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FIRST AID KNOWLEDGE AND ATTITUDE OF TRAUMATIC DENTAL INJURIES MANAGEMENT IN CHILDREN: A CROSS-SECTIONAL ANALYSIS AMONG THE SCHOOL STAFF IN SAUDI ARABIA

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Abstract

Background: One of the most serious dental public health concerns affecting children is traumatized dental injuries (TDIs), which are frequently occurring in the general population. In order to effectively manage it, dental practitioners need to increase awareness of it. **Aim:** This cross-sectional study aimed to assess elementary school staff members' attitudes and levels of knowledge on the first-aid management of children's traumatic dental injuries in Saudi Arabia. **Methods:** A cross-sectional study of self-administered questionnaire consisted of; demographic data, self-assessment, knowledge and attitude, were collected from elementary school staff members from all five regions (The eastern, western, northern, southern and central). **Result:** As regard the participants' knowledge towards traumatic dental injuries management in children, a vast majority, 86.3%, acknowledge the critical role of time in saving a tooth. Furthermore, the majority view dental trauma management as an emergency (77.3%). The role of teachers in saving a tooth during school dental injuries is considered important by 81.6% of respondents. Additionally, 75.4% advocate for teacher involvement to ensure timely assistance. The data also addresses the issue of mandating mouth guards in outdoor sports, with 61.5% in favor of compulsion. A substantial majority (83.9%) support the idea of providing training in dental trauma management. Regarding attitude of participants towards traumatic dental injuries management in children, varied responses and perceptions have been revealed. The preference for pediatric dentists in such situations was clear, along with the importance of seeking professional help promptly after tooth loss. Storage methods for fallen teeth also varied, with a leaning towards saline solution and milk. The study also revealed that the belief that managing the tooth injuries by the teachers is a moral responsibility has statistically significant relation to education (p value=0.002), receiving first aid

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http://magellanes.com/

training (p value=0.0001), and if the teacher witnessed a child fell over and got tooth injury (p value=0.002). It also shows statistically insignificant relation to gender, age, region of residence, nationality, workplace, position, and working experience. **Conclusion:** The findings revealed a significant gap in teachers' preparedness to handle dental trauma emergencies, with a majority acknowledging the critical role of timely intervention, supporting the inclusion of tooth injury management in teacher training, and recognizing the necessity for teacher involvement in ensuring timely assistance. Varied responses and perceptions were observed regarding the type of teeth damaged, appropriate actions to take, and storage methods for fallen teeth, emphasizing the need for comprehensive education and training programs.

Keywords: Attitude, Child, Schools, First Aid, Knowledge, Injuries.

Introduction:

Traumatic dental injuries (TDI) are the 5th most prevalent disease in humans [1]. Dental practitioners are the primary care providers for it and their responsibilities are to provide an adequate advice during the emergency/follow up and to help in creating awareness for the TDI emergency management among different societies of population [2]. Time and quality of emergency care play an important role in the prognosis of the traumatized tooth [3]. Mastication difficulties, facial deformities, phonation, and negative impact on the psychological, social, and financial components are all some of the potential consequences of improperly treated/neglected TDI for the child and his/her family [4]. Emergency protocols such as immobilization, hemostasis, reimplantation of an avulsed tooth, or preservation of tooth or fragments can avoid a subsequent corrective complicated/expensive dental procedure and most important is to avoid the adverse consequences like loss of tooth vitality, external root resorption, bone resorption and ankylosis or tooth loss [5].

Epidemiological study have shown that 35% of children and adults with permanent teeth have experienced dental trauma, while 50% of children have dental trauma [6]. According to study found dental trauma affects 33% of Saudi schoolboys and 31.4% of schoolgirls [7]. Children are more likely to spend 60% of their time at home rather than in school or on the playground[8] As a result, it is critical to consider the mother of the injured kid as the first person to attend to the child and make judgements in the majority of cases [8]. Most notably, consider enamel fracture and enamel and dentin fracture without pulp exposure [9].

In 2020, cross sectional study was conducted Knowledge and Attitudes of Primary Wing School Teachers toward Dental Trauma and its Management in Qassim, Kingdom of Saudi Arabia, the result Teachers in the primary schools are unaware of how to treat oral dental trauma [10]. To increase teachers' attitudes and knowledge on the treatment of oral trauma in children, there is a need for more awareness [10]. A cross-sectional study was done in Saudi Arabia in 2022, it shows education programs on the management of traumatic dental injuries are essential since schoolteachers lack sufficient knowledge and an understanding of the management of avulsed teeth[11]. The knowledge of the participants was determined to be insufficient in 86.3% of the cases [11]. In addition a study about the Educational Dental Program and Its Impact on Emergency Management of Traumatic Dental Injuries in Children in 2022 showed that Schools, homes, clubs, and the streets are the settings where traumatic

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dental injuries (TDI) in children occur most frequently; as a result, teachers and parents must be knowledgeable in emergency treatment protocols [12].
The previous studies' limitations reveal several significant gaps that need to be addressed in our study. A vulnerability to nonresponse bias, primarily among dentists interested in dental trauma, may have constrained the range of professional perspectives [13]. This highlights the need for broadening the recruitment strategy to encompass a more diverse range of professionals. Furthermore, the confinement of the study's results to a single area also emphasizes a gap in the understanding of the broader, national context, suggesting that research across various regions in Saudi Arabia is necessary for a comprehensive understanding [14].
Therefore, the aim of the present study is to assess the knowledge and attitude regarding the first-aid management of traumatic dental injuries in children in Saudi Arabia among school staff members.

Material and Methods

The research proposal was submitted to the Institutional Review Board, and Ethics Committee, College of Dentistry Research Center (CDRC) to be approved. This was followed by permission from the headmasters of the selected elementary school in Saudi Arabia in order to conduct this study.
This cross-sectional study was performed among elementary school staff between September 2023-June 2024, from elementary school. Cluster random sampling was used as a method of obtaining sample subjects for the study. Individuals was clustered in the groups based on the located in five geographical regions (southern, northern, eastern, western and central) in Saudi Arabia.
The sample size was calculated by using the Raosoft sample size calculator based on the total population, which is approximately 20 thousand according to the General Authority for Statistics in the Kingdom of Saudi Arabia, with a 95% confidence interval, a 5% margin of error, and a 50% response distribution. As a result, the minimum sample size was set at 377.

All school staff population in Saudi Arabia, both males and females were invited for participating in this study. Based on the questionnaire created by Balkhair ,the authors were create a distinctive version that is written in Arabic [15]. There are three sections to the questionnaire. The first and second sections each have eight questions. The first section addresses general demographic variables such as age, nationality education level, working experience, location, duration of experience, first aid training, and school-based dental trauma experience. The questions in the second part relate to teachers' levels of knowledge about TDI management. Two dental trauma scenarios form the third section. A 9-year-old student had a simple crown fracture in the first case, while a 12-year-old student had a severe accident that caused a tooth avulsion. Both scenarios have been used in previous studies to evaluate elementary school teachers' knowledge levels and attitudes.

Statistical Analysis:

The data was coded, computerized and analyzed using SPSS pc+ version 22.0 statistical software (IBM Inc., Chicago USA). Descriptive statistics (mean, standard deviation, frequencies and percentages) was used to describe the quantitative and categorical variables. Descriptive statistics, frequency distribution tests, and chi-square analysis were employed. Confidence was kept at 95% and p-value$\leq$ 0.05 was

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http://magellanes.com/

considered to be statistically significant.

Results:

Table (1) displays various demographic parameters of a group of people with a total number of (577). The participants' age distribution indicates a mean age of 41.7 years, with a standard deviation of 7.7. Most participants fall within the age range of 40 to 45, comprising 32.6% of the sample, followed closely by those aged less than 40 at 28.8%. The gender distribution shows a higher representation of females at 61.9% compared to males at 38.1%. Geographically, the Southern Region stands out with 51.8% of participants, while the other regions - Central, Western, and Eastern - have varying percentages. Most participants are Saudi nationals (98.3%) employed in the governmental sector (89.3%), predominantly as teachers (56.5%). In terms of education, most hold a university degree (62.4%), followed by a diploma (31.2%). Notably, a significant proportion of participants have over 6 years of working experience (83.2%). Regarding first-aid training, 37.1% have received it, whereas 62.9% have not. Moreover, a portion of participants reported incidents of children falling in their class/school, with 18.5% witnessing such events. Of those cases, the majority involved 1-2 incidents, as reported by 54.2% of respondents. This comprehensive dataset provides valuable insights into the sociodemographic profile and experiences of the participants, warranting further analysis and interpretation to extract meaningful implications.

Table (1): Sociodemographic characteristics of participants (n=577)

Parameter		***No.***	***Percent (%)***
Age (Mean:41.7, STD:7.7)	less than 40	166	28.8
	40 to 45	188	32.6
	45 to 49	133	23.1
	more than 50	90	15.6
Gender	Male	220	38.1
	Female	357	61.9
Region	Northern Region	5	.9
	Southern Region	299	51.8
	Central Region	165	28.6
	Eastern Region	42	7.3
	Western Region	66	11.4
Nationality	Saudi	567	98.3
	Non-Saudi	10	1.7
Workplace	Governmental sector	515	89.3
	Private sector	62	10.7
Position	Teacher	326	56.5
	Administrative	223	38.6
	Administrative teacher	14	2.4

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http://magellanes.com/

	School nurse	3	.5
	Healthcare officer	11	1.9
Education	Diploma	180	31.2
	University	360	62.4
	High education(master's and Ph.D.)	37	6.4
working experience	Less than 3 years	59	10.2
	3 to 6 years	38	6.6
	More than 6 years	480	83.2
Did you receive first-aid training?	No	363	62.9
	Yes	214	37.1
Did any kid fall in your class / school?	No	470	81.5
	Yes	107	18.5
If yes, how many cases did you witness in school last year? (n=129)	1-2	70	54.2
	3-4	28	21.7
	More than 4	31	24.1

As shown in figure 1, The sizable disparity between those who agree and those who disagree underscores the divergence of perspectives on this matter. With 382 individuals indicating their agreement, it is evident that a significant portion of the population recognizes the importance of equipping teachers with the knowledge and skills necessary to respond effectively to tooth injuries in educational settings. Conversely, the 118 individuals who disagree suggest that there may be differing beliefs or priorities regarding the role of teachers in managing such incidents. The presence of 77 respondents who cannot definitively express a stance implies a level of uncertainty or lack of clarity surrounding this issue. As such, it becomes imperative for educational institutions and policymakers to deliberate on the incorporation of appropriate training programs that address the management of tooth injuries, considering the potentially positive impact it could have on student health and safety within school environments.

CAHIERS MAGELLANES-NS
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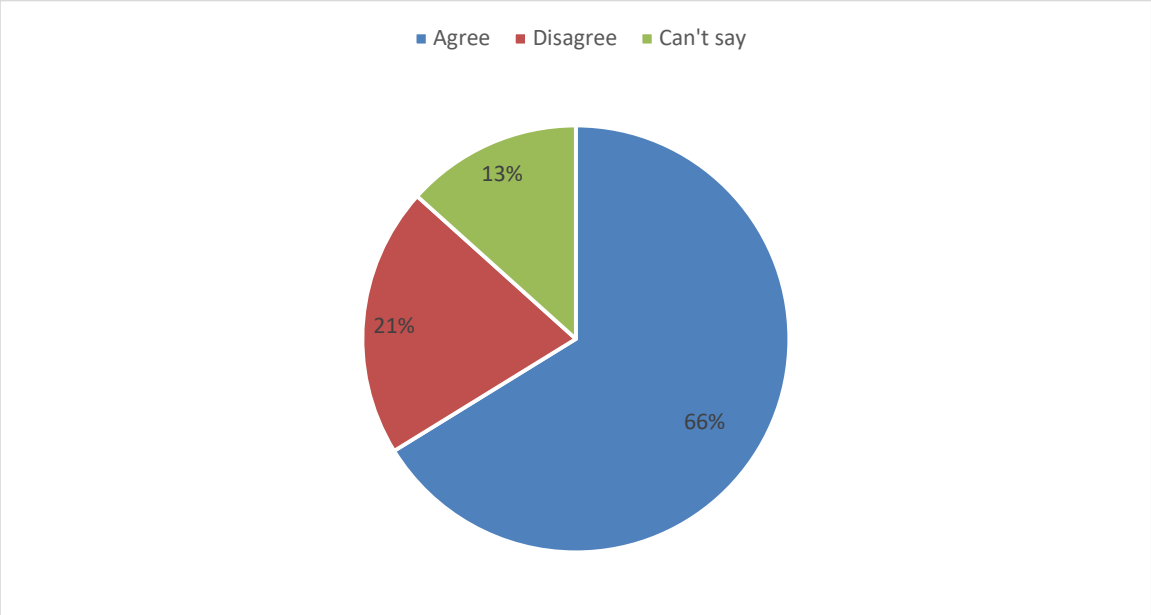
http://magellanes.com/

Figure (1): Illustrates if teachers think that management of tooth injuries must be included during the training of teachers.



As illustrated in table (2), It is evident from the responses that a significant portion of the participants recognize the moral responsibility of teachers in caring for tooth injuries that occur during school hours, with 36.7% agreeing, 35.4% disagreeing, and 27.9% unable to provide a clear stance. Moreover, a vast majority, 86.3%, acknowledge the critical role of time in saving a tooth, highlighting the importance of prompt action in such situations. The data also indicates varying beliefs regarding the potential for saving a lost tooth post-injury, with 59.8% agreeing, 18.5% disagreeing, and 21.7% expressing uncertainty. Participants largely support the inclusion of tooth injury management in teacher training, with 66.2% in agreement. Furthermore, the majority view dental trauma management as an emergency (77.3%), emphasizing the urgency and seriousness of such incidents. The role of teachers in saving a tooth during school dental injuries is considered important by 81.6% of respondents, underlining the impact of timely intervention. Additionally, while emergency management is typically handled by professionals, 75.4% advocate for teacher involvement to ensure timely assistance. The data also addresses the issue of mandating mouth guards in outdoor sports, with 61.5% in favor of compulsion. Legal considerations related to teachers' involvement in emergency situations are highlighted, with 40.7% believing there are no legal repercussions, 11.1% expressing concern, and 48.2% unsure. A substantial majority (83.9%) support the idea of providing training in dental trauma management, underscoring the perceived value of such education in responding to these critical situations. Overall, the data underscores the complexity of perspectives regarding dental injury management in children and the potential role of teachers in safeguarding children's dental health.

ISSN:1624-1940
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http://magellanes.com/

Table (2): Participants' knowledge towards traumatic dental injuries management in children (n=577).

Parameter	***Agree***	***Disagree***	***Can't say***
It is moral responsibility of teachers to take care of the tooth injuries that happened in school hours.	212 36.7%	204 35.4%	161 27.9%
Time plays an important role for saving a tooth.	498 86.3%	16 2.8%	63 10.9%
When a tooth is lost in injury, it can be saved, so there is an utmost need for treatment.	345 59.8%	107 18.5%	125 21.7%
Management of tooth injuries must be included during the training of teachers.	382 66.2%	118 20.5%	77 13.3%
Dental trauma management is an emergency.	446 77.3%	54 9.4%	77 13.3%
Teacher's intervention in school dental injuries plays an important role in saving a tooth.	471 81.6%	28 4.9%	78 13.5%
Even though, emergency management of tooth injuries is thoroughly taken care by professionals but there is a need for teacher's involvement to timely save the tooth.	435 75.4%	49 8.5%	93 16.1%
Wearing a mouth guard should be made compulsory in all outdoor sports.	355 61.5%	103 17.9%	119 20.6%
In case of such emergency situations, there are no legal considerations that will put teachers in trouble.	235 40.7%	64 11.1%	278 48.2%
You feel providing training in management of dental trauma will be help.	484 83.9%	40 6.9%	53 9.2%

Analyzing the data provided in figure (2), it is evident that a significant number of respondents, precisely 433 individuals, recognize the critical importance of seeking professional help within 30 minutes after a tooth has fallen out. This indicates a commendable level of awareness and prompt action within the general population regarding dental emergencies. Conversely, the responses dwindled as the time frame extended, with 111 individuals opting for seeking help within a few hours, 9 within the next day, and only 5 within a month. Surprisingly, a notable portion of the respondents, 19 individuals, believe that no immediate care is required when a tooth falls out, which raises concerns about the lack of awareness or urgency in addressing dental issues promptly. The distribution of responses highlights the varying degrees of urgency and perception of dental emergencies within the surveyed group, underscoring the need for comprehensive education on the importance of prompt professional intervention in such cases.

CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

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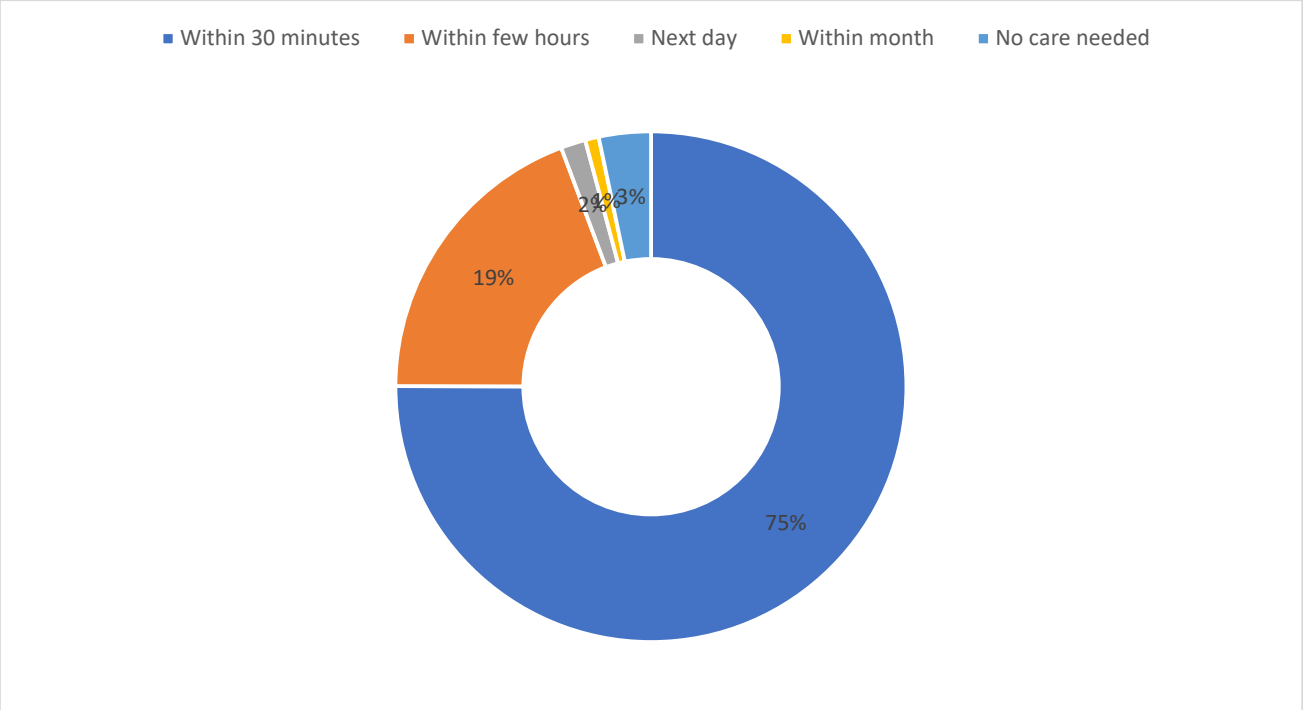
http://magellanes.com/

Figure (2): Illustrates what participants think a good time to seek professional help if a tooth has fallen out.



In analyzing the data presented in Table 3 regarding parameters linked to participants' attitudes towards the management of traumatic dental injuries in children, several key insights can be gleaned. The table, based on a sample size of 577 individuals, delves into various scenarios related to dental trauma in children and the corresponding responses and perceptions of the participants. For instance, when confronted with a situation where a 9-year-old child has broken their upper front tooth, responses varied regarding the type of teeth damaged, the potential reusability of the broken piece, and the most appropriate course of action, with a majority opting to advise the child's parents to seek immediate dental attention. Notably, considerations differed when a 12-year-old boy lost his upper front tooth due to a hit on the face, with responses split on whether to find the fractured teeth and the immediate actions to be taken. Furthermore, preferences for seeking health services in such scenarios leaned heavily towards pediatric dentists. The urgency placed on seeking professional help post-tooth loss within specific timeframes also reflected a sense of awareness regarding prompt intervention. Additionally, storing fallen teeth before seeking medical assistance varied in terms of choices, with a preference for saline solution and milk among respondents. Opinions on enhancing the knowledge and attitude of schoolteachers towards dental trauma management predominantly favored workshops and educational campaigns, indicating a perceived need for comprehensive educational initiatives in this domain. This data underscores the importance of not only understanding attitudes towards traumatic dental injuries in children but also the strategies to improve awareness and responses among relevant stakeholders.

Table (3): Parameters related to attitude of participants towards traumatic dental injuries management in children (n=577).

CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

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http://magellanes.com/

Parameter			***No.***	***Percent (%)***
9-years-old child fell and broke upper front tooth	***The damaged front teeth likely to be***	Permanent teeth	242	41.9
		Primary (milk teeth)	246	42.6
		Don't know	89	15.4
	The broken piece	Can be reused.	138	23.9
		Is no longer usable.	241	41.8
		I don't know	198	34.3
	Which of the following would you consider to be the most appropriate?	Contact his parents and advise them to send the child to dentist immediately.	459	79.5
		Calm down the child and send him back to class.	45	7.8
		Don't know what to do.	73	12.7
A 12-year-old boy was hit on the face and his upper front tooth fell out	***Would you try to find the fractured teeth?***	Yes	384	66.6
		No	193	33.4
	Which immediate action would you take?	Would you look for the tooth, wash it and put it back in its place.	55	9.5
		Stop the bleeding by compressing a cloth or handkerchief over the injury.	297	51.5
		Put the tooth in a solution and send the child to dentist.	146	25.3
		Don't know what to do.	79	13.7
	What type of health service would you seek first?	General physician	19	3.3
		Pediatrician	25	4.3
		General dentist	68	11.8
		Pediatric dentist	429	74.4
		Don't know	36	6.2
	How urgent do you think it is good to seek professional help if a tooth has fallen out?	Within 30 minutes	433	75.0
		Within few hours	111	19.2
		Next day	9	1.6
		Within month	5	.9
		No care needed	19	3.3
	Before you take the child to the dentist/ doctor, where	Tap water	12	2.1
		Childs mouth	15	2.6

ISSN:1624-1940
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http://magellanes.com/

	would you store the fallen teeth?	Saline solution	180	31.2
		Milk	92	15.9
		Disinfecting solution	10	1.7
		Wrap the tooth in a handkerchief.	20	3.5
		Paper tissue	97	16.8
		Don't know	151	26.2
	What is your opinion about the method to improve the knowledge and the attitude of the schoolteachers?	Written information: brochure and posters	48	8.3
		Visual information: videos	46	8.0
		Workshops	230	39.9
		Educational school visits	75	13.0
		Educational campaigns	148	25.6
		Schoolteachers don't need this information	30	5.2

Table (4) shows that the belief that managing the tooth injuries by the teachers is a moral responsibility has statistically significant relation to education (p value=0.002), receiving first aid training (p value=0.0001), and if the teacher witnessed a child fell over and got tooth injury (p value=0.002). It also shows statistically insignificant relation to gender, age, region of residence, nationality, workplace, position, and working experience.

Table (4): Relation between if there it is the moral responsibility of teachers to take care of the tooth injuries among children in school hours and sociodemographic characteristics.

Parameters		***It is moral responsibility of teachers to take care of the tooth injuries that happened in school hours.***		***Total (N=577)***	***P value****
		Agree	**Disagree or can't say**		
Gender	Female	136	221	357	0.390
		64.2%	60.5%	61.9%	
	Male	76	144	220	
		35.8%	39.5%	38.1%	
Age	less than 40	55	111	166	0.354
		25.9%	30.4%	28.8%	
	40 to 45	69	119	188	
		32.5%	32.6%	32.6%	
	45 to 49	48	85	133	

ISSN:1624-1940
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http://magellanes.com/

		22.6%	23.3%	23.1%	
	more than 50	40	50	90	
		18.9%	13.7%	15.6%	
Region of residence	Northern Region	2	3	5	0.188
		0.9%	0.8%	0.9%	
	Southern Region	119	180	299	
		56.1%	49.3%	51.8%	
	Central Region	49	116	165	
		23.1%	31.8%	28.6%	
	Eastern Region	19	23	42	
		9.0%	6.3%	7.3%	
	Western Region	23	43	66	
		10.8%	11.8%	11.4%	
Nationality	Saudi	210	357	567	0.268
		99.1%	97.8%	98.3%	
	Non-Saudi	2	8	10	
		0.9%	2.2%	1.7%	
Workplace	Governmental sector	191	324	515	0.620
		90.1%	88.8%	89.3%	
	Private sector	21	41	62	
		9.9%	11.2%	10.7%	
Position	Teacher	114	212	326	0.542
		53.8%	58.1%	56.5%	
	Administrative	84	139	223	
		39.6%	38.1%	38.6%	
	Administrative teacher	7	7	14	
		3.3%	1.9%	2.4%	
	School nurse	2	1	3	
		0.9%	0.3%	0.5%	
	Healthcare officer	5	6	11	
		2.4%	1.6%	1.9%	
Education	Diploma	85	95	180	0.002
		40.1%	26.0%	31.2%	
	University	116	244	360	
		54.7%	66.8%	62.4%	
	High education (master's and Ph.D.)	11	26	37	
		5.2%	7.1%	6.4%	

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http://magellanes.com/

working experience	Less than 3 years	24	35	59	0.735
		11.3%	9.6%	10.2%	
	3 to 6 years	15	23	38	
		7.1%	6.3%	6.6%	
	More than 6 years	173	307	480	
		81.6%	84.1%	83.2%	
Did you receive first-aid training?	No	110	253	363	0.0001
		51.9%	69.3%	62.9%	
	Yes	102	112	214	
		48.1%	30.7%	37.1%	
Did any kid fall in your class / school?	No	159	311	470	0.002
		75.0%	85.2%	81.5%	
	Yes	53	54	107	
		25.0%	14.8%	18.5%	

****P value was considered significant if ≤ 0.05.***

Discussion:

Dental trauma in children is very common. According to epidemiologic research, half of children have dental trauma. Children aged 8–12 years have a high rate of dental injury as per epidemiological reports [16]. According to the American Academy of Pediatric Dentistry, tooth avulsion is one of the most common dental injuries, accounting for 0.5–16% of all TDIs in children. The term “dental avulsion” refers to the complete removal of a tooth from its socket [17]. Children spend a considerable amount of time at school every day; therefore, TDIs may occur more commonly at school. Teachers are usually present at the time of dental trauma or immediately afterward. Therefore, they play an important role in dental trauma management. Therefore, it is vital to provide schoolteachers with information and skills regarding basic first aid [18]. Thus we aimed in this study to assess elementary school staff members' attitudes and levels of knowledge on the first-aid management of children's traumatic dental injuries in Saudi Arabia.

As regard the participants’ knowledge towards traumatic dental injuries management in children, we have found that a vast majority, 86.3%, acknowledge the critical role of time in saving a tooth. Participants largely support the inclusion of tooth injury management in teacher training, with 66.2% in agreement. Furthermore, the majority view dental trauma management as an emergency (77.3%). The role of teachers in saving a tooth during school dental injuries is considered important by 81.6% of respondents. Additionally, 75.4% advocate for teacher involvement to ensure timely assistance. The data also addresses the issue of mandating mouth guards in outdoor sports, with 61.5% in favor of compulsion. A substantial majority (83.9%) support the idea of providing training in dental trauma management.

Regarding attitude of participants towards traumatic dental injuries management in children, varied responses and perceptions have been revealed. When presented with scenarios like a 9-year-old breaking their upper front tooth or a 12-year-old losing a tooth due to a hit, participants differed in their

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opinions on the type of teeth damaged, reusability of broken pieces, and appropriate actions to take, with a majority suggesting immediate dental attention. The preference for pediatric dentists in such situations was clear, along with the importance of seeking professional help promptly after tooth loss. Storage methods for fallen teeth also varied, with a leaning towards saline solution and milk. On the other hand, a study conducted by Ziyad F. Alharbi [19], revealed that 49.7% (n = 146) of the teachers correctly answered correctly when asked about the capability of avulsed tooth replantation. When questioned regarding the storage of the avulsed tooth, 23% mentioned milk/saliva as an appropriate storage media which is consistent with our results. In comparison to our study, a majority of the teachers (67%) in the same study felt they did not have sufficient knowledge and management of dental trauma. 29% of the teachers did receive first aid training but only 15% of these had any formal training on management of traumatic injuries. these findings were lower when compared with a previous study in Madinah [20] where 28.1% had acquired first-aid training on trauma. Another study conducted by Alghalayini et al. (2020) [21] assessed the knowledge and attitude of elementary school staff in Saudi Arabia regarding the first-aid management of children's traumatic dental injuries. The study found that only 45% of staff knew the correct immediate action to take in case of a dental injury, with the majority lacking knowledge about proper fallen teeth storage. Moreover, study by Al-Maweri et al. (2017) [22] investigated the knowledge and attitude of elementary school staff in Saudi Arabia towards the first-aid management of children's traumatic dental injuries. The study reported that only 35% of the participants were knowledgeable about immediate action in cases of dental trauma, while 46% demonstrated adequate knowledge in fallen teeth storage. Additionally, a study conducted by Faten A. Alluqmani [23] revealed that most of the teachers had not acquired training about management of TDIs in first-aid training (93.8%). Furthermore, most of the teachers (71.9%) have not received any first-aid training for the management of TDIs. Similar findings were also reported in another study, [24] in which 85.7% of the teachers had not received training for managing dental trauma. Moreover, a study by Al-Maweri et al. (2020) [25] further explored this topic and surveyed 200 elementary school staff members in Saudi Arabia. The results of this study showed that only 25% of the participants had adequate knowledge of the first-aid management of traumatic dental injuries. Additionally, the study found that 45% of the participants had a positive attitude towards providing first-aid for such injuries.

Conclusion:

In conclusion, our study highlighted the crucial importance of enhancing knowledge and attitudes among elementary school staff members in Saudi Arabia regarding the first-aid management of traumatic dental injuries in children. The findings revealed a significant gap in teachers' preparedness to handle dental trauma emergencies, with a majority acknowledging the critical role of timely intervention, supporting the inclusion of tooth injury management in teacher training, and recognizing the necessity for teacher involvement in ensuring timely assistance. Varied responses and perceptions were observed regarding the type of teeth damaged, appropriate actions to take, and storage methods for fallen teeth, emphasizing the need for comprehensive education and training programs. The study underscores the necessity of implementing targeted educational initiatives to equip school staff with the necessary skills and knowledge to effectively manage traumatic dental injuries, thereby improving outcomes for children experiencing such incidents. Further research and nationwide initiatives are

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imperative to address these gaps and promote better oral health outcomes for children in Saudi Arabia.

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Ethical approval

Ethical approval was obtained from the research ethics committee of the King Saud University with Application number: [KSU-HE-23-1261]. An informed consent was obtained from each participant after explaining the study in full and clarifying that participation is voluntary. Data collected were securely saved and used for research purposes only.

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Conflict of interests

The authors declare that there are no conflicts of interest.

Informed consent:

Written informed consent was obtained from all individual participants included in the study.

Data and materials availability

All data associated with this study are present in the paper.

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