

Awareness of the Emergency Management of Dental Trauma in Children: A Comparison of Fathers and Mothers in Riyadh City

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Abstract

Background: Traumatic dental injuries (TDI) are one of the most common causes of oral morbidity in children. The aim of the current study was to evaluate the knowledge of first aid measures for TDI, assess their attitudes and perceptions towards treatment. The study will also seek to compare these factors between fathers and mothers and evaluate the socio-economic and demographic factors that influence them.

Methodology: A total of 198 pairs of parents (198 fathers and 198 mothers) selected using a convenience sample in Riyadh City, were surveyed over a period of one month. A composite questionnaire based on combining two previously developed questionnaires, was translated into Arabic contained questions on personal information and the knowledge of the fathers and mothers about Emergency management of TDI. The total number of correct answers represented the total knowledge score of the parent. The t test was used to compare the mean scores between fathers and mothers, while linear regression models were developed to examine the effect of sociodemographic variables on the knowledge.

Results: The mothers had a slightly higher knowledge about the emergency management of dental traumatic injury, though these differences were not statistically significant. The overall awareness of the management of traumatic dental injuries was low among both parents. Education and gender of the parent were overall predictors of knowledge. When analysed separately education was directly related to knowledge in mothers but not in fathers.

Conclusion: The knowledge of traumatic dental injuries among parents in this sample was low, but fathers had a poorer knowledge when compared to mothers. Education was a significant factor in the knowledge of mothers but not fathers.

Keywords: Traumatic dental injuries; Parental knowledge; First aid

Introduction

Traumatic dental injuries (TDI) are one of the most common causes of oral morbidity in children. The pain and suffering caused by an injury along with the psychological trauma of broken teeth have been documented as a cause of concern for both the father and the mother [1]. The prevalence of Traumatic Dental Injuries in Children has been placed at between 3% to 8% in Saudi Arabia [2,3].

Emergency care following TDI is an essential for good prognosis of the injury. The longer the treatment of a TDI is delayed the greater is the risk of de-vitalization of the tooth or bone resorption [4]. It is also known that the first aid measures provided after severe trauma such as an avulsed tooth can result in a marked improvement in the chance of survival of the tooth. There have been several studies that have documented the awareness of teachers and parents towards the knowledge and awareness of the emergency management of traumatic dental injuries in children [3,5-7]. There is also evidence that traumatic injuries affect the oral health related quality of life of families and that socio-demographic factors may influence how these injuries are perceived [8,9]. There is however little data about the impact of the above-mentioned factors in Saudi Arabia.

Boys have been reported to be four to six times more likely to suffer from traumatic dental injuries than girls [2]. This is particularly significant in a country like Saudi Arabia where boys are likely to spend more time outdoors with their fathers than their mothers [2,3]. Furthermore, females are not allowed to drive, meaning that it is most probably the father who will accompany the child to the emergency room. While traditionally studies in other countries have focused on the mothers' knowledge, attitude and perception towards dental trauma [10,11], there is a need for a study in Saudi Arabia that takes into account the knowledge of the fathers as well.

Given these factors the aim of the current study is to evaluate the knowledge of first aid measures for TDI, assess

their attitudes and perceptions towards treatment. The study will also seek to compare these factors between fathers and mothers and evaluate the socio-economic and demographic factors that influence them.

Methodology

Ethical approval

The study has been registered with the research centre of Riyadh Colleges of Dentistry and Pharmacy with registration number FUGRP/2016/102 and ethical approval was obtained from the Institutional Review Board (IRB) with an approval number RC/IRB/2016/138.

Validation of the questionnaire

A composite questionnaire based on combining two previously developed questionnaires [10,12], was translated into Arabic (Figure 1). The knowledge questions were coded with 1 for a correct answer and 0 for a wrong answer. The overall score (sum of correct answers) of the respondents was then compared between groups. The Validation of the questionnaire was carried out on 20 mothers and 20 fathers using a previously developed method for validation translated into Arabic [7]. The Cronbach alpha was used to evaluate the reproducibility of the questionnaire.

Distribution of the questionnaire

The sample was selected from a sample of governmental schools in Riyadh. After approval from the concerned authority's children were given a consent form to take home to their parents. Parents of children who brought home a signed consent form (n=356) were invited to participate in the interview. A total of 198 pairs of parents (198 fathers and 198 mothers) completed the questionnaire.

Statistical analyses

All statistical analyses were performed using the SPSS ver. 21 Data processing software (IBM corp. Armonk, NY). Descriptive statistics were tabulated and the Shapiro-Wilk test used to determine the normality of the knowledge score. The differences in knowledge between fathers and mothers was

compared using the paired t test. A regression model was developed using the knowledge score as a dependent variable and gender of parent, age, education monthly income and the number of children in the family as repressors.

- 1) Gender
 1. male
 2. female
- 2) Age :
- 3) Educational level:
- 4) Are you Employed:
 - 1- Yes
 - 2- No
- 5) Monthly income of the family:
 - 1- less then 4000 SR
 2. 4000-7000 SR
 3. 7000-15000 SR
 4. 15000-25000 SR
 5. more than 25000 SR
- 6) How many children you have ?
- 7) Oldest child age:.....
- 8) Youngest child age:.....
- 9) Do you know about the first aid measure to be taken when there is dental trauma?
 - 1- Yes
 - 2- No
- 10) Have you heard of mouth guard used to prevent traumatic injuries to the teeth?
 - 1- Yes
 - 2- No
- 11) Do you recommend your child/children to wear mouth guard while playing ?
 - 1- Yes
 - 2- No
- 12) Do you know whether the avulsed tooth (tooth out of the mouth after trauma) can be saved?
 - 1- Yes
 - 2- No
- 13) If your child has a tooth injury while playing what do you do?
 - 1- Visit a dentist
 - 2- Visit a physician
 - 3- Manage with an emergency kit
- 14) At the time of trauma if the tooth is completely out of the mouth what do you do?
 - 1- Replace it back or carry the tooth in a solution to the dentist immediately
 - 2- Arrest the bleeding and discard the avulsed tooth
 - 3- Not sure what to do
- 15) In case you are carrying a tooth to a dentist , how would you do it ?
 - 1- Handkerchief
 - 2- Cold milk
 - 3- Water
 - 4- Saline

Figure 1 The questionnaire used to test knowledge.

Results

Of the 356 children, whose parents signed the consent form, in only 198 cases were both parents present to complete the questionnaire. The mean age of the fathers was 43.6 years (\pm 9.7 years) and they were significantly older than the mothers whose mean age was 37.64 years (\pm 8.8 years). The demographic properties of the population are summarized in Table 1.

Table 1 Demographic characteristics of the population.

		Gender	
		Father	Mother
		Count	Count
Education	Did not complete school	3	4
	Completed School	37	54
	Graduated College	122	129
	Post-graduate/Professional Degree	36	11

Employment Status	Employed	178	102
	Not Employed	19	96
Family Income	< 4000SR	44	
	4000-7000SR	36	
	7000-15000 SR	45	
	15000-25000 SR	42	
	> 25000 SR	32	

The questionnaire had cronbach alpha of 0.88 among the 20 initial respondents which suggested good reproducibility.

The overall knowledge among the population was poor and ranged between 1-4 out of a maximum of 7. Mothers had a

greater knowledge about the emergency management of dental trauma when compared to fathers, but the difference was not statistically significant (**Table 2**).

Table 2 Knowledge scores of the fathers and mothers.

	Gender	Mean	Std. Deviation	T	sig
Total Knowledge Score	Father	2.9444	1.56158	-1.459	0.145
	Mother	3.1768	1.60711		

The linear regression model showed that of the different demographic variables studied the gender of the parent, and the education were significant predictors of knowledge (**Table 3**). When the model was run separately for fathers and

mothers (after excluding gender) it was seen that while education was a significant predictor for the knowledge of the mothers it was not a significant predictor for the knowledge of fathers (**Table 4**).

Table 3 Factors influencing parental knowledge.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.360	0.583		2.332	0.020
	Gender	0.398	0.174	0.126	2.289	0.023*
	Education	0.350	0.144	0.139	2.432	0.015*
	Monthly Income	-0.028	0.083	-0.020	-0.336	0.737
	Number of Children	-0.022	0.048	-0.030	-0.457	0.648
	Age	0.016	0.012	0.098	1.333	0.183

Dependent Variable: Total Knowledge Score; * Association significant at p<0.05

Table 4 Regression models contrasting between fathers and mothers.

Coefficients ^a						
Gender		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Fathers	(Constant)	2.160	0.610		3.539	0.001

	Education	0.337	0.195	0.141	1.728	0.086
	Monthly Income	-0.175	0.120	-0.126	-1.451	0.149
	Number of Children	-0.072	0.059	-0.108	-1.211	0.227
	Age	0.024	0.015	0.152	1.609	0.109
Mothers	(Constant)	1.635	0.636		2.571	0.011
	Education	0.485	0.219	0.177	2.219	0.028*
	Monthly Income	0.102	0.114	0.074	0.893	0.373
	Number of Children	0.078	0.081	0.098	0.960	0.338
	Age	0.001	0.019	0.004	0.038	0.969
Dependent Variable: Total Knowledge Score; * Association significant at p<0.05						

Discussion

The role of the parent in traumatic dental injury is a critical one. A favourable prognosis and greater chance of treatment success following dental trauma are directly related to the time elapsed between injury and dental care. Parents are often the first responders and the actions they take and the information they give the dentist can greatly alter the prognosis of the tooth [3]. The role of the parents has been studied in detail in other countries but is relatively under-explored in Saudi Arabia.

Parental knowledge has been assessed either by using responses to individual questions or the overall knowledge scores. Several investigators have described the benefits of using the total score as a predictor of parent behaviour [7,10]. It was for this reason that total parental score was taken as an indicator.

It has been shown that a good questionnaire must be long enough to obtain essential information but not so long that it prevents response. One of the reasons we could achieve a good response rate in this study was because of the limited number of questions in the study. A similar approach has been previously advocated by Hegde et al. [10] and separately by Firmano et al. [1]. This questionnaire was not designed *de-novo*, but used questions taken from a previously validated questionnaire [10]. The validation of the translation into Arabic was done using the test-retest method that has been shown to be effective in such cases [7].

A total of five variables were predictors of Emergency management of Dental Trauma in Children for parents. These variables have been previously used by authors and are accurate descriptors to show the overall socio-demographic factors that influence the perceptions of parents [10,12]. The overall knowledge of both fathers and mothers was low, which is in keeping with the findings of Al-Obaida [3], who documented a poor overall knowledge of traumatic dental injuries among Saudi Parents.

In a society where segregation of genders in educational institutions is mandatory and where the recreational areas and parks are largely dominated by boys accompanied by fathers, it

is important for fathers to have as good, if not a better knowledge of the management of TDI as the mothers. Our results showed that mothers had better knowledge than the fathers. This finding is in keeping with previous studies from show better maternal oral health awareness when compared to the fathers [13-15].

The role of education in improving parents' knowledge of both first-aid and dental first aid has been previously documented [8]. The fact that education improved the overall ability of the parent to deal with dental trauma was a significant observation in our study. This has implications for public health professions across the region. There is a need to improve education of parents towards the management of dental trauma. Directing these efforts towards the fathers could help allow them to make first aid decisions that could greatly reduce the morbidity associated with traumatic dental injuries.

Conclusion

There is a lack of dental awareness on the management of traumatic dental injuries among Saudi parents. However, there is a greater lack of awareness among fathers than mothers. Efforts need to be made to improve the education of fathers and to promote the overall education of parents in dental first aid across the Kingdom.

References

1. Firmino RT, Siqueira MB, Vieira-Andrade RG, Gomes GB, Martins CC, et al. (2014) Prediction factors for failure to seek treatment following traumatic dental injuries to primary teeth. *Braz Oral Res* 28.
2. Al-Malik M (2009) Oral injuries in children attending a hospital in Saudi Arabia. *J Maxillofac Oral Surg* 8: 34-39.
3. Al-Obaida M (2010) Knowledge and management of traumatic dental injuries in a group of Saudi primary school's teachers. *Dent Traumatol* 26: 338-341.
4. Lin S, Levin L, Emodi O, Fuss Z, Peled M (2006) Physician and emergency medical technicians' knowledge and experience regarding dental trauma. *Dent Traumatol* 22: 124-126.

5. Diaz J, Bustos L, Herrera S, Sepulveda J (2009) Knowledge of the management of paediatric dental traumas by non-dental professionals in emergency rooms in South Araucania, Temuco, Chile. *Dent Traumatol* 25: 611-619.
6. Fux-Noy A, Sarnat H, Amir E (2011) Knowledge of elementary school teachers in Tel-Aviv, Israel, regarding emergency care of dental injuries. *Dent Traumatol* 27: 252-256.
7. Pani SC, Hillis H, Chaballout T, Al Enazi W, AlAttar Y, et al. (2014) Knowledge and attitude of Saudi teachers of students with attention-deficit hyperactivity disorder towards traumatic dental injuries. *Dent Traumatol* 30: 222-226.
8. Frujeri Mde L, Frujeri JA, Bezerra AC, Cortes MI, Costa ED Jr (2014) Socio-economic indicators and predisposing factors associated with traumatic dental injuries in schoolchildren at Brasilia, Brazil: a cross-sectional, population-based study. *BMC Oral Health* 14: 91.
9. Oldin A, Lundgren J, Noren JG, Robertson A (2015) Temperamental and socioeconomic factors associated with traumatic dental injuries among children aged 0-17 years in the Swedish BITA study. *Dent Traumatol* 31: 361-367.
10. Hegde AM, Kumar KN, Varghese E (2010) Knowledge of dental trauma among mothers in Mangalore. *Dent Traumatol* 26: 417-421.
11. Yassen GH, Chin JR, Younus MS, Eckert GJ (2013) Knowledge and attitude of dental trauma among mothers in Iraq. *Eur Arch Paediatr Dent* 14: 259-265.
12. Kaul R, Jain P, Angrish P, Saha S, Patra TK, et al. (2016) Knowledge, awareness and attitude towards emergency management of dental trauma among the parents of kolkata-an institutional study. *J Clin Diagn Res* 10: Zc95-zc101.
13. Hashim R (2012) Investigation of mothers' knowledge of dental trauma management in United Arab Emirates. *Eur Arch Paediatr Dent* 13: 83-86.
14. Pani SC, Badea L, Mirza S, Elbaage N (2012) Differences in perceptions of early childhood oral health-related quality of life between fathers and mothers in Saudi Arabia. *Int J Paediatr Dent* 22: 244-249.
15. Zhang M, McGrath C, Hagg U (2007) Who knows more about the impact of malocclusion on children's quality of life, mothers or fathers? *Eur J Orthod* 29: 180-185.