

Original article

Knowledge, Attitudes, and Practices of Parents Regarding Emergency Management of Pediatric Dental and Maxillo-Facial Injuries in Misrata, Libya

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Maxilla Facial Injuries,
Traumatic Dental Injuries.**ABSTRACT**

Parents and caregivers are typically the first responders when children experience oral or maxillofacial injuries. Their knowledge of appropriate first-aid measures can significantly influence the prognosis of traumatic dental injuries, particularly tooth avulsion, where immediate management is essential. Objective: This study aimed to assess parents' knowledge, attitudes, and practices regarding the emergency management of pediatric oral, facial, and dental injuries in Misrata, Libya, and to identify factors associated with better knowledge. A cross-sectional questionnaire-based study was conducted among 164 parents using a structured online survey. The questionnaire assessed demographic characteristics, knowledge of emergency management of dental and maxillofacial injuries, attitudes toward prevention, and educational needs. Descriptive statistics, independent-samples t-test, one-way ANOVA, and Chi-square tests were used for data analysis, with statistical significance set at $p < 0.05$. The mean knowledge score was 6.63 ± 2.1 out of 10. Overall, 39.0% of participants demonstrated good knowledge, 47.0% moderate knowledge, and 14.0% poor knowledge. Parents showed good awareness of tooth type according to age, soft-tissue injury management, and emergencies requiring immediate medical care. However, major deficiencies were identified in the emergency management of avulsed permanent teeth, particularly regarding immediate replantation and appropriate storage media. Parents who had previously received first-aid training achieved significantly higher knowledge scores than those without training ($p = 0.001$). Educational level, age, and gender were not significantly associated with knowledge. Most parents (82.7%) expressed interest in receiving educational programs, with short educational videos being the preferred learning method. Parents demonstrated moderate overall knowledge of pediatric dental trauma management, but clinically important gaps remain in the management of tooth avulsion. Targeted educational programs focusing on dental trauma first aid, particularly avulsion management, should be developed to improve parental preparedness and enhance outcomes for injured children.

Introduction

Pediatric dental and maxillofacial injuries represent a significant challenge in oral and maxillofacial surgery and pediatric dentistry. The type of injury might be simple, such as a soft tissue injury or a dentoalveolar injury, or complex, involving skeletal fractures [1]. Epidemiological studies have identified clear age-related patterns in pediatric maxillofacial trauma. Falls are the leading cause in younger children, whereas sports-related injuries and interpersonal violence become more common during adolescence, particularly among boys.[2] The consequences extend beyond physical injury, significantly impacting a child's quality of life, including mastication, speech, and psychosocial development.[3] Therefore, management of these injuries requires careful planning, with consideration of the child's age, stage of dentition, and skeletal maturity to avoid damaging developing teeth or facial growth centers [4].

Facial bone fractures occur less frequently in children than in adults, accounting for 1.5% to 8.0% of injuries in children aged 12 years or younger. Among these injuries, less than 1% are in children below the age of 5 years. The low incidence rate has been attributed to the greater flexibility of the developing facial skeleton, large cranium size, increased adipose tissue, and incomplete development of paranasal sinuses in young children [5]. Traumatic dental injuries (TDIs) are a common global pediatric oral health issue, with prevalence among school-aged children ranging from 15% to 30%. TDIs are consistently reported more frequently in boys than in girls. In the primary dentition, the reported prevalence ranges from 20% to 30% in boys and 16% to 25% in girls, while in the permanent dentition, it ranges from 12% to 33% and 4% to 19%, respectively [6]. TDIs predominantly affect the maxillary anterior region, with maxillary central incisors accounting for 80-90% of all TDIs [7].

Maxillofacial soft-tissue injuries represent a significant component of pediatric oral emergency cases and require timely assessment and appropriate management to minimize complications. Among these injuries, the lips are the most frequently affected site, while other soft tissues, including the cheek, tongue, palate, gingiva, and intraoral mucosa, may also be involved. Although soft palate lacerations are relatively rare, they are potentially serious injuries that require prompt recognition and emergency management due to the risk of complications such as infection, airway obstruction, and vascular injury. Therefore, early evaluation, proper referral, and adequate knowledge of emergency care are essential for improving outcomes in pediatric patients with maxillofacial soft-tissue injuries [8]. Parents are the first line of defense when a child suffers an oral or facial injury. The majority of TDIs occur at home, school, or on the street, and the most common bystanders are the child's parents and teachers. [9,10] As children spend approximately 60% of their time at home, it is likely that a parent will be present at the injury site [9].

Rapid recognition of the injury and the appropriate action by parents or caregivers is essential. Early management significantly improves the prognosis of affected teeth [9,11]. A parent's knowledge regarding appropriate immediate responses, such as recognizing dental avulsion, proper storage of an avulsed tooth, and the urgency of seeking professional care can significantly influence treatment outcomes. Furthermore, parental attitudes toward preventive measures, such as the use of mouthguards in sports, play a crucial role in mitigating trauma risk. [11] Conversely, a lack of awareness can lead to delayed presentation, inappropriate first-aid measures, and potentially poorer prognoses.

Multiple studies have revealed that parental knowledge about dental trauma management is quite limited [12,13]. A systematic review concluded that this limited knowledge negatively impacts the long-term prognosis of traumatized teeth. [12] A Croatian study involving 333 parents found an overall low knowledge level (7.6 out of 15 points), with less than half knowing that an avulsed primary tooth should not be replanted. [14] Similarly, a study conducted in Jizan, Saudi Arabia, reported limited parental awareness of dental trauma management. Nearly three-quarters of parents were unsure how to respond to such injuries, and most were unaware that an avulsed permanent tooth could be replanted immediately. Only 26.8% claimed to know how to respond to dental trauma, and 80% were unaware that a fallen tooth could be repositioned. [6]

The most concerning knowledge gaps relate to tooth avulsion, a time-sensitive emergency where prognosis depends entirely on immediate action. A study from Qatar found an overall mean knowledge score of only 23%, with only 23.3% of parents knowing it was possible to reinsert an avulsed permanent tooth [15]. A Turkish study revealed that 91.6% of parents had received no training on dental injuries, and only 10.4% knew to store an avulsed tooth in milk [16]. A study from Taif, Saudi Arabia, demonstrated that parents had slightly better knowledge than the general population but still showed critical deficiencies: while 88.4% correctly identified immediate action for a fractured tooth, only 12.3% correctly knew the immediate management for an avulsed permanent tooth [17]. Several studies have identified factors associated with better parental knowledge. Higher education levels, previous TDI information or training, and prior experience with dental trauma significantly improve awareness. [18] Mothers generally demonstrate higher knowledge than fathers, and parents working in healthcare professions show better understanding. [14] Furthermore, studies have shown that educational interventions can effectively improve parental awareness; the Tooth SOS mobile application significantly improved parental knowledge from inadequate-low to adequate-high levels immediately after review [19].

While clinical studies provide valuable insights into the patterns and management of pediatric maxillofacial and dental injuries, the perspectives, knowledge levels, and attitudes of parents remain generally underexplored in many populations. Identifying these knowledge gaps is essential for designing targeted educational interventions and public health initiatives that improve prevention, first-aid practices, and ultimately children's oral health outcomes. Consequently, this study aims to investigate the level of knowledge, attitudes, and practices (KAP) of parents regarding pediatric maxillofacial and dental injuries. Specifically, this research seeks to: (1) assess the current knowledge base of parents concerning the immediate management of common oro-facial injuries, such as lip and palate injuries and avulsions; (2) evaluate parental attitudes towards preventive measures and the urgency of pursuing professional care; and (3) identify potential gaps in parental knowledge and demographic factors that may influence these attitudes and practices. By identifying these knowledge gaps, the findings can serve as a foundation for developing effective, evidence-based educational strategies to empower parents and ultimately improve the long-term oral and facial health outcomes for children.

Methods

Study Design

This was a cross-sectional descriptive study conducted to assess parents' knowledge, attitudes, and educational needs regarding maxillofacial and dental injuries in children. Data were collected using an electronic questionnaire (Google Form) distributed to parents.

Participants

The study population consisted of parents residing in Misrata, Libya. Participants were selected using a convenience sampling method by distributing the questionnaire via social media platforms (Facebook, WhatsApp), family groups, and friends' groups. A total of 164 participants completed the questionnaire. Inclusion criteria were: being a parent or primary caregiver of at least one child under 18 years of age, residing in Misrata, and providing informed consent by voluntarily submitting the questionnaire.

Data Collection Instrument

A structured questionnaire was developed for data collection, consisting of four main sections:

Section One: General Information. This section included questions about participants' demographic characteristics such as age, gender, educational level, whether they had received first-aid training (and the type of training if applicable), and the number of children they had.

Section Two: Knowledge. This section contained 10 multiple-choice questions to assess parents' knowledge about managing deciduous and permanent tooth injuries, including the correct action if a permanent tooth is avulsed, the optimal time to seek medical care, the best medium for preserving an avulsed tooth, and initial procedures for managing oral wounds and bleeding. Each correct answer was assigned 1 point, and incorrect or missing responses received 0 points.

Section Three: Attitudes. This section aimed to measure parents' attitudes towards the importance of prevention and learning first aid for oral and dental injuries. Questions included their belief that wearing mouthguards reduces injuries, the necessity of first-aid training for every parent, and their perceived adequacy of knowledge to handle such injuries.

Section Four: Educational Needs. This section explored the primary sources parents rely on for health information, their preferred methods for receiving information about oral and dental injuries in children, and their willingness to participate in educational programs.

The questionnaire was designed to be easy to understand and complete, taking approximately 3-5 minutes to finish. The questionnaire was prepared in Arabic, the native language of the participants, to ensure comprehension and minimize response bias.

Pilot Testing

Prior to the main data collection, the questionnaire was pilot-tested on a convenience sample of 20 parents who met the inclusion criteria but were not included in the final study sample. The pilot aimed to assess the clarity of the questions, the approximate completion time, the comprehensibility of the response options, and the face validity of the instrument. Based on the pilot feedback, minor linguistic adjustments were made to improve question clarity and ensure cultural appropriateness. The pilot data were excluded from the final analysis. The estimated completion time was confirmed to be 3-5 minutes.

Ethical Considerations

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Participation was entirely voluntary. An introductory statement at the beginning of the online questionnaire explained the study purpose, assured anonymity and confidentiality, and stated that completion and submission of the questionnaire constituted informed consent. No personally identifiable information was collected. Participants were free to withdraw at any time without penalty. All data were stored securely and accessible only to the research team.

Statistical Analysis

Collected data were coded and analyzed using IBM SPSS Statistics version 26 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize participants' demographic characteristics and the distribution of responses to knowledge, attitude, and educational needs questions (frequencies and percentages). A composite Knowledge Score (range 0-10) was derived by summing correct responses across the 10 knowledge items. Missing responses were treated as incorrect, a conventional conservative approach in KAP survey scoring [20]. For inferential analyses involving demographic variables, listwise deletion was applied, and the number of valid responses was reported for each test. Respondents were classified into three knowledge levels: Poor (<50% correct, 0-4/10), Moderate (50-74% correct, 5-7/10), and Good ($\geq 75\%$ correct, 8-10/10).

Associations between categorical demographic variables and knowledge level were tested using the Pearson Chi-square test of independence. The difference in mean knowledge score between trained and untrained parents was tested using an independent-samples t-test (Welch's t-test was used to account for unequal variances, as confirmed by Levene's test for equality of variances). Differences in mean knowledge score across educational level and age groups were tested using one-way ANOVA. Effect sizes were calculated where appropriate: Cohen's d for t-tests and Cramér's V for chi-square tests. All tests used a significance threshold of $\alpha = 0.05$.

Results

Sample Characteristics

A total of 164 parents completed the questionnaire. The demographic characteristics are presented in Table 1. The majority of participants were female (78.6%) and aged 30-39 years (47.5%). Most parents held a Bachelor's degree (57.6%), while 18.4% had completed postgraduate studies. Approximately one-third (34.2%) had received prior first-aid training, most commonly through general first-aid courses (50.0%). Nearly half of the participants (48.2%) had more than three children.

Table 1. Demographic Characteristics of the Study Participants (N = 164)

Characteristic	n	%
Age Group		
Under 30 years	29	18.4
30-39 years	75	47.5
40-49 years	44	27.8
50 years and above	10	6.3
Gender		
Female	125	78.6
Male	34	21.4
Educational Level		
Basic education	8	5.1
Reads and writes only	1	0.6
Secondary education	16	10.1
Diploma	13	8.2
Bachelor's degree	91	57.6
Postgraduate studies	29	18.4
Prior First-Aid Training		
Yes	54	34.2
No	104	65.8
Number of Children		
One child	22	15.6
2-3 children	51	36.2
More than 3 children	68	48.2

Note: Valid responses varied between 141 and 159 due to missing data; missing values were excluded from percentage calculations

Table 2. Distribution of Responses and Correct Answers for Dental Trauma Knowledge Items (Q1-Q10)

Question / Knowledge Item & Responses	n	%	Valid n	Total Correct (%)
Q1: Tooth type injured at age 4			158	138 (87.3%)
Primary (baby) teeth*	138	87.3		
Permanent teeth	8	5.1		
I don't know	12	7.6		
Q2: Tooth type injured at age 9			157	132 (84.1%)
Permanent teeth*	132	84.1		
Primary (baby) teeth	11	7		
I don't know	14	8.9		
Q3: Correct action for an avulsed permanent tooth			157	11 (7.0%)
Attempt to reinsert it immediately if possible*	11	7		
Store in milk or saline and go to the dentist†	62	39.5		
Store in a dry tissue	21	13.4		
I don't know	63	40.1		
Q4: Reimplantation of avulsed primary teeth			158	132 (83.5%)
No*	132	83.5		
Yes	3	1.9		

I don't know	23	14.6		
Q5: Effect of primary tooth injury on underlying permanent tooth			155	83 (53.5%)
Yes*	83	53.5		
No	47	30.3		
I don't know	25	16.1		
Q6: Optimal time window for care after avulsion			158	86 (54.4%)
Within the first 30 minutes*	86	54.4		
After several hours	26	16.5		
The next day	13	8.2		
I don't know	33	20.9		
Q7: Best storage medium for an avulsed tooth			158	76 (48.1%)
Milk / Saline solution* ‡	76	48.1		
Dry tissue	26	16.5		
I don't know	56	35.4		
Q8: First action for a deep bleeding lip/tongue wound			158	138 (87.3%)
Apply pressure with clean gauze or cloth*	138	87.3		
Wash the wound with water only	11	7		
I don't know	9	5.7		
Q9: Recognizing an emergency requiring the ER			157	149 (94.9%)
Bleeding that does not stop after 10 minutes of pressure*	149	94.9		
I don't know	8	5.1		
Q10: Foreign object injury to the throat/mouth			157	143 (91.1%)
Go directly to the Emergency Department*	143	91.1		
Forcibly remove the object	9	5.7		
Wait and observe the child	2	1.3		
I don't know	3	1.9		

Notes:

- **For Q1** Valid responses: n = 158; Missing = 6; Correct answer: Primary teeth (87.3% correct)
- **For Q2** Valid responses: n = 157; Missing = 7; Correct answer: Permanent teeth (84.1% correct)
- **For Q3** Valid responses: n = 157; Missing = 7; Correct answer: Attempt immediate reinsertion (7.0% correct). Note: 'Store in milk or saline' (39.5%) represents the second-best alternative when immediate reinsertion is not feasible, consistent with IADT 2020 guidelines.²²
- **For Q4** Valid responses: n = 158; Missing = 6; Correct answer: No (83.5% correct)
- **For Q5** Valid responses: n = 155; Missing = 9; Correct answer: Yes (53.5% correct)
- **For Q6** Valid responses: n = 158; Missing = 6; Correct answer: Within first 30 minutes (54.4% correct). Note: IADT guidelines emphasize that the critical window is within 5 minutes for optimal periodontal ligament cell viability. [18]
- **For Q7** Valid responses: n = 158; Missing = 6; Correct answers: Milk or Saline (48.1% combined correct). Note: IADT 2020 guidelines recommend milk as the first-choice storage medium, followed by HBSS, with saline and saliva as acceptable alternatives when milk is unavailable. [18]
- **For Q8** Valid responses: n = 158; Missing = 6; Correct answer: Apply pressure (87.3% correct)
- **For Q9** responses: n = 157; Missing = 7; Correct answer: Uncontrolled bleeding (94.9% correct)
- **For Q10** Valid responses: n = 157; Missing = 7; Correct answer: Go to ER (91.1% correct)

Table 3. Overall Parental Knowledge Scores and Levels (N = 164)

Knowledge Measure	Value / Distribution
Composite Score Statistics	
Mean ± SD	6.63 ± 2.1
Median	7
Minimum – Maximum	0 – 10
Knowledge Level Classification, n (%)	
Poor (0-4 correct / <50%)	23 (14.0%)
Moderate (5-7 correct / 50-74%)	77 (47.0%)
Good (8-10 correct / ≥75%)	64 (39.0%)

On average, parents answered approximately 6.63 out of 10 knowledge questions correctly (66.3%). Scores ranged from 0 to 10, indicating considerable variation in knowledge across the sample. The largest proportion of parents fell into the moderate knowledge category (47.0%), while 39.0% demonstrated good knowledge and 14.0% showed poor knowledge.

Table 4. Parental Attitudes and Practices Regarding Oral Health and Traumatic Injuries

Question / Statement & Responses	n	%	Valid n
Belief: Mouthguards reduce oral/dental injuries			156
Yes	130	83.3	
No	8	5.1	
I don't know	18	11.5	
Belief: First-aid training is necessary for all parents			157
Strongly agree	83	52.9	
Agree	65	41.4	
Neutral	8	5.1	
Disagree	1	0.6	
Self-perceived adequacy of knowledge			157
Yes	57	36.3	
No	100	63.7	
First point of care sought after an oral/facial injury			158
Hospital Emergency Department	76	48.1	
Depends on the type of injury	57	36.1	
The dentist	15	9.5	
The pediatrician	9	5.7	
Primary health care center	1	0.6	
Child's mouthguard uses during contact sports			154
Always	2	1.3	
Sometimes	17	11	
Never	45	29.2	
Child does not play these sports	90	58.4	

Note: Valid responses varied between 154 and 158 due to missing data (ranging from 6 to 10 missing values)

Table 5. Comparison of Mean Knowledge Scores by Demographic Characteristics (t-Test and ANOVA)

Demographic Variable	n	Mean	SD	Test Statistic	p-value
Prior First-Aid Training				t = 3.331	0.0011*
Received prior training	54	7.43	1.47	(Welch)	
No prior training	104	6.53	1.83		
Educational Level				F = 0.873	0.5009
Reads and writes only	1	9	—		
Postgraduate studies	29	7.28	1.67		
Bachelor's degree	91	6.8	1.87		
Basic education	8	6.62	1.51		
Diploma	13	6.54	1.66		
Secondary education	16	6.5	1.55		
Age Group				F = 1.984	0.1187
Under 30 years	29	6.79	2.02		
30-39 years	75	7.07	1.72		
40-49 years	44	6.36	1.69		
50 years and above	10	7.5	1.35		

Interpretation:

- Prior Training: Statistically significant ($p < 0.05$); parents with prior first-aid training scored significantly higher on average (7.43) than those without training (6.53), showing a medium effect size (Cohen's $d = 0.54$).
- Educational Level & Age Group: Not statistically significant ($p \geq 0.05$); no significant differences in knowledge scores were found across different educational levels or age groups

Table 6. Chi-Square Test Results for Associations with Knowledge Levels and Training Status

Analysis / Variable	χ^2	df	N	p-value	Significant
Knowledge Level vs. Demographics					
Prior First-Aid Training	6.04	2	158	0.0488	Yes*
Number of Children	5.906	4	141	0.2062	No
Age Group	7.159	6	158	0.3064	No
Gender	1.729	2	159	0.4213	No
Educational Level	9.921	10	158	0.4475	No
Program Interest vs. Prior Training					
Interest in Educational Program	2.547	1	155	0.1105	No

Only prior first-aid training showed a statistically significant association with the overall knowledge level ($\chi^2 = 6.04$, $p = 0.0488$). Age, gender, education, and number of children showed no significant association ($p \geq 0.05$). Furthermore, prior training did not significantly affect interest in future educational programs, as both groups showed similar enthusiasm ($p = 0.1105$).

Table 7. Educational Needs, Preferred Formats, and Interest in Future Programs

Educational Preference Categories	n	%*
Primary Source of Health Information		
Internet	93	59.2
The dentist	60	38.2
The doctor	54	34.4
Family and friends	35	22.3
Social media	33	21
Preferred Format for Educational Content		
Short educational videos	104	66.2
Awareness lectures	60	38.2
Social media	55	35
Educational workshops	27	17.2
Booklets/pamphlets	24	15.3
Interest in a Future Educational Program (Valid n=156)		
Yes	129	82.7
No	27	17.3

Note: Multiple responses were allowed for information sources and preferred formats. The Internet was the most common health information source (59.2%), and short educational videos were the most preferred format (66.2%). A large majority of parents (82.7%) expressed definitive interest in a future structured educational program.

Discussion

When we look at what parents in Misrata actually know about handling dental emergencies, the picture is mixed. The average score of 6.63 out of 10 suggests most parents have a reasonable grasp of basic concepts, but the devil is in the details. Nearly half fall into the 'moderate' knowledge category, and while 39% score well, a worrying 14% are essentially unprepared. This uneven pattern, strong on simple facts, weak on urgent actions, mirrors what researchers have found across the globe [12]. It is reassuring that most parents can tell a baby tooth from a permanent one. Around 87% correctly identified the tooth type for a 4-year-old, and 84% got it right for a 9-year-old. This is not trivial knowledge it prevents the dangerous mistake of trying to replant a baby tooth. Croatian researchers saw similarly high recognition rates (99% and 98% respectively), [14] suggesting this basic developmental fact is widely understood across cultures. The challenge is translating this awareness into action when an emergency strikes.

Here is where the data becomes concerning. Only 7% of parents knew that an avulsed permanent tooth should be reinserted immediately. Seven percent. That means 93% of parents would either delay, store the tooth incorrectly, or simply not know what to do. Nearly 40% opted for storing the tooth in milk or saline and rushing to a dentist, which is not wrong per se, but it is Plan B, not Plan A. The International Association of Dental Traumatology is clear: immediate replantation gives the best chance of saving the tooth [21]. This is not a Libyan problem alone. Tewari's global meta-analysis found that only about half of parents worldwide respond appropriately to avulsion, and just 21% know the correct storage medium. [12] In Qatar [10], the figure for immediate replantation knowledge was 23%; in Turkey [16], only 10% knew about milk storage. Our 7% is at the lower end, but it fits a global pattern of dangerous ignorance about this time-critical emergency.

It is worth celebrating what parents do know. Over 83% correctly understood that a knocked-out baby tooth should not be replanted better than the Croatian sample where fewer than half knew this.¹⁴ Nearly 95% recognized uncontrolled bleeding as an emergency, and 91% knew to seek emergency care for a foreign object in the throat. These are life-saving instincts, and they show that parents are not starting from zero. The gap is specifically in dental trauma mechanics, not in emergency awareness generally.

Perhaps the most actionable finding is this: parents who had first-aid training scored nearly a full point higher (7.43 vs. 6.53, $p = 0.001$). The effect size was medium (Cohen's $d = 0.54$), meaning this is not just statistically significant it is practically meaningful. This aligns with findings from Croatia¹⁴ and Saudi Arabia,²² where trained parents consistently outperformed untrained ones. The message is clear: general education does not help much, but specific training does. A parent's degree level, age, or gender had no bearing on their score. What mattered was whether someone had taught them what to do.

Here is a familiar frustration for public health professionals: 83% of parents believe mouthguards reduce the risk of oral and dental injury during sport, yet only 1.3% say their child always wears one, and 29% never do despite playing contact sports. The Croatian study found the same disconnect 82% saw value, but only 13% of children actually used them⁹; the authors attributed this gap to limited education, comfort issues, and insufficient encouragement from coaches and parents. [14] The consistency of this attitude-behavior gap across both studies suggests that raising awareness of mouthguards' protective value, on its own, is unlikely to translate into increased use without complementary interventions addressing access, comfort, and reinforcement from sport organizations.

Despite the knowledge gaps, there is a genuine appetite for education. Over 82% of parents want a structured program, and two-thirds prefer short videos. This is an opportunity. The same parents who do not know how to handle an avulsed tooth are eager to learn. Kaul and colleagues in India found the same enthusiasm [18] as did Tewari's global review. [12] The demand is there; the supply of accessible, culturally appropriate education is not.

Conclusion

Parents in Misrata, Libya, show moderate overall knowledge of pediatric dental trauma first aid. They understand basic developmental facts and recognize general emergencies, but the specific, time-critical actions for avulsed permanent teeth, immediate replantation, correct storage, and the 30-minute window remain dangerously unfamiliar to most. Prior first-aid training emerged as the only reliable predictor of better knowledge, while demographics like education, age, and gender showed no association. The strong interest in educational programs, particularly short videos, suggests a ready audience for targeted intervention. Closing this gap is not merely an academic exercise; it is a practical step toward saving children's teeth and improving their long-term oral health outcomes.

References

1. Sakamoto, Yuki, et al. "Characteristics of Pediatric Dental Injuries and Predictive Factors for Long Treatment Duration." *Clinical and Experimental Dental Research* 11.5 (2025): e70218.
2. Hofmann E, Koerdt S, Heiland M, Blessmann M, Blake F, Schmelzle R, Pohlenz P. Pediatric maxillofacial trauma: insights into diagnosis and treatment of mandibular fractures in pediatric patients. *Int J Clin Pediatr Dent*. 2023;16(3):499-509.
3. Maniaci, A., Lentini, M., Vaira, L., Lavalle, S., Ronsivalle, S., Rubulotta, F. M., ... & La Via, L. (2025). The global burden of maxillofacial trauma in critical care: a narrative review of epidemiology, prevention, economics, and outcomes. *Medicina*, 61(5), 915.
4. Kumar, R., Singh, V., & Dutta, K. D. (2024). Paediatric Maxillofacial Trauma: An Overview of Incidence, Challenges and Management. *Advances in Human Biology*, 14(2), 148-152.
5. Mukhopadhyay, Santanu, et al. "Oral and maxillofacial injuries in children: a retrospective study." *Journal of the Korean Association of Oral and Maxillofacial Surgeons* 46.3 (2020): 183-190.
6. Maganur PC, Ahamed FEA, Alhulaili DH, Alhamed FEA, Alqahtani AS, Almutairi MA, Alshahrani A, Alqahtani AS. Knowledge, attitude, and behavior toward dental trauma among parents of primary schoolchildren visiting college of dentistry, Jizan. *Int J Clin Pediatr Dent*. 2024;17(9):1030-1034.
7. Alqahtani AS, Alshammari A, Alotaibi F, Alotaibi A, Almutairi A, Alshammari A, Alshammari A, Alshammari A. Knowledge on management of traumatic dental injury and related predictors in Taif, Saudi Arabia: a cross-sectional study. *Int J Dent*. 2025;2025:3623119.
8. Chang, Huihui, et al. "Pediatric maxillofacial soft-tissue injuries: a retrospective analysis of 19,979 cases in a stomatology emergency department in southern China." *BMC Oral Health* 25.1 (2025): 1317.
9. Fadel HT, Mousa SK, Al-Malik MI, Al-Badawi EA, Al-Sebaei MO, Al-Harbi T. Parental knowledge of traumatic dental injuries explained by first aid training and education: a cross-sectional study. *J Clin Pediatr Dent*. 2025;49(6):40-47.
10. Patidar D, Sogi S, Fry RR, Malhotra A, Patidar DC. Maxillofacial trauma in pediatric patients: a retrospective study. *J Maxillofac Oral Surg*. 2024;23:99-106

11. Parental preparedness for traumatic dental injury management in children - an evaluative study. *Indian J Dent Res.* 2026;37(1):24-28.
12. Tewari N, Goel S, Srivastav S, Mathur VP, Rahul M, Haldar P, Pandey RM. Global status of knowledge of parents for emergency management of traumatic dental injuries: a systematic review and meta-analysis. *Evid Based Dent.* 2023;24(2):91-101.
13. Lai G, Ding N, Sheng K, Ding Q, Gu J, Wang J. Parental knowledge and attitudes regarding emergency management of traumatic dental injuries and associated factors among a Chinese sample: a cross-sectional study. *J Clin Pediatr Dent.* 2026;50(1):94-102.
14. Aleric K, Gavic L, Draganja M, Gorseta K, Ambarkova V, Tadin A. Parental knowledge and attitudes toward emergency management of dental trauma in children: a cross-sectional Croatian study. *Pediatr Rep.* 2026;18(1):11.
15. Al Sheeb M, Al Jawad FA, Nazzal H. Parents' knowledge of emergency management of avulsed permanent teeth in children and adolescents in the State of Qatar. *Eur Arch Paediatr Dent.* 2023;24(5):643-650
16. Koçkanat A. Evaluation of parents' knowledge levels and awareness regarding emergency management of tooth avulsion. *Cumhuriyet Dent J.* 2025;28(2):192-198.
17. Shukr BS, Alshamrani HM, Alzubaidi MA, Alqarni AA, Alzahrani MH, Altalhi FK, Alrizqi AA. Knowledge on management of traumatic dental injury and related predictors in Taif, Saudi Arabia: a cross-sectional study. *Int J Dent.* 2025;2025:3623119
18. Kaul R, Jain P, Angrish P, Saha S, Patra TK, Saha N. Knowledge, awareness and attitude towards emergency management of dental trauma among the parents of Kolkata—an institutional study. *J Clin Diagn Res.* 2016;10(9):ZC95-ZC101.
19. Barutçigil G, Oz E. Evaluation of parental awareness on emergency management of traumatic dental injuries: the role of the ToothSOS application. *Dent Traumatol.* 2025;41(6):667-679.
20. Tıraşçı G, Yildirim G, Öz FT, Aydınbelge M, Yildirim-Bicer AZ. Parental awareness and decision-making in enamel-dentin fractures in permanent teeth: the role of visual case scenarios. *Dent Traumatol.* 2025;41(4):e70024.
21. Fouad NA, Abbott PV, Tsilingaridis G, Cohenca N, Lauridsen E, Bourguignon C, O'Connell A, Andreasen JO, Cvek M, Malmgren B, Andreasen FM, Andersson L, Day P, Hargreaves KM, Kahler B, Oginni A, Levin L, Trope M, Mente J, Nagendrababu V, Pulikkotil SJ, Duggal M, Law AS, Nixdorf DR, Vena DA, Donaldson M, Anderson M. International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 2. Avulsion of permanent teeth. *Dent Traumatol.* 2020;36(4):331-342.
22. Momeni Z, Afzalsoltani S, Moslemzadehasl M. Mothers' knowledge and self-reported performance regarding the management of traumatic dental injuries and associated factors: a cross-sectional study. *BMC Pediatr.* 2022;22(1):665.