

The Value of Educating Teachers, Coaches, and Athletic Trainer on the Management of Dental Trauma

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Abstract

The Value of Educating Teacher and Coaches on the Management of Dental Trauma

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Objective: To investigate the benefit of educating teachers, coaches, and athletic trainers on dental trauma and improve the management of students/athletes with dental trauma.

Methods: Teachers, coaches, and athletic trainers across the city of Richmond were recruited via email. Participants answered a pre-seminar survey to evaluate their baseline knowledge and determine whether they have experienced dental trauma with their students/athletes previously. The participants were given the option to attend an in-person or virtual seminar educating them on the basic management of traumatic dental injuries and how to guide affected students/athletes and their families to obtain optimal care. A post-seminar survey asked the same questions as the pre-seminar survey to analyze their improvement and whether education guided by pediatric dentistry would be beneficial for teachers, coaches, and athletic trainers.

Results: A total of 44 teachers participated in the study. Fifteen percent reported having witnessed a dental injury while teaching or coaching and 95% reported feeling that teachers and coaches should have better education on preventing and handling dental injuries. Post training scores were significantly higher than pre-training scores by an average of 0.93 (95% CI: 0.43, 1.44, p=.0006), or about 1 additional question correct. The average number of correct responses was 1.9 at baseline compared to 2.8 after the training, both out of a possible 5 correct responses.

Conclusion: The study showed a low level of baseline knowledge among the teachers on the management dental traumatic injuries. It can be recommended that school teachers need further training on the appropriate management of traumatic dental injuries in children. The teachers acknowledged that they need more training on handling a dental trauma.

Introduction

Traumatic dental injuries are now a leading health issue due to their high prevalence and their significant impact on children’s activities. About 25% of school-aged children experience some sort of dental trauma.¹ Generally, children are likely to injure their primary teeth at around age 3 to 4 years and permanent teeth at around 13 to 14 years of age.² Eighty percent of those who present to the emergency department with dental injuries are younger than age 18 years, and about 32% of these injuries occurred during sport activities.³ Baseball (in children age 7-12 years) and basketball (in children age 13-17 years) are sports with the most dental injuries reported.¹ Studies show that 16%-40% of children age 6-12 years experience dental traumas due to unsafe playing in playgrounds, accidents at schools, accidents during car crashes, or violence.⁴ With the combined impact of violence, traffic accidents, and sporting activities has contributed to the establishment of traumatic dental injuries as a public dental health problem.^{2,5}

Dentists should be at the frontline educating the public about the management of dental injury and sport protective equipment to help prevent dental injury. The International Association of Dental Traumatology has guidelines which have also been adopted by AAPD. The recommendations of treatment depend on a number of factors such as type of dental trauma, whether the tooth is primary or permanent dentition, the level of cooperation from the patient to provide treatment, and the access to dental care.

Teachers, coaches, and athletic trainers can play a vital role in helping manage these trauma because they are in close proximity to the child when the injury occurs.⁴ Sport coaches are required by law to have first aid certificates. The first aid training courses do not contain a dental component potentially leading to this lack of knowledge in handling dental emergencies.

The aim of this study is to investigate the benefit of educating teachers, coaches, and athletic trainers in Richmond, VA about different types of dental trauma and how to manage them.

Methods

This study is a cross-sectional survey conducted among teachers, coaches, and athletic trainers working in childcare facilities, youth sports facilities, and schools across the city of Richmond and the Greater Richmond Region.

This study assessed the baseline knowledge of teachers, coaches, and athletic trainers from childcare facilities, sport facilities, and schools on the management of dental trauma through a survey to measure their preparedness. The questionnaire took into consideration emergent and non-emergent dental trauma and methods to manage this trauma. Questions were asked based on concepts such as management of avulsed teeth in primary and permanent teeth, and trauma that will or will not need immediate attention.

The intervention of this study involved the option of in-person or pre-recorded virtual seminar for participating teachers, coaches, and athletic trainers. The pre-survey questionnaire comprised of 15 multiple choice and fill-in questions.

The collected questionnaire was inputted into REDCap, a secure web-based survey application.

Statistical Methods

Responses were summarized with counts and percentages. The total number of correct responses was summarized with mean and standard deviation and compared before and after the seminar with paired t-test. The rate of correct responses to each question was compared before and after the seminar with McNemar’s chi-squared tests.

Results

A total of 44 teachers participated in the study. Fifteen percent reported having witnessed a dental injury while teaching or coaching and 95% reported feeling that teachers and coaches should have better education on preventing and handling dental injuries. Post training scores were significantly higher than pre-training scores by an average of 0.93 (95% CI: 0.43, 1.44, p=.0006), or about 1 additional question correct. The average number of correct responses was 1.9 at baseline compared to 2.8 after the training, both out of a possible 5 correct responses.

Table 1- Demographic of Participants and School Setting

	n	%
Role		
Classroom/Grade Level Teacher	10	23%
Daycare/Preschool Teacher	30	68%
Didn't Respond	4	9%
Sector		
Private	16	36%
Public	24	55%
Didn't Respond	4	9%
Neighborhood Setting of School		
Inner City	7	16%
Suburban	27	61%
Rural	4	9%
Didn't Respond	6	14%

A total of 44 teachers participated in the study, with 68% from a daycare or preschool setting and 23% classroom teachers (9% didn’t respond). More than half of the respondents indicated they work in the public sector (n=24, 55%) and in a suburban setting (n=27, 61%). Demographics are provided in Table 1.

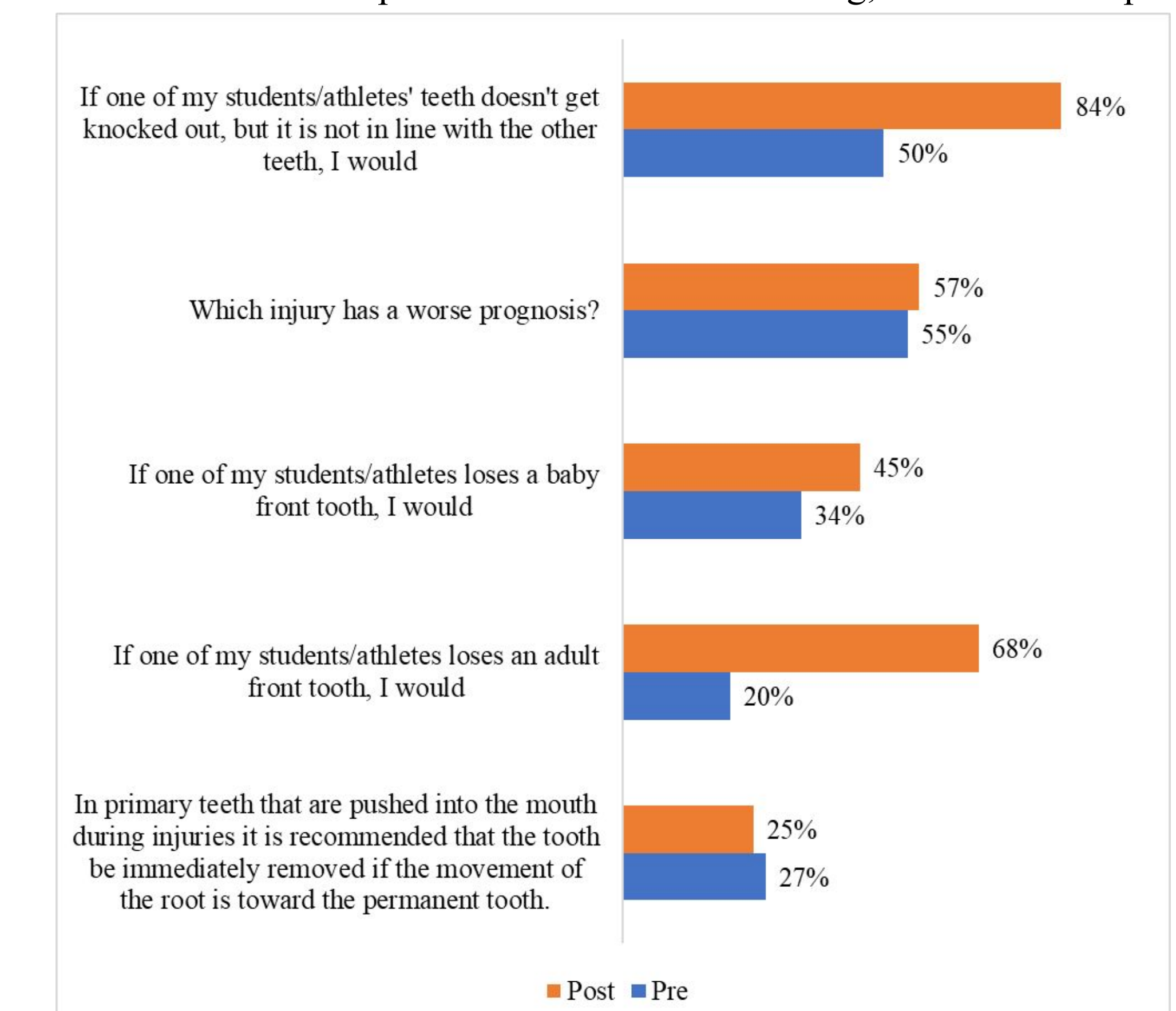
Table 2- Description of Dental Injuries

Descriptions of Injuries	Course of Action	n
A child getting hit in the mouth with play equipment.	Unknown	1
Child tooth went in child gum breaking tooth	Went to ER	1
Minor mouth/teeth injury while playing soccer/football (Not Provided)	Watch/wait	1
(Not Provided)	Was evaluated by dentist	1
(Not Provided)	Unknown	2

Fifteen percent reported having witnessed a dental injury while teaching or coaching. Three of the respondents provided details regarding the dental injuries which are provided in Table 2. The course of action was known for 50% of the incidents, with one watch/wait, one evaluated by the dentist, and one the child went to the ER.

Figure 1: Rate of Correct Responses by Question Before and After the Training Seminar

Before and after the seminar, each participant was asked 5 knowledge questions (Figure 1). Post training scores were significantly higher than pre-training scores by an average of 0.93 (95% CI: 0.43, 1.44, p=.0006), or about 1 additional question correct. The average number of correct responses was 1.9 at baseline compared to 2.8 after the training, both out of a possible 5 correct responses.



Respondents were also asked if they feel that teachers and coaches should have better education on preventing and handling dental injuries. Nearly all participants (n=42, 95%) responded “Yes” to this question. One respondent selected “No” and one did not respond.

Conclusions

The study showed a low level of baseline knowledge among the teachers on the management dental traumatic injuries. It can be recommended that school teachers need further training on the appropriate management of traumatic dental injuries in children. The teachers acknowledged that they need more training on handling a dental trauma. The first aid training course that is required for teachers should also include information on dental trauma and dental trauma management. The more informed and educated the teachers are in managing dental trauma they can help with the long-term prognosis of the injuries. It is also necessary for the teachers and coaches to understand how to best direct a child to the proper provider in case of dental emergency. Further studies should be conducted to help teachers retain the information to be able to apply in an emergency.

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Thank you to Dr. Tiffany Williams and committee members for all their help and guidance during this project.