

ORIGINAL ARTICLE

Dental Caries among the patients visiting HBS Dental College Hospital Islamabad

SOBIA SIDDIQUE¹, ABDUL MANAN SHAHID², HINA MAHMOOD³, NAVEEN FAROOQ⁴, SARA ALI⁵, SHAHIDA MAQBOOL⁶¹Associate Prof Oral Pathology, HBS Dental College Islamabad.^{2,6}Assistant Professor Oral Medicine, Islamabad Dental Hospital, Islamabad.³Associate Professor Periodontology, Islamabad Dental Hospital, Islamabad.⁴Assistant Professor Community Dentistry, HBS Dental College Islamabad⁵Assistant Professor Dental Education, HBS Medical and Dental College Islamabad.Correspondence to Dr Sobia Siddique, Email: sobiawaqar3033@yahoo.com, Mobile 0315-9991457

ABSTRACT

Background: Dental caries is a common, chronic microbial disease affecting the teeth of huge population worldwide. It is a progressive but preventable and treatable disease which has an impact on oral as well as general health of patients.

Aim: To assess the frequency and pattern of caries spread in the patients visiting HBS Dental College Hospital Islamabad.

Methods: It is a descriptive cross sectional study carried out at HBS Dental College Hospital Islamabad from August 2021 to Jan 2022, to find the frequency and pattern of caries affecting the teeth of patients. It consisted of 840 patients, 522 males and 318 females, examined in oral diagnostic department and assessed by dentition status and treatment need (WHO 1997).

Results: Teeth affected with dental caries. The results showed 48% incidence of dental caries among the patients examined including 57% males and 43% females, being more in males ($p < 0.05$) and posterior teeth specially 2nd molar compared to other teeth.

Conclusion: Health professionals and dentists need to educate people about its risk factors and instruct them proper oral hygiene and brushing techniques. Lack of education and poor quality of life are among the main causes.

Keywords: Frequency, Dental Caries, Molar teeth.

INTRODUCTION

Dental caries (DC) is a most common, chronic multi-factorial disease of microbiological origin and counted among the top ten common health conditions affecting huge human population¹. It affects hard tissue of the tooth causing de-mineralization and remineralization². It is a progressive disease which without proper care, can destroy a tooth but is preventable, can be limited, treated and practically reversed at initial stage^{3,4}. Due to its high occurrence globally, Edelstein B. in 2006 described it a 'pandemic' illness with increased number of untreated, painful carious teeth, resulting in discomfort and functional problems⁴. Dental caries showing social, environmental, biological and behavioral elements as causative factors, it may have serious impact on oral as well as general health of persons influencing the socio-economic wellbeing of communities^{5,6}. Some studies have shown wide spread prevalence of untreated caries in developing countries like Pakistan⁸, whereas according to few studies, Pakistan is a low-carries region showing equally prevalent oral disease in urban and rural areas with majority of under 12 year population caries-free^{10,11,12}. The frequency and pattern of teeth affected shows variation for different population groups of age, sex, status, location, eating habits and oral care practice^{13,14,19,25}.

The objective of our study was the assessment of frequency and pattern of caries spread in the patients visiting HBS Dental College Hospital Islamabad.

METHODOLOGY

After IRB permission a cross sectional study was carried out during August 2021 to Jan 2022 among the patients visiting HBS Dental hospital Islamabad. It comprised of 840 patients, 522 males and 318 female. Before examination, the patients were instructed to brush teeth and rinse the mouth. Two dental surgeons used mouth mirrors and probe for patient's examination following the steps described by WHO 1997 criteria (dentition status and treatment need). Only carious teeth with cavities visible under room and dental unit light were noted. The data was analyzed statistically using P test for comparison of frequency of caries for sex, teeth and jaw affected. Patients were instructed about proper tooth brushing techniques and those seeking treatment, were facilitated to the related departments.

Received on 17-10-2021

Accepted on 29-05-2022

RESULTS

Table 1:

Total patients 840		Patients with carious teeth 404 (48%)	
Male	Female	Male	Female
522 (62%)	318 (38%)	230 (57%)	174 (43%)

Table 1: Presence of dental caries among patients examined. 48 % patients showed presence of dental caries, higher in males, 230 (57%) than in females, 174 (43%). The difference was significant statistically ($P < 0.05$).

Table 2: Arch wise caries frequency among patients.

Jaws affected	Mandible	Maxilla
Jaw affected by caries	274(65%)	130(35%)
Male patients	158(68%)	72(32%)
Female patients	102(67.7%)	72(32.3%)

Figure 1: Arch wise (Jaws) caries frequency.

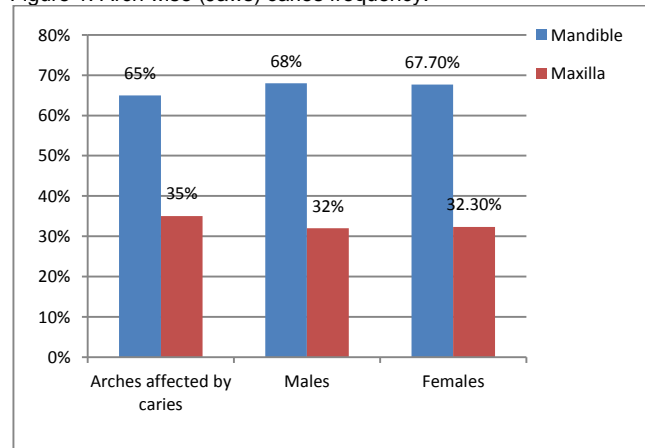


Figure 1 and 2 show higher Caries Frequency in mandible (65%) than maxilla (36%). Male Patients having 68% frequency of mandibular caries and 32% in maxilla which is significant statistically ($P < 0.05$). Similarly female patients showed 67.7% caries in mandible compared to maxilla (32.3 %) in maxilla with significant ($P < 0.01$)

Table 3: Teeth affected with dental caries

Teeth affected with caries	Male	Female
Central Incisors	57	36
Lateral incisors	40	28
Canines	22	27
Premolars	128	85
1 st molars	133	75
2 nd molars	175	121

Fig. 2: Graphical Presentation of Pattern of teeth affected with Dental Caries

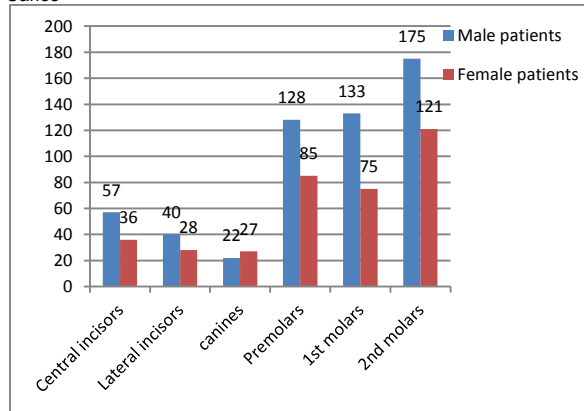


Table 2 and 3 present tooth wise occurrence of caries. In all patients, posterior teeth were affected more than the anterior teeth and among posterior teeth, 2nd molars were affected more than other teeth.

DISCUSSION

Dental caries is globally the most prevalent chronic disease, practically not sparing the inhabitants of any region. Its early diagnosis is important to prevent it, make population pain free and improve oral and general health. Population of all ages, adults as well as children, have been showing increased frequency of dental caries^{18,26}. Lack of education and poor quality of life are among the main causes.

Our findings in figure 1 resemble with results of several studies^{19,20,26} indicating sex predilection of caries frequency among patients, higher in males 230 (57%) than in females 174 (43%) with significant statistic difference ($P < 0.05$).

Results of Arch wise caries frequency mentioned in figure 2 and figure 3, indicate that Caries was higher in mandible than maxilla among both the male and female patients with statistically significant values of $P < 0.05$ and $P < 0.01$ respectively in male and female patients. These findings are also very much similar to the data shown in studies done by Sathe in 1998, Rizwan in 2009, Wyne AH in 2008 and Tufail HM in 2022^{18,19,27,29}.

Figure 4 and 5 shows that posterior teeth, mostly 2nd molars are affected more by caries than other teeth in patients of both sexes. Similar finding has been observed by^{20, 21, 22, 23, 25, 27}. This higher caries susceptibility among 2nd molars could be due to deeper pits and fissures in tooth morphology allowing food impaction, retention and bacterial accumulation^{20, 24, 28}.

CONCLUSION

Present study shows that the dental caries is a common disease affecting general population with higher frequency in mandibular posterior teeth. Health professionals and dentists need to educate people about its risk factors and instruct them proper oral hygiene

and brushing techniques. Lack of education and poor quality of life are among the main causes. Schools and community oral health programs should be organized to enhance awareness of improving oral hygiene so as to control and reduce dental caries occurrence.

Conflict of interest: Nil

REFERENCES

- Edelstein BL. The dental caries pandemic and disparities problem. *BMC oral health*. June 2006; 6 (1): 1-5.
- Ditmyer M, Dounis G, Howard K, Mobley C, Cappelli D. Validation of a multifactorial risk factor model used for predicting future caries risk with Nevada adolescents. *BMC Oral Health*. 2011; 20:11-18.
- Karlsson L. Caries Detection Methods Based on Changes in Optical Properties between Healthy and Carious Tissue. *Int J Dent*. 2010: 270-29.
- Edelstein B: The dental caries pandemic and disparities problem. *BMC Oral Health*. 2006; 15 (Suppl 1):S2.
- Dixon MG, Schafer IJ. Ebola viral disease outbreak—West Africa, 2014. *MMWR. Morbidity and mortality weekly report*. 2014 Jun; 63(25): 548
- Petersen PE, Yamamoto T. Improving the oral health of older people: the approach of the WHO Global Oral Health Programme. *Community dentistry and oral epidemiology*. 2005 Apr; 33(2): 81-92.
- Sheiham A: Dental caries affects body weight, growth and quality of life in pre-school children. *Br Dent J*. 2006; 25: 625-6.
- Jan B., Iqbal M., Iftikharudin. Urbanization Trend and Urban Population Projections of Pakistan Using Weighted Approach. *Sarhad J. Agric*. 2008; 24: 173-80.
- Baelum V, van Palenstein Helderma W, Hugoson A, Yee R, Fejerskov O: Global perspective on changes in the burden of caries and periodontitis: implications for dentistry. *J Oral Rehabil*. 2007; 34: 872-906.
- Khan A.A. Prevalence of Caries among school children in Pakistan. *Oral Epidemiology and Community Dentistry*. 1992; 7: 57-60.
- Haleem A., Khan A.A. Dental caries and Oral Hygiene Status of 12 year old school children in Pakistan. *Pak J Med Res*. 2001; 40: 138-42.
- Khan AA, Ijaz S, Syed A, Qureshi A, Padhiar I, Sufia S. Oral health in Pakistan: a situation analysis. *Developing Dentistry*. 2004; 5: 35-44.
- Sufia S., Chaudhry S., Izhar F., Khan A.A., Mirza B.A.Q., Syed A. Dental Caries experience in Preschool children; is it related to child's residence and family income? *Ind. Jnl. Pead. Dent*. 2011.
- Ferreira SH, Béria JU, Kramer PF, Feldens EG, Feldens CA. Dental caries in 0- to 5-year-old Brazilian children: prevalence, severity and associated factors. *Int J pediatri Dent*. 2007; 17: 289-96
- Kalra, Dental caries. <http://www.wherincity.com/medical/articles/129>.
- Peter FI, George MG. Dental caries experience in deciduous dentition of rural Guatemalan children ages 6 months to 7 years. *J Dent. Res*. 1976; 55(6): 951-57.
- Zerfowski M, Koch ML, Niekusb U, Staehle HL. Caries prevalence and treatment needs of 7-10 years old school children in south western germany. *Community dent. Oral epidemiol*. 1997; 25: 348-51.
- Sathe PV. A textbook of community dentistry. 1st edn. Hyderabad, Paras medical publisher, 1998: 84-94.
- Rizwan M, Rizwan S. prevalence and pattern of dental caries in the deciduous dentition. *Pakistan oral and dental journal*. 2009; 29(1): 141-4.
- Finn SB. *Clinical pedodontics*. 4th edn. Philadelphia, wb Saunders company. 1991: 454-74.
- Koch G, Poulsen S. *pediatric dentistry. A clinical approach*. 1st edn. Munksgaard. 2001: 192.
- Elferink ME, Veerkamp JS, Kalsbeek H. *Eur arch paediatric dent*. 2006; 7(4): 236-40.
- Saravanan S, Madivanan I, Subashini B, Felix JW: Prevalence pattern of dental caries in the primary dentition among school children. *Indian J Dent Res*. 2005; 16:140-46
- Me Donald RE, Avery DR. *dentistry for the child and the adolescent*. 7thedn. Mosby Co. 2001: 212.
- Abdullah S, Qazi HS, Maxood A: Dental caries status in 6–9 years old children. *Pak Oral Dent J*. 2008; 28:107–12
- Hugoson A, Koch G, Helkimo AN, Lundin SA: Caries prevalence and distribution in individuals aged 3–20 years in Jonkoping, Sweden, over a 30-year period (1973–2003). *Int J Paediatr Dent*. 2008; 18:18–26.
- Wyne AH: Caries prevalence, severity, and pattern in preschool children. *J Contemp Dent Pract*. 2008; 3: 024–31.
- Dhar V, Bhatnagar M. Dental caries and treatment needs of children (6-10 years) in rural Udaipur, Rajasthan. *Indian J Dent Res*. 2009; 20: 256-60.
- Tufail HM, Fatima K, Mahmood A, Hamadia, Saadia CH. Assessment of Dental Caries among adults of different Socioeconomic groups. *Pak J Med Health Sci*. 2022; 16 (03): 199-200.