to distinguish deciduous and permanent teeth morphology. Where a study led by Young C. *et al* affirmed only 24 % dental physician were able to differentiate deciduous and permanent teeth⁹. A recent study led by Kazim *et al* recognized that, lack of post-residency professional training Centre is another challenge to manage dental complications¹⁰. In our study, 10 % dental professional agree to use clean water for avulsed tooth whereas 44.8% agree to use milk for subject purpose. An Australian retrospection acknowledged that, 55% of dental professionals prefer milk for avulsed tooth transport and storage. Secondly, only 9% dental professional requires further trainings to manage dental traumatic complexities¹¹. In our area there is a higher need of post-residency dental trainings to improve treatment practices and expertise managing traumatic dental injuries.

CONCLUSION

Current study declares that there is lack of qualified dental experts with post-residency trainings dealing dental traumatic complexity in Sindh Pakistan. Secondly, the increasing prevalence trends of pediatric dental injuries warrant dental professionals to ensure accurate and appropriate treatment during dental emergencies.

Acknowledgement: I thank all the dental professionals for their willingness to participate in this research survey. Further, I acknowledge the support of co-authors for questionnaire design, data acquisition and approval for the final submission.

Conflict of Interest: Nil

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