

Knowledge about Dental Traumatic Injuries among Dental Interns -A Cross Sectional Survey

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Abstract:

Objective: The aim of this study was to assess the level of knowledge about dental traumatic injuries among dental interns**Materials and Methods:** A self-administered questionnaire comprising 10 close-ended questions was used in this survey. The questions were to assess knowledge regarding dental trauma. Data of 200 respondents were analyzed using SPSS (Statistical Package for Social Studies) version 22.0

Results: The response rate was 76.8%. Around 75% of students could correlate between age, developmental stage of teeth and treatment modality. 60% of students had a good theoretical knowledge in contrast only 11.5% could correlate theoretical knowledge clinically 70% could correctly identify the media of storage of an avulsed tooth, only 59% of the students knew the proper method of transportation.

Conclusion: The present study demonstrates an insufficient knowledge concerning dental trauma management among dental interns. This highlights the need to improve the knowledge of dental students regarding dental trauma and its management using a variety of educational methods such as problem-based learning and powering the curriculum concerning those topics of dental trauma.

Key Words: dental trauma, interns, knowledge, survey.

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I. Introduction

Most significant threat to dental health that exceeds periodontal disease and dental caries is trauma.^(1, 2) Commonly occurring in children between the age group of 18-11 years⁽³⁾ affecting both primary and permanent dentition and then their supporting structures⁽⁴⁾ majority of the times involving the anterior teeth⁽⁵⁾ having a greater physiological impact on both parent and the child as it hampers phonetics, mastication, integrity of supporting tissue, physiological wellbeing as well as esthetic⁽⁶⁾ Prompt and appropriate emergency management decides the prognosis of traumatized structure⁽⁷⁾ Thus, knowledge of dentist and health care professional is very critical in making decision in case of any trauma to dentition especially in younger age group. A series of guidelines have been published by (IADT) for the management of avulsed teeth⁽⁸⁾ Traumatic injuries, its sequel as well as the cause consist of management of it even in undergraduate level despite, there is lack of data about knowledge of emergency procedure for dental students.

Therefore, the purpose of this study was to evaluate, by means of survey, the knowledge of dental interns in Davangere city about management of dento alveolar trauma.

II. Materials And Methods

A cross-sectional survey was conducted where Interns were selected randomly from Bapuji Dental College and Hospital and College of Dental Sciences in Davangere city. G power statistical software was used to estimate sample size, sample required for the study was calculated to be 169 with 80% power and 5% α error. The time period set for the data collection was two months, from October - November 2017.

A total sample size estimated was 200. Ethical approval was obtained from the Institutional Review Board of Bapuji Dental College and Hospital, Davangere. Permission was sought from the principals' of respective institutions. Dental interns who were willing to participate were included in the study. Voluntary written informed consent was obtained from the dental interns

A self-structured questionnaire was formulated in English. The questionnaire was tested for content validity by three experts (one pedodontist, one endodontist and one oral surgeon). Questionnaire was assessed for relevance, simplicity, clarity and ambiguity. The content validity index (CVI) for total scale was computed. A satisfactory level of agreement was found (CVI = 0.86) among the panelists. As all the components had a CVI score of more than 0.75, hence it was considered to be valid.⁹

Students were asked to fill the self-administered questionnaires. Prior information about the study was given and purpose of the study was explained. The self-administered questionnaires comprised 10 closed ended

questionnaires on knowledge about managing hypothetical dental traumatized injuries and availability of emergency services with these inquiries.

Participants were divided into: poor knowledge (0- 5 points) and good knowledge (5-10 points) interns were asked to assemble in the lecture hall and were given 30 minutes to answer the questionnaire distributed to them by the investigator. Interns were instructed to approach investigator if they have any doubts pertaining to questionnaires to avoid contamination.

The data obtained was compiled systematically in Microsoft Excel sheet and subjected to statistical analysis using Statistical Package for Social Sciences Software. Descriptive statistics was generated in terms of frequencies or percentages. Chi-square test was used to assess categorical data by setting statistical significance at $p < 0.05$.

III. Results

The result of the present study revealed that 60% of the participants were aware of the correlation between time of trauma and the treatment modality.

Majority of the participants i.e. about 75% gave a correct response in relation to the age, stage of the development and the treatment modality in case of primary teeth and when asked about the same in relation to permanent teeth, the correct response was 65% indicating that participants were well aware about the correlation between dental age, chronological age and duration of trauma and the treatment modality.

When the question related to vitality was asked 84% of the participants were theoretically as well as clinically able to relate about the state of vitality of tooth in question.

In case of intrusive type of trauma 60% of the student population has given positive response indicating a good theoretical knowledge about surgical aspect in contrast to it only 11.5% of the population gave a correct response when asked about further detail in relation to intrusion, which can be contributed to the lack of clinical exposure.

While 70% identified correct storage media in case of avulsed tooth with greater extra oral time only 59% knew the proper method of transportation. (Table 1)

Generally, students showed variation regarding their knowledge towards dental trauma, there was no statistical difference observed.

IV. Discussion

Clinical outcome in case of dental traumatic injuries depends on the definitive and effective treatment provided by the dentist and this in turn is related to the level of knowledge of dentist. As traumatic injuries in children can lead to long term threat to dental health thus it is important that definitive treatment is received at appropriate time.⁽⁵⁾

The completed questionnaires showed that the level of knowledge among dental interns is good for e.g. 70% of the students selected the correct storage media in case of avulsed tooth but only 59% students knew the correct method of transportation, indicating poor knowledge.

The avulsed tooth should be kept moist, as the risk of ankylosis will increase significantly with increase time of extra oral dryness over 20 minutes for which 70% of the participants gave a positive response. The rationale for this fluoride soak is based on evidence that this procedure will delay but not prevent ankylosis.⁽¹⁰⁾ The treatment of root surface with sodium fluoride has been hypothesized since 1968 due to its beneficial effect by decreasing the rate of osseous replacement in replanted teeth of monkeys⁽¹¹⁾. A similar study in humans also demonstrated 50% reduction in progression of root surface resorption after replantation

Unfortunately only 59% of the students knew the correct method of transportation i.e. avulsed tooth could be transported to dentist in patient's mouth by keeping it in the vestibular region, if the patient is conscious, thus indicating a lack of current knowledge about this point. This finding is in accordance with the study done by Al-Shamiri et al and Anderson L. et al^(8,13)

Whenever there is severe intrusion to primary teeth with bodily displacement (lingual) of tooth in question the treatment of choice is extraction of tooth in order to prevent the further damage to permanent tooth bud which is always positioned in lingual to primary teeth. When asked about the similar scenario only 11.5% gave positive response. This can be contributed to lack of exposure to clinical cases during undergraduate level.

Direct personal approach was used for this survey because of inherited advantage of extremely good response. In the present convenient sample enabled the ease of research as it is time sensitive, data was readily available and most importantly its cost effective. Dental interns were selected because they are future professional.

Since quality of emergency management and treatment necessary to enhance the survival time of traumatized teeth is almost important. Hence, there is a compelling reason to increase the dentist's awareness of the important role they can play in managing cases of traumatic injuries.

Lectures and seminars, continuing education courses, use of a formal protocol of treatment for dental injuries should be included in the curriculum for better understanding of dental students intern enhancing a better skills for management of traumatic injuries in children and also increase the knowledge about referral to specialized domain in need for further intervention.

V. Conclusion

There is need to develop strategies to improve the knowledge of dentists who are potentially on the front line to provide emergency diagnosis and treatment for patients who incur dental trauma.

Table 1. Distribution of study participants according to the Knowledge regarding trauma of tooth and its treatment modalities

Questions	Participants with correct responses (%)	Participants with incorrect responses (%)
Time of trauma and the treatment modality	60	40
Age, stage of the development and the treatment modality in case of primary teeth	75	25
Age, stage of the development and the treatment modality in case of permanent teeth	65	35
Vitality of tooth	84	16
Intrusive type of trauma	60	
Depth of intrusion	11.5	88.5
Transportation media for avulsed tooth with respect to time	70	30
Proper method of transportation	59	41

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