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Prevalence of Chief Complaints Among Pediatric Dental Patients in Saudi Population; Study Done in Riyadh Colleges of Dentistry and Pharmacy, Saudi Arabia

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Research Article

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ABSTRACT

Background: This study aimed to assess the prevalence of different chief complaints of the pediatric patients attending dental clinics of Riyadh College of Dentistry and pharmacy. Another aim was to determine the chief complaints among different age groups of children.

Material and Methods: This is a cross-sectional study, which involved 490 pediatric patients and divided into sub groups (0-3, 4-6, 7-9, 10-12 years). Data collection conducted in two phases; checking patients' files and distribution of a survey. A well-structured, closed-ended questionnaire acquired knowledge about chief complaints of these patients. Collected data was subjected to statistical analysis using SPSS v.21 using descriptive statistics followed by chi square test ($p<0.05$) for age groups and first vs. second dental visit.

Results: A response rate of 91% (490 out of 540) was observed. Participants aged between 0-3 were 1%, 4-6 were 29%, 7-9 were 34% and 10-12 were 37%. Non first visit were 43% and first visit were 57%. Pearson Chi-square test showed a statistically significant association between chief complaint and gender ($p=0.017$) and association between chief complaint and first visit ($p=0.001$).

INTRODUCTION

A number of studies based on individual hospitals, cities or states have reported an increase in dental-related emergency department (ED) visits in the U.S. studies have also shown that for the U.S. as a whole, per-capita dental ED visits have been increasing, and that dental ED visits are growing as a percentage of all ED visits. Most dental ED visits are for non-traumatic dental conditions, and in most cases, ED health care providers provide prescriptions for pain or antibiotics for infections. They found According to the NHAMCS, the number of dental ED visits in the U.S. increased from 1.1 million in 2000 to 2.1 million in 2010 [1].

To investigate the characteristic of patients attending College of Dentistry at Mosul University, the chief complaint that make them seeking dental treatment, and the final diagnosis of their problems research revealed that 760 patients presented to the oral diagnosis clinic in a period of about one year. Of them 41.18% were males and the remaining 58.82% were females. The most common chief complaint was pain (34.73%). The less common complaints were routine check-up and esthetic. Pain complaint was higher in married patients, while check-up was more frequent in single patients [2].

Another study done on pediatric patients found that 247 visits for non-traumatic dental complaints comprise 0.5% of all patients who presented to the ED in 2005. 59% were younger than 5 years (primary dentition), with males representing 52% of the children. Half of the visits were during normal dental office hours, and more than half presented during the weekday. 53% complained of pain. 28% were referred to the dental clinic after being checked by an ED physician. 80% of children required hospitalization for intravenous antibiotics. Most children (82%) were discharged from the ED with oral antibiotics [3].

Another study in Texas, US revealed that the reasons for seeking emergency included:

1. Pain or discomfort due to caries (30.1%) with 27% due to early childhood caries

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2. Dental trauma (23%;3) eruption difficulties (18%) with 27% due to early childhood caries
3. Dental trauma (23%;3) eruption difficulties (18%;4) soft tissue pathoses (16%;5) problems with orthodontic appliances or space maintainers (10%); and 6 lost restorations (2%). Pain and bleeding were the most common reasons for seeking emergency dental care. Most causes for seeking outpatient emergency dental care are disease processes which may be avoided by infant oral health and preventive dentistry programs and early treatment intervention [4].

Another research in US showed that 60% of visits were for trauma, the remainder for infection or other reasons. The number of visits was 2.1 times greater in 1991 than in 1982. Comparing the periods of 1982-1987 and 1988-1991, there was an increase in the proportion of infection-related visits from 30.5 to 43.5% of all visits. Spring/summer and weekends had the highest volume. More males (61.2%) than females received care. The largest number of visits (47.9%) occurred between 6:00 PM and midnight. Nearly two-thirds (62%) of children did not have a usual source of medical care; 30.2% of children had no medical insurance, and 21.5% received Medicaid benefits. Medicaid patients were twice as likely to be seen for infection as for trauma. Among the uninsured, there was no difference in the rates of trauma or infection. Non-Caucasian patients were twice as likely to be seen for infection as Caucasians. Infection visits were for pulpitis (32.1%), and periapical and gingival abscess (53.5%). Trauma patients were younger (66 months) than infection patients (89 months). Trauma was primarily to the maxillary anterior teeth (70.1%) and upper lip and gingiva (12.1%). Common agents for trauma were furniture, bicycles, and sports [5]. Several studies in Saudi Arabia have observed that the major cause of dental visit among pediatric patients was pain due to dental caries [6-9].

Another study conducted in Pelotas, Brazil indicated that a large majority of pediatric patients visited the dental hospital due to pain form caries, eventually undergoing endodontic treatment [10]. Our literature review included a study done in India, which stated that toothache was once again the chief complaint among patients, with oral hygiene and mal-occlusion being the next most common causes [11].

A study was conducted in Nairobi dental hospital which revealed that the presenting complaint for most patients was dental pain 31.5%, orthodontic related complaints 25.4% and dental decay 19.7%. Very few children attended for dental check-up 3.9%. Five hundred ninety (73.8%) children suffered from dental caries, while 275 34.4% children manifested gingivitis. The average number of teeth decay was 3.71 (SD ± 3.76). Only 51 6.4% children attended with traumatic injuries to the dentition. Treatment performed at the first visit mainly consisted of dental extractions 21.8%, oral prophylaxis and dental health education 20.5% and restorative treatment 20% [12].

AIMS

1. To assess the prevalence of different chief complaints of the patients attending Dental Clinics of Riyadh College of Dentistry and pharmacy.
2. To determine the chief complaints among different age groups of children.

METHODOLOGY

1. Patients records of Riyadh collage of dentistry and pharmacy.
2. Survey for the patients to ask about the chief complaint.

Inclusions

» Patients at age 0 - 12 years old.

Exclusions

» More than 12 years old.

MATERIALS

1. E system files from Riyadh colleges of dentistry and pharmacy.
2. Pre-structured questionnaire.

490 patients were randomly selected from the dental clinics of Riyadh Colleges of dentistry and pharmacy to assess the prevalence of different chief complaints. Chief complaints were divided into categories as malocclusion (M), esthetics (ES), emergency/pain (EM) and oral hygiene (O).

Statistical Analysis

The data was subjected to appropriate statistical analysis using SPSS data processing software and frequency distribution as well as cross tabulation was done including chi square test.

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RESULTS

The participants aging 0-3 years were only 1%, 4-6 years 29%, 7-9 years 34% and 9-12 years 37%. 57% of patients had their first visit to the dentist. Distribution of chief complaints was as follows: Malocclusion comprised of 12%, aesthetics 9%, emergency/pain 51%, maintenance of oral hygiene 29% **(Figures 1- 3)**.

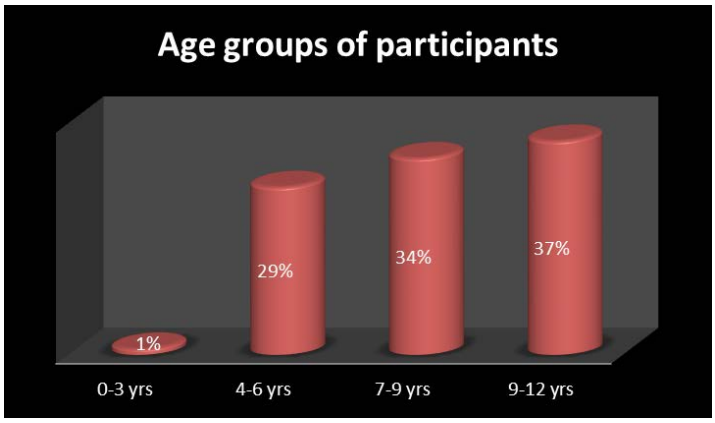

Figure 1. Age groups distribution of study participants in years.

Figure 2. Percentage of participants with first and not-first dental visit.

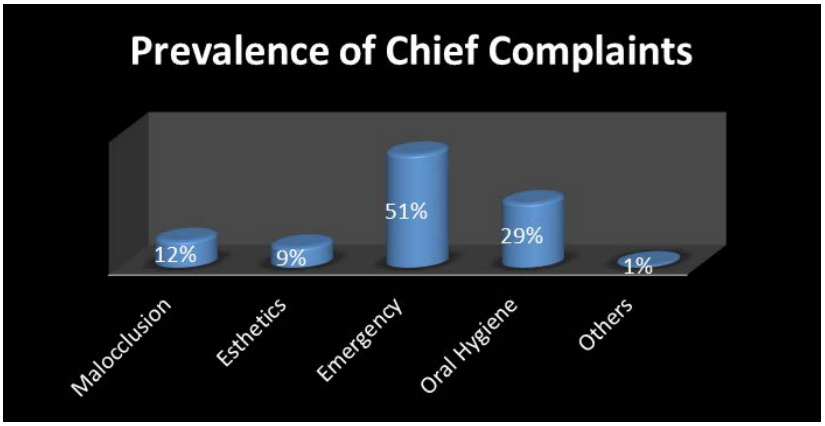

Figure 3. Pediatric patients with various chief complaints.

Chi square test on the different chief complaints and their association with gender showed that the significance value was 0.017; therefore, there was a significance relationship between the above-mentioned variables **(Table 1)**. Same test was used to determine the association between age and chief complaints, which revealed that there is a significant association between the two variables **(Table 2)**.

Patients visiting for the first time were also compared with the ones having previous dental visit history and their responses of various chief complaints were recorded. Chi square test showed that there was a statistically significant association between these two variables **(Table 3)**.

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Table 1. Chi square test showing association between chief complaint and gender of child.

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	10.143[a]	3	0.017
Likelihood Ratio	10.412	3	0.015
Linear-by-Linear	6.048	1	0.014
Association N of Valid Cases	485		
Pearson Chi-square test showed a statistically significant association between chief complaint and gender (p=0.017).			

Table 2. Age-chief complaint relationship.

Age * Chief Complaint Cross tabulation						
Age		CC				Total
		M	ES	EM	O	
0-3 years	Count	0	0	1	2	3
	% within Age	0.0%	0.0%	33.3%	66.7%	100.0%
4-6 years	Count	2	15	86	39	142
	% within Age	1.4%	10.6%	60.6%	27.5%	100.0%
7-9 years	Count	14	10	87	50	161
	% within Age	8.7%	6.2%	54.0%	31.1%	100.0%
9-13	Count	41	19	72	47	179
	% within Age	22.9%	10.6%	40.2%	26.3%	100.0%
Total	Count	57	44	246	138	485
	% within Age	11.8%	9.1%	50.7%	28.5%	100.0%
Chi-Square Tests						
			Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square			34.014[a]	3	0.000	
Likelihood Ratio			41.618	3	0.000	
Linear-by-Linear Association			17.205	1	0.000	
N of Valid Cases			321			
[a] 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.04.						
Pearson Chi-square test showed a statistically significant association between chief complaint and age group (p=0.000).						

Table 3. Relationship between first visit and chief complaints.

First Visit * Chief Complaints Cross tabulation						
First Visit		CC				Total
		M	ES	EM	O	
No	Count	46	23	128	76	173
	% within First Visit	16.8%	8.4%	46.9%	27.8%	100.0%
Yes	Count	11	21	118	62	212
	% within First Visit	5.2%	9.9%	55.7%	29.2%	100.0%
Total	Count	57	44	246	138	485
	% within First Visit	11.8%	9.1%	50.7%	28.5%	100.0%
Chi-Square Tests						
		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		15.990[a]	3	0.001		
Likelihood Ratio		17.327	3	0.001		
Linear-by-Linear		7.629	1	0.006		
Association N of Valid Cases		485				
[a]0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.23.						
Pearson Chi-square test showed a statistically significant association between chief complaint and first visit (p=0.001).						

CONCLUSION

1. The most common chief complaint among children was found to be pain/emergency, followed by maintenance of oral

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hygiene and malocclusion.

2. Pain/emergency was more common among 4-6 and 7-9 year olds.
3. Dental visits due to esthetics need were more common among 9-12 year olds.

DISCUSSION

Pediatric dental patients visit Riyadh Colleges outpatient clinics in a large number in all campuses. This study was designed to measure the prevalence of various chief complaints and reasons for dental visit for children from earliest age to 12 year olds. This study was conducted in the three campuses of Riyadh colleges, where pediatric patients' parents were asked to fill up the questionnaire.

The most common chief complaint was pain/emergency among a large majority of children, which has been the case with results seen in previous studies conducted in different countries. It was noted that emergency/pain was more commonly seen among 4-6 and 7-9 year olds, whereas other chief complaints including malocclusion and esthetic need were more common among older age groups. It was also noted that emergency/pain was found to be the common chief complaint among patients visiting for the first time to dental clinics.

Several studies have indicated that pain due to caries was found to be the most common reason behind visit to dental hospital. There have not been many studies done on pediatric patients when it comes to their chief complaints. Literature reviewed was limited to studies related to our focus of interest. However, there is a big scope of expanding this study starting from targeting major dental hospitals in Riyadh, followed by other cities, in order to retrieve much detailed information about this topic.

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