

Assessing the Levels of Knowledge About Common Causes and Treatments of Traumatic Dental Injuries Among General Dentists in the City of Bandar Abbas in 2018

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ABSTRACT

Background and Aim: Traumatic dental injuries (TDIs) are among the urgent challenges in dental sciences. These types of trauma are a common dental health problem, which may affect hard tissues and tooth-supporting structures. Since dentists' knowledge and practice are vital for TDI treatments, this study aimed to assess the levels of knowledge of TDIs among general dentists working in Bandar Abbas, Iran.

Materials and Methods: This cross-sectional study was conducted on 97 general dentists working in the city of Bandar Abbas, Iran, using a three-part questionnaire comprising items about demographic characteristics, knowledge of TDI causes, and knowledge of TDI treatments. Descriptive and analytical statistical analyses of data were performed according to Mann-Whitney and Kruskal-Wallis tests using SPSS 20 software at the significance level of 0.05.

Result: Ninety-seven general dentists, including 61 men and 36 women, participated in this study. The findings revealed that 60.9% and 46.4% of these dentists had high levels of knowledge about TDI causes and treatments, respectively. The mean score obtained by the general dentists was 11.86 ± 2.87 , which was promising. A significant relationship was observed between university affiliation and levels of knowledge ($P=0.002$).

Conclusion: According to the results, knowledge about common causes and treatments of TDI was at a favorable level among the general dentists working in Bandar Abbas. There was a significant relationship between university affiliation and levels of knowledge; dentists who graduated from universities located in the city of Tehran, Iran, had higher levels of knowledge than others did.

Keywords: Knowledge, Trauma, Children, Dentoalveolar

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Introduction:

Management and treatment of traumatic dental injuries (TDIs) are among the main urgent challenges in dental sciences. The incidence of TDIs has been investigated in numerous settings and countries, reporting high rates.⁽¹⁾ TDIs are known as a common dental health problem among children and adults, which can affect hard tissues and tooth-supporting structures.⁽²⁾

Falls, accidents, injuries sustained by cycling and other sports, car crashes, and some chronic diseases, such as epilepsy, are considered as the etiological factors of TDIs. (3) The prognosis of such dental traumas depends on the severity of injuries, the quality of timely primary care services, and follow-up. Following a reduction in the incidence and severity

of tooth decay, there is an increasing interest in TDIs as the second common dental injuries that affect children and adolescents.⁽⁴⁾

TDIs are viewed as a public health problem due to their high rates of occurrence, high treatment costs, as well as long-term side effects of dental health services, demanding extensive lifetime care and treatment. Moreover, TDIs lead to pain, permanent cosmetic and functional problems, and psychological effects on children and parents as an unpredictable event, which needs dental care.⁽⁵⁾ Most injuries are associated with the incisors, such as enamel-dentin fractures involving the maxillary central incisors.⁽⁵⁾ Minor injuries to the teeth, including cracks and chipping as well as fractures of enamel or dentin, can be promptly treated. Such fractures must not be left untreated, and it is necessary to immediately cover the exposed dentin since it can be easily infected by the saliva, food, and bacteria, leading to pulpal necrosis. In addition, the missing tooth structure needs to be instantly replaced to prevent complications, such as tooth-induced labial protrusion, deviation or movement of adjacent teeth, and incisor overgrowth.⁽⁶⁾ Dentists must treat such patients using the most accurate methods or immediately refer them to specialists.⁽⁶⁾

Since good levels of knowledge and practice among dentists are of utmost importance in TDI treatment, this study aimed to evaluate the knowledge of TDIs among general dentists working in the city of Bandar Abbas, Iran.

Materials and Methods

In this cross-sectional study, all general dentists working in the city of Bandar Abbas, Iran, were recruited using the census method. In this study, a valid and reliable three-part questionnaire was used for data collection.⁽⁷⁾ The first part of this research instrument included items about demographic characteristics, and the second and the third parts contained items associated with dentists' knowledge of TDI causes and treatments, respectively.

The questionnaire included 18 questions; the correct answer to each question had a score of

one. Three main items were related to the TDI causes (questions 3, 8, and 9) with minimum and maximum scores of zero and three, respectively. Mean scores lower than one indicated low levels of knowledge among general dentists, and scores of 1 to 2 and 2 to 3 represented good and excellent levels of knowledge, respectively.⁽⁷⁾ To address TDI treatments, fifteen items (questions 1, 2, 4-7, and 10-18) were developed with 0 and 15 as the minimum and maximum scores, respectively. Accordingly, mean scores lower than five showed low levels of knowledge, scores between 5 and 10 denoted good levels of knowledge, and scores greater than 10 indicated excellent levels of knowledge.

In this study, the maximum score achievable in the field of "cause and treatment of dental trauma" was 18. According to a general classification, mean scores lower than six, between six and 12, and between 13 and 18 suggested low, moderate/good, and excellent levels of knowledge, respectively.⁽⁷⁾

The data were imported into SPSS 20 software (IBM Corp., Armonk, NY, USA). Firstly, the data were analyzed using descriptive statistics, including mean, standard deviation (SD), and frequency/percentage, and then, analytical (inferential) statistics were utilized to reflect on the statistical correlations. The questionnaire is attached to the end of the article.

Result:

This study involved 97 general dentists, including 61 men (62.9%) and 36 women (37.1%). The mean age of the participants was 36.55 ± 8.42 years, ranging from 24 to 63 years. The average duration of work experience was 9.71 ± 6.93 years, ranging from at least 6 months to a maximum of 34 years. Table 1 shows the demographic characteristics of dentists.

Table 1: Frequency/percentage of demographic characteristics among dentists

Demographic variables	Frequency	Percentage
Age group	Below 30 years old	23 23.7
	30-40 years old	48 49.5
	40-50 years old	15 15.5
	Over 50 years old	11 11.3
Dentistry work experience	Less than 10 years	49 50.5
	Between 10 and 20 years	39 40.2
	More than 20 years	9 9.3
University affiliation	Tehran	27 27.8
	Other cities	61 62.9
	Abroad	9 9.3
History of participation in retraining courses	Yes	46 47.4
	No	51 52.6
Number of exposures to TDI cases per year	Often	13 13.4
	Rarely	59 60.8
Knowledge self-assessment	Sometimes	20 20.6
	Never	5 5.2
Knowledge self-assessment	Sufficient	63 64.9
	High	15 15.5
	Insufficient	19 19.6

TDI=Traumatic Dental Injuries

Overall, 47.4% of the dentists had a history of participation in retraining courses. The majority of the dentists (60.8%) reported that they had rarely encountered TDIs, and 64.9% of them felt that they had sufficient knowledge in this field. The mean score of levels of knowledge of common TDI causes among the dentists was 1.73 ± 1.08 , and 60.9% of them were at excellent levels. The mean score associated with the levels of knowledge about common TDI treatments among these dentists was 10.1 ± 2.6 , varying between 4 and 15. Overall, 49.5% of the dentists had good levels of knowledge in this respect. The mean score of the levels of knowledge about common TDI causes and treatments was 11.86 ± 2.87 , and 50.5% of the dentists had good levels of knowledge in this respect (Table 2).

Table 2: Frequency/percentage of levels of knowledge among dentists about common causes and treatments of traumatic dental injuries (TDI) with a 95% confidence interval (CI)

Dentists' knowledge	Levels	Frequency	Percentage
TDI causes	Low	17	17.5
	Good	21	21.6
	Excellent	59	60.9
TDI treatments	Low	4	4.1
	Good	48	49.5
	Excellent	45	46.4
TDI causes and treatments	Low	5	5.2
	Good	49	50.5
	Excellent	43	44.3

Table 3 represents the correlation between the dentists' demographic characteristics and their levels of knowledge. Accordingly, there was no statistically significant relationship between gender, age, work experience, graduation year, history of retraining, and knowledge self-assessment, and only a significant relationship was observed between levels of knowledge and university affiliation. Dentists who graduated from dental schools located in the city of Tehran, Iran, showed the highest levels of knowledge, followed by those who graduated from other cities and dental students; abroad graduates had the lowest levels of knowledge of TDI causes and treatments ($P=0.002$).

Table 3: Relationship between dentists' demographic characteristics and mean scores of knowledge level

Demographic variables		Mean±SD	Test results
Gender	Male	12.05±2.9	P=0.361
	Female	11.53±2.8	
Age	Below 36.5 years	11.65±93.2	P=0.347
	Over 36.5 years	12.23±2.76	
Dentistry work experience	Below 9.7 years	11.33±3.11	P=0.074
	Over 9.7 years	12.4±2.52	
Graduation year	Before 2007	12.51±2.69	P=0.078
	After 2007	11.48±2.92	
University affiliation	Tehran cities	13.07±2.53	P=0.002*
	Other cities	11.74±2.77	
	Abroad	9±2.35	
History of retraining	Yes	12.22±2.62	P=0.254
	No	11.53±3.06	
Number of exposures to TDI cases per year	Often	11.46±2.73	P=0.595
	Rarely	11.75±2.84	
	Sometimes	12.15±3.12	
	Never	13±2.92	
Knowledge self-assessment	Sufficient	11.84±3.69	P=0.662
	High	11.75±69.2	
	Insufficient	12.33±2.58	

TDI=Traumatic Dental Injuries, *SD*=Standard Deviation

Discussion:

The incidence of TDIs in children aged up to 15 years has been reported to be 7%-50%.⁽⁸⁾ Epidemiological studies have further revealed that the prevalence of TDIs depends on statistical populations and their nationality, age, and gender, as well as the status of healthcare services, and TDI classifications; therefore, their results cannot be easily compared.⁽⁹⁾

According to a systematic study by Glendor (2008), one-third of preschool children suffer from TDIs, which affect their deciduous teeth.⁽¹⁰⁾ Moreover, it has been reported that over a quarter of school children and approximately one-third of adults suffer from TDIs that affect their permanent teeth; however, there are differences between various countries.⁽¹⁰⁾ In the present study, about half of the general dentists working in the city of Bandar Abbas had good levels of knowledge of TDI causes and treatments. In a

study by Nilchian et al (2014) in the city of Isfahan, Iran, dentists' general knowledge was also reported to be at good levels.⁽⁷⁾ In a survey by Tafaraji et al (2017) in the city of Semnan, Iran, 75.4% of the dentists answered all the questions correctly.⁽¹¹⁾

In a study conducted in the city of Ahwaz, Iran, Basir et al (2016) found that 51% of a total number of 100 dentists had good levels of knowledge; the overall knowledge of the general dentists regarding TDIs was reported to be at a good level.⁽¹²⁾ Seraj et al (2008) also revealed that dentists' knowledge of TDIs affecting children in the city of Tehran, Iran, was relatively good.⁽¹³⁾ In their study, the levels of knowledge of the dentists positively correlated with their graduation year and inversely correlated with their age.⁽¹³⁾ This is in contrast to the findings of the present study as well as those reported by Tafaraji et al (2017).⁽¹¹⁾ They found no significant relationship between the dentists' graduation year and age and their levels of knowledge.⁽¹¹⁾

Furthermore, there was no significant difference between levels of knowledge and gender in the present study. Seraj et al found no significant difference between gender and levels of knowledge, which is in line with the findings of the present study.⁽¹³⁾

In a study by Krastl et al (2009), 63% of German dentists had sufficient knowledge of TDI treatments.⁽¹⁴⁾ de Vasconcellos et al (2009), in Tanzania, similarly reported that levels of knowledge about TDI causes and prevention in a group of dentists were sufficient although they had insufficient knowledge about treatments.⁽¹⁵⁾ The reason for differences with the results of the present study could be variances in measurement instruments as well as discrepancies in levels of dental education.

In an investigation by Abu-Dawoud et al (2007), levels of knowledge among physicians and dentists about avulsed teeth were further compared; it was reported that the dentists had good levels of knowledge, which were higher than that of the physicians⁽¹⁶⁾. In a study by Hu et al (2013) in Brazil, levels of knowledge of general dentists and endodontists about emergency management of dentoalveolar traumas were compared; the results indicated that the levels of knowledge among endodontists were higher than that of general dentists.⁽¹⁷⁾ They concluded that general dentists should attend training programs to improve their knowledge about TDIs.⁽¹⁷⁾

The results of the present study demonstrated that the general dentists' knowledge of TDIs was good; nonetheless, continuous training courses, as well as workshops and conferences, would help in maintaining the results and even improving the dentists' practices.

Conclusion:

Of the total number of 97 dentists in this study, 60.9% and 46.4% showed high levels of knowledge of TDI causes and treatments, respectively.

The level of knowledge about TDI causes and treatments was also good among most of the dentists. There was a statistically significant correlation between university affiliation and levels of knowledge such that dentists who graduated from universities located in the city of Tehran, Iran, had higher levels of knowledge.

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