Asian Pac. J. Health Sci., 2015; 2(1): 55-59 e-ISSN: 2349-0659, p-ISSN: 2350-0964

Dental caries experience among 6-12 year old school children of Budgam district, Jammu and Kashmir state, India

Aasim Farooq Shah[1], Manu Batra[2], Soumik Kabasi[3], Subha Soumya Dany[4], Prashant Rajput[4], A. Ishrat[5]

[1] Registrar, Department of Public Health Dentistry ,Government Dental College & Hospital Shreen Bagh, Srinagar, Kashmir,Jammu and Kashmir, India*

[2]Assistant Professor,Department Of Public Health Dentistry,Surendera Dental College & Research Institute.HH Gardens, Sri GanganagarRajasthan, India

[3]Department of Public Health Dentistry, Institute of Dental Sciences and Hospital, Sector -8, Kalinga Nagar, Bhubaneswar - 751 003,Odisha, India

[4]Post Graduate Student Department of Public Health Dentistry.Kothiwal Dental College & Research Centre. Kanth Road, Moradabad-244001, Uttar Pradesh, India

[5] Dental Surgeon [School Health Program],J&K Government Health Services, Srinagar, Jammu and Kashmir, India

ABSTRACT

Objective: The purpose of this study was to investigate the caries experience in 6 -12 yearold schoolchildren in Kashmir Division of Jammu and Kashmir state, India. **Material & methods:** This study was carried out in Budgam District of Kashmir Division of Jammu and Kashmir State, India. A cluster sampling was done to collect the sample. Schools accessible and situated in the district were selected. Sample size of 453 school going children was obtained within the age group of 6-12 years from these schools. DMFT/dmft index was used for recording dental caries. **Results:** The mean dmft of the school children was 1.355±1.79 which was lower than the mean DMFT 1.74 ±1.92 seen in the permanent dentition of the same children. In primary as well as permanent dentition the decayed component remained higher in comparison to the missing and decayed components. It was also observed that the females had lower caries experience in both the dentitions as compared to boys. **Conclusion:** The study highlight the extent of dental disease in this community, which reflects the high treatment needs that cannot be met by traditional ways in Budgam, Jammu and Kashmir, India.

Keywords: Kashmir, School children, Dental caries, DMFT, dmft

Introduction

Dental caries is the most prevalent oral disease and has a very high morbidity potential. There is no geographic area spared in the world where people do not exhibit some evidence of dental caries. It affects both the sexes, all races of any socio-economic status and all age groups. It not only causes pain and discomfort, but also places a financial burden on the parent.

**Correspondence*
Dr. Aasim Farooq Shah
Registrar,
Department Of Public Health Dentistry ,Government Dental College & Hospital Shreen Bagh, Srinagar, Kashmir, Jammu and Kashmir, India.
Email: dr_aasimshah@yahoo.com

About 90% of school children worldwide and most adults have experienced caries, with the disease being most prevalent in Asian and Latin American countries. [1]. Despite credible scientific advances and the fact that caries is preventable, the disease continues to be a major public health problem. In developing countries changing life-styles and dietary patterns are markedly increasing the caries incidence[2]. A very extensive and comprehensive National Health Survey conducted in 2004 throughout India has shown dental caries in 51.9% in 5 year-old children, 53.8% in 12 year-old children and 63.1% in 15 year old teenagers[3]. The increase in the prevalence of dental caries has been attributed to factors such as high sugar consumption, a shift to a westernized diet, poor SES, and the rate of

urbanization[4].The incidence of caries has been predicted to increase in several developing nations. In order to control the growing burden of oral diseases, a number of developing countries have introduced school‐based oral health preventive programs which aim at improving oral health status of the child and have disclosed some encouraging results[5]. In a developing country like India, information on studies of caries and oral behaviour in schoolchildrenis sparse with no specific studies done in Kashmir. Thus the purpose of this study was to investigate the caries experience in 6 -12yearold schoolchildren in Budgam district of Kashmir Division in Jammu and Kashmir state, India.

Materials and methods

This study was carried out in Budgam District of Kashmir Division of Jammu and Kashmir State, India. A cluster sampling was done. Schools accessible and situated in the district were selected. Sample size of 453 school going children was obtained within the age group of 6-12 years from these schools. The study was conducted on these school-going children over a time span of three months [July to September 2014] involving a total of 10 schools in district Budgam. After obtaining consent from the teachers, 30-50 children were examined per day and given free dental treatment. In this manner, all the students in the age group of 6-12 years were examined from all the schools. The children were examined by the single investigator. All children in each school were examined DMFT and dmf indices were used for recording the status of the teeth.Processing and analysis of data were carried out by means of the Statistical Package for Social Sciences [SPSS ‐ PC version 18, Statistical Analysis Software]. t‐test was used for the comparison of means. The level of significance was set at $P < 0.05$.

Results

The study consists of 453 school going children aged 6-12 years, from ten different schools of district Budgam and was carried out to assess oral health status of 6 to 12 years old school going children of district Budgam. Study population consisted of ten schools which had been selected by cluster sampling method in Budgam District of Kashmir division which comprised of 6 private schools and 4 Government run schools.

Table 1 shows the frequency distribution of the subjects. Children aged 6-8 years were 63 [13.9 %] and children aged 9-12 years were 390 [86.1 %]. Mean age was 9 years. Highest number of children were in the age of 11 years. The study consisted of male children 269 [59%] and female 184 [41 %].

Table 1: Age wise frequency distribution of all school children

Age [years]	Frequency	Percent
6	1	0.2%
7	23	5.1%
8	39	8.6%
9	102	22.5%
10	104	23.0%
11	183	40.4%
12	1	0.2%
Total	**453**	**100%**

Table 2 shows that 133 male children [49 %]were having decayed teeth while 59 female children [32 %] are had decayed teeth. Males were having higher percentage of decayed teeth in comparison to females.

Table 2: Frequency distribution of the study subjects according to number of decayed teeth (d/D Component)

Gender	Total Number of children	Number of children with decayed teeth	Percentage
Male	269	133	49%
Female	184	59	32%
Total	**453**	**192**	**42%**

Table 3 shows the number and percentage of decayed, missing and filled teeth in the study subjects. Out of the total subjects 192 children [42 %] show decayed and caries teeth, 43 children had teeth missing due to caries while 58 children had filled teeth.

Table 3: Frequency distribution of the study subjects according to dmft/DMFT

Nature of teeth	Frequency	Percent
Decayed [D/d]	192	42%
Missing[M/m]	43	9%
Filled [F/f]	**58**	**13%**

Table 4 shows that the mean dmft of the school children was 1.355±1.79 which was lower than the mean DMFT 1.74 ±1.92 seen in the permanent dentition of the same children. In primary as well as permanent dentition the decayed component remained higher in comparison to the missing and decayed components. It was also observed that the females had lower caries experience in both the dentitions as compared to boys. Moreover the observations show that the Filled component was higher in the permanent dentition.

Table 4: Mean dental caries (dmft/DMFT) experience in deciduous and permanent dentitions in study subjects according to gender

Variables	Males [n=269]		Females [n=184]		*t-value*	*p –value*
	Mean	**SD**	**Mean**	**SD**		
Primary Dentition						
dt	1.63	1.86	0.65	1.25	*3.991*	*<0.001*
mt	0.20	0.94	0.19	0.63	*0.040*	*0.969*
ft	0.01	0.11	0.02	0.15	*0.611*	*0.542*
dmft	1.84	2.14	0.87	1.44	*3.450*	*0.001*
	1.355 ± 1.79					
Permanent Dentition						
DT	1.61	1.85	1.43	1.58	*-1.358*	*0.175*
MT	0.06	0.34	0.07	0.29	*0.266*	*0.790*
FT	0.17	0.53	0.15	0.78	*-0.366*	*0.715*
DMFT	1.85	1.97	1.64	1.88	*-1.393*	*0.164*
	1.74 ±1.92					

Discussion

Dental caries is the most prevalent chronic disease among children in the global scenario. There are practically no geographic areas in the world whose inhabitants don't exhibit some evidence of dental caries. Early recognition of the disease is of vital importance. The present study provides information on dental caries experience in a representative sample [n = 453] Budgam District of Kashmir Division of Jammu and Kashmir State, India. School-going children were targeted in this study because of the ease of accessibility. According to present study, the prevalence of decayed teeth among children aged 6-12 years was 42 %. The prevalence estimates for caries were lower than those reported earlier in different studies in different parts of world [6,7]. Mean dmft was 1.355±1.79 for primary dentition which was lower than the mean DMFT 1.74 ±1.92 seen in the permanent dentition of the children. The reason for higher caries in permanent dentition in the selected population could be due to fact that permanent teeth are exposed to carcinogenic diet from the time of eruption till the teeth are in situ. However, DMFT observed in this study is lower than the, WHO global oral health data for areas such as Bangladesh, Bhutan, Sri Lanka and Nepal [8].
The wide use of fluoridated water in the communities of developed countries is playing a major role in the decline of caries[9,10].The high prevalence of caries in permanent dentition in this selected population can also

be related to poor oral hygiene practices, improper dietary habits, as well as poor dental awareness and lack of dental knowledge among children. Additional factors such as late first dental visits for routine check-ups and starting brushing late, which has also been seen earlier[11].The overall high level of untreated dental caries in the children examined underscores the fact that some children are unlikely to have access to the dental care. Emphasis should be placed on the primary health care approach and on community dental health in general. In this study it was concluded that caries rate is high in permanent dentition than in primary dentition and more in male children than the female counterparts. Dental caries has been explained as a multifactorial disease influenced by intra oral and extra oral factors; various factors including age and sex[12].In the present study there was a significant relation between gender and the decayed component. Recent studies have reported variations in dental caries according to the gender and age[13,14].The data on caries pattern helps to determine the appropriate treatment planning for these children. The study showed the occurrence of caries in both anterior and posterior teeth in most of the children. This data of existing dental health problems shows that necessary dental health programs needs to be implemented to attain the required oral care among the school-going children of Jammu and Kashmir State. The study also highlights the extent of dental disease in this community, which reflects the high treatment needs that cannot be met by traditional ways. Reduction of high caries levels can only be achieved by a preventive and oral hygiene promotion program; therefore, there is a great need for preventive-oriented dental services in order to improve the oral health status of this population. The need to initiate school dental health education programs for children and their parents is a must to increase the dental awareness on the importance of oral health and how to prevent oral diseases by improving oral hygiene practices and change in dietary habits. Hence, future health education programs should be targeted towards parents and school teachers of the school children who can significantly influence children's oral health behaviour. The sample size of the present study was less which remains as limitation furthermore; the overall caries prevalence in the study population was low. However, we shall consider the results of the present study as a baseline for further studies that need to be conducted on larger sample size. Furthermore, we should consider the training of dental auxiliaries such as dental therapists, dental hygienists, and dental educators to help in the prevention and control of dental caries.

Conclusion

Our study revealed that caries is more prevalent in male school going children as compared to female school going children.The high prevalence of untreated dental caries found in this group of children requires urgent efforts to initiate planning strategies for prevention and treatment in this group of population. Although parents play a role of influence the eating behaviour of their children, a more effective idea would be empowering the children to make healthy food choices.

References

1. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S and Ndiaye C. The global burden of oral diseases and risks to oral health. Bull World Health Organ, 2005; 83[9]: 661-669.
2. Rao A, Sequeira SP, Peter S. Prevalence of dental caries among school children of Moodbidri. J Indian SocPedoPrev Dent 1999;17:2:45-8.
3. National Oral Health Survey and Fluoride Mapping. An Epidemiological Study of Oral Health Problems and Estimation of Fluoride Levels in Drinking Water. Dental Council of India, New Delhi, 2004; 32; 67-78.
4. Christensen LB, Petersen PE, Bhambal A. Oral health and oral health behaviour among 11-13‐year‐olds in Bhopal, India. Community Dental Health 2003;20:153‐8.
5. Petersen PE, Peng B, Tai B, Bian Z, Fan M. Effect of a school‐based oral health education programme in Wuhan city, Peoples Republic of China. Int Dent J 2004;54:33‐41.
6. Al-Shammary A, Guil E, El-Buckly M. Prevalence of caries in primary school children in Saudi Arabia. Community Dent Oral Epidemiol 1990; 18: 320-321.
7. Akpata ES, Al-Shammary AR, Saeed HI. Dental caries, sugar consumption and restorative dental care in 12-13 year old children in Riyadh. Community Dent Oral Epidemiol 1992; 20:343-346.
8. 8.Orellana MR: Nicaragua dentistry against the odds. British Dental Journal 1988; 404-05.
9. Khan A.A: Prevalence of dental caries in school children of Lahore Pakistan. Community Dental Oral Epidemiology 1992; 20: 155.
10. Kerosuo H, Honkala E: Caries Experience in the primary dentition among groups of Tanzania and

Finish 3 to 7 years old children. Community Dental Oral Epidemiology 1991; 19: 272-76.

11. Nainar SM, Wyne AH. Caries pattern of high caries preschool children attending a dental clinic in Riyadh. Saudi Dental Journal 1998; 10:80-85.

12. Addy M. Dummer PMH, Hunter MI, Kigdon A, Shaw WC. The effect of tooth brushing frequency, tooth brushing hand, sex, and social class on the incidence of plaque, gingivitis and pocketing in adolescents. A longitudinal cohort study. Community Development Health 1990; 7: 237-47.

13. Gauba K, Tewari A, Chawla HS. Frequency distribution of children according to dental caries status in rural areas of northern India [Punjab] J Ind Dent association 1986; 58, 59-1.

14. Dummer MH, Addy M, Kicks R, Anne kingdom. The effect of social class on the prevalence of caries, plaque gingivitis and pocking in 11-12 year old children in South Wales. J Dent 1987; 15; 185-90.

Source of Support: NIL
Conflict of Interest: None