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ORIGINAL ARTICLE

Parental Awareness and Decision-Making in Enamel-Dentin Fractures in Permanent Teeth: The Role of Visual Case Scenarios

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ABSTRACT

Aim: This study aims to assess the impact of visual case scenarios on parental awareness and urgency perception regarding enamel-dentin fractures in children.

Methods: This descriptive study included parents of children aged 4–14 who were receiving active dental care. Data were collected via a structured questionnaire, which consisted of two sections: demographic characteristics and general knowledge questions, and visual case-based scenarios to evaluate trauma perception. Statistical analysis was conducted using descriptive methods and chi-square testing. Internal consistency was assessed using Cronbach's alpha.

Results: A total of 317 participants participated in the study; 65.9% of the participants were mothers and 56.8% had female children. A history of dental trauma was reported by 11.7% of parents. Regarding information sources, 50% relied on dentists or healthcare professionals, and 30.1% used the Internet. After a traumatic event, 42% preferred consulting a pediatric dentist, while 25.2% would visit a general dentist. 62.1% of participants could distinguish between primary and permanent teeth, but only 45.1% believed that the tooth type (primary or permanent) influenced treatment decisions. Regarding trauma concerns, 62.8% prioritized treatment for anterior teeth due to the risk of future complications. 96.8% acknowledged that the time elapsed since the trauma could affect treatment outcomes, and 72.2% considered fracture size important in treatment decisions. Furthermore, 87.1% did not view posterior tooth fractures as concerning as anterior ones.

Conclusion: This study highlights significant gaps in parental knowledge about pediatric dental trauma, stressing the need for improved education on trauma severity, timely intervention, and the impact of fracture size and tooth type on treatment.

1 | Introduction

Dental injuries are common among preschool and school-aged children and represent a significant concern in pediatric oral health. Managing the post-trauma process is highly challenging and complex for the injured child, their parents, and dental practitioners. Early intervention and appropriate treatment are critical, as delayed or improper management may lead to long-term prognostic complications [1].

Management strategies for dental trauma are influenced by the nature and severity of the injury. The spectrum of such injuries ranges from minor enamel fractures to severe dentoalveolar trauma involving periodontal tissues, tooth dislocation, or avulsion [2].

According to the guidelines established by the International Association of Pediatric Dentistry (IAPD), luxation injuries are the most prevalent form of dental trauma in primary teeth,

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whereas enamel-dentin fractures are more frequently observed in permanent teeth [3]. Traumatic dental injuries (TDIs) typically affect the upper anterior teeth, primarily due to their forward positioning in the dental arch, labial inclination, and the structural rigidity of the maxilla. Among these, the maxillary central incisors are the most susceptible to trauma, followed by the upper lateral incisors [4].

In addition to their aesthetic significance, maxillary incisors play a key role in speech articulation, mastication, oral tissue preservation, and children's psychosocial development. Therefore, accurate diagnosis, evidence-based treatment, and consistent clinical follow-up are essential for favorable long-term outcomes [5].

Crown fractures are classified into two categories: those involving pulp exposure and those without pulp involvement [3]. The treatment of complicated crown fractures (with pulp exposure) can be particularly challenging, requiring procedures such as pulp capping, partial pulpotomy, or root canal therapy. Conversely, definitive restorations for both complicated and uncomplicated enamel-dentin fractures may include fragment reattachment, composite resin restorations, or strip crowns. The choice of treatment and restorative approach depends heavily on timely intervention and appropriate clinical decision-making [6].

These treatments require not only professional expertise from the dentist but also active cooperation among the child, parents, and dental team. Long-term prognosis remains difficult to predict, even with optimal care [7]. Therefore, regular follow-ups are essential to monitor treatment outcomes, detect complications early, and implement necessary interventions [8].

Numerous studies have highlighted the lack of sufficient parental knowledge regarding TDIs and their management. Since most dental injuries occur at home or under parental supervision, the prognosis of traumatized teeth is closely linked to parental awareness and the timeliness of intervention. Moreover, encouraging parents to adopt preventive strategies and become familiar with first-aid protocols for dental trauma can significantly enhance long-term outcomes for affected children [8, 9]. These observations underscore the importance of evaluating how well parents understand and recognize enamel-dentin fractures in permanent teeth, which constitutes the central focus of this study. Accordingly, the study aims to systematically examine parents' awareness and decision-making tendencies concerning pediatric dental crown fractures.

2 | Materials and Methods

This research was designed as a descriptive study and involved parents of children aged 4–14 who received care at the Pediatric Dentistry Clinic of the Faculty of Dentistry. Participants were selected regardless of whether their children had a previous history of dental trauma or not. Individuals who were illiterate or declined to participate were excluded from the study. Questionnaires with incomplete or inconsistent responses were not included in the analysis. Ethical approval for the study was obtained from the Non-Clinical Research Ethics Committee (Ethics Approval No: 2024/5895).

A researcher-designed questionnaire was used to assess parental knowledge and awareness of enamel-dentin fractures in permanent teeth. The survey was written in clear, nontechnical language to ensure comprehensibility and was administered face-to-face by the researchers. All questionnaires were completed during a single session, and the data were anonymized to protect participant confidentiality. Prior to participation, the aim and scope of the study were explained verbally, and written informed consent was obtained from all participants.

Participant confidentiality was strictly maintained, and all data were used exclusively for scientific purposes. Participation was entirely voluntary, with no incentives or obligations imposed.

The questionnaire comprised two main sections:

2.1 | Section 1: Demographic Information and General Knowledge

This section of the questionnaire collected demographic information from participants, including their age, gender, educational level, and their child's history of dental trauma. Additionally, it evaluated parents' general knowledge of dental trauma through questions addressing their awareness of injury types, potential complications, and emergency response protocols. The questions included in this section are presented in detail in Table 1.

2.2 | Section 2: Clinical Case Scenarios and Trauma Perception

The second section presented two clinical case scenarios, developed based on existing literature and previous research findings. These scenarios were accompanied by clinical photographs to assess parents' ability to recognize the severity of injuries, their knowledge of first-aid measures, and their perception of urgency in seeking dental care. The questions from this section are provided in Table 2.

2.2.1 | Case Scenario 1

Parents were presented with a clinical image of a 9-year-old female patient exhibiting an enamel-dentin crown fracture. The questions assessed whether factors such as fracture size, presence of pain, and preservation of the fractured fragment influenced their decision to seek immediate dental care. Additionally, parents were asked to evaluate the perceived severity of the injury and whether they believed urgent professional intervention was necessary. This scenario aimed to assess their level of awareness regarding the urgency of post-traumatic dental treatment (Figure 1).

2.2.2 | Case Scenario 2

In continuation of the same case involving the 9-year-old female patient, a second clinical image depicting pulpal bleeding following dental trauma was presented. The aim was to assess

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their perception of trauma severity and their views regarding the urgency of professional intervention. Participants were asked to evaluate the need for dental care by considering the presence of bleeding along with other factors such as pain and fractured tooth fragments (Figure 2).

TABLE 1 | General information and demographic questions.

Question no	Content of the question
1	What is your child's gender?
2	What is your child's date of birth?
3	What is the mother's level of education?
4	What is the father's level of education?
5	Has your child experienced any dental trauma in the past?
6	Do you believe you have sufficient knowledge about dental trauma?
7	If yes, what were your sources of information?
8	Which type of doctor would you consult first in case of a dental trauma?
9	Do you also worry about surrounding structures (e.g., jaw joint, gum) in addition to the tooth itself after a trauma?
10	Do you think you can visually distinguish between primary and permanent teeth in terms of shape and size?
11	Would it affect your treatment decision or timing if the traumatized tooth is a primary or permanent tooth?
12	Would you be as concerned if a posterior tooth were fractured as you would be with an anterior tooth?
13	What would be your primary reason for consulting a dentist after a dental trauma to the anterior teeth?
14	Do you think the amount of time that passes after the trauma is important for treatment?
15	Is the extent of the tooth fracture an important criterion in your treatment decision or urgency of seeking care?

These scenarios aimed to explore how parents' perceptions of dental trauma are influenced by visual materials compared to written descriptions, as well as the potential implications of this difference. The study evaluated whether visual support altered trauma perception and assessed parents' awareness of the need for emergency intervention and its appropriate timing.

The two clinical scenarios used in this study were developed based on the 2020 guidelines of the International Association of Dental Traumatology (IADT) and represented an uncomplicated enamel-dentin fracture and a complicated crown fracture involving pulpal exposure, respectively.

To enhance the realism of the assessments, clinical photographs of actual patients were incorporated into the scenarios. Written informed consent was obtained from the parents of the patients whose images were used, and all photographs were anonymized to remove any identifying information. Furthermore, the research protocol—including the use of these visual materials—was approved by the Non-Clinical Research Ethics Committee (Ethics Approval No: 2024/5895).

The photographs were standardized in resolution, lighting, background, and shooting angle to minimize perceptual bias among participants and ensure consistency across scenarios. The use of visually supported scenarios aimed to explore differences in parental awareness and responses to dental trauma when information is presented visually versus textually.

A priori power analysis was performed using G*Power (version 3.1) to determine the minimum sample size required for the study. The analysis employed a two-tailed independent samples t-test with a medium effect size (Cohen's $d = 0.5$), an alpha level of 0.05, and a desired power of 0.80. The allocation ratio between groups was set at 1. Results indicated that a total of 128 participants (64 per group) were necessary to detect statistically significant differences. The achieved power was 0.801, confirming that the study had sufficient statistical power to detect the expected effect.

Qualitative variables included in the study were summarized as frequency (percentage). The internal consistency of the questionnaire was assessed by calculating Cronbach's alpha coefficient. For statistical analyses, categorical variables were compared

TABLE 2 | Clinical case-based questions.

Question no	Clinical sub-situation	Content of the question
16	Decision after trauma	What would you do following the incident?
17	Awareness of tooth fragment	Do you think it is important to bring the broken tooth fragment to the dentist?
18	Bleeding management	How would you respond if you observed bleeding on the tooth surface after the trauma?
19	Storage of the fragment	If you decide to bring the broken tooth piece, how would you store it until seeing the dentist?

Note: **Case Scenario:** Your 9-year-old child hit their front teeth on a school desk, resulting in dental trauma as shown in the images.

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FIGURE 1 | Clinical image used to assess parental awareness regarding enamel-dentin crown fractures and urgency of dental intervention.



FIGURE 2 | Case image depicting pulpal bleeding following dental trauma, used to evaluate parental perception of trauma severity and urgency of dental intervention.

using the Pearson chi-square test, Yates' corrected chi-square test, or Fisher's exact test, as appropriate. A p-value of less than 0.05 was considered statistically significant in all analyses. All statistical analyses were performed using IBM SPSS Statistics for Windows, Version 26.0 (New York, USA).

The internal consistency of the questionnaire was evaluated using Cronbach's alpha coefficients. The scale was divided into two subscales: General Knowledge and Demographic Factors (Items 1–15) and Clinical Case Scenarios and Trauma Perception (Items 16–19). The General Knowledge and Demographic Factors subscale demonstrated acceptable internal consistency ($\alpha = 0.78$), while the Clinical Case Scenarios and Trauma Perception subscale showed satisfactory reliability ($\alpha = 0.72$). These findings indicate that both subscales are consistent and reliable for use in this study.

3 | Results

The study included 317 parent–child pairs. Most participants were mothers (65.9%), and female children accounted for 56.8% of the sample. The most frequently reported educational level was primary school for mothers (52.1%) and high school for fathers (41.6%) (Table 3).

A history of dental trauma in their children was reported by 11.7% of parents. The most commonly cited sources of information about dental trauma were dentists or healthcare professionals (50%), followed by the Internet (30.1%), other sources (16.1%), and books or journals (3.8%). Regarding the preferred healthcare provider after dental trauma, 42% chose pediatric dentists, 25.2% general dentists, 17.7% family physicians, and 15.1% emergency physicians (Table 4).

While 62.1% of parents stated that they could distinguish between primary and permanent teeth, only 45.1% believed that this distinction would influence treatment decisions. Moreover, 87.1% of parents perceived posterior tooth fractures as less serious than those involving anterior teeth.

When anterior teeth were affected, 62.8% of parents reported that their primary motivation for seeking treatment was concern over potential future complications, followed by pain complaints (27.1%) and aesthetic concerns (6.9%). Only 3.2% of parents would consider delaying treatment in the absence of pain. Additionally, 96.8% of participants acknowledged that the time elapsed since trauma affects treatment outcomes, and 72.2% indicated that fracture size influences treatment planning (Table 4).

The survey included two visual case-based scenarios: one depicting an uncomplicated crown fracture and the other a complicated crown fracture involving pulpal exposure. In the

TABLE 3 | Demographic characteristics of the participants.

		n	%
Parent	Mother	209	65.9
	Father	108	34.1
Child's gender	Female	180	56.8
	Male	137	43.2
Mother's educational level	Primary school	165	52.1
	High school	98	30.9
	University or higher education	54	17.0
Father's educational level	Primary school	114	36.0
	High school	132	41.6
	University or higher education	71	22.4

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TABLE 4 | Distribution of parents' knowledge levels regarding dental trauma.

		n	%
History of dental trauma	Yes	37	11.7
	No	280	88.3
Source of information	Dentist/ Healthcare professional	118	50
	Internet	71	30.1
	Books/Journals	9	3.8
	Other	38	16.1
Preferred healthcare provider after trauma	Pediatric dentist	133	42
	General dentist	80	25.2
	Family physician	56	17.7
	Emergency physician	48	15.1
Ability to differentiate primary and permanent teeth	Yes	197	62.1
	No	120	37.9
Does the type of tooth (Primary or permanent) Influence the treatment decision?	Yes	143	45.1
	No	174	54.9
Is a posterior tooth fracture as concerning as an anterior one?	Yes	40	12.9
	No	277	87.1
Reason for seeking treatment for a traumatized anterior tooth	Risk of future complications	199	62.8
	Pain complaint	86	27.1
	Aesthetic concern	22	6.9
	Would wait in absence of pain	10	3.2
Does the time elapsed after trauma affect treatment outcome?	Yes	307	96.8
	No	10	3.2
Does the fracture size influence the treatment?	Yes	229	72.2
	No	88	27.8

uncomplicated case, 76.0% of parents reported that they would seek immediate dental care. Among them, 56.8% believed that bringing the fractured tooth fragment to the dentist was important, while 43.2% did not consider it necessary.

In the complicated case scenario, 66.2% of parents stated they would clean the bleeding and then take their child to the dentist, whereas 28.7% would first search for the fractured fragment before seeking care. Regarding the storage of the fractured tooth fragment, the most commonly reported method was water (28.7%), followed by a dry environment (25.6%) and not carrying the fragment at all (25.2%). Only a minority mentioned biologically appropriate media such as milk (13.6%) or saline solution (6.9%) (Table 5).

No significant differences were observed between mothers and fathers or between parents of boys and girls regarding their reasons for seeking treatment for traumatized anterior teeth ($p=0.970$ and $p=0.200$, respectively). Across all groups, the primary concern was long-term complications (mothers: 63.1%, fathers: 62.0%, parents of girls: 62.7%, parents of boys: 62.7%), followed by pain (mothers: 26.7%, fathers: 27.7%, parents of girls: 25.0%, parents of boys: 29.9%), with aesthetics as a lesser concern (mothers: 7.1%, fathers: 6.4%). Delaying treatment in the absence of pain was rare across all groups (< 5%) (Table 6).

When parental knowledge and attitudes were compared based on their child's history of dental trauma, both groups showed strong agreement regarding the critical role of prompt intervention. All parents with a history of trauma (100%) and 96.4% of those without such a history recognized the importance of the time elapsed since trauma ($p=0.613$). Similarly, 86.5% of parents with trauma history and 74.6% of those without stated they would seek dental care regardless of the fracture size ($p=0.284$). A slightly higher proportion of trauma-experienced parents emphasized the importance of bringing the fractured fragment (62.2% vs. 56.1%, $p=0.599$).

Regarding the scenario involving pulpal bleeding, 59.5% of parents with a history of trauma and 67.1% of those without such a history reported that they would seek dental care after cleaning the bleeding ($p=0.636$). Overall, no statistically significant differences were found in parental knowledge and attitudes based on trauma history or the child's gender (Table 7).

4 | Discussion

Dental traumas are common, particularly during preschool and school-aged periods, and may lead to significant complications if not properly managed. Studies report that without appropriate intervention, the incidence of pulp necrosis may reach up to 54%, whereas timely treatment can reduce this rate to as low as 8% [10]. These findings underscore the pivotal role of prompt intervention in achieving successful treatment outcomes. Parental knowledge and awareness are crucial for effective post-traumatic management [11]. Deficiencies in parental understanding may delay treatment initiation, thereby increasing the risk of complications [12].

The literature consistently reports that parental knowledge regarding dental trauma management is generally insufficient. Santos et al. [13] and Kebriaei et al. [14] demonstrated that parents exhibit low levels of knowledge, independent of age, educational attainment, or socioeconomic status. Similarly, Alyahya et al. [15] and Al-Sehaibany et al. [16] highlighted a significant lack of awareness among parents, even among those with higher education levels.

Conversely, Quaranta et al. [17] reported that older age and higher educational attainment were associated with better knowledge of dental trauma management. However, this finding was not supported by Świątkowska et al. [18], who found no significant correlation between educational level and parental

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TABLE 5 | Distribution of parents' responses based on case scenarios.

		n	%
Noncomplicated (No pulp exposure)			
Effect of the fractured piece size on seeking treatment	Seeking treatment according to the size of the fractured tooth piece	62	19.6
	Seeking treatment regardless of the size of the fractured tooth	241	76.0
	Not seeking treatment if there is no pain	14	4.4
Importance of sharing the fractured tooth piece with the dentist	Yes, I would take it	180	56.8
	No, I don't think it is important	137	43.2
Complicated (Pulp exposure)			
Management of pulpal bleeding in the tooth	Wait for the bleeding to stop and not seek treatment if there is no pain	16	5.0
	Clean the bleeding and seek dental care	210	66.2
	Find the fractured piece and take the child to the dentist quickly	91	28.7
Storage conditions for the fractured tooth piece	Water	91	28.7
	Milk	43	13.6
	Saline	22	6.9
	Dry environment	81	25.6
	Not considering bringing it	80	25.2

TABLE 6 | Relationship between reason for seeking treatment and parent and child gender.

		Parent's gender			Child's gender		
		Anne	Baba		Kız	Erkek	
		n (%)	*n* (%)	*p*	*n* (%)	*n* (%)	*p*
Reason for seeking treatment	Future complications	132 (63.1)	67 (62)	0.97	113 (62.7)	86 (62.7)	0.20
	Pain complaints	56 (26.7)	30 (27.7)		45 (25)	41 (29.9)	
	Aesthetic concerns	15 (7.1)	7 (6.4)		17 (9.4)	5 (3.6)	
	Would wait in absence of pain	6 (2.8)	4 (3.7)		5 (2.7)	5 (3.6)	

knowledge. Tian et al. [10] further confirmed the general lack of awareness, knowledge, and skills among parents in Australia regarding the management of dental injuries.

These findings suggest that deficiencies in parental knowledge cannot be solely attributed to demographic factors, indicating the influence of broader cultural and systemic variables. Therefore, community-based educational interventions should be designed not only to disseminate information but also to enhance parents' ability to make prompt and appropriate decisions during dental trauma incidents.

The impact of prior dental trauma experience on parental knowledge remains debated in the literature. While studies by Swiatkowska and Namdev found no significant association between trauma experience and parental knowledge [18, 19], Elbay et al. reported higher awareness levels among parents with such experience [12]. In this study, no significant association was found between a history of dental trauma and parental awareness levels. This finding suggests that prior trauma experience alone is not sufficient to enhance parental knowledge. One possible explanation is the lack of adequate post-trauma counseling and guidance provided to parents. Effective education and counseling after traumatic incidents are essential for fostering sustainable improvements in parental awareness.

Additionally, parents' perception of the severity of the trauma may influence their motivation to seek information. Minor fractures or superficial injuries that do not cause pain are often considered negligible, which may reduce the perceived need for acquiring further knowledge. This combination of parental

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TABLE 7 | Comparison of parents' knowledge and attitudes regarding dental traumas in children.

	Presence of trauma history		
	Yes	**No**	
Time elapsed since trauma: is it important for treatment?			
Yes, it is important	37 (100)	270 (96.4)	0.613***
No, it is not important	0 (0)	10 (3.57)	
Actions after tooth fracture in a 9-year-old child			
Seek treatment based on the size of the broken tooth fragment	4 (10.8)	58 (20.7)	0.284*
Seek treatment regardless of the size of the broken tooth	32 (86.4)	209 (74.6)	
Avoid seeking treatment unless there is pain	1 (2.7)	13 (4.6)	
Importance of sharing the broken tooth fragment with the dentist			
Yes, I will bring it	23 (62.1)	157 (56)	0.599**
No, I don't think it's important	14 (37.8)	123 (43.9)	
Actions in case of pulpal bleeding in a tooth			
Wait for the bleeding to stop and avoid seeking treatment if there is no pain	2 (5.4)	14 (5)	0.636*
Clean the bleeding and seek dental treatment	22 (59.4)	188 (67.1)	
Find the broken piece and take the child to the dentist quickly	13 (35.1)	78 (27.8)	

*Pearson chi-square test.
**Yates' continuity-corrected chi-square test.
***Fisher's exact chi-square test.

complacency and insufficient post-trauma information may account for the absence of a significant association observed in our study.

Regarding educational attainment, the findings revealed no significant correlation between parental education level and dental trauma knowledge. This outcome is consistent with some previous studies [1, 11, 20], but contrasts with others that report improved awareness among parents with higher education levels [12, 21, 22]. These discrepancies suggest that public health interventions aimed at raising dental trauma awareness should target all parents broadly, rather than focusing exclusively on highly educated groups.

When evaluating the sources of information parents rely on, dentists emerged as the most frequently consulted source (50%), followed by the Internet (30.1%). In a study by Nourwali et al. [22], the Internet was identified as the primary source, whereas the current findings indicate a greater reliance on professional advice. Similarly, research by Quaranta and Momeni's research [2, 23] demonstrated that the majority of parents seek help from dentists following trauma. In this study, 67.2% of participants reported that they would consult a dentist. These findings suggest that although parents generally prefer to consult specialists, general dentists and family physicians are also commonly approached due to their accessibility.

The aesthetic consequences of dental trauma are often regarded by parents as an important issue. However, in the present study, aesthetic concerns did not emerge as a primary motivator for seeking dental care, which contrasts with initial assumptions. Instead, parents predominantly emphasized the potential long-term implications of the trauma on oral health, with particular attention to the presence of pain. Previous research has frequently identified pain as a key factor prompting families to seek professional dental care [19].

The impact of audiovisual materials on education has been extensively documented in the literature [24]. Digital tools, including the IADT's "ToothSOS" mobile application and the "Save Your Tooth" poster, have demonstrated efficacy in facilitating knowledge transfer across diverse educational settings [25, 26]. In this study, visual content was also found to significantly improve parents' decision-making regarding appropriate responses; notably, 95% of participants indicated an intention to seek professional care in the scenario involving pulpal bleeding. These findings highlight the crucial role of visual and technological educational resources in enhancing awareness of dental trauma.

The presence of bleeding in TDIs is a critical factor influencing parents' perception of injury severity. However, accurately distinguishing the bleeding source—whether pulpal or soft tissue—often necessitates professional expertise. Previous studies have demonstrated that many parents are unable to differentiate between these sources, which may result in misjudged urgency and inappropriate prioritization of treatment [12, 27]. While pulpal bleeding generally indicates the need for urgent dental intervention, soft tissue bleeding may not require immediate care. The current findings indicate that visual scenarios depicting pulpal bleeding elicited a strong intention among parents to seek professional care, suggesting that bleeding is subconsciously associated with increased severity. However, misinterpretation of the bleeding source may result in unnecessary anxiety or delays in appropriate management. Thus, the integration of visual educational tools into parental guidance programs may improve recognition accuracy, facilitate timely decision-making, and reduce stress—ultimately contributing to better outcomes in dental trauma cases.

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In this study, 96.8% of parents indicated that the time elapsed between a traumatic incident and receiving care plays a critical role in treatment success. Similarly, Elbay et al. reported a significant improvement in parental help-seeking behavior following an educational intervention [12]. The high response rate observed in this sample may reflect increased parental awareness of the potential long-term complications associated with dental trauma.

Whether the trauma occurs in a primary or permanent tooth is a factor that directly influences the treatment approach. Previous studies have reported that the proportion of parents able to distinguish between the two dentitions ranges from 44.9% to 70% [8, 22, 25]. In this study, a relatively high awareness level of 62.1% was observed; however, only 45.1% of parents acknowledged that the type of tooth affects the treatment process. This finding suggests that primary teeth may be undervalued by the public and that knowledge regarding different dentition periods remains insufficient.

Reattachment of a fractured tooth fragment has emerged as an aesthetic and minimally invasive treatment option, facilitated by advancements in adhesive technologies [28]. Studies by Guler, Onsuren, and Gill have reported varying levels of parental awareness regarding the preservation and reattachment of fractured segments [5, 21, 29]. In this current study, 56.8% of parents recognized the importance of the fragment for treatment. This finding further highlights the need for targeted educational interventions on appropriate management following dental trauma.

This study assessed parental knowledge regarding dental trauma and identified significant gaps that warrant attention to improve awareness. Although most participants recognized the necessity of professional dental care following trauma, considerable deficiencies were observed in their ability to accurately evaluate injury severity. To address these gaps, it is imperative that dental professionals and public health authorities implement comprehensive educational initiatives. School-based programs, digital awareness campaigns, and easily accessible informational materials in clinical settings may effectively enhance parental understanding and promote timely, appropriate responses to dental trauma. Furthermore, the demonstrated positive impact of visual materials on parental decision-making underscores the importance of integrating multimedia tools into educational strategies. These findings emphasize the need for ongoing development and rigorous evaluation of diverse, targeted interventions to optimize outcomes following dental injuries.

Author Contributions

G.T. conceived and designed the study, collected and analyzed the data, and drafted the initial manuscript. T.A. conducted the literature review, contributed to data visualization, and assisted in revising the manuscript critically. S.D. supervised the research process, validated the methodology, critically reviewed the manuscript, and approved the final version for publication.

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The authors have nothing to report.

Ethics Statement

Ethical approval for this study was obtained from the University Clinical Research Ethics Committee (Approval No: 2024/5895).

Consent

Written informed consent was obtained from the patient's legal guardian for publication of clinical details and images.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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