

DENTAL CARIES AMONG THE PATIENTS VISITING OUT PATIENT DEPARTMENT OF LIAQUAT MEDICAL UNIVERSITY HOSPITAL, HYDERABAD — SINDH

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ABSTRACT

The objective of this study was to find out the prevalence of dental caries and DMFT score among the patients visiting out-patient department of Liaquat Medical University Hospital.

This was cross sectional study conducted at the Liaquat Medical University Hospital. The minimum sample size calculated was 278. Oral examination was carried out using mouth mirror and a blunt ball-ended probe on the dental chair using artificial light. The results showed that there were 57.2% male and 42.8% female. The prevalence of dental caries was 60.4 %. The mean DMFT score was 2.10 with Standard Deviation 2.11. 59.5% caries was present in male and 40.5% caries was present in female, the male patients were more affected than female showed insignificant results. Male and female patients had mean DMFT score 1.26 with a Standard Deviation (SD) 0.449 and 1.39 with a Standard Deviation (SD) 0.493 respectively. It was concluded that the prevalence of dental caries and DMFT score is higher in the selected study population so for prevention and control of dental caries continuing dental health education programs should be emphasized for general population as a whole.

Key Words: DMFT, Dental Caries, Prevalence.

INTRODUCTION

Dental caries / decay is a chronic disease of outer surface/ hard tissues of the tooth, characterized by alternating phases of demineralization and remineralization. This will lead to cavitations and eventually

tooth loss.¹ The physical, functional, cosmetic, social, psychological and emotional impacts of this pathological process (dental caries) have been well documented to diminish the quality of life.^{2,3,4}

Dental caries, affects the vast majority of adult population and prevalent in 60-90% of children in industrialized countries, but comparatively prevalence is still very high in many developing countries.^{5,6} A survey conducted in Karachi revealed that most of the years of age were suffering from caries children (>40% among them 85% were untreated) of 9-18.⁷

It is the most prevalent oral disease of humans. DC has a high morbidity rate and is the main focus of the primary as well as tertiary dental health professionals. There is practically no geographic area in the any continent whose inhabitant does not exhibit some evidence of dental caries. It can affect either gender, irrespective of age groups with all socioeconomic conditions.^{8,9} In most of the developing countries prevalence of dental caries is on the higher rise because of inadequate hygienic conditions and little access and awareness to dental health services.¹⁰

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Dental caries is the disease can be prevented in childhood; however people are susceptible to the disease throughout their lifetime.^{7,11,12} Recent data of dental caries among the people visiting Liaquat Medical University Hospital is not available and very less studies of caries has been done on adults so the purpose of this research was to find out the prevalence of dental caries and DMFT score among the patients visiting out-patient department of Liaquat Medical University Hospital Hyderabad.

METHODOLOGY

A cross sectional research was carried out from 1st March 2014 to 30th April 2014 among the patients visiting out-patient department of Liaquat Medical University Hospital, Hyderabad. Ethical clearance was sought from the Ethical Review Board of University. The sample size was calculated with estimated true proportion 0.5 at 0.95 confidence interval with desired precision of 0.05 at population size of 1000 subjects. The minimum calculated sample size was 278. The sample selection was done with convenient sampling technique. The inclusion criteria were the patients of all age groups above 7 years, either gender and only permanent teeth. The exclusion criteria were the patients with limited mouth opening, having fracture of either or both jaws and who did not sign the consent form.

Dental and Oral examinations were conducted using mouth mirror and a blunt ball-ended probe with an end diameter of 0.5 mm. All teeth starting from Posterior teeth were examined in a systematic manner using international FDI nomenclature to identify each tooth. World Health Organization dental caries diagnosis criteria was used to collect the clinical data.¹³ The DMFT index, corresponding to the each and average number of decayed, missing, and filled permanent teeth, was the outcome analyzed. No radiographs were taken.

Data were entered and analyzed using the Social Package for Statically Science version 21.0. All the information including demographic data, caries prevalence and DMFT were recorded in proforma. All the qualitative variables like gender and prevalence of dental caries are calculated in frequencies and percentage. All the quantitative variables like age and DMFT score are presented in Mean and Standard Deviation. Chi square test was applied between gender and caries prevalence. Independent sample T-test was applied between gender and DMFT score to see the statistical significance. The level of significance was set to < 0.05 along with 95% Confident Interval.

RESULTS

This study was conducted on 278 patients of different age groups ranging from 7 years to 65 years. Male

were 57% and female were 43%. The mean age was 30.67 ± 10.31 . Overall mean DMFT score was 2.10 ± 2.11 (Table 1). Prevalence of caries was 60.4% in our study participants (Fig 1). 59.5% caries was present in male and 40.5% caries was present in female, the male patients were more affected than female which is statistically not significant (Table 2).

TABLE 1: BASE LINE CHARACTERISTICS OF STUDY POPULATION

Base line character-istics of patients	N (%) /278	Mean + SD
DMFT		2.10±2.11
Age		30.67±10.31
Gender		
Male	159(57.2)	
Female	119 (42.8)	
Decayed teeth	168 (60.4)	
Missing teeth	112 (59.7)	
Filled teeth	51(18.3)	

TABLE 2: PREVALENCE OF CARIES IN GENDER

Gender of subject	Caries status		Total	P-value
	Yes	No		
Male	100 59.5%	59 53.6%	159 57.2%	0.332
	68 40.5%	51 46.4%	119 42.8%	
Female	168 100.0%	110 100.0%	278 100.0%	
Total				

TABLE 3: DMFT SCORE IN GENDER

Gender	Total No. of patients (%)	DMFT Score	P-value
Male	159 (57.2%)	1.26±0.449	0.290
Female	119 (42.8%)	1.39±0.493	

TABLE 4: CORRELATION BETWEEN AGE AND DMFT SCORE

		Age of subjects	DMFT
Age of subjects	Pearson Correlation	1	.469**
	Sig. (2-tailed)		.001
	N	278	278
DMFT	Pearson Correlation	.469**	1
	Sig. (2-tailed)	.001	
	N	278	278

Male and female patients had mean DMFT score 1.26 with a Standard Deviation (SD) 0.449 and 1.39 with a Standard Deviation (SD) 0.493 respectively (Table 3). There was moderate and significant (P-Value= 0.001) correlation between age and DMFT score (Table 4).

DISCUSSION

This study was done on patients visiting the out-patient department of a Liaquat Medical University Hospital, Hyderabad. In this research the total prevalence of dental caries was 60.4%, this higher prevalence of caries is in agreement with the study results of a local study conducted in public sector hospital Larkana by Shaikh MI et al.¹⁴ It might be due to the same culture, social and routine life styles are being observed in both regions.

In this study, the caries prevalence was more in male as compared to female but statistically not significant (P-value = 0.332) which is in accordance with the results of Shaikh MI et al.,¹⁴ it might be due to the sample population visiting the government hospitals of Hyderabad and Larkana region and possess same norm and cultures. This society does not favor the females to seek dental treatment unless the pain angers them. Females have more concern for their routine oral hygiene and maintain more oral hygiene as compared to their opposite sex. The current study findings are in line with the study conducted in Bahawalpur¹⁵ where the prevalence of dental caries was 52% and 48% in male and females respectively. Saravana S et al.¹⁶ also concluded similar findings in their study. The finding is however does not correlate in the study conducted by Mosha HJ¹⁷ which mentioned higher female ratio of caries prevalence.

In the present study the overall mean DMFT was 2.10 ± 2.11 which is lower than the study conducted at public sector hospital of Karachi by Askari J et al 3.92 ± 2 .¹⁸ It might be due to the difference in sample size, diagnostic methods, area difference and time period difference. It also reflects that in the current time period awareness of oral hygiene among general population is increasing and the people are more conscious and concerned to maintain their oral hygiene now-a-days.

The results of this study indicated that the DMFT score in male (1.26) is somewhat lower than female (1.39). This finding is in agreement with Jodat et al¹⁸ and the difference was not significant. This might be due to Higher DMFT in girls can be explained by several factors. Teeth erupt earlier in girls than boys therefore girls have more exposure time for cariogenic oral environment. There is difference in biochemical composition of saliva and rate of flow in girls and boys. Clinical and experimental caries research done by Lukacs and Largaespada¹⁹ validate the effect of hormonal

fluctuations on the quantity and quality of saliva thus on oral ecology.

There was moderate and significant (P-Value= 0.001) correlation between age and DMFT score. We can say that with increase in age there was simultaneous increase in DMFT score. This finding of present study is in accordance with a survey conducted in Turkey; showed the increase in age by having high DMFT score.²⁰ It has been observed that Caries prevalence and DMFT score is different nationally and internationally due to geographic variables like race, climate, diet, culture and economic factors. In spite of these variations an attempt has been made to compare the results of current study with the other local and international studies.

CONCLUSION

The DMFT score was 2.10 ± 2.11 and Prevalence of caries was 60.4% in this study participants. In our society Caries remains a major public dental problem. Extensive damage from caries to multiple teeth can lead to major problems for the individual, affecting quality of life both functionally and cosmetically. The health services should have specific preventive programs for general population as a whole and surveillance of the caries prevention programs are needed to identify the communities with higher risk of dental caries. Serious efforts need to be made by focusing on this neglected group of population.

REFERENCES

- 1 Roberts, W, Wright T. The dynamic process of demineralization and remineralization, Dimensions of Dental Hygiene. Belmont Publications; July, 2009; 7(7): 16-21.
- 2 Center of Disease Control. Promoting oral health: Interventions for preventing dental caries, Oral and pharyngeal cancers and sports related craniofacial injuries. A report on recommendations of task force on community preventive forces. MMWR 2001, 50: 1-13.
- 3 World Health Organization. Global Oral Health Data Bank 2004, Geneva.
- 4 World Health Organization. The World Oral Health Report. Continuous improvement of oral health in the 21st century the approach of the WHO Global oral health program 2003, (http://www.who.int/oral_health/media/en/orh_report03_en.pdf, Accessed on 26th June 2015).
- 5 Petersen PE. The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 2003; 31 (Suppl 1): 3-24.
- 6 Al Malik MI, Holt RD, Bedi R. The relationship between erosion, caries and rampant caries and dietary habits in preschool children in Saudi Arabia. Int J Paediatr Dent. 2001 Nov; 11(6): 430-39.
- 7 Hingorjo MR, Jaleel F, Mehdi A. Oral Health Aspects In Primary School Children Of Three Major Cities Of Pakistan. J Pak Dent Assoc. 2010; 19 (4): 211-55.
- 8 Petersen PE. World Health Organization global policy for improvement of oral health – World Health Assembly 2007. Int Dent J. 2008 Jun; 58(3): 115-21.

- 9 Joyson Moses BNR, Deepa Gurunathan. Prevalence Of Dental Caries, Socio-Economic Status And Treatment Needs Among 5 To 15 Year Old School Going Children Of Chidambaram. J Cline and Diagn Resea. 2011; Feb; 5(1): 146-51.
- 10 Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks to oral health. Bull World Health Organ. 2005 Sep; 83 (9): 661-69.
- 11 Pitts NB. Are we ready to move from operative to non-operative/preventive treatment of dental caries in clinical practice? Caries Res. 2004 May-Jun; 38(3): 294-304.
- 12 US Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. Rockville: National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000: 308.
- 13 World Health Organization (WHO). Oral Health Surveys Basic Methods. Geneva: WHO, 1997.
- 14 Shaikh MI, Rajput F, Khatoon S, Shaikh MA. Prevalence of dental caries in Bibi Aseefa Dental College, Larkana areas. Pak Oral Dent J 2014; 34 (1): 131-34.
- 15 Badar S, Channar S, Bhutta N, Arshad S. Dental caries; frequency and determinants among patients attending dental out-patient department in Bahawal Victoria Hospital Bahawalpur. Professional Med J 2012; 19(3): 117-22.
- 16 Saravanan S, Kalyani V, Vijayarani MP, Jayakodi P, Felix J, Arunmozhi P, et al. Caries prevalence and treatment needs of rural school children in Chidambaram Taluk, Tamil Nadu, South India. Indian J Dent Res. 2008 Jul-Sep; 19(3): 186-90.
- 17 Mosha HJ, Ngilisho LA, Nkwera H, Scheutz F, Poulsen S. Oral health status and treatment needs in different age groups in two regions of Tanzania. Community Dent Oral Epidemiol. 1994 Oct; 22(5 Pt 1): 307-10.
- 18 Askari J, Kalhor FA, Nadya SA, Saad AK. Dental caries experience in patients attending Dr. Ishrat-ulebad institute of oral health sciences, DUHS, Karachi. J Pak Dent Assoc 2009; 18: 67-69.
- 19 John R. Lukacs, Leah L. Iargaspada. Explaining Sex Differences in Dental Caries Prevalence: Saliva, Hormones, and "Life-History" Etiologies. American journal of human biology. 2006; 18: 540-55. Oral Health 2015; 1 (1): 1-5.
- 20 Amal N, Can G, Vehid S, Koksall S, Kaypmaz A. Dental health status and risk factors for dental caries in adults in Istanbul, Turkey. East Mediterr Health J 2008; 14(1): 110-18.

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