

PARENTAL KNOWLEDGE AND ATTITUDE TOWARDS FIRST AID MEASURES OF TOOTH AVULSION

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ABSTRACT

Most dental injuries occur at home in the presence of parents. Therefore, parents' knowledge about the emergency management (ER) of tooth avulsion is essential for better prognosis. The aim of this study was to evaluate the knowledge of parents with different educational levels about the emergency management of tooth avulsion in Saudi Arabia and their attitude toward receiving further education on the emergency management of tooth avulsion.

A self-administered questionnaire was applied to parents of patients who attended the Faculty of Dentistry of King Abdulaziz University (KAUFD) from August to December 2016. The 23 questions assessed knowledge and attitude towards first aid measures of tooth avulsion. Data were collected and statistically analyzed using T test and one way ANOVA.

A total of 480 parents who attended KAUFD participated voluntarily in the study. Data revealed that 70.6% of the respondents did not have prior knowledge regarding the subject. The dentists (29.4%) was the source of information to those who had previous knowledge. There were statistical significant differences between parents' gender ($p= 0.000$), nationality ($p= 0.000$), place of living ($p= 0.000$), and attitude towards learning ($p= 0.000$). However, there were no statistical significant differences in the mean knowledge between parents' different levels of education ($p= 0.910$) and presence or absence of previous history of avulsion ($p= 0.187$).

The study findings showed that the majority of parents lack the basic knowledge needed for the emergency management of tooth avulsion and the level of education has no impact on their knowledge. Therefore, educational programs are needed for parents to know how to manage such cases as this will encourage them to seek immediate treatment.

Keywords: *Tooth avulsion, Dental trauma, Emergency management, replantation, parents, attitude, knowledge.*

INTRODUCTION

Traumatic dental injuries (TDI) are the most serious oral health problems amongst children.¹⁻² Tooth avulsion is a common type of TDI.³⁻⁶ It can occur at any age, however it usually occurs in children 8-12 years old^{4,7} and affects the permanent maxillary central and lateral incisors.⁸ Permanent anterior teeth are essential for esthetics, function, speech, and the psychologic and mental health of children.^{4,6,9} Therefore, immediate and appropriate treatment is essential for long-term prognosis^{4,10-12} of the avulsed teeth which will help to avoid more expensive, complex and time-consuming treatment⁴ as well as preserving the self-image and enhanced self-esteem in children.⁴

Immediate replantation is the treatment of choice for avulsed teeth.^{4,7,11-14} If replantation is not feasible, then storing the tooth in an appropriate media is necessary to preserve the periodontal ligament cells' viability.^{2,12,15-17} Most dental injuries occur at home in the presence of parents. Therefore, parents' knowledge about the emergency management (ER) of tooth avulsion is essential for better prognosis.^{4,13,19-21}

Several studies were conducted in a number of countries to evaluate the parents' knowledge about emergency management of tooth avulsion.^{10,15,18,22-30} Unfortunately, to the best of my knowledge, no study of this type has been conducted in Saudi Arabia so far. So, the aim of this study was to evaluate the knowledge of parents with different educational levels about the emergency management of tooth avulsion in Saudi Arabia and their attitude toward receiving further education on the emergency management of tooth avulsion.

METHODS

This is a cross-sectional study conducted from Au-

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gust to December 2016, at King Abdulaziz University, Faculty of Dentistry (KAUFD). Ethical approval was sought from the Research Ethics Committee of KAUFD (#052-16). After explaining the nature and the purpose of the study, informed written consent was obtained from each participant. Then, the parents were asked to fill in a questionnaire in the patients waiting area. The questionnaire was distributed in both Arabic and English languages. It was formulated in a simple language format for the parents to understand. The parents were given the chance to ask or comment on the questions, however, very few inquiries were made and the questionnaires were collected on the spot. One examiner applied the questionnaire who was oriented not to influence on patients answers. Confidentiality was maintained as these questionnaires were anonymous.

The questionnaire consisted of 23 questions. The first eleven questions were about general demographic data and any history of TDI. The rest of the questions were close-ended questions which had options to assess the parents' general knowledge about the emergency management of avulsed teeth. The final question was about the parents' attitude toward receiving information about the emergency management of avulsed teeth.

To avoid data contamination, educational leaflets were distributed to parents after the end of this study. Data were collected, tabulated and statistically analyzed using T test and one way ANOVA test (SPSS program, version 20, SPSS, Chicago, IL, USA).

RESULTS

Demographic data- Table1

A total of 480 parents who attended KAUFD participated voluntarily in the study. None of them refused to participate. The majority of the participants were male (58.1%), between the age of 40-49 years (53.8%). 66.25% of them were Saudi and 33.75% were non-Saudi. 58.5% were living in Jeddah and the rest were from the rural areas of Jeddah (41.5%).

Previous knowledge and experience with dental avulsion- Table2

Data revealed that 70.6% of the respondents did not have prior knowledge of tooth avulsion. The dentist was the source of information to 29.4% of those who had previous knowledge. 41.9% of the participants mentioned that they had previous experience with tooth avulsion. 25.2% of them, had one of their children with tooth avulsion and the rest (16.7%) were the parents themselves.

Most of these children were male (67.8%) aged 4-6 years old. The majority of the participants (68.3%) thought that the avulsed tooth should be treated. When participants were asked about the necessity of saving the avulsed tooth, 62.1% of them answered positively. Knowledge about re-implantation, cleaning and transport media- table3

Most of the participants (79%) will go to the dentist in the case of avulsion, however, 37.9% of them will go immediately. 8.5% of the participants would replant the tooth and place it in its socket if the tooth is still in the child's mouth. However, 4% of them would keep it or replant it if it was outside the child's mouth. 32.5% of those who chose to keep the tooth, chose to rinse the tooth with water and 8.3% of them selected milk as a transport media for the avulsed tooth.

Parents Attitude- Table 1

Most of the participants (87.7%) had shown interest in receiving more information in order to properly manage such injuries.

Group comparisons on knowledge level- Table 1

To compare mean knowledge of parents' different levels of education, as well as gender, nationality, place of living, history of avulsion, and attitude towards learning, t- test (SPSS, version 20; SPSS, Chicago, IL, USA) was used. There were statistical significant differences between parents' gender ($p=0.000$), nationality ($p=0.000$), place of living ($p=0.000$), and attitude towards learning ($p=0.000$). However, there were no statistical significant differences in the mean knowledge between parents' different levels of education ($p=0.910$) and presence or absence of previous history of avulsion ($p=0.187$).

Results showed that females had better knowledge about the ER management of tooth avulsion than males ($p=0.000$). Furthermore, Saudis had better knowledge than non-Saudis ($p=0.000$). Additionally, parents living in Jeddah had better knowledge than those living in rural areas outside Jeddah ($p=0.000$). Moreover, parents with interest in learning about the ER management had better knowledge than those without interest ($p=0.000$).

To compare mean knowledge of different parents' age, one way ANOVA test (SPSS, version 20; SPSS, Chicago, IL, USA) was used. There was a statistical significant difference between age groups ($p=0.000$). Results showed that knowledge increased with age.

DISCUSSION

This study was conducted to evaluate the parents' knowledge about the ER management of tooth avulsion in Saudi Arabia, and to assess its relation to their educational levels. The results of this study showed that the majority of the respondents (70.6%) did not have prior knowledge about the ER management of tooth avulsion which is in agreement with the results of previous studies in different countries.^{15,24,31}

The first thing to do in the case of avulsion is to look for the avulsed tooth and replant it.^{4,7,11-14} In the present study, most of the participants choose to remove the tooth outside the child's mouth if it was out of its place. Very few participants would keep the avulsed tooth which is in agreement with Loo et al.³¹ In addition

TABLE 1: DEMOGRAPHIC DATA AND KNOWLEDGE LEVEL OF THE PARTICIPANTS

Variable		N	%	Mean	SD	P value
Gender	Male	279	58.1	39.68	13.11	0.000
	Female	201	41.8	50	20.69	
Age	20-29	121	25.2	38.89	20.11	0.000
	30-39	101	21	46.67	17.87	
	40-49	258	53.8	55.56	15.81	
Place of living	Jeddah	281	58.5	50	18.7	0.000
	Outside (rural areas)	199	41.5	37.04	10.5	
Nationality	Saudi	318	66.25	48.61	18.82	0.000
	Non Saudi	162	33.75	36.51	7.8	
Education	School	221	46	43.2	18.09	0.910
	University	259	54	43.43	16.07	
History of tooth avulsion to parent or child	Yes	201	41.9	45.68	15.26	0.187
	No	279	58.1	42.96	18.56	
Attitude toward learning	Yes	421	87.7	46.56	17.03	0.000
	No	59	12.3	25.93	5.28	

TABLE2: PREVIOUS KNOWLEDGE AND EXPERIENCE WITH DENTAL AVULSION

Questions	Options	Frequency	%
Have you ever received any information regarding traumatic dental injuries (TDI)?	Yes	141	29.4
	No	339	70.6
If yes, what was your primary source information?	Dentist	141	29.4
	Other	0	0
	NA*	340	70.8
Have you ever had any dental trauma?	Yes	80	16.7
	No	400	83.3
Did your child ever have any dental trauma?	Yes	121	25.2
	No	359	74.8
If yes, what was the child age?	4Y	40	8.3
	6Y	41	8.3
	7Y	22	4.2
	14Y	18	4.2
	NA*	359	74.8
Boy or girl?	Male	82	17.1
	Female	39	8.1
	NA*	359	74.8
Do you think treatment is needed for avulsed (knocked out) tooth?	Yes	328	68.3
	No	152	31.7
Do you think it is necessary to save the avulsed teeth?	Yes	298	62.1
	No	182	37.9

*NA: answered (No) to the previous question.

to this, study of Data of this study revealed that most of the participants would discard the tooth if it was outside the child's mouth however, few participants (4%) would replant it which is in consensus with previous studies.^{9,10,13,15,18,29} This could be attributed to the lack of the basic knowledge, and the fear of hurting the

child.^{9,13,28} Furthermore, few parents identified the appropriate method of cleaning the tooth which is rinsing. This was in agreement with earlier studies.^{9,15,17,31}

Immediate replantation is the most important factor that ensures a favorable outcome.^{4,7,11-14} If re-

TABLE 3: KNOWLEDGE ABOUT RE-IMPLANTATION, CLEANING AND TRANSPORT MEDIA

	Options	Frequency	%
To whom you will take the child first?	Physician	39	8.1
	Hospital	62	12.9
	Dentist	379	79.0
	When will you go for the treatment?	182	37.9
	Next day	119	24.8
	Later	99	20.6
What would you do if the tooth was in child's mouth, however, out of its place?	Only if any pain or other symptoms are noticed	80	16.7
	Put the tooth back into the its place	41	8.5
	Leave the tooth inside the mouth	61	12.7
	Remove the tooth outside the mouth	378	78.8
	What will you do if you have found the knocked out tooth outside the mouth?	80	16.7
	Discard	381	79.3
How will you carry the tooth to the dentist?	Put the tooth back into the socket (its place)	19	4.0
	If you saved the tooth, What will you do with it?	156	32.5
	Clean it with a tissue or a paper	119	24.8
	Don't clean it	102	21.25
	Don't know	103	21.45
	Wrap in paper or gauze	241	50.2
	Put in ice	18	3.7
	Put in Water	19	4.0
	Put in Milk	40	8.3
	Put in Saline (salted water)	22	4.6
	Put in disinfecting solution	61	12.7
	Don't know	79	16.5

plantation was not feasible, then the tooth must be stored in a storage media to preserve periodontal cells viability.^{4,12,15-17} The ideal storage media is milk.^{4,12,15-17} Unfortunately, most of the participants choose to carry the tooth to the dentist wrapped in paper or gauze and very few choose milk as a transport media which is in agreement with previous studies.^{9,13,15,17,32} Additionally, most of the participants (79%) will go to the dentist in case of avulsion. However, 37.9% of them would go immediately. Instant treatment is very important for long-term success. This result is in consensus with Santos et al.¹⁷ where 73% of their participants will go to the dentist or specialized hospital.

Results showed that parents' level of education has no effect on the knowledge of immediate management of avulsed tooth. This finding is in consensus with previous studies carried out in several countries.^{9,15,25,27,32} Some of the participants were highly educated and few of them were physicians, however, their level of knowledge with regards to this subject was low as well. Moreover, it was assumed that parents with previous experience of avulsion injury were more likely to have the correct knowledge than those who had never experienced such an incident. However, our results showed that previous experience of avulsion injury has no effect on the knowledge as well. This could have been due to the fact

that these parents did not visit the dentist after the injury; or possibly their dentists concentrated on the treatment and ignored their important role of educating the parents because of the emergency situation.

Results of present study showed that parents living in Jeddah had better knowledge than those living in rural areas outside Jeddah. This could be due to the difficulty in seeking treatment¹³ as well as the difference in socio-economic status between the two groups. Likewise, there was a statistically significant difference between Saudi and non-Saudi parents. Most of the non-Saudi parents were laborers of low socio-economic status. Finally, parents that showed a better attitude toward learning had better knowledge than those who did not. This result is logical and understandable. These results reflected the importance of this study. Proper and immediate management of avulsed tooth will ensure a long-term success. Therefore, management of dental injuries should be added to the first-aid information or courses given to the public to raise the parents' knowledge and improve the prognosis of such cases.

Collecting a suitable sample was a limitation of the present study. However, the good response rate that the study had achieved over the large sample size collected, indicated that the sample was representative of the larger population. Likewise, the proper design

and ease of the questionnaire was indicated by the few inquiries made by the participants.

CONCLUSION

The study findings showed that the majority of parents lack the basic knowledge needed for the emergency management of tooth avulsion and the level of education has no impact on their knowledge. Therefore, educational programs are needed for parents to know how to manage such cases as this will encourage them to seek immediate treatment.

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