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Traumatic Injuries of Incisors among Patients Attending Pedodontic Clinic of Basra Dental Teaching Hospital

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ABSTRACT

Dental trauma is a public health problem in young, aged children. The aim of this study was to evaluate severity and percentage of injuried anterior teeth and its correlated factors, in the age group of seven to twelve years dental patients attending to the teaching clinics, college of dentistry, Basra University. The sample of the present study include patients who came to the Pedodontic clinic in the Pedodontic and Preventive department at the College of Dentistry/Basra University seeking treatment of traumatized anterior permanent teeth. The traumatized teeth were examined clinically -according to modified Ellis and Davey classification. Dental trauma was more in males than females with ratio was 2.53 and was statistically significant. Higher prevalence of dental trauma was recorded among the age 10-11-year-old. Maxillary permanent central incisors were the most repeated injured tooth, and the most common type of fracture was Class II Enamel Dentine, fracture with no pulp exposure. The most frequent causes of dental injury were Fall and playing. In conclusion further considerations should be paid to preventive methods, especially in initial stages of development of males.

Keywords: Higher Education, Foreign Languages, Communicative Qualities, Organizational Skills, Experiment.

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INTRODUCTION

The fourth commonest type of human injuries among 7-30 years age are Oral injuries (Rajab, 2003). Dental trauma that lead to fractured, displaced or lost teeth can affect child's functional, esthetic and psychological state (Ilma de Souza Cortes, Marcenes, & Sheiham, 2002). The most common etiologic reasons of traumatic dental injuries were found by many studies was falls (Noori, 2007). However, pain and esthetic are the most common reasons for children attending dental clinic. Most susceptible age group to any dental trauma is seven-to-twelve year. Besides, dental trauma occurs in boys almost two times than girls, showing significant gender differences with regard to dental trauma capability. The main cause of dental injuries is falls and, sporting activities, and traffic accidents (Gutmann & Gutmann, 1995). In Basra , there is a great necessity for scientific studies to establish baseline data on the prevalence of dental traumatic injuries since no studies are available in Basra city to outline the injured anterior permanent teeth in 7 to 12 years old children. The objective of this study was to evaluate the severity and percentage of injuried anterior teeth and its associated factors, in the age group of seven to twelve years dental patients attending to the teaching clinics, college of dentistry, Basra University.

METHODOLOGY

Study sample consisted of 82 patients (38 boys and 24 girls), aged between 7 and 12 years with traumatized anterior teeth, who had attended to the Pedodontic clinic in the Department of Pedodontic and Preventive Dentistry at the College of Dentistry / Basra University, during the period from 2018 and 2019. All children with dental crown fracture were incorporated in the study. The traumatic dental injury was categorized according to" modified Ellis and Davey of crown fracture" which include: Class I-Mild fracture of the crown involving little or no dentin, Class II-Broad fracture of the crown involving extensive amount of dentin but not the dental pulp, Class III-Broad fracture of the crown with an exposure of the dental pulp and Class IV-Loss of the entire crown. Dental records were used to collect information on gender, type of the tooth, age, number and type of dental traumatic injury. The results of the study were analyzed by using descriptive statistic.

Statistical analysis

Data analysis used "Statistical package for social science (SPSS-21)" (Chicago, In Press) with descriptive statistics as frequency, percentage, minimum, maximum, mean, standard deviation (SD) ,standard error (SE) and simple chart bars, while the inferential statistics are Independent sample T test, One-Way Analysis Of Variance (ANOVA) with Games Howell post hoc test, and Fisher exact probability test. The significance level indicates in 0.05

RESULTS

In the present study, the total sample consisted of 82 children and teenaged between ages (7-12) years, 54 of the sample were boys (65.85%) and 28 were girls (34 .15%) collected from patients attending college of dentistry /university of Basra during 2018 of Basrah City. The findings are presented in Tables (1) which shows that the most age are 8,9, and 10 years with equal numbers followed by 12 years while the lowest is the 7 years, about gender males are pronounced more than females.

The most commonly affected tooth by traumatic injuries was the maxillary right central incisor (65.85%), (Table 2).Most frequent injuries were class II crown fracture (40.24%), followed by class I (32.93%) while the lowest is class 4 (3.66%) most of trauma classes found to be rise then decline and finally rise with significant association between age and trauma classes.(Table 3).

Results in this table shows that the most age are 8, 9, and 10 years with equal numbers followed by 12 years while the lowest is the 7 years, about gender males are pronounced more than females. Findings in this table

shows that class 2 is the most prominent classes followed by class 1 while the lowest is class 4, most of trauma classes found to be increase then decrease and finally increase with significant association between trauma classes and age.

Table 1: Distribution of subjects by age and gender

Age (years) 7-12 (Mean±SE=9.45±1.43)	M (54,65.85%)		F (28,34.15%)		Total	
	N.	%	N.	%	N.	%
7	3	100.0	0	0	3	3.66
8	10	50.0	10	50.0	20	24.39
9	10	50.0	10	50.0	20	24.39
10	16	80.0	4	20.0	20	24.39
11	5	71.4	2	28.6	7	8.54
12	10	83.3	2	16.7	12	14.63
Total	54	65.85	28	34.15	82	100

Table 2: Distribution of subjects by teeth affection by trauma

Teeth	Trauma affection			
	With		free	
	N.	%	N.	%
R.max.cent.inc.	54	65.85	28	34.15
L.max.cent.inc.	45	54.88	37	45.12
R.max.lat.inc.	9	10.98	73	89.02
L.max.lat.inc.	4	4.88	78	95.12
R.mand.cent.Inc.	5	6.10	77	93.90
L.mand.cent.Inc.	1	1.22	81	98.78
R.mand.lat.Inc.	3	3.66	79	96.34
L.mand.Lat.Inc.	1	1.22	81	98.78

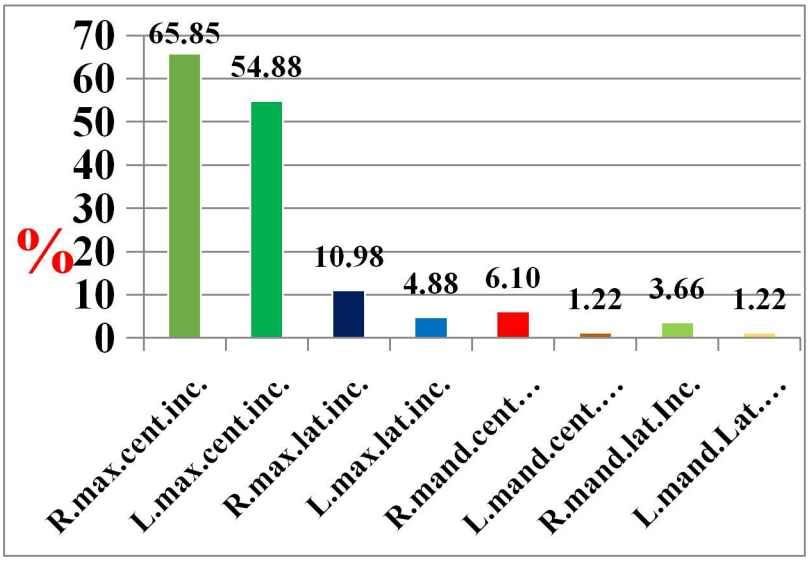

Figure 1: Distribution of traumatized teeth according to the location, side and tooth type.

Table 3: Association between trauma classes and age

		Age (years)						Fisher exact	P value	Total
		7	8	9	10	11	12			
CL 1	N.	1	11	8	4	2	1			27
	%	3.70	40.74	29.63	14.81	7.41	3.70			100.00
	% T	1.22	13.41	9.76	4.88	2.44	1.22			32.93
CL 2	N.	2	5	11	9	2	4			33
	%	6.06	15.15	33.33	27.27	6.06	12.12			100.00

	% T	2.44	6.10	13.41	10.98	2.44	4.88			40.24
CL 3	N.	0	3	1	7	3	5	23.346	0.026 Sig.	19
	%	.00	15.79	5.26	36.84	15.79	26.32			100.00
	% T	.00	3.66	1.22	8.54	3.66	6.10			23.17
CL 4	N.	0	1	0	0	0	2			3
	%	.00	33.33	.00	.00	.00	66.67			100.00
	% T	.00	1.22	.00	.00	.00	2.44			3.66
Total	N.	3	20	20	20	7	12			82
	%	3.66	24.39	24.39	24.39	8.54	14.63			100.00
	% T	3.66	24.39	24.39	24.39	8.54	14.63			100.00

Table 4: (Descriptive and statistical test of number of teeth affected by trauma among causes using One-way Analysis of Variance. (ANOVA)

Trauma causes	N	Mean	SE	Minimum	Maximum	F	P value
Fall	44	1.568	.094	1.000	3.000	5.982	0.001 HS
Hit	15	1.000	.000	1.000	1.000		
Accident	20	1.400	.152	1.000	3.000		
Medical Problem	3	2.333	.333	2.000	3.000		

Results in this table demonstrate that number of teeth affected by trauma found to be more in medical problems followed by fall while the least found in the hit causes with highly significant difference.

Tables 5: Association between number of teeth affected by trauma and trauma causes.

causes		Total teeth			FEPT	P value	Total
		1	2	3			
Fall	N.	22	19	3	23.608	0.000 HS	44
	%	50.00	43.18	6.82			100.00
	% T	26.83	23.17	3.66			53.66
Hit	N.	15	0	0			15
	%	100.00	.00	.00			100.00
	% T	18.29	.00	.00			18.29
Medical Problem	N.	0	2	1			3
	%	.00	66.67	33.33			100.00
	% T	.00	2.44	1.22			3.66
Road Accident	N.	1	1	1			3
	%	33.33	33.33	33.33			100.00
	% T	1.22	1.22	1.22			3.66
School Accident	N.	13	3	1			17
	%	76.47	17.65	5.88			100.00
	% T	15.85	3.66	1.22			20.73
Total	N.	51	25	6			82
	%	62.20	30.49	7.32			100.00
	% T	62.20	30.49	7.32			100.00

Results in this table indicate that the most causes are the fall cause followed by the school accident and hit while the least are both medical problems and road accident, and the most number of teeth affected by trauma is only tooth followed by two teeth while the least is three teeth, the number of teeth affected by trauma (only one tooth) found to be more in the fall cause followed by hit while the least found in the medical problem, regarding two teeth , the most cause is also the fall followed by school accident while the least in hit cause, lastly the three teeth affected found to be mostly in the fall followed by medical, road and school accidents while the least in hit causes with highly significant association.

Tables 6: Association between trauma causes and gender

		Gender		FEPT	p	Total
		M	F			
Fall	N.	35	9			44
	%	79.55	20.45			100.00
	% T	42.68	10.98			53.66
Hit	N.	5	10			15

	%	33.33	66.67			100.00
	% T	6.10	12.20			18.29
Medical Problem	N.	2	1	11.112	**0.014 Sig.**	3
	%	66.67	33.33			100.00
	% T	2.44	1.22			3.66
Road Accident	N.	2	1			3
	%	66.67	33.33			100.00
	% T	2.44	1.22			3.66
School Accident	N.	10	7			17
	%	58.82	41.18			100.00
	% T	12.20	8.54			20.73
Total	N.	54	28			82
	%	65.85	34.15			100.00
	% T	65.85	34.15			100.00

Results in this table indicate that the most causes are the fall cause followed by the school accident and hit while the least are both medical problems and road accident, only the hit cause, females affected by trauma more than males while other causes found to be that males more affected by trauma than females with significant association between gender and trauma causes.

DISCUSSION

In this study eighty - two children with different age groups ranged 7-12 years old who attended the pedodontic clinic with dental injuries were examined. The ratio of males was found to be higher (65.85%) than females. This result was be supported by previous studies (Al-Obaidi & Al-Geburi, 2002; Kargul, Çağlar, & Tanboga, 2003; Rajab, 2003; Zuhal, Semra, & Hüseyin, 2005), and this might be the influence of being more active selecting more forceful (Al-Obaidi & Al-Geburi, 2002) games than girls (Zuhal et al., 2005). It was showed that falls were the most repeated cause of trauma among all age groups and the second cause of trauma was Hits ,this is reinforced by other earlier studies (Ilma de Souza Cortes et al., 2002; Mohammed, 2005) but in disagreement with other studies (Salih & Al-Qassab, 2007; Trabert, Perez, Blank, Bocil, & Pietnuza, 2003) which showed that playing was the most common cause of trauma. This study showed that maxillary central incisors were the mostly affected by dental trauma (65.85%), because of their prominent and defenseless position. Also, the upper jaw is stable in the skull which makes it rigid, while the lower jaw, reduce the impact forces focused on the lower anterior teeth by movement as it is a flexible part (Baghdady, Ghose, & Enke, 1981). This finding is coincided with previous studied (Noori, 2007; Oliveira, Marcenes, Ardenghi, Sheiham, & Bönecker, 2007; Sae-Lim, Hon, & Wing, 1995). Concerning the side of the jaw, the right side was more frequently affected by dental trauma than the left side and this finding supports the earlier conclusions of the researchers (Noori, 2007; Sae-Lim et al., 1995). Regarding type of fracture concerning traumatic dental injury, this study found that class II fracture was the most frequent type of fracture (40.24%) followed by class I (32.93%)and this finding coincided with those of other previous studies (Al-Jundi, 2002; Rajab, 2003; Salih & Al-Qassab, 2007; Zuhal et al., 2005). However, there are studies viewing that simple enamel fracture class I is the most common type of injury in permanent teeth (Al-Obaidi & Al-Geburi, 2002; Kargul et al., 2003; Trabert et al., 2003), variation in diagnosing and sampling measures between different studies may clarify differences in findings.

CONCLUSION

Dental injury is commonly occurring in different periods of lifecycle, but mainly in children (in the current study the age group more liable to trauma is 8 to10 years). More considerations should be paid to preventive measures, particularly in the early stages of development of male population

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