



RESEARCH ARTICLE

EFFECT OF CUSTOM MADE POSTER REGARDING KNOWLEDGE AND AWARENESS OF EMERGENCY TOOTH AVULSION MANAGEMENT IN A COHORT OF GOVERNMENT PRIMARY SCHOOL TEACHERS

¹Ashish Loomba, ^{2,*}Abhishek Dhindsa, ²Shalini Garg, ²Damle, S. G., ³Isha Jatana and ¹Neetu Jain

¹Assistant Professor, Department of Pediatric and Preventive Dentistry, M.M. College of Dental Sciences and Research, Mullana (Ambala), India

²Professor, Department of Pediatric and Preventive Dentistry, M.M. College of Dental Sciences and Research, Mullana (Ambala), India

³Ex-Post Graduate student, Department of Pediatric and Preventive Dentistry, M.M. College of Dental Sciences and Research, Mullana (Ambala), India

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ABSTRACT

Aim: To evaluate influence and impact of custom made local language poster on awareness and knowledge of primary school teachers in Ambala district concerning emergency management regarding dental trauma.

Materials and Methods: A cluster randomised study consisting of primary school teachers was carried out in Ambala district, Haryana (India). A cohort group of 100 primary school teachers and physical instructors from 9 government primary schools in Ambala, Haryana participated in study. They were requested to answer an awareness and knowledge assessment questionnaire containing eleven questions about tooth avulsion and its emergency management in first phase. After which a self-explanatory poster showing a sikh boy explaining in Hindi language containing knowledge on tooth avulsion and its emergency management was displayed. The same cohort was made to re answers the same questionnaire again.

Results: 22.2% teachers had previous information about tooth avulsion statistically significant improvement in knowledge and awareness was observed after poster presentation. Knowledge that broken tooth fragment can be reattached increased from 16.7% to 51.4%, statistically significant (p value < 0.001). Knowledge on tooth replantation increased significantly from 13.9% to 62.2%, also the knowledge regarding time of reimplantation increased from 28.6% to 66.7% (p value < 0.05).

Conclusion: graphic Display of educational posters at primary schools in Ambala District for 2 weeks significantly improved level of knowledge on the management of dental trauma. Furthermore educational campaigns on dental trauma must be organized to improve knowledge on emergency management of dental avulsion.

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INTRODUCTION

Tooth injuries are the most common result of trauma in the orofacial region of children and they occur mostly in the developing years. Among the most serious types of dental injuries is avulsion which very often leads to the permanent loss of affected tooth and if permanent tooth is lost the loss is lifelong leading to psychological stress (Lieger et al., 2009; Feldens et al., 2010). Schools are the places to initiate dental trauma education programmes to educate people spending time with children (parents, guardians and mostly teachers (Feldens et al., 2010; Al-Obaida, 2010; Vergotine and Govoni, 2010; Hashim, 2012). The awareness of dental trauma management at the critical age range is important for the long term success of traumatized teeth (Caglar et al., 2012). All types of dental trauma should be treated as soon as possible after the event. This is most urgent for avulsed permanent incisors, when any

delay in replantation dramatically reduces their long-term survival (Jorge et al., 2009). Sport activity is one of the most common reasons for dental traumas among children and physical education instructors/teachers are important agents in the prevention of dental trauma (Mesgarzadeh et al., 2009). Moreover, as they are close to the incident of injury they have the potential to immediately shorten the time interval between avulsion and replantation (Jorge et al., 2009; Tziggounakis and Merglova, 2008). Physical training teachers should therefore be cognizant of dental trauma and its appropriate treatment such as insertion of an avulsed tooth back to its original location in the mouth as soon as possible (Oliveira et al., 2007; Bayrak et al., 2012). Unfortunately previous research has indicated that teachers in general and physical education teachers specifically, have little or no knowledge on this subject (Caglar et al., 2005). The literature has repeatedly emphasized the need for an educational campaign to improve this knowledge. The present study evaluated the influence and impact of self-explanatory poster on attitude and knowledge of school teachers in Ambala

*Corresponding author: Abhishek Dhindsa,

Professor, Department of Pediatric and Preventive Dentistry, M.M. College of Dental Sciences and Research, Mullana (Ambala), India.

District, Haryana, North India concerning emergency management in regards to dental avulsion and the various self-care actions taken by children and schoolteachers after trauma.

MATERIALS AND METHODS

Multistage cluster sampling procedure was used to select study group of 570 primary school teachers from 9 government primary schools of Ambala District. Prior permission for study was taken from Principal and respective school authorities. Simple random sample of 102 primary school teachers was finally considered and were recruited in study. Participation of teachers was voluntary and an informed consent letter was taken after giving complete information about the study. Two teachers could not participate due to change of school, so finally 100 teachers were subjected to result analysis as they participated both before and after education through poster. They were requested to answer a questionnaire containing eleven questions about tooth avulsion and its emergency management (Table 1).

For each question, there were two to seven possible responses, from which the teachers could choose one or more. Teachers were asked to complete and return the questionnaires plus information regarding their age, sex, and education level was also collected. Then after that a custom made self-explanatory poster in local language (both Hindi and English) (Figure 1) containing knowledge on tooth avulsion and its emergency management was displayed to the teachers. The poster depicted characteristic North India figures so as the teachers could easily correlate with the local demographics. It contained information about how one should react and behave in cases of tooth avulsion. The poster was not explained in detail by the dental health professionals. After half an hour teachers were again asked to answer the same questionnaire. We provided our contact information, in case respondents had any questions or further wanted knowledge about the emergency management of avulsion. A4 sized printout of the same poster was given to the principals of the school incorporated in the study and they were requested to put it on the school notice board so as to increase the awareness on tooth avulsion and it's

Table 1: Questionnaire to know awareness knowledge of the teachers about tooth avulsion

1.	If a tooth that has completely come out of its socket and fallen on the ground what would you do? A. Place it in hand or pocket B. Place it in handkerchief/ clean cloth C. Don't bother to pick it up C. In Milk D. In Saline
1.	Is it possible to reposition the tooth back in its socket A. Yes B. No
1.	If your answer is yes what should be ideal time for reimplantation A. Immediately B. Don't know C. Upto 30 minutes D. Upto one hour E. upto two hours F. upto 24 hours G. More than 24 Hr
1.	Do you think such type of information will be helpful to you?(on avulsion and reimplantation) A. Yes B. No
1.	Have you ever received any information on tooth avulsion/ reimplantation A. Yes B. No
1.	If a tooth fragment is broken off can it be reused A. Yes B. No
1.	If reusable how it should be stored A. Dry B. Wet
1.	Suggestions for dental education [ie. Which method as teacher you suggest for students and general public] A. Tv B. Posters C. Multimedia D. Movie E. Orally
1.	Have you yourself suffered from trauma A. Yes B. no If yes describe the incidence when where and how it was managed

Table 2: Crosstab's comparing the percentage of favourable responses of teachers before and after poster presentation. [=highly significant pvalue=0.0005(<0 .001) .*significant pvalue= 0 .01(<0.05)]**

Qno.	QUESTION	% of Favourable	
		Before presentation	After poster presentation
1	If a tooth that has completely come out of its socket and has fallen on the ground what would you do?	14.7%	31.4%
2	Is it possible to reposition the tooth back in its socket	13.9%	62.2%*
3	If your answer is yes what should be ideal time for reimplantation	28.6%	66.7%*
4	Do you think such type of information will be helpful to you	100%	100%
5	Have you ever received any information on tooth avulsion / reimplantation	22.2%	22.2%
6	If a tooth fragment is broken off can it be reused	16.7%	51.4%**
7	If reusable how it should be stored	87.9%	93.9%
8	Suggestions for dental education	47.4%	50.0%
9	Have you suffered dental trauma yourself	5.6%	13.9%

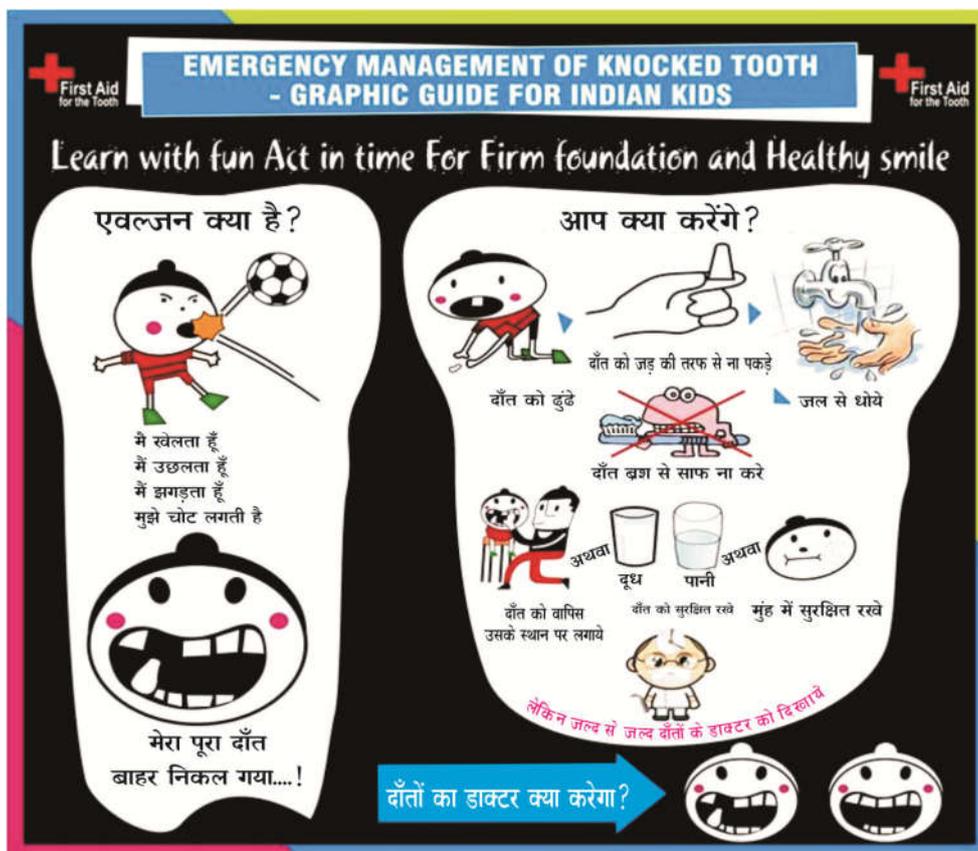


Figure 1. The custom made poster

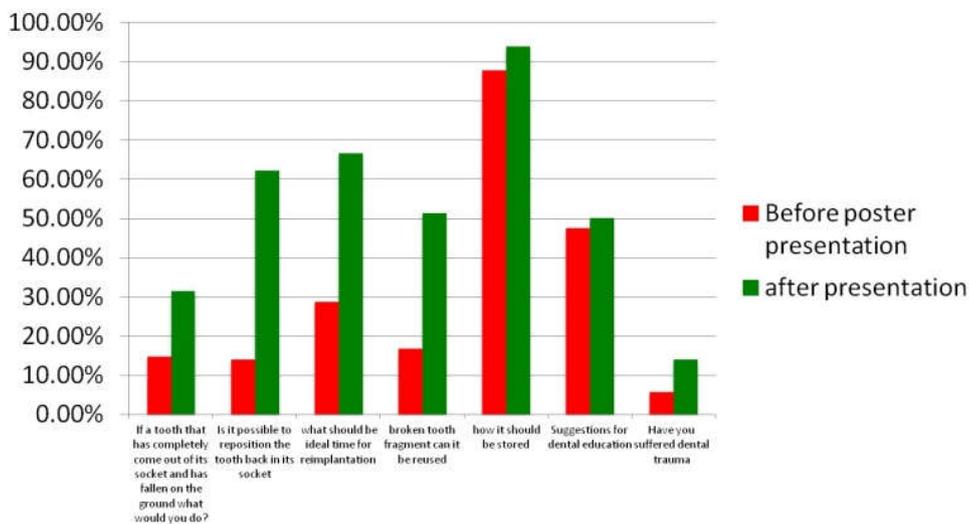


Figure 2. Comparative graph denoting the percentage difference of favourable answers before and after the study

emergency treatment amongst the staff and students of the school. Teachers were requested to increase the awareness about avulsion and its emergency management to children in their locality. But the teachers were not contacted again to know about the outcome of the awareness campaign. During grading correct answers to a question were given a score 1 while incorrect answers were given score 0. Results In the present study, a total of 100 questionnaire forms were distributed to school teachers of nine randomly selected government-aided schools in Ambala district, Haryana. One of the answer out of many options was considered favourable and the other options were taken unfavourable. The results were as following (Table 2). To give a rough estimate of the overall

effect of the posters on the selected population, we calculated the percentage increase in the favourable answers of the intervention on physical instructors plus school teachers before and after poster presentation. Only 22.2% teachers had previous information about tooth avulsion. The idea of getting knowledge by poster presentation was liked and welcomed by 100% both before and after poster presentation. The knowledge that a broken tooth fragment can be reattached increased from 16.7% to 51.4%, which was statistically significant ($p < 0.001$). Knowledge on tooth replantation increased significantly from 13.9% to 62.2%, also the knowledge regarding time of replantation from 28.6% to 66.7% ($p < 0.05$). The percentage of favourable answers

increased remarkably in case of every question which can be appreciated in Figure 2. Which is very encouraging showing an improvement in the level of knowledge on the management of dental trauma amongst school teachers.

DISCUSSION

100 primary school teachers from 9 government aided Primary schools who could read Hindi or English were recruited in this study in District Ambala, Haryana (India). As some schools display a lot of information for teachers and change the notices or posters quite frequently, a two-week display of the educational poster was chosen as it was not overly difficult to get schools to comply with this length of time. The information obtained from the Education Bureau was that every primary school had 3 places where the notices are mostly seen, were previously identified (medical room, staff common room, other notice board for teachers). For this reason, we chose these locations for poster display, ensuring minimal variation in environment for the teachers. Implementation of a research study or educational campaign of at least two weeks was feasible in schools in Ambala. Investigation of the long-term effect of these posters was outside the scope of this study, and we suggest that other researchers explore it. Educational posters are relatively cheap and easy to distribute, and no time limit exists, as teachers do not need to be gathered (as would, for example, a group of teachers attending a seminar or lecture). The locations chosen for poster display were practical, and long-term display in a medical office at a school was a feasible option. In summary, this is an effective means of improving knowledge of dental trauma (Lim and Lim, 2001). Poster was not explained and that could be a cause of lack of understanding by the school teachers. The need for repetition of Poster presentations along with oral presentations or other means is known to be necessary, in the health education literature, in order to maintain or increase knowledge levels. The findings of this study showed that the impact of a single poster presentation, can significantly improve the knowledge of school teachers regarding the appropriate immediate treatment of avulsed permanent teeth. Displaying educational posters improved the score statistically significantly for those who had not acquired dental knowledge from sources besides first aid training. This cannot and was not aimed at assessing a change in actual behaviour. Furthermore, it should be remembered that the above reported poster was an integral on-going component of an effort throughout the district regarding prevention of dental trauma. Posters had been placed in the schools, the educational authorities and superintendents had been involved, circulars had been sent to all teachers, etc. All of this could certainly have had a cumulative influence beyond the independent effect of the single poster presentation (Al-Asfour et al., 2008; Al-Jundi, 2006).

The findings of this study clearly indicate that further effort is needed to raise the level of awareness among teachers regarding the emergency management of traumatic dental injuries. A number of methods can be used for this purpose, including interactive seminars, leaflets, lectures, short documentaries and workshops through multimedia campaigning (Cohenca et al., 2006; Holan and Shmueli, 2003; Al-Asfour et al., 2006; Al-Jundi, 2006). In addition, the Internet, which is rapidly becoming a common source of information, may represent another promising avenue for enlightening both teachers and parents about dental trauma.

Conclusion

The display of educational posters at primary schools in Ambala District for 2 weeks significantly improved the level of knowledge amongst teachers on the management of dental trauma. The educational quotient of teachers on ideal time for re implantation, possibility of tooth repositioning in its socket and tooth fragment is broken off can be reused, increased significantly. More educational campaigns and preventive programs on dental trauma must be organized to improve the emergency management of tooth avulsion.

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