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Cross-Sectional Study

Knowledge and Practices of Riyadh-Based Dentists in Managing Traumatic Dental Injuries

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ABSTRACT

Children of all ages frequently suffer from traumatic dental injuries (TDIs), which can seriously impair function, appearance, and mental health by breaking, moving, or losing teeth. Males are twice as likely as females to suffer from dental trauma at school, affecting over 25% of children. The upper central incisors are most commonly impacted with a high frequency between the ages of 8 and 10 years. This study aimed to determine the dental attitudes and knowledge of dental professionals in Riyadh regarding the treatment of traumatic injuries. A survey was used for this cross-sectional study of dental care in Riyadh. 450 dentists participated in the study using a straightforward random sample technique. As an element of this research, a questionnaire method was created that included questions on demographics as well as knowledge and comprehension of oral traumatic injuries. The average score for total knowledge was 7.11 ± 2.90. The findings showed that the mean knowledge was significantly affected by the availability of continuous dental trauma training sessions (P = 0.039). Dentists' general understanding of how to treat dental injuries is adequate, and their training has a great impact.

Keywords: Trauma, Knowledge, Management, Injuries

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Introduction

Children of all ages frequently sustain traumatic dental injuries (TDIs), which can seriously impair function, appearance, and mental health by breaking, moving, or losing teeth. Nearly 25% of kids sustain dental trauma at school; males are twice as likely as females to do so, and the upper central incisors are most frequently impacted, with an elevated risk between the ages of eight and ten [1].

During well-child visits, dentists may advocate for dental injury prevention techniques in the same way that they do other injury prevention messaging. Parents and guardians need to be educated about sports and activities that are suitable for their children's age and developmental stage to prevent dental trauma. Additionally, they ought to be instructed on fundamental home safety measures like putting in stair gates and removing trip hazards [2].

Based on a study done in Germany, just 37% of dentists said they had a fragmented understanding of dental traumatology, while 63% said they understood it significantly or well. 40% of the questions were correctly answered, irrespective of the self-assessment. There was a tendency for dentists with recent degrees to have somewhat stronger comprehension, however this is not statistically significant. The results of the research suggest that general dentists in Germany are not well-versed in a variety of dental traumatology scenarios, and their self-evaluation is inaccurate [3].

The best way to treat dental trauma may be impacted by perceived limitations on dental trauma therapy. The study found that the biggest barrier to trauma treatment is financial disincentives. The majority of general dentists in the UK (69%) felt that "involvement in the treatment of traumatic damage to adolescent permanent teeth is not cost-effective on the National Health System," and 85.6% of dentists felt that the cost of treatment was too high. The poll indicates that despite the low cost, dentists are willing to give trauma care because it is their clinical obligation. The majority of dentists often begin treatment, but if problems persist later on because of perceived limits, they will still refer patients to a dental trauma center [4].

Rationale of the study

The study findings will be useful in teaching dental students about the correct management of dental trauma.

Study hypotheses

Knowledge and awareness of Riyadh-based dentists regarding traumatic injuries are good.

Aims of the study

To determine the knowledge and awareness of dentists towards dental traumatic injuries.

Materials and Methods

Study design

A survey was used to perform this cross-sectional investigation of Riyadh's dental.

Study sample

A simple random sampling method was used to include 450 dentists in the research.

Study instrument

A questionnaire method comprised of questions on demographics and awareness and understanding of oral traumatic injuries was developed as part of the study.

Instrument validity and reliability

After conducting pilot research in which 20 participants were surveyed through the internet, the results were analyzed using SPSS version 22 to verify the accuracy of the findings using Cronbach's coefficient alpha. Changes were made to the questionnaire based on responses and suggestions received from REU experts throughout the project's testing phase.

Statistical analysis

SPSS version 22 was used to analyze the collected data, including descriptive and inferential statistics. The statistical significance for all group comparisons was set at less than 0.05. The choice of statistical tests was made in light of the results of a normal test.

IRB approval

Before collecting data, this project was registered on the REU research center's online page, and IRB permission was granted.

Results and Discussion

Researchers examined responses from 450 survey forms filled out by participants in this study, who ranged in age from 25 to 61 (190 women and 260 males). The participants' general demographic details and the average knowledge score for each component (part 1) are compiled in **Table 1**. The average score for total knowledge was 7.11 ± 2.90. The findings demonstrated that the mean knowledge was significantly impacted by the availability of continuous dental trauma training sessions (P = 0.039).

Table 1. The mean (SD) knowledge score of dentists regarding traumatic dental injuries (TDI) and demographic distributions

Variables		P-value	Mean (SD)
Gender	Male Female	0.233	7.12 (1.9) 7.41 (2.3)
Age (years)	25-40 40-60	0.711	7.39 (2.1) 7.61 (3.5)

The number of patients under study with TDI	Frequent Occasional Very rare	0.347	7.47 (2.6) 7.72 (2.9) 7.53 (2.4)
Participation in TDI-related educational programs	Yes No	0.039*	7.11 (1.8) 8.01 (2.2)
Desire to learn about the effective management of TDI.	Undergraduate courses Post-graduate courses Trauma fellowship courses	0.119	7.81 (2.4) 7.29 (1.9) 7.39 (2.8)
Assessment of dental professionals evaluating their expertise in TDI	Comprehensive Sufficient Fragmentary	0.081	6.32 (1.9) 8.66 (2.3) 7.32 (2.7)
Knowledge	Poor Moderate Good Excellent		7.11 (2.9)

GDPs' understanding of TDI examination, evaluation, and regulation was put to the test in this study. The results of this study showed that therapists had a satisfactory awareness of complex crown fractures, extrusion, avulsed primary teeth, and the critical period for avulsed permanent tooth replantation. But they didn't know enough about simple crown fractures, root fractures, permanent tooth intrusion and avulsion, and splinting time.

Similar to the results of earlier studies showing that TDI occurs infrequently and only when therapists are ill-prepared to handle it effectively, the majority of students reported that they rarely encountered traumatic situations in their day-to-day practice.

The treatment of choice for large pulp exposures (> 2 mm) or when the pulp has been exposed to the oral environment for longer than 24 hours is a partial pulpotomy, per the approved guidelines for the treatment of complex crown fractures in juvenile teeth [5]. According to the results of the present research, dentists are adequately educated to handle this situation. Partial pulpotomy has demonstrated a high success rate in maintaining pulp viability following complex crown fractures in juvenile permanent teeth. While endodontic therapy is favored for complex crown fractures of fully developed teeth, this is in keeping with the most recent recommendations from the International Association of Dental Trauma (IADT).

The most crucial factor in treating different dental injuries that could change the prognosis of traumatized teeth is time management. Instead of doing so at the dental office, the majority of dentists agreed to replant the avulsed tooth at the scene of the accident. Patients should seek immediate medical attention at the site of the lesion, nevertheless, since poor replantation by unskilled individuals may compromise the success of the replanted tooth. The risk of external inflammatory root resorption and replacement root resorption decreases with decreasing time between avulsion and replantation [6]. Additionally, the majority of GDPs in this poll would splint avulsed teeth for seven to ten days. Compared to earlier studies, which found that only 10–30% of physicians would splint their teeth for that time, this percentage is higher. The best therapeutic method, according to 50% of dentists, is endodontic therapy within 7–14 days after replanting an avulsed tooth with full root development in less than an hour. The stated guidelines are compatible with this method. In line with the IADT's current guidelines and recommendations, the majority of GDPs stated that they would not replace an avulsed deciduous tooth [7].

According to the results of the current study, the majority of experts categorized their knowledge and expertise as fragmented, which is consistent with two previous research studies. Nonetheless, a fair general level of awareness was found by GDP analysis. Therefore, it seems necessary to take deliberate steps to keep them informed and improve their comprehension of TDI [8]. To increase physicians' and patients' comprehension, various approved suggestions can be created and delivered to emergency and dental clinics via booklets and posters. To provide 24-hour care, especially for severe cases, TDI facilities with a few licensed dentists must be built in urban areas. Patients should be able to bring their problems to these centers, and they should be connected to the city's GDPs. Dentists may also recommend patients to continue their treatment. All practitioners need to be proficient in handling traumatic events because of the significance of TDI primary prevention, which has the potential to significantly change treatment outcomes. Therefore, it is recommended that more studies be done on how trauma management courses affect clinician

awareness. This will allow for the expansion of such training to cover all GDPs [9].

Conclusion

Dentists' general understanding of how to treat dental injuries is adequate, and their training has a big influence.

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Conflict of Interest: None

Financial Support: None

Ethics Statement: This study was registered in the Riyadh Elm University research center portal and received ethical approval.

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