ORIGINAL ARTICLE

PREVALENCE OF DENTAL CARIES IN GARRISON SCHOOLS OF LAHORE

[1]BILAL ABDUL QAYUM MIRZA
[2]ASMA SHAKOOR
[3]ALI ANWAAR
[4]FATIMA TUZ ZAHRA

ABSTRACT

The purpose of the study was to evaluate the caries prevalence in Garrison schools of Lahore.

This was a cross sectional study conducted in 10 public schools (n=12971). The students were checked by six calibrated examiners under natural light, with the student sitting on a chair using dental examination kit (dental mirror & probe). The findings of the study were charted on WHO assessment form. Mean decayed, missing filled teeth index DMFT was measured among students. The study reported a mean DMFT score of 2.46 (SD ± 3.07). The study showed a caries prevalence of 57.12% among students with mean age of 9.25 ± 3.11. High level of prevalence reported suggests a high level of unmet health care needs of the students.

Key Words: *Dental caries, garrison schools children.*

INTRODUCTION

Dental caries is considered the most important oral health burdens worldwide.[1] The prevalence is global in all the regions with Latin America, Middle East, South Asia being the regions with highest prevalence of this disease.[2] In developing countries, the prevalence of dental caries is more than 95% which is considered very high, out of which 90% is left untreated unfortunately.[3,4] In Pakistan WHO global data has shown an increase in DMFT of 12 years old children from 0.9 to 1.38.[5]

Awareness among children about good oral hygiene is the most important way to control caries and school based dental care programs were found to be most effective in this regard.[6] The negligence of oral hygiene leads to decline in children's quality of life in the form of pain, premature tooth-loss, malnutrition and finally influences overall growth and development.[7] The children suffering from poor oral health are 12 times more likely to have restricted activity days than those who maintained good oral health.[8] In India, two studies carried out showed prevalence of dental caries to be 51% and 54.1% respectively.[9,10] In Pakistan, Amynah et al reported a caries experience of 29.1% among preschoolers, while Sufia et al observed a caries prevalence of 40.1% among 3-5 years old children.[11,12] Similarly, another study conducted in army schools in Lahore showed that around 60.90% of the students had caries.[13]

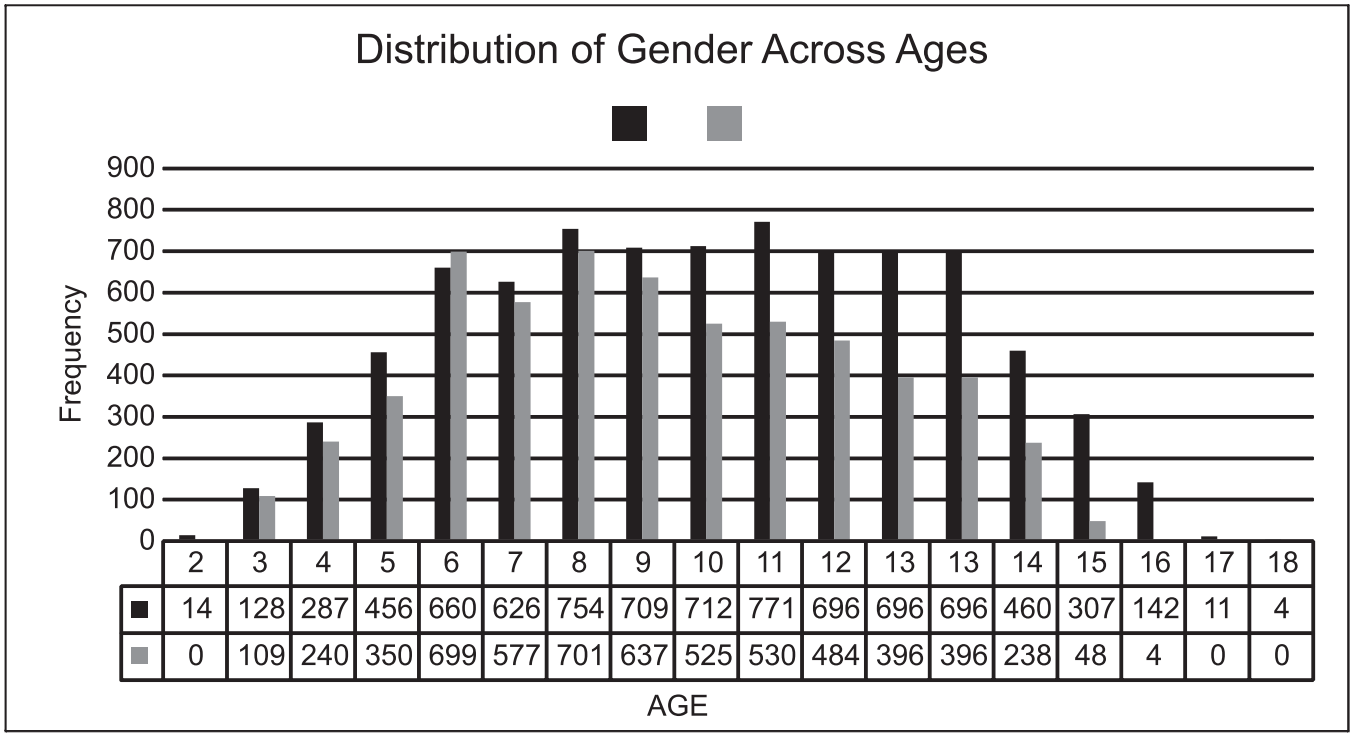
Unfortunately, epidemiological data regarding prevalence of dental caries in pre-school and school students in Pakistan is very limited. The major role is played by the government in the form of employment of dentists and providing low cost oral health services for the general population, which cannot be achieved unless an accurate prevalence of dental caries is noted. Prevention programs for dental diseases are commonly non existant.[14] The study related to the prevalence of dental caries in primary and secondary students of Lahore is considered pertinent. The study will enhance the oral health of students to counteract dental caries by helping policy makers and planners to take preventive measures.

METHODOLOGY

It was a cross sectional study focusing on the oral health of students from schools in Lahore, Pakistan.

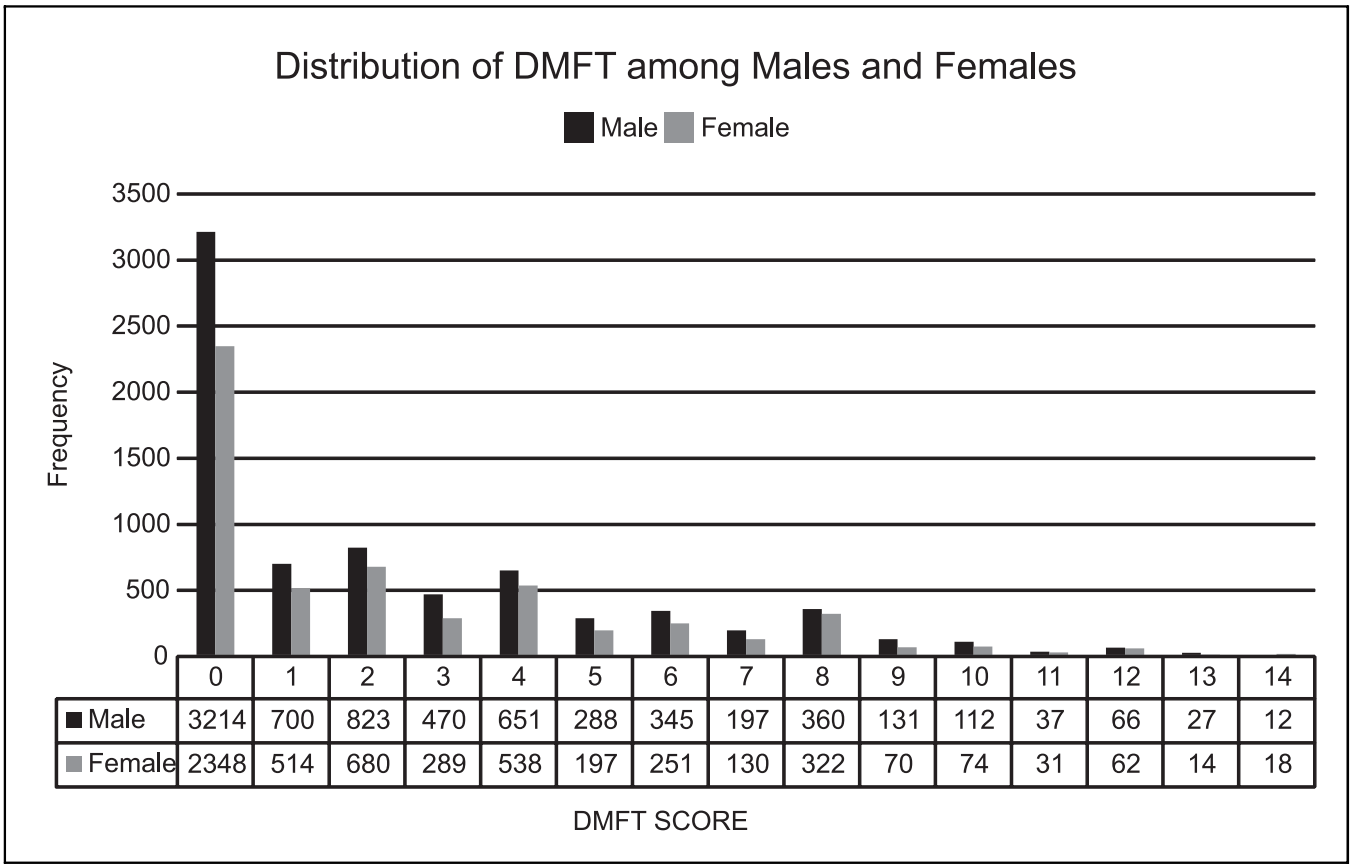
[1] Bilal Abdul Qayum Mirza, Associate Professor, Department of Community & Preventive Dentistry, Institute of Dentistry, CMH Lahore Medical College, Lahore **For Correspondence:** Dr Bilal Abdul Qayum Mirza, Institute of Dentistry, CMH Lahore Medical **Postal Address:** 201-E Block, Street 4, Phase 6, DHA, Lahore Email: bilal_abdul_qayum@hotmail.com Cell: +92 300 4770048
[2] Asma Shakoor, Assistant Professor, Department of Community & Preventive Dentistry, Institute of Dentistry, CMH Lahore Medical College, Lahore
[3] Ali Anwaar, Assistant Professor, Department of Community & Preventive Dentistry, Institute of Dentistry, CMH, Lahore Medical College, Lahore
[4] Fatima Tuz Zahra, Demonstrator, Department of Community & Preventive Dentistry, Institute of Dentistry, CMH Lahore Medical College, Lahore

Received for Publication: December 28, 2016
Revised: March 3, 2017
Approved: March 3, 2017



	2	3	4	5	6	7	8	9	10	11	12	13	13	14	15	16	17	18
■	14	128	287	456	660	626	754	709	712	771	696	696	696	460	307	142	11	4
■	0	109	240	350	699	577	701	637	525	530	484	396	396	238	48	4	0	0

Fig 1: represents distribution of gender from ages 2-18



	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
■ Male	3214	700	823	470	651	288	345	197	360	131	112	37	66	27	12
■ Female	2348	514	680	289	538	197	251	130	322	70	74	31	62	14	18

Fig 2: Distribution of DMFT among Males and Females

The epidemiologic data was collected from 10 primary and secondary schools. Research permission was granted from the Institutional review committee at the Institute of Dentistry, CMH Lahore Medical College and from the respective principals of the schools. The study targeted all age group and 12,971 students

TABLE 1: SHOWS MEAN DMFT ACROSS AGES AMONG MALES AND FEMALES

Age	Mean DMFT	
	Male	Female
2	1.64 ± 2.21	—
3	2.09 ± 3.06	2.02 ± 2.93
4	2.47 ± 3.19	1.92 ± 3.19
5	2.93 ± 3.41	2.82 ± 3.43
6	2.80 ±3.45	2.87 ± 3.28
7	3.22 ± 3.35	3.48 ± 3.24
8	2.92 ± 3.07	3.19 ± 3.19
9	3.01 ± 2.90	2.84 ± 3.01
10	2.62 ± 2.83	2.18 ± 2.65
11	2.31 ± 2.92	1.90 ± 2.78
12	1.97 ± 2.91	1.53 ± 2.63
13	1.70 ± 2.84	1.78 ± 3.01
14	1.59 ± 2.73	1.43 ± 2.42
15	1.51 ± 2.62	1.85 ± 3.00
16	1.37 ± 2.17	1.00 ± 2
17	0.73 ± 1.68	—
18	3.5 ± 2.08	—
Mean Age 9.25 ± 3.11	Mean DMFT	2.46 ± 3.06

were examined. The students were checked by six calibrated examiners under natural light, with the student sitting on a chair using dental examination kit (dental mirror & probe). Information was recorded on oral health assessment form for decayed, missing and filled teeth. DMFT index was calculated according to WHO (World Health Organization) criteria alongside other oral hygiene parameters.[15]

Data analysis was performed on SPSS version 24 (IBM).

Inclusion criteria: All age group students (male & female) of 10 Army schools in Lahore.

Exclusion criteria: Mentally, physically, sensory handicapped, Medically compromised patients, e.g. suffering from leukemia, hemophiliac etc.

RESULTS

The study was conducted at Garrison Schools of Lahore regarding the prevalence of dental caries in students. The total number of participants were 12,971. Out of this 57.3% were males and 42.7% were females. Table 1 shows mean DMFT among male and females students. The age group was from 2 years old to 19 years old. The mean DMFT of this study was 2.46 ± 3.06.

Fig 1 represents distribution of gender across ages 2-18. The sample consisted of 8,129 males and 4,842 female. Fig 2 shows the distribution of DMFT among males and females. It was seen that more male (7,433) students had DMFT score as compared to female students (5538). The missing and filled teeth count was 44 and 55 respectively which is a negligible 0.01%.

DISCUSSION

Statistics of this study revealed that 7409 (57.1%) students had a DMFT score of 1 or more. Which means that they have one or more decayed, missing or filled teeth. This shows 57.1% of sample require urgent treatment so that their quality of life is not effected.[7] Delayed treatment of dental caries may lead to pain, discomfort and loss of school days.[16] In spite of this fact, this percentage is significantly high keeping in perspective the biological consequences and financial burden of treatment of dental caries but is in accordance to our current low-budget healthcare system.[1]

This also suggests that in these students (4,219 males and 3,190 females), more males are prone to dental decay than females. A similar study carried out showed males had higher DMFT value.[17] The possible method of reasoning is either the socioeconomic contrast of the review aggregate or a distinction in the nourishment and dietary propensities among students. Conversely, a review led in Islamabad reported a high DMFT score among essential dentate students.[18]

Mean DMFT score for our study is 2.46 with standard deviation 3.07. DMFT scores in Pakistan range from 0.3 in Khairpur District and 1.14 in Clifton.[11,17] A similar study conducted in 2013 in Cantonment region, Lahore with less sample size than our sample size revealed a mean DMFT of 2.69.[13] The most likely reason can be linked with our larger data size of 691 as compared to 12,971 in the current study. All schools in the cantonment region were checked with a specific end goal to make awareness about dental wellbeing, encourage any treatment advised and follow up of their dental status.

CONCLUSION & RECOMMENDATIONS

- Establish a school dental treatment program
- Periodic education of the teachers and parents to teach students how to maintain oral hygiene
- Follow up of studies after dental treatment to monitor D & M component of DMFT
- School should also need to play active part in limiting on sugary food and fizzy drinks available in cafeteria.

REFERENCES

1 Peterson PK, Bourgeois D, Ogawa H, Day S E, Ndiyae C. The global burden of oral diseases and risks to oral health. Bulleton of WHO 2004; 93: 661-69.

2 Petersen PE. World Health Organization global policy for improvement of oral health World Health Assembly. 2007, IDJ; 2008; 58: 115-21.

3 Roberts, W, Wright T. The dynamic process of demineralization and remineralization, Dimentions of Dental Hygiene. Belmont Publications; July, 2009; 7: 16-21.

4 Moynihan P, Petersen PE. Diet, nutrition and the prevention of dental diseases. Public Health Nutr. 2004; 7: 201-26.

5 Bratthall D. Introducing the Significant Caries Index together with a proposal for a new oral health goal for 12-year-olds. Int Dent J 2000; 50: 378-84.

6 Nishi M, Stjernsward J, Calsson P, Bratthall D. Caries experience of some countries and areas expressed by the Significant Caries Index. Community Dent Oral Epidemiol 2002; 30: 296-301.

7 Bratthall D. Estimation of global DMFT for 12-yearolds in 2004. Int Dent J. 200; 55: 370-72.

8 Abdullah S, Qazi HS, Maxood A: Dental caries status in 6–9 years old students. Pak Oral Dent J. 2008, 28: 107-12.

9 Currie C, Hurrelmann K: Health and health behaviors among young people. Copenhagen; WHO regional office for Europe; 2000 WHO policy series. Health policy for students and adolescents. International report.http://www.euro.who.int/__data/assets/pdf_file/0006/119571/E67880.pdf.

10 Pitts NB, Chestnutt IG, Evans D, White D, Chadwick B, Steele JG: The dentinal caries experience of students in the United Kingdom, 2003. Brit Dent J. 2006, 200: 313-20.

11 Charani A, Mohsin S, Sufia S, Khan AA: Prevalence of early childhood caries among 3-5-year old students of Clifton, Karachi. J of Pak Dent Assoc. 2011, 20: 89-92.

12 Sufia S, Chaudhry S, Izhar F, Syed A, Mirza BA, Khan AA: Dental caries experience in preschool students: is it related to a child's place of residence and family income? Oral Health Prev Dent. 2011, 9: 375-79.

13 Mirza BA,Chohan AN,Sajid M,Kahlown RA.Dental Caries prevalence in 3-8year old students of Army schools in Lahore. Pak Oral Dent J 2013;33:364-66.

14 Dawani N, Qureshi A, Syed S. integrated school-based child oral health education. J Dow University Health Sci Karachi 2012; 6: 110-14.

15 World Health Organization. Oral Health Surveys: Basic Methods: 5th Edition. (2013). Retrieved from http://www.who.int/oral_health/publications/9789241548649/en/

16 Jackson S.L., William F.V.Jr, Jonathan B.K.,Bhavna T.P, Jessica Y. L,.Impact of Poor Oral Health on Children's School Attendance and Performance Am J Public Health. 2011; 101: 1900–1906.

17 Sheikh IA, Kalhoro FA, Pirazado MS, Memon AB, Sahito MA, Dahri WM et al. Prevalence of dental caries among students of Khairpur District. Pak Oral Dent J 2014; 34 : 680-83.

CONTRIBUTIONS BY AUTHORS

1 Bilal Abdul Qayum Mirza:	Research concept & design, data analysis and interpretation
2 Asma Shakoor:	Project collaboration, data acquisition data interpretation and manuscript review
3 Ali Anwaar:	Literature review, project collaboration, data collection, and manuscript preparation
4 Fatima Tuz Zahra:	Data collection, literature review.