

# Dental Trauma: School Teachers' Understanding of Handling the Situation

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## ABSTRACT

**Introduction:** Traumatic dental injury among primary school children's considered as significant public health problem. Injuries at early stage may leads to functional limitation and disability; hence role of teachers at primary school in managing dental trauma is of primary concern. The present study was conducted to know insight about what school teachers know about concerned issue and its management. Objective of the study were to determine the frequency of dental trauma among primary school children's, confronted by primary school teachers, and to assess their confidence in managing dental trauma

**Material and Methods:** An observational study having cross-sectional design was conducted among primary school teachers in Hail, Saudi Arabia. It was conducted in January 2017. Face and content validated questionnaire was used as study tool. Data from 400 primary school teachers from 18 schools were gathered using non probability, convenient sampling technique. Data was displayed as number and percentage, Chi square test were used to measure association, using SPSS version 20. P value < 0.05 was considered significant.

**Results:** Out of 400 a total of 378 (94.5%) responded to the questionnaire. 281 (74.3%) of primary school teachers encountered a child with a dental trauma in school hours, and noted that 209 (55.3%) of the primary school teachers were not confident enough in dealing with it. A statistical significance was found in between the years of experience and the confidence of the teachers in managing the situation.

**Conclusion:** The present study concluded that almost 75% of teachers had handled dental trauma during school hours, whilst 55.3% are not confident to manage it. Based on this finding we suggest further research on concerned issue in Hail, Saudi Arabia

**Keywords:** Dental Trauma, Primary School Teachers, Dental Injury, Hail city

Some of the children who suffered from avulsed tooth attend late to the dental clinic owing to the supervisors' lack of the knowledge and the ability to deal with this condition which may result in decreasing the prognosis.<sup>2</sup> That is where role of teachers become very important, they must have adequate knowledge and confidence in their abilities to manage a dental trauma took place in their schools. Children between 7 to 12 years consider as more vulnerable to dental trauma so it is highly important that the teachers be prepared for any emergency that could happen.<sup>4</sup> Several studies have observed that there is a lack of knowledge and awareness of dealing with the traumatic dental injury all around the world. During the year, 2016, Nirwan M, et al did a study to evaluate the knowledge level in elementary school teachers in South Jaipur, India. They found that 46% of school teachers had poor knowledge, and only 7% of them had satisfactory knowledge.<sup>5</sup> A similar type of study in 2015, by Antunes LAA, et al found that almost 94% of teachers had no knowledge about managing dental trauma.<sup>6</sup> There is lack of studies on concerned topic in Saudi Arabia; based on our review a study was found, conducted in 2010 amongst primary school teachers in Riyadh. The result indicated that majority of teachers do not have the confident to deal with traumatic dental injury faced by children during school hours.<sup>7</sup> To the best of our knowledge, there is no study undertaken to determine the frequency of dental trauma confronted by primary school teachers in northern region of Saudi Arabia. The present study was developed to report that in Hail city. The other objective of this study was to assess school's teacher confidence in managing dental trauma. Based on findings from these studies, future studies can be planned and carried out on various aspects with regards to dental trauma in Hail, Saudi Arabia.

## MATERIAL AND METHODS

An observational study having cross-sectional design was conducted among primary school teachers in Hail, Saudi Arabia. It was undertaken in January 2017. The total number of primary school teachers in Hail region are 8214 according to the last counting in 2014. The sample size was calculated using Raosoft sample size calculator. At 95% confidence level, 5% margin error with a response rate of 50%, the required sample size was 368. Data from 400 primary school teachers from 18 schools

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**How to cite this article:** Ammar Ahmed Siddiqui, Hazza A Alhobeira, Yazeed Saud Altamimi, Naif Salem Al-Amer, Mohammed Khalid Alsaleh, Asaad Javaid Mirza. Dental trauma: school teachers' understanding of handling the situation. International Journal of Contemporary Medical Research 2017;4(2):512-514.

## INTRODUCTION

Traumatic dental injuries beside dental caries, oral cancer, and periodontal disease are considered as significant public health problem because of its very high prevalence as well as frequency.<sup>1</sup> Dental injury is a key oral health issue during childhood days, as subsequent of it is pain and distress. The minor accidents happen to the children in their daily activities such as running, cycling, etc., may leads to traumatic dental injury.<sup>2</sup> These injuries are of significant importance as it was reported that dental injuries may leads to tooth loss, whereas tooth loss itself is an important determinant of poor quality of life.<sup>3</sup> One of the major consequences of dental trauma is avulsion, it is a condition when tooth is displaced out of the socket completely, and it accounts for 0.5 to 16% of the dental injuries. The replantation depends on the drying time where the tooth outside the oral cavity and the storage medium of the tooth, these two factors are essential to be a successful replantation.<sup>4</sup>

were gathered using non probability, convenient sampling technique. The face and content validated questionnaire which was in Arabic language was divided into two parts; the first one gathered the personal information such as age, sex, and the years of experience. Then the second part was a self-assessment question to evaluate the confidence of the teacher in managing the dental injuries. Internal consistency of the questionnaire was checked through Cronbach's alpha test yielded the value 0.8 hence making it well reliable to use. Written informed consent was taken before data collection from each respondent. This study was approved by the research Ethics Committee at university of Hail.

## STATISTICAL ANALYSIS

Data was displayed as number and percentage, Chi square test were used to measure association, using the Statistical Package for the Social Sciences (SPSS) version 20. P value < 0.05 was considered significant.

## RESULTS

Out of 400 a total of 378 (94.5%) responded to the questionnaire. Included 207 (54%) male and 171 (45.2%) female. Most of the

|                     |             | n (%)      |
|---------------------|-------------|------------|
| Gender              | male        | 207 (54.8) |
|                     | female      | 171 (45.2) |
| Age                 | 20 – 29     | 38 (10.1)  |
|                     | 30 – 39     | 155 (41.0) |
|                     | 40 – 49     | 145 (38.4) |
|                     | 50 and more | 40 (10.6)  |
| Years of experience | 0 – 5       | 60 (15.9)  |
|                     | 6 – 10      | 57 (15.1)  |
|                     | 11 – 15     | 75 (19.8)  |
|                     | 16 – 20     | 56 (14.8)  |
|                     | 20 and more | 130 (34.4) |

**Table-1:** Demographics of respondents

participant were 30 – 39 years of age (41.0%) and 40 – 50 years of age (38.4%), and about 34.4% of the teachers have years of experience of 20 years and more (Table 1).

### Teachers facing dental trauma

The teachers answered a question whether they had faced any dental injury in child in their working life. Surprisingly 74.3% of the primary school teachers encountered a child with a trauma. Comparing the years of the experience with the percentage of facing dental trauma, there was a significant difference ( $p = .041$ ). It noted that 80.77% of teachers with 20 and more years of experience met a child with dental trauma. Table 2 shows the number and percentage of teachers who faced a dental injury according to their years of experience.

### Confidence regard to dental trauma management

Overall only 169 (44.7%) of teachers were confident in their abilities to manage dental trauma. Interestingly the level of confidence in managing dental trauma increased with years of experience. Teachers with more experience managed trauma more confidentially than those with less experience and this difference was statistically significant ( $p < 0.001$ ) using Pearson chi square test (Table 3).

### The need for more education in managing the dental injury

A question has been asked if the teachers think that they need more education regarding management of dental trauma, 353 (93.39%) teachers replied that they need more education.

## DISCUSSION

The study aimed to determine the frequency of dental trauma amongst children handled by primary school teachers, and to assess their confidence in managing the injury. The child spends most of his active time at school; this increases the chance of students becoming object to dental trauma at school.<sup>5</sup> Hence making the responsibility of the teachers even higher to be able, and deal with traumatic conditions efficiently. A study about Teachers' knowledge regarding oral health and their awareness

|                     |             | Have you ever confronted a dental injury in a child? |             | Total n (100%) | P. Value |
|---------------------|-------------|--|-------------|----------------|----------|
|                     |             | Yes  | No          |                |          |
| Years of experience | 0-5         | 40 (66.67%)  | 20 (33.33%) | 60 (15.9)      | <0.04*   |
|                     | 6-10        | 43 (74.44%)  | 14 (24.56%) | 57 (15.1)      |          |
|                     | 11-15       | 48 (64%)   | 27 (36%)    | 75 (19.8)      |          |
|                     | 16-20       | 45 (80.36%)  | 11 (19.64%) | 56 (14.8)      |          |
|                     | 20 and more | 105 (80.77%)   | 25 (19.33%) | 130 (34.4)     |          |
| Total               |             | 281 (74.3%)  | 97 (25.7%)  | 378 (100)      |          |

\*Significant at 95%

**Table-2:** The number and percentage of teachers who faced a dental injury according to their years of experience.

|                     |             | Do you think that you are confident in managing a dental injury? |             | Total n (%) | P. value  |
|---------------------|-------------|--|-------------|-------------|-----------|
|                     |             | Yes  | No          |             |           |
| Years of experience | 0-5         | 24 (40%)   | 36 (60%)    | 60 (15.9)   | <0.001*** |
|                     | 6-10        | 26 (45.61%)  | 31 (54.39%) | 57 (15.1)   |           |
|                     | 11-15       | 31 (41.33%)  | 44 (58.67%) | 75 (19.8)   |           |
|                     | 16-20       | 13 (23.21%)  | 43 (76.79%) | 56 (14.8)   |           |
|                     | 20 and more | 75 (57.69%)  | 55 (42.31%) | 130 (34.4)  |           |
| Total               |             | 169 (44.7%)  | 209 (55.3%) | 378 (100)   |           |

\*\*\*Significant at 99.9%

**Table-3:** The number and percentage of teachers who are confident in managing dental injury

to be involved as oral health educator in Hail city revealed that 95% of the teachers agreed that they can play considerable role in oral health promotion, and 84% of the teachers in Hail believe that teachers should have training in oral health education.<sup>8</sup> This was the only study in Hail region, Saudi Arabia, with regard to teacher interest in promoting oral health together with two studies on different areas of Saudi Arabia (Abha in 2011 and Riyadh, 2010) regarding the same interest.<sup>7,9</sup> However results with respect to willingness of school teachers to be utilised as oral health promoter was appreciable and our finding was in line with recently published study on teachers willingness.<sup>8</sup>

The present study showed that 74.3% of the primary school teachers faced a child with a trauma; this was a surprising result as it is higher than what we have expected. The teachers in Hail region should be capable and educated to overcome this highly increased frequency of accidents. A study carried in 2011 in Abha city, and Aseer region was done by Zakirulla M et al reported that only 15% had encountered a dental trauma amongst school children<sup>9</sup>, and a study in Casablanca, Morocco (2011) found that 44.5% of the teachers had an experience of tooth avulsion at their school.<sup>10</sup> Which is not in line with the findings of present study.

The present study showed that 55.3% of the primary school teachers are not confident enough to manage the dental trauma, and noted that there was a statistical significance ( $p < 0.001$ ) with the increase in years of experience. The findings of the present study showed that the majority of teachers 94% think they need more education regarding management of dental trauma. Results from several studies around the globe for example in Abha, Saudi Arabia (2011), India (2016), Brazil (2015), Trinidad (2011) documented that the teachers express their need for more education concerning the management of dental injuries as 80%, 100%, 96%, 86% respectively.<sup>5,9,11,12</sup> These findings from the mentioned prior studies are in agreement with the present study. A study that was conducted in Riyadh city showed that the most of the primary school teachers are not able to handle a child with dental injury.<sup>7</sup>

Which means the issue is not only in Hail region but also documented in a lone study on concerned issue reported in Saudi Arabia, and in most part of the world who measured this issue.

## CONCLUSION

The present study concluded that almost 75% of teachers had confronted dental trauma during school hours, whilst majority of respondents 55.3% are not confident to manage it. Based on this finding we suggest further research on concerned issue in Hail, Saudi Arabia

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 04-02-2017; **Published online:** 17-03-2017