

Research Report

Online Seminar on Dental Health Management in Early Childhood Education Students (2–6 Years Old)

Betadion Rizki Sinaredi¹, Syafira Hasnarani P² and Virna Septianingtyas²

¹Department of Pediatric Dentistry,

²Department of Dental Public Health,
Faculty of Dental Medicine, Universitas Airlangga,
Surabaya, Indonesia

ABSTRACT

Background: Dental injuries can affect children's development both physically, psychologically and in social interactions, so it requires proper treatment. However, the lack of knowledge of parents and teachers about handling dental injuries in children is considered to worsen the condition of teeth and mouth after injury. **Purpose:** This activity aims to increase the knowledge of teachers in providing emergency dental management for children aged 2-6 years. **Methods:** This activity is in the form of online health education that involves early childhood, education teachers. Health education is carried out using the lecture method and discussion on emergency management and dental health in children. Increasing knowledge of activity participants was assessed using the google form provided before and after the activity was carried out. **Results:** This community empowerment activity shows an increase in the knowledge of teachers about health and dental emergencies in children after being given dental health education interventions (66.7%). This activity also found a decrease in the number of teachers with low levels of knowledge (33.3%). **Conclusion:** The increase in teachers' knowledge in providing dental emergency management in children can be caused by the use of accessible media and easy-to-understand module forms.

Keywords: dental injury; health education; knowledge factor; preschool-age children; online lecture

Correspondence: Betadion Rizki Sinaredi, Department of Pediatric Dentistry, Faculty of Dental Medicine, Universitas Airlangga. Jl. Mayjen Prof. Dr. Moestopo No. 47 Surabaya, East Java, 60132, Indonesia. Email: betadion@yahoo.com

INTRODUCTION

Dental injuries are currently the main causes of tooth decay and oral health problems in children.¹ Studies have shown a significant increase in the prevalence of dental injuries in recent years.² Oral health is one of the important factors that affects the health status of the human body.³ A healthy oral condition can be characterized by the functions of biting, chewing, smiling, and speaking freely and without hindrance.^{4,5} However, some dental and oral disorders cause the issues in dental and oral physiological functions.⁵

Dental injury is one of the dental and oral disorders that relate to physical and psychosocial development.^{6,7} Dental injury is a dental emergency, especially in children, due to an impact that is quite hard between the teeth and an object.⁸ Dental injury does not only affect the dental development, but also the supporting tissues and soft tissues around the teeth.⁹ In addition, some aspects and functions are also affected, such as: aspects of growth, appearance, speech function, swallowing function, taste function, and

the development of children's social interactions.^{6,7,10} Therefore, the management of dentoalveolar injuries in children shall be carried out immediately to reduce pain and complications.⁸

Dental emergencies in children often occur in places where they have a lot of activities, such as the home and school environment.^{11,12} Dental injury cases that often occur in children at school are caused by collisions and sports injuries.^{13,14} Parents and teachers have a role in a responsive and precise first-aid emergency dental care post-injury, before receiving dental treatment by dentists.^{15,16} Studies have stated that parental knowledge is an important factor in the management of dental emergencies in children.^{2,16,17} Knowledge and first aid management for dental emergencies avoid the risk of infection and suboptimal growth in permanent teeth.¹⁸ Emergency dental management is strongly influenced by the treatment of dental injuries within the first hour.¹⁷ Therefore, knowledge on the proper treatment will increase the effectiveness of the dental treatment process.¹⁸

The high incidence of dental injuries in children can be caused by the lack of knowledge and attention from parents regarding oral health.¹² A study shows the low level of teachers' knowledge about dental injuries.^{2,19} Another study states that one third of teachers in schools do not know about the management of dental trauma in children.¹⁶ In addition, more than half (55.2%) of teachers in primary schools in Saudi Arabia responded less appropriately to dental injuries, and the majority of teachers made mistakes in dental evacuation.¹⁹ In addition, a study in Malaysia showed only 9.3% of 150 teachers received training on dental injuries.²⁰ Epidemiological research at the Tahfidz Early Childhood Ashabul Qur'an (TAUD Sa-Qu) Surabaya, Indonesia, showed that 58.3% of the 24 teachers had poor understanding in dental emergencies in children. Therefore, this activity aimed to increase the knowledge and improve teachers responses in providing emergency dental treatment for children aged 2–6 years.

MATERIALS AND METHODS

This community empowerment activity was an online seminar on dental health education involving 24 preschool age children teachers (aged 2–6 years). The research subject was pre-school teachers, particularly teachers of Ashabul Qur'an Early Childhood Tahfidz teacher (TAUD Sa-Qu) Surabaya, Indonesia.

The seminar was followed by two-way discussion and evaluation of the respondents' understanding. The module entitled "Children's Dental Health and Emergency Management in Children" was distributed using WhatsApp and LINE applications. The seminar was conducted via Zoom. The objective of this community empowerment activity was to promote the management of dental emergencies in children. In addition, the participants were also expected to be able to implement the material obtained.

The evaluation was done through online forms distributed after the seminar.

RESULTS AND DISCUSSION

This community empowerment increased in the knowledge of TAUD Sa-Qu teachers on oral dental health and dental emergencies in children (Table 1.). More than half (67%) of respondents had increased their knowledge after participating in the seminar. Consequently, the number of teachers with poor understanding of the matter decreased by 33%. The data showed that 58% of teachers had poor understanding of oral dental health and dental emergencies in children before the intervention. Meanwhile, only 33% of teachers had excellent understanding of oral dental health and dental emergencies before the intervention.

The intervention has improved the teachers' understanding on the dental emergency and dental health. Two thirds of respondents has demonstrated a success of in the management of emergency dental health situations in children. This is in line with the previous study which reported a 70.83% increase in knowledge after the intervention.²¹ The study also demonstrated poor understanding on the emergency management of fractured teeth.²¹ Teachers need a health education to increase knowledge and awareness because they are the first-responder of dental trauma cases in schools.²² Dental health education is an effective way to increase knowledge, attitudes and behavior in dental care.^{23,24} Lack of knowledge on the subject matter has hindered the dental health education programs by teachers in schools.²⁵

After the intervention, respondents were able to answer the questions on first-aid management of dental trauma in children. However, 67% of respondents failed to answer the appropriate response on sudden tooth pain due to cavities in children (see Table 2).

Table 1. Teacher knowledge level on emergency and dental health management in children

Evaluation	Number of respondents	
	Excellent understanding	Poor understanding
Pre-test	42%	58%
Post-test	67%	33%

Table 2. Questions on dental health emergency in children

Question	Correct	Incorrect
First-aid measures for children with broken front teeth and cuts to the lips	100%	0%
First aid measures for children who experience sudden pain due to cavities	33.3%	66.7%
First aid measures for children to reduce swelling due to cavities	100%	0%
First aid measures for children with bruises on the lips and broken front teeth	66.7%	33.3%
Measures after calming down a child who cried due to pain caused by dental cavities	100%	0%
Measures to save a loose tooth before seeing a dentist	66.7%	33.3%
Measures to manage broken tooth and injured lips because the child fell and hit a table	100%	0%
Estimated time to re-implant the loose tooth.	66.7%	33.3%
Types of drugs used to manage tooth pain	66.7%	33.3%
First-aid measures for choking child	66.7%	33.3%

In the health education program, experts speakers are the main attraction for health education participants. This activity involved pediatric dentists who are considered competent in the field of pediatric dental health. Therefore, health education participants were strongly confident in the material presented. Two of the factors that influence the delivery were the preparation and completeness of the material presented.²⁴ However, there were many dental health education programs that have failed to reduce dental and oral health problems.²⁶ This dental health education used a module media with a design and language that are easy to understand by readers. A study found that illustration is quite effective in promoting information for participants with low understanding (the modules consisted of attractive pictures so that readers do not get bored of reading, especially the modules for children). The module was distributed in soft file for ease of access.

The number of complete and interactive literature on the emergency and dental health of children is still low. This indicates the high enthusiasm of health education participants in the dental health education process. In addition, disseminating information using social media can expand target audience. However, there was too many materials distributed and it possible made the readers feel bored and tired. Readers might also eyestrain because they have to stare at screen for extended period of time. This might cause failure in understanding the materials.

CONCLUSION

The intervention of providing dental health education to teachers can increase teachers' knowledge about proper management of dental emergencies and dental and oral health in children. Although the intervention was carried out online, the participants were quite enthusiastic, and they were able to understand the material quite easily. The intervention is expected to continue with a more attractive delivery and use more illustrations in order to further motivate the participant on the subject matter.

ACKNOWLEDGEMENTS

Tahfidz Early Childhood Ashabul Qur'an (TAUD Sa-Qu) Surabaya, Indonesia.

REFERENCES

1. Firmino RT, Siqueira MBLD, Vieira-Andrade RG, Gomes GB, Martins CC, Paiva SM, et al. Prediction factors for failure to seek treatment following traumatic dental injuries to primary teeth. *Braz Oral Res.* 2014;28(1):1–7.
2. Kaushal P, Singh T, Padda AS, Deepti SS, Bansal P, Satija M, et al. Impact of Health Education on The Knowledge, Attitude and Practices of Teachers Regarding Reproductive Health of Adolescents of Amritsar, Punjab. *J Clin Diagnostic Res.* 2015;9(5).
3. Ingle N, Chaly P, Zohara CK. Oral health related quality of

- life in adult population attending the outpatient department of a hospital in Chennai , India. *J Int Oral Heal.* 2010;2(4):45–55.
4. Çolak H, Dülgergil Ç, Dalli M, Hamidi M. Early childhood caries update: A review of causes, diagnoses, and treatments. Vol. 4, *Journal of Natural Science, Biology and Medicine.* Wolters Kluwer -- Medknow Publications; 2013. p. 29–38.
5. Razak PA, Richard KMJ, Thankachan RP, Hafiz KAA, Kumar KN, Sameer KM. Geriatric oral health: a review article. *J Int oral Heal JIOH.* 2014;6(6):110–6.
6. Rodd H, Noble F. Psychosocial impacts relating to dental injuries in childhood: The bigger picture. *Dent J.* 2019;7(1):1–7.
7. Arhakis A, Athanasiadou E, Vlachou C. Social and Psychological Aspects of Dental Trauma, Behavior Management of Young Patients Who have Suffered Dental Trauma. *Open Dent J.* 2017 Feb;11(1):41–7.
8. Moule A, Cohenca N. Emergency assessment and treatment planning for traumatic dental injuries. *Aust Dent J.* 2016 Mar;61:21–38.
9. Santos MESMI, Habecost APZ, Gomes FV, Weber JBB, De Oliveira MG. Parent and caretaker knowledge about avulsion of permanent teeth. *Dent Traumatol.* 2009 Apr;25(2):203–8.
10. Namdev R, Jindal A, Bhargava S, Bakshi L, Verma R, Beniwal D. Awareness of emergency management of dental trauma. *Contemp Clin Dent.* 2015 Oct;5(4):507–13.
11. Dutra FT, Marinho AC, Godoi PFS, Borges C. Prevalence of dental trauma and associated factors among 1- to 4-year-old children. *J Dent Child.* 2010;77(3):146–51.
12. Parikh U, Shah K. Assessment of knowledge of parents towards paediatric dental traumatic injuries. 230 ~ *Int J Appl Dent Sci.* 2017;3(4):230–3.
13. Batstone MD, Waters C, Porter SAT, Monsour FNT. Treatment delays in paediatric dento-alveolar trauma at a tertiary referral hospital. Vol. 49, *Australian Dental Journal.* Blackwell Publishing; 2004. p. 28–32.
14. Vergotine RJ, Govoni R. Public school educator's knowledge of initial management of dental trauma. *Dent Traumatol.* 2010 Apr;26(2):133–6.
15. Hassan AO, Olukolade R, Ogbuji QC, Afolabi S, Okwuonye LC, Kusimo OC, et al. Knowledge about Tuberculosis: A Precursor to Effective TB Control—Findings from a Follow-Up National KAP Study on Tuberculosis among Nigerians. *Tuberc Res Treat.* 2017;2017:1–8.
16. Ozer S, Yilmaz EI, Bayrak S, Tunc E Sen. Parental knowledge and attitudes regarding the emergency treatment of avulsed permanent teeth. *Eur J Dent.* 2012 Oct;6(4):370–5.
17. Dahham A, Saffan A. Factors Influencing Awareness of the Emergency Management of Dental Trauma in Children-A Comparison of Fathers and Mothers across Saudi Arabia. *Int J Dent Oral Heal.* 2018;4(2).
18. Sienkiewicz KL, Rainchuso L, Boyd LD, Giblin L. Child Care Providers' Knowledge About Dental Injury First Aid in Preschool-age Children | *Journal of Dental Hygiene.* Am Dent Hyg Assoc. 2017;91(3):55–62.
19. Al-Obaida M. Knowledge and management of traumatic dental injuries in a group of Saudi primary schools teachers. *Dent Traumatol.* 2010 Aug;26(4):338–41.
20. Hassan S, Zulkifly NN, Venkiteswaran A, Abdul Halim R. Knowledge and Attitude of Teachers in Selected Malaysian Primary School towards Dental Injuries. *Sci Res J.* 2018 Dec;15(2):51.
21. Taranath M, Senaikarasi R, Manchanda K. Assessment of knowledge and attitude before and after a health education

- program in East Madurai primary school teachers with regard to emergency management of avulsed teeth. *J Indian Soc Pedod Prev Dent*. 2017 Jan;35(1):63.
22. Al-Jundi SH, Al-Waeili H, Khairalah K. Knowledge and attitude of Jordanian school health teachers with regards to emergency management of dental trauma. *Dent Traumatol*. 2005 Aug;21(4):183–7.
 23. Nakre P, Harikiran A. Effectiveness of oral health education programs: A systematic review. *J Int Soc Prev Community Dent* [Internet]. 2013 Jul [cited 2020 Mar 26];3(2):103. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24778989>
 24. Haque SE, Rahman M, Itsuko K, Mutahara M, Kayako S, Tsutsumi A, et al. Effect of a school-based oral health education in preventing untreated dental caries and increasing knowledge, attitude, and practices among adolescents in Bangladesh. *BMC Oral Health*. 2016 Mar;16(1):44.
 25. Ramroop V, Wright D, Naidu RS. Dental Health Knowledge and Attitudes of Primary School Teachers toward Developing Dental Health Education. *West Indian Med J*. 2011 Mar;60(5):576–80.
 26. Frencken JE, Borsum-Andersson K, Makoni F, Moyana F, Mwashenyi S, Mulder J. Effectiveness of an oral health education programme in primary schools in Zimbabwe after 3.5 years. *Community Dent Oral Epidemiol*. 2001;29(4):253–9.