

EMERGENCY MANAGEMENT OF AVULSED TOOTH: KNOWLEDGE AND ATTITUDE OF TEACHERS AND STUDENTS

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ABSTRACT

Introduction: Children spend a considerable amount of time in school where teachers are the primary caregivers. Children are especially sensitive about missing anterior teeth. Immediate replantation of avulsed tooth more often contributes to an improved self-image and enhances self-esteem in children. Hence, **Aim;** to assess the school teachers' and students' knowledge and attitude about emergency management of avulsed tooth.

Subjects and Methods: A Cross-sectional study design was utilized to meet the aim of the study. A multistage sample; 384 students from private school and 384 from public ones, as well as, 372 teachers from private school and 383 from public ones, from Sohag and Minia Governorate. A questionnaire sheet was designed to collect the essential data.

Results: Data indicated insufficient knowledge for 76.9 percent of private school teachers. While in public school, only seventy nine percent had insufficient knowledge. Also Insufficient knowledge for 83 percent of private school students and 87.3 percent in public school students.

Conclusion: The level of teachers' and students' knowledge was insufficient.

KEY WORDS: Students, Teachers, Knowledge, attitude, Avulsed tooth, Permanent Incisor.

INTRODUCTION

One of the greatest assets a person can have is a '*Smile*', which shows beautiful, natural teeth. Children and teenagers are especially sensitive about missing anterior teeth and there is often a conscious effort to avoid smiling. The permanent anterior teeth

are not only important for esthetics, but are also essential for speech (phonetics), mastication, health of supporting tissues and psychological and mental health of children. Hence, immediate replantation of avulsed or knocked out teeth (Permanent incisors) more often contributes to an improved self-image and enhances self-esteem in children. ⁽²⁷⁾

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Andreasen et al.,(2012)⁽⁶⁾defined tooth avulsion as a complete displacement of the tooth from its socket. The frequency of tooth avulsion following traumatic injuries ranges from 0.5 to 16% of traumatic injuries in the permanent dentition and from 7 to 13% in the primary dentition. The sooner avulsed permanent teeth are replanted the greater chance for a favorable outcome.

Replantation of an avulsed tooth is preferably done at the injury site to minimize extra -alveolar time. The tooth is rinsed with cold tap water for ten seconds to remove any gross contaminants and then immediately replanted in its socket. The patient is referred to the dental care facility for stabilization and antibiotic prophylaxis⁽²⁴⁾.

Emergency management of traumatic dental injuries is not only the responsibility of dentists but also of lay people such as school teachers available at the site of the accident. School teachers are likely to be among the first to see a child immediately after an injury has occurred also these children spend about 40% of their awake time in school are incompetent to carry out emergency treatment of an avulsed tooth. Therefore the knowledge and attitude of school teachers and students regarding emergency management of dental trauma is critical to ensure good prognosis of the clinical treatment.⁽²¹⁾

Schools are common locations where traumatic dental injuries occur. For the management of avulsed permanent tooth, immediate replantation of the tooth back into its socket is generally the accepted treatment of choice. The viability of the periodontal ligament left on the root surface of the tooth and the prevention of dehydration of the tooth by placing in appropriate storage medium during transportation are important factors in the prognosis of replanted tooth^(19,1).

In Upper Egypt Governorate, no studies were conducted to assess knowledge and attitude of parents, teachers or students regarding the emergency treatment of avulsed teeth. Such studies are essential since it will help in planning effective preventive program in this field.

AIM OF THE STUDY

The aim of this study was to evaluate the knowledge and attitude of teachers and students toward emergency management of avulsed tooth

SUBJECTS AND METHODS

3.1 Study design:

This is a cross sectional study was undertaken to evaluate the knowledge and attitude of teachers and students about emergency management of avulsed tooth. The study was enrolled in both Sohag and Minia governorates.

3.2 Sample size calculation

Sample size consisted of 384 students from public school, 384 from private school, and 383 teachers from public school and 372 from private school and calculated according $n = Z^2(p)(1-p)/c^2$ ⁽¹²⁾.

3.3 Sampling design

Twenty school (10 public and 10 private) were randomly selected from schools were included with a sampling by a probability proportional to the school size from Minia and Sohag by multistage cluster random sample. It was selected on the basis of ease of accessibility. First-two governorate; Minia and Sohag were selected as representative for Upper Egypt. Then, a List of primary and preparatory school of both governorates were prepared (sampling frame). A random sample was selected from these clusters by drawing lots. Children aged 7-14 of both sexes were randomly selected from these schools by a probability proportional to the school size. All teachers from schools who were willing to participate were included in the study.

3.4-approval and regulation authority:

The approvals of the Central Agency for Public Mobilization and Statistics, In accordance with resolution No. (1528) for the year 2015. The Ministry of Education, Ethics Committee, teachers and students and were obtained.

3.5- Data collection:

Dental questionnaire was prepared in accordance with **Setty.,2011⁽²⁵⁾** and **Kaur et al.,2014⁽¹⁶⁾** to evaluate the knowledge and attitude of teachers and students toward emergency management of avulsed tooth, It was formulated in simple Arabic language to be easily interpreted by students and teachers. It consists of two parts **Part-I**, of questionnaire were filled by the participants in the presence of the author including demographic details. **Part II**, of questionnaire was short 12questions, designed to evaluate the knowledge and attitude of teachers and students toward emergency management of avulsed tooth. All question were close-ended (multiple-choice questions), except for demographic data . Filled questionnaires were collected on the same day. The survey was conducted over five month period.

To quantify the knowledge of the participant, according to guideline of IADT, eight questions were selected as the main question showing the knowledge of the participant for emergency management of tooth avulsion ⁽⁴⁾.

To facilitate interpretation, the answers to each question were dichotomized to "acceptable" or "not acceptable". The participant was given a score of one for every "acceptable" answer to a question and a score of zero for every "not acceptable" answer to question. The sum of correct answers to the questions for each participant was calculated, giving the knowledge score. Participant who have one, two or three wrong answer (more than 60%) were considered to have **Sufficient** knowledge and attitude while those who have more than three

wrong answer (less than 60%) were considered to have **Insufficient** knowledge and attitude toward emergency management of avulsed tooth ⁽²⁷⁾.

Filled questionnaire was numberly and randomly coded and delivered to other researcher (supervisors prof dr /Nagwa Mohammed Ali Khattab and dr / Amro Mohamed Moness) after dissimulation of all demographic data and so knowledge and attitude was assessed in blind manner

3.6 Statistical method:

All the obtained data were compiled and tabulated systematically in Microsoft Excel Spreadsheet and subjected to statistical analysis (SPSS version 17.0 (IBM Corporation, SPSS Inc., Chicago, IL, USA).

Knowledge score for each individual was calculated by assigning a score of 1 for each correct answer. Scores for questions 1-8 were added together to get a "knowledge score" for each individual. Mean knowledge score was calculated by dividing the total knowledge scores of all individuals by the number of individuals. For all the previous tests a probability value was used, **the significant** level was set at $p \leq 0.05$

RESULTS

A) Distribution of study sample:

Total of 372 teachers from private schools and 383 from public as well as 384 students from private schools and 384 from public schools were selected to conduct the present study. The demographic characteristics of the teachers in both public and private schools were presented in Table 1 while demographic data of the students was listed in table 2

B) Knowledge survey:

This part gathered information on teachers' and students' knowledge in several area. This has typically covered sections regarding knowledge

of replantation of avulsed tooth, handling and preparation of avulsed tooth, as well as ideal time for replantation and storage media for avulsed tooth and finally referral patient with avulsed tooth.

Regarding correct answer of teachers to knowledgeable questions (table 3): Majority of teachers know the correct answer for replantation of deciduous teeth while 30% of them only opted the correct answer for replantation of permanent teeth. One third of teachers were aware about urgency in seeking treatment. Nearly Forty-eight percent of teachers reported that they would rinse the tooth gently with tap water. Half of teachers reported that the correct holding method of an avulsed tooth. While the response of teachers regarding selection of storage medium revealed that one fifth had correct information storage media. Also similar percentage suggested suitable storage medias. Finally teachers asked about the emergency care procedure of choice in such cases, more than 68% of teachers of both private and public school would take the child to a dentists.

Regarding correct answer of students to knowledgeable questions. A significantly higher number of students in private schools (88.3% and 47.8%) compared with public one (78.6% and 35.5), reported correct answer for replantation of deciduous teeth and handling of tooth respectively. In contrast a significantly higher number of students in public schools (83.2%) compared with private one (65.8%) reported correct answer when asked about urgency in seeking treatment. Responses of students to other answer were presented in table 4.

C) Attitude survey

The teachers' responses to questions regarding their information about avulsed tooth are summarized in tables 5. Few numbers of them had received education on tooth avulsion. While about

seeing tooth avulsion nearly one third of teachers had seen tooth avulsion. The major sources of information they received were dentists as reported by half of teachers, followed by media. Most of teachers were unsatisfied with their knowledge regarding emergency management of dental trauma and tooth avulsion, only 52(15.6%) & 45(12.3%) teachers from private and public school respectively feels that have adequately information.

The students' responses to questions regarding their information about avulsed tooth are summarized in tables 6. Two third of students have never received any advice about what to do when a tooth is avulsed. Number of students had seen tooth avulsion was 85 students in private school and 179 students in public school. The majority of students from private and public school were unsatisfied with their knowledge regarding emergency management of dental trauma and tooth avulsion, only 99(25.8%) & 82(22.2%) students from private and public school respectively feels that have adequately information. The major sources of information they received were dentists as reported by 235(61.4%) students in private school and 258(69.9%) students in public school.

D) Results of knowledge question

The mean knowledge score for private schoolteacher regarding management of tooth avulsion was 3.3 (SD=1.5) and for public school was 3.3 (SD=1.4) out of a total possible score of 8. Data indicated low degree of knowledge for 76.9 percent of private schoolteacher. Among public school, only seventy nine percent had low knowledge. While The mean knowledge score for private school student regarding management of tooth avulsion was 3.3 (SD=1.2) and for public school was 3.3 (SD=1.1) out of a total possible score of 8. Data indicated low degree of knowledge for 83 percent of private school student and 87.3 percent of public one. (Figure 1)

TABLE (1): Distribution of the studied teachers according to their demographic characteristics

Demographic characteristics		Private school teachers	Public school teachers	P value
Age	Range	22-60	22-60	0.001*
	Mean±SD	39.5±9.9	42.5±9.1	
Sex	Male	146(43.7%)	165(45.1%)	0.009*
	Female	175(52.4%)	199(54.4%)	
Residence	Rural	56(16.8%)	103(28.1%)	0.001*
	Urban	278(83.2%)	263(71.9%)	
Governorate	Minia	50(15%)	70(19.1%)	0.1
	Sohage	284(85%)	269(80.9%)	
Total		334	366	

TABLE (2): Distribution of the studied students according to their demographics characteristics

Demographic characteristics		Private school students	Public school students	P value
Age	Range	7.5-15	2-14	0.001*
	Mean±SD	9.3±1.1	11.09±1.2	
Sex	Male	220(57.4%)	140(37.9%)	0.001*
	Female	163(42.6%)	229(62.1%)	
Residence	Rural	0	162(43.9%)	0.001*
	Urban	383(100%)	207(56.1%)	
Governorate	Minia	91(23.8%)	100(27.1%)	0.2
	Sohage	292(76.2%)	269(72.9%)	
Total		383	369	

TABLE (3): Correct answer of teachers about knowledgeable questions:

Knowledge item	Correct answers				P
	private teacher		Public teacher		
	No	%	No	%	
Knowledge about replantation of deciduous tooth	246	73.7	270	73.8	0.8
Knowledge about replantation of permanent tooth	98	29.3	102	27.9	0.1
Urgency in seeking treatment.	119	35.6	138	37.7	0.1
Preparing the tooth prior to replantation	160	47.9	158	43.2	0.2
Knowledge on handling of avulsed tooth during cleaning	146	43.7	161	44.4%	0.4
Knowledge of students about storage media for avulsed tooth	63	18.8	75	20.5	0.007
Information regarding the most suitable storage media for avulsed tooth	63	18.8	75	20.5	0.007
consultation of Avulsed tooth with soft tissue injury	227	68	256	69.9	0.1

TABLE (4): Correct answer of students about knowledgeable questions:

Knowledge item	Correct answers				P value
	Private school students		Public school students		
	No	%	No	%	
Knowledge about replantation of deciduous tooth	338	88.3	289	78.6	0.001*
Knowledge about replantation of permanent tooth	54	14.1	54	14.6	0.03
Urgency in seeking treatment.	252	65.8	307	83.2	0.001*
Preparing the tooth prior to replantation	63	16.4	62	16.8	0.001*
Knowledge on handling of avulsed tooth during cleaning	183	47.8	131	35.5	0.005*
Knowledge of students about storage media for avulsed tooth	48	12.6	21	5.7	0.04*
Information regarding the most suitable storage media for avulsed tooth	48	12.6*	21	5.7*	0.04*
Consultation of Avulsed tooth with soft tissue injury	227	68	256	69.9	0.1

TABLE (5): Comparison between private and public school teachers regarding their information about avulsed tooth:

Responses	Private school teachers	Public school teachers	P value
Education on tooth avulsion	131(39.2%)	147(40.2%)	0.3
Seeing case with permanent tooth avulsion	99(29.6%)	102(27.9%)	0.2
Feeling adequately informed about traumatic dental injuries	52(15.6%)	45(12.3%)	0.1
Source of information:			0.6
• Media	72(21.6%)	81(22.1%)	
• Dentists	171(51.2%)	195(53.3%)	
• Friends, Teachers	24(7.2%)	27(7.4%)	
• Others	28(8.4%)	20(5.5%)	
• Non	39(11.7%)	43(11.7%)	
Total	334	366	

TABLE (6): Comparison between private and public school children regarding their information about avulsed tooth

Responses	Private school children	Public school children	P value
Education on tooth avulsion	141(36.8%)	129(35%)	0.4
Seeing case with permanent tooth avulsion	85(22.2%)	179(48.5%)	0.003*
Feeling adequately informed about traumatic dental injuries	99(25.8%)	82(22.2%)	0.1
Source of information:			0.008*
• Media	40(10.4%)	43(11.7%)	
• Dentists	235(61.4%)	258(69.9%)	
• Friends, Teachers	14(3.7%)	14(3.8%)	
• Others	66(17.2%)	44(11.9%)	
• Non	28(7.4%)	10(2.7%)	

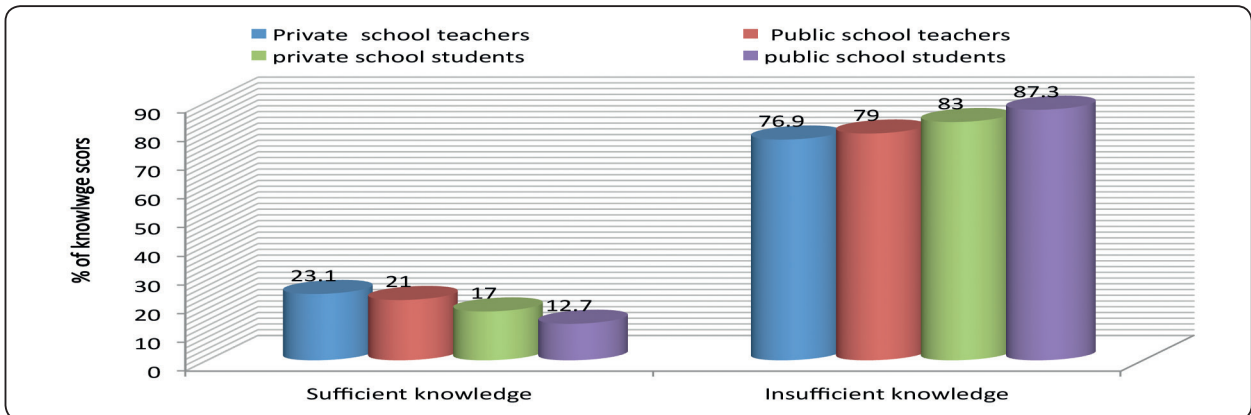


Fig. (1) Knowledge and attitude scores of teachers and students

DISCUSSION

The result of study showed that the most of teachers and students had insufficient knowledge about tooth avulsion. A finding that is in line with the results of other studies, **Toure et al.,2001** ⁽²⁸⁾ high lightened the lack of knowledge of Morocco teachers regarding dental trauma and especially tooth avulsion. **Mori et al.2006**⁽¹⁹⁾ in Admantantina, Brazil, concluded that the lack of knowledge of teachers on tooth avulsion; Also **Abdellatif and Hegazy., in 2011**⁽¹⁾ found that Egyptian parents has low knowledge regarding the emergency management of avulsed teeth. **In 2015, Adekoya et al.,**⁽⁴⁾ in Nigerian, demonstrated that the knowledge of school children on avulsion and replantation of teeth was low.

The sample size of the study was comparable to similar studies, and the questionnaire randomly distributed over large area in two governorates this adds to the accuracy, reliability of our study results and the results can be generalized with caution to a wider population.

The formulas used to calculate the sample size (ss) of teachers and students were previously used by **Ebrahimpour 2012**⁽¹²⁾ to determine sample size of fire services staff during assessment of their understanding about tooth avulsion. Also same formula was used by **chopra et al. 2014**⁽¹⁰⁾ during

their study to evaluate traumatic dental injuries among 12-15-year-old-school children in panchkula city in India.

The target populations were children aged 7-14 years, this age group was the most common for TDIs. School teachers were also included in the studied population since they are the first people who may confronted with traumatic injuries in school children.

The questionnaire for this study was inspired from a similar study done by **setty, 2011** ⁽²⁵⁾ and **Kaur et al., 2014**⁽¹⁶⁾. It was translated in both Arabic language and was checked by other authors so as to ratify the study, It consisted of two parts Part-I of questionnaire were filled by the participants in the presence of the author (demographic details). Part II, of questionnaire was designed to evaluate the knowledge and attitude of teachers and students toward emergency management of avulsed tooth.

In the present study, nearly one third of teachers had witnessed situations where a child's tooth was avulsed and unfortunately most of them could not provide first aid emergency treatment for children. Also more than one third of student from public and private schools had seen this situation. This result was agreed with other studies as **Caglar et al., 2005**⁽⁸⁾, **Mesgarzadeh et al., 2009**⁽¹⁸⁾ and **Thabet and Abed El-kerim.,2016**⁽²⁷⁾ which stated that,

35.8%, 47.2%, and 36% of teachers, respectively had experienced close encounters with dental trauma .also reported similar results.

In the current study, few percent of teachers and students received first aid training about dental trauma and tooth avulsion. This result disagree with **Abu-Dawoud et al., 2007**⁽²⁾ who reported that 61.7% of physicians had received information about tooth avulsion. However our results matched with **Setty.,2011**⁽²⁵⁾ and **Hashim.,2012**⁽¹⁴⁾, which reported that 8% and 19.2% of teachers had received training in first aid methods on emergency management of traumatized tooth

The results of the present study showed that more than half of teachers and students was not satisfied with their knowledge on avulsed tooth and the majority of them requested conduct of educational program on management of avulsed or broken tooth. These results agreed with **Setty.,2011**⁽²⁵⁾ who stated that, majority of the teachers were not satisfied with the knowledge of dental trauma and most of them thought it is important for them to have an educational program in the “management of dental trauma. This unsatisfactory level of teachers’ and students’ knowledge combined their desire to improve their knowledge necessitate the importance of planning and implementing educational program for first aid management of tooth avulsion and providing training courses on this era.

Further analysis of the result showed that there was no statistically significant difference in the knowledge levels among the teachers and students whose received advice about tooth avulsion and those who had never received advice ($p>0.05$). This observation was in accordance with a previous study done by **Olatosi et al. 2013**⁽²¹⁾ among Nigerian school teachers. This finding may be attributed to the fact that in most of the dental health education programs, more emphasis on maintenance of dental hygiene is stressed rather than management of avulsive injuries. Or it might be due to lack of

frequent implementation of such program that result in information fading and subsequently change in their attitude. The cause for such a finding cannot be ascertained as the author did not collect any data about the type of educative program the teachers had attended or the topics covered, as well as the duration and frequency of these programs.

Results of the current study, also showed that there was a statistically significant relationship between the knowledge of teacher and their age ($p<0.05$). Where younger teachers had better knowledge than older ones. While there were no statistically significant association between the knowledge of students and their age ($p>0.05$). This finding may attributed to wide range in teacher’s age while all children were nearly of same age groups. In contrary **Haragushiku et al.,2010**⁽¹³⁾ and **Basir et al., 2013**⁽⁷⁾ and **Young et al.,2014**⁽³⁰⁾ did not find any statistically significant between age of teachers and emergency management of avulsed tooth. But Similar findings were reported by **Panahi et al.,2014**⁽²³⁾.

When a tooth is avulsed, the periodontal ligament fibers and neuromuscular bundles at the root apex are severed and the pulp and periodontal ligament cells begin to deteriorate. Therefore avulsed tooth should be properly handled and immediately replanted (**Andersson et al.,2012**)⁽⁶⁾. Teachers and students were asked about their opinion in replanting avulsed primary tooth, the majority of them reply that “they would not replant”. A response that follows the American Academy of Pediatric Dentistry guidelines; which contraindicate the replantation of avulsed deciduous teeth to prevent pulp necrosis and further injury to the developing permanent teeth. These finding goes in accordance with the results of **Addo et al. 2007**⁽³⁾ and **Hashim et al.,2012**⁽¹⁴⁾

Successful replantation of an avulsed permanent tooth is dependent solely on two factors which are extra-oral drying time and the storage medium

of the avulsed tooth. Some clinical studies have demonstrated that the immediate replantation of an avulsed tooth is necessary for the regeneration of the periodontal ligament. In the present study more than one third of the teachers and students were unaware that an avulsed permanent tooth could be replanted. This finding reflected lack of knowledge among teachers and students about replantation of avulsed tooth necessitate urgent need for health education. Similar responses were reported in studies done by **Zakirulla et al.,(2011)**⁽³¹⁾ and **Olatosi et al., (2013)**⁽⁴⁾

Time is one of the most critical factors for success of replantation of avulsed tooth to preserve its vitality after replantation. The current study, with respect to the extra oral time permissible for a tooth prior to replantation; about one third of teachers and two third students choose “immediate replantion” to be appropriate time. The response of students was higher than teachers which reflect higher knowledge of students than teachers about this topic. This is because students are more discourse with the internet and modern technology than teachers which would influence their knowledge about tooth avulsion. However, the reported percentage in our study was higher than Saudi Arabian school teachers where only 6% and 10% of teachers said that tooth should be replanted immediately(**Zakirulla et al.,2011**)⁽²²⁾. Also in a study conducted by **Kaur et al., 2014**⁽¹²⁾, among Indian teachers, it was found that 2% and 4%of teachers in rural and urban area respectively replied that the ideal time for replanting avulsed tooth is between 5 and 30 min. This differences among various studies would be due to difference in studied population or variation in survey questionnaire

In most of tooth avulsion cases, the avulsed tooth would fall on the ground and get dirty. The knowledge to clean a dirty avulsed tooth is also very important. Nearly forty-five percent of teachers in private and public schools replied that they “would

rinse with tap water” compared to sixteen percent of students. This results was lower than Indian school teachers where **Natarajan et al.,2013**⁽²³⁾, and **Shamarao et al.,2014**⁽²⁴⁾ found that 60.3% and 62.5% of teachers respectively would rinsing the tooth with tap water. Likewise **De Lima Ludgero et al. 2015**⁽¹¹⁾ in their study found that 67.8% of teachers would clean the tooth with water. It can be argued that the differences in the results might be due to the different number of correct answers to the same questions provided to the participants or to the different modalities of asking the same question.

Another important aspect in the management of avulsed teeth is tooth manipulation. The avulsed tooth should be handled by the crown, not touching the root, avoiding contact with and possible damage to periodontal ligament cells (**Andreasen et al.,2007**). Our survey showed that 44% of teacher and about 45% of student decided to hold the tooth by its crown. This was in agreement with **paligran et al., 2011**⁽²⁶⁾ who found 46.5% of the physical education teachers did not know how to correctly handle an avulsed tooth.

A great deal of confusion about ideal transport media was observed among respondents, 20% of teachers and 33.2% of students preferred to wrapped the tooth in tissue paper or cotton and about 23%%teacher and 15.4% of student from private and public schools considered the antiseptic solution the best medium for storage and transportation with only 12.5% of teachers as well as about 5% of student identifying milk as the best media of transportation of avulsed tooth. This reflects lack of adequate knowledge regarding suitable medium for transport of an avulsed tooth similar finding were reported by **Setty.,2011**⁽¹¹⁾, in India , who observed that among respondents, 55% of teachers preferred wet hand kerchief and about 29% of participants considered normal saline as the best medium for storage and transportation of avulsed tooth.

Although milk, which can usually be found in the vicinity of the place of accident, has a favorable osmolality and composition for the viability of periodontal ligament cells and therefore has been recommended for temporary storage of avulsed teeth before replantation. Few number of teachers and students in private and public school opted milk as best transport media for avulsed tooth. Similar response were found in Ahvaz, Iran, where only 6.7% of respondents preferred to keep the avulsed tooth in milk (**Basir et al., 2013**)⁽⁷⁾. Likewise **Kaur et al., 2014**⁽¹⁶⁾ found that 8% to 9.3 of participants preferred milk as the best transportation medium. These percentage were considerably low when compared to the study results of **Chan et al., 2001**⁽⁹⁾ in Hong Kong were 21.5% of participants chose milk as the transport media. This difference is because the knowledge is higher among the Hongkong teachers who received frequent education and training in this era.

It should be noted again that the different ways of asking the same question and more importantly, the different options given might skew the answers from one study to another. As an example, for some reason a large percentage of teachers and students selected! "antiseptic solution" as a correct way to store and transport avulsed tooth. Some studies did not have "antiseptic solution" as an option in the answers to the same question. This inevitably raises the question whether providing such an option contributes to more incorrect response rates and on the Other hand not offering such choices underestimates the respondent's level of knowledge.

A matter of interest in this study was that the majority of the teachers and students reported that they would attend dentist rather than the Physician for management of avulsed tooth. Since knowledge of physicians and medical professionals about tooth avulsion is inadequate for emergency management of tooth avulsion.^(2, 29)

More than 85% of teacher and 75% of the stu-

dents in private and public schools reported that they did not adequately informed about traumatic dental injuries and tooth avulsion, although about 35% of those children and 39% of the teachers had received some advice about what to do when a tooth is avulsed. This means that the received advice could not unfunded or change the students or teachers knowledge. However the previously received knowledge was higher than the Jordanian school teacher study at which 11.8% had received advice (**Al-Jundi et al., 2005**)⁽⁶⁾. It was similar to the reported knowledge for elementary school teachers (39%) in the USA in study done by **McIntyre, 2008**⁽¹⁷⁾

Finally Most of teachers and students gained their information about tooth avulsion from either a dentist or media. The participant had opted other sources of information which Were not relevant to health education program

CONCLUSION

On the basis of the results of current study, the following can be concluded

- 1- The study demonstrated that public and private school teachers had insufficient knowledge about emergency management of avulsed tooth.
- 2- Also public and private school children had insufficient knowledge about emergency treatment of avulsed tooth
- 3- There was lack of insufficient education programs for both students and teachers regarding tooth avulsion
- 4- Majority of teachers and students from private and public school were unsatisfied with their knowledge regarding emergency management of dental trauma and tooth avulsion.
- 5- The main the sources of information for teachers and students were dentists followed by media
- 6- Private school teachers and students had slightly better knowledge than public one

RECOMMENDATION

- 1- Dental and medical institutional authorities in coordination with the school authorities should plan education programs to improve teacher's and student's knowledge and attitude toward management of avulsed tooth
- 2- First-aid management of dental trauma should include in the teacher training curriculum, would help teachers to act in a better way when faced with such situations
- 3- Dental camps should be held for school children and teachers on a regular basis to improve their and reinforce their knowledge and s highlighting emergency management of dental traumatic injuries and tooth avulsion
- 4- Multidisciplinary interaction between dentists and teachers in the public school network is necessary for positive interference in health promotion and prevention of more severe complications. This includes the dissemination of posters, leaflets, and information through lectures, television, magazines, radio and newspapers, or the Internet
- 5- Further similar study should be conducted on other area on Upper Egypt to provide core for educational program
- 6- Comparative studies should be conducted to evaluate the effect of an oral health knowledge and attitude of school children regarding tooth avulsion

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