

Knowledge and Awareness Regarding Traumatic Dental Injuries in School Children among Physical Education Teachers in Patna: A Cross-Sectional Study

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Abstract

Introduction: A major cause of morbidity in both developed and developing countries around the world is orofacial injuries. Traumatic dental injuries are caused by a complex array of social and environmental factors.

Aim: The aim of this study was to evaluate physical education teacher's knowledge and awareness in Patna regarding traumatic dental injuries among school children.

Materials and Methods: The study was conducted among 60 physical education teachers from randomly selected schools in Patna using modified questionnaire that was used in the study done by Randhawa *et al.*

Results: The study results showed that physical education teachers had completely inadequate knowledge regarding management of traumatic dental injuries among school children.

Conclusion: For the physical education teachers having a lack of knowledge regarding management of dental injuries, educational and motivational programs are necessary to improve their level of knowledge.

Key words: Dental injuries, Knowledge, Physical education

INTRODUCTION

Traumatic dental injury (TDI) is a developing and challenging public health problem to dental health professionals, nowadays, and it has been seriously neglected worldwide.¹ Dental trauma refers to trauma (injury) to the teeth and/or periodontium (gums, periodontal ligament, and alveolar bone), and nearby soft tissues such as the lips and tongue and more than 20% of school-aged children reported to have been affected. Dental trauma mainly

affects the upper anterior which leads to the development of negative quality of life due to loss of function, psychological and social discomfort, lowered self-esteem and financial burden over the parents.

Dental traumatic injuries can vary from simple concussions to extensive maxillofacial damage which involves periodontal structures and displacement or avulsion of teeth. The most frequent type of injury is crown fracture, comprising 26-76% of injuries to the permanent dentition. Luxation injuries comprise 30-44% of all the dental injuries. The complete detachment of tooth from the socket is known as avulsion, which is the most complicated and serious problems comprising 1-16% of dental injuries with peak incidence record in the 7-11 years old age group and the maxillary central incisors being the most affected. It was 75% more frequent in children under the age of 15.²

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www.ijss-sn.com

Month of Submission : 02-2016
Month of Peer Review : 03-2016
Month of Acceptance : 03-2016
Month of Publishing : 04-2016

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Schools are places where one can find a noticeable risk of traumatic dental injuries during playing activity. Knowledge and awareness of physical education teacher regarding emergency management of dental trauma is decisive for better prognosis. Many literatures around the world indicated the lack of knowledge of physical education teachers with regard to emergency management of traumatic dental injuries. However, no such studies related to knowledge and awareness of physical education teachers on dental trauma management have been done in Patna. The purpose of this study was to evaluate physical education teacher's knowledge and awareness in Patna regarding traumatic dental injuries among school children.

MATERIALS AND METHODS

A modified questionnaire that was used in the study done by Randhawa *et al.* which comprises demographic information including gender, age, teaching experience, first aid training, dental trauma experience and multiple choice questions on subjective self-assessment of attitude and source of knowledge regarding management of traumatic dental injuries was used in the present study.

A total of 60 physical education teachers were enrolled in the study and it was conducted in 60 different schools of Patna over a period of 2-month from October to November 2015. The permission for the study was taken from the concerned authorities in the participating schools, and ethical clearance was obtained from institutional ethical clearance committee of Buddha Institute of Dental Sciences and Hospital, Patna. Questionnaires were personally handed over to all physical education teachers at school counters and collected after 2 days (Table 1).

RESULTS

A total of 60 physical education teachers completed the questionnaires provided to them and participated in the study. The respondents consisted of 30% were males and 70% were females. With the exception of 55 (91.6%), only 5 (8.3%) of them had received training regarding the first aid. When they were asked regarding who all had come across dental trauma, only 16 (26.6%) had a positive response, 6 (10%) had come across broken tooth with bleeding, and 10 (16.6%) found tooth that had fallen off, whereas 2 (3.3%) had come across soft tissue injuries. When asked about the first reaction on seeing the child with trauma, only 30 (50%) replied that they would contact parents and carry the child to the dentist nearby the school, while 20 (33.3%) replied that they would give child warm drink and call parents. When asked regarding the kind of first aid they would provide to the students in the case of

Table 1: Knowledge, attitude and practice of physical education teachers regarding the traumatic tooth injuries in school children

Questions	N (%)
Do you have any formal training of first aid?	
Yes	5 (8.3)
No	55 (91.6)
Have you ever come across dental trauma in your school?	
Yes	16 (26.6)
No	40 (66.6)
-	4 (6.6)
What kind of trauma it was?	
Broken tooth without bleeding	5 (8.3)
Broken tooth with bleeding	6 (10)
Tooth that had fallen off	10 (16.6)
Displaced tooth	2 (3.3)
Soft tissue injuries	2 (3.3)
Others	35 (58.3)
What would be your first reaction when you see some child with trauma	
Immediately contact the parents and call them for further action	5 (8.3)
Give child warm drink and call parents	20 (33.3)
Contact parents and immediately carry child to the nearest dentist	30 (50)
None of the above	5 (8.3)
What kind of first aid would you give to your students in case of trauma?	
Sideline injured subject and ask to bite on handkerchief	10 (16.6)
Wash the affected traumatic area and look for broken toothpiece if any and seek dentist opinion	30 (50)
None of the above	20 (33.3)
Can a broken toothpiece be reattached?	
Yes	10 (16.6)
No	30 (50)
Don't know	20 (33.3)
Can a completely fallen off tooth be replanted back?	
Yes	15 (25)
No	30 (50)
Don't know	15 (25)
What would you do if you see completely avulsed or fallen off tooth or piece of tooth	
Wrap it in a clean cloth and carry to the dentist	5 (8.3)
Wash under running tap water and wrap in a clean cloth and carry to the dentist	20 (33.3)
Wash under running tap water and carry in a milk container to the dentist	7 (11.6)
Wash under running tap water and ask child to keep in the mouth and carry to the dentist	10 (16.6)
Wash under running tap water and try to replant back in the socket and carry to the dentist	1 (1.6)
Don't know	9 (15)
Others	8 (13.3)

injury, 10 (16.6%) sideline injured subject and ask them to bite on the handkerchief. Whereas 30 (50%) participants responded that they would wash affected the traumatic area and look for broken tooth piece if any and seek dentist opinion. Regarding the knowledge about management of broken tooth piece 30 (50%) responded that broken tooth piece cannot be reattached. Moreover, regarding

the replantation of completely fallen off tooth, 30 (50%) replied that it is not possible to replant the tooth back into the socket once it has completely fallen off. Regarding the immediate management of completely fallen off tooth, 20 (33.3%) answered that they would wash it under running tap water, and wrap it in a clean cloth and carry to the dentist, whereas 8 (13.3%) had belief that once a tooth is completely fallen off, it is of no use, it should be dumped in the ground or thrown in the running Ganga water.

DISCUSSION

A major cause of morbidity in both developed and developing countries around the world is orofacial injuries. Traumatic dental injuries are caused by a complex array of social and environmental factors. Contact sports, violence, falls, traffic accidents, and poor environments have all been implicated in injuries. Traumatic dental injuries are serious dental public health problem among children and adolescents causing both functional and esthetic problems, with possible impacts on the patient's quality of life.¹

Fractured teeth or its loss as a result of trauma may cause a negative impact on the physical appearance of individuals and society. According to American organization for the prevention of sports-related trauma, there are 10% chances of suffering an orofacial injury and 18.9% of 12-year-old children have suffered TDI during leisure and sports activities. Traebert *et al.* reported that majority of the accidents occurred at home (60.4%) followed by school (18.6%) and outside in street (16%).³

The future course of an injured tooth will extremely rely on a sufficient urgent administration of treatment. Physical education teachers were selected as the study group because a great deal of dental trauma may occur during sports activities in school premises. Among the 60 participants, only 5 (8.3%) respondents underwent first aid training during the course. In the study conducted by Randhawa *et al.*,⁴ this percentage was almost same as in the present study.

When a question was asked regarding the action to be taken on seeing, a child with dental trauma, only 5 (8.3%) replied that they would contact parents and ask them to take further action, which was found to be slightly higher than reported by Randhawa *et al.*

Regarding the management of broken tooth piece or completely fallen off tooth, 30 (50%) replied that broken tooth piece cannot be reattached and 50% replied that completely avulsed tooth cannot be replanted back. This strongly reflects the lack of knowledge about emergency

management of avulsed teeth among physical education teachers could be due to their lack of prior experience or information from other sources.

In response to the question, regarding, immediate management of completely fallen off tooth, the ideal treatment would be, to wash under running tap water and try to replant back in socket and carry to the dentist, but this study, only 20 (33.3%) participants opted for this option which was found to be higher than as reported by Randhawa *et al.* This could be explained by the abundant availability of private dental facilities and their idea that dental profession has a comparatively well knowledge of correct activities taken in case of tooth separation than the medical profession.

Based on this, it is of prime importance to introduce dental trauma management in physical education trainees' curriculum, which is in agreement with Chan *et al.*⁵ The cooperative actions between dental and physical education teachers are needed to develop continued education programs, since physical education teachers are not adequately prepared to provide emergency care to dental trauma victims. From here to abstain this, it is inevitable to invest on preventive educational strategies to promote oral health, aiming to qualify these future professionals so that they are aware of their leading role when dealing with dental trauma. The results suggest that almost all of the physical education colleges have no contents regarding dental trauma in their curriculum, as is evident from their inadequate knowledge and awareness toward the matter which coincides with the results of the study conducted by Alencar *et al.*⁶

CONCLUSION

The study gave a clear picture that there were insufficient knowledge and awareness of physical education teachers in Patna in the management of traumatic dental injuries. Various protocols may be used to improve the knowledge of physical education teachers including educational and motivational programs, lectures, seminars and regular visit to the school dentist.

ACKNOWLEDGMENT

The authors wish to appreciate the constructive support from the head of the institution of all the schools of Patna for granting the permission throughout the investigation. Researchers also wish to thank all of the physical education teachers who participated in the present study for their warm cooperation.

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How to cite this article: Anand A, Mukherjee CG, Shukla JN, Sharma S. Knowledge and Awareness Regarding Traumatic Dental Injuries in School Children among Physical Education Teachers in Patna: A Cross-Sectional Study. *Int J Stud Sci* 2016;4(1):51-54.

Source of Support: Nil, **Conflict of Interest:** None declared.