

Original Research

A study to assess oral health status among rural children: A cross-sectional study

Tanya Verma¹, Sandeep Saurabh², Alok Kumar Gupta³, C K Singh⁴, Premchand Kumar⁵, Vijayendra Pandey⁶

¹Assistant Professor, Department of Conservative Dentistry and Endodontics, Vananchal Dental College and Hospital, Garhwa

²PG 3rd year Student, Department of Pedodontics and Preventive Dentistry, Vananchal Dental College and Hospital, Garhwa

³Private Practitioner, Garhwa

⁴Dental Officer, ECHS, Darjeeling

⁵Private Practitioner, Daltongunj

⁶HOD Department of Periodontology, Vananchal Dental College and Hospital, Garhwa

ABSTRACT:

Background: Oral diseases such as dental caries and gingival diseases affect about 80% of the school children worldwide. The pain and tooth loss associated with oral diseases adversely affect the appearance, quality-of-life, growth, and development of children. The present cross-sectional study was conducted to assess oral health status among rural children.

Material and methods: This study was conducted among 5-12-year old children of rural children. A total of 620 school children were included. The study consisted of close-ended questions comprising sociodemographic variables of age, sex. All the children were examined under adequate illumination in the school premises. The examination was conducted with a plain mouth mirror and CPI probe as given by the WHO 1997. Oral hygiene status was assessed using Simplified Oral Hygiene Index (OHI-S) were assessed based on WHO proforma 1997. Data analysis Statistical analysis of the data was done using Statistical Package for Social Sciences version 11.5 (SPSS Inc., Chicago, IL, USA). $P \leq 0.05$ was considered as statistically significant and highly significant, respectively.

Results: The results of the study showed that there were 59.03% males and 40.96% were females. It was observed that 297 participants belonged to age group of 5-10 years and 323 belonged to age group >10 years. Mean age of the participants was 10.52 ± 2.37 . It was observed that the decayed teeth (d/D) were present in 258 study subjects, missing teeth (e/M) were present in 36 study subjects, filled teeth (f/F) were present in 14 study subjects and deft/DMFT was 308. It was observed that the good oral hygiene was present in 206 study subjects, average oral hygiene was present in 246 study subjects, poor oral hygiene was present in 168 study subjects and mean OHI-S was 1.52 ± 0.87 .

Conclusion: The prevalence of dental caries is less than half. This suggested a need of dental health education program including proper oral hygiene instruction which helps children to improve positive dental attitude and behavior.

Keywords: oral hygiene index-S, oral health status, dental caries.

Received: 12 September, 2020

Accepted: 12 November, 2020

Corresponding Author: Dr. Vijayendra Pandey, HOD Department of Periodontology, Vananchal Dental College and Hospital, Garhwa

This article may be cited as: Verma T, Saurabh S, Gupta AK, Singh CK, Kumar P, Pandey V. A study to assess oral health status among rural children: A cross-sectional study. J Adv Med Dent Sci Res 2020;8(12):13-15.

INTRODUCTION:

Oral health is an integral part of general health and no individual can be considered fully healthy while there is active disease in the mouth as "Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity".¹ Dental caries is one of the most prevalent diseases

among children. Major complications associated with dental caries are dentoalveolar infection and pain. These complications can adversely affect the quality of life in children and can place undue financial burden on their families.² The National Oral Health Survey and Fluoride Mapping-2003 reported that the prevalence of dental caries among 12-year-old

children was 72.5% and among 15-year-old children was 75.4% in India.³ The changing living condition, adoption of healthy lifestyle, improved self-care practices, effective use of fluorides, and establishment of preventive oral care programs which have improved oral health status among adults in developed countries⁴ are dominantly deficient in developing countries with worse scenarios in rural areas. The present cross-sectional study was conducted to assess oral health status among rural children.

MATERIAL AND METHODS:

This study was conducted among 5-12-year old children of rural children. Before the commencement of the study ethical clearance was taken from the Institutional Ethics Committee. Permission to examine school children was obtained from the heads of the respective schools. Informed written consent was taken from parents and children before carrying out the survey. All examination was carried out by

single examiner. Children who were present on the day of examination, willing to participate, positive parental consent, and no medical condition were included in the study. A total of 620 school children were included. The study consisted of close-ended questions comprising sociodemographic variables of age, sex, type of school, parent's education, occupation, and income. All the children were examined under adequate illumination in the school premises. The examination was conducted with a plain mouth mirror and CPI probe as given by the WHO 1997. Oral hygiene status was assessed using Simplified Oral Hygiene Index (OHI-S) were assessed based on WHO proforma 1997.⁵ Data analysis Statistical analysis of the data was done using Statistical Package for Social Sciences version 11.5 (SPSS Inc., Chicago, IL, USA). $P \leq 0.05$ was considered as statistically significant and highly significant, respectively.

RESULTS:

Table 1 shows the total population of study group of 620. The gender distribution of the study showed that there were 59.03% males and 40.96% were females.

Gender	N	%
Male	366	59.03
Female	254	40.96
Total	620	100

Table 1: Gender distribution among the study subjects

Table 2 shows the age groups of participants of study. It was observed that 297 participants belonged to age group of 5-10 years and 323 belonged to age group >10 years. Mean age of the participants was 10.52 ± 2.37 .

Age (in years)	N	%
5-10	297	47.90
>10	323	52.09
Mean	10.52	
SD	2.37	

Table 2: Age distribution among the study subjects

Table 3 depicts decayed (d/D), missing (e/M), and filled (f/F) teeth and the total deft/DMFT. It was observed that the decayed teeth (d/D) were present in 258 study subjects, missing teeth (e/M) were present in 36 study subjects, filled teeth (f/F) were present in 14 study subjects and deft/DMFT was 308.

Variables	Present	
	N	%
d/D	258	41.6
e/M	36	5.8
f/F	14	2.2
def/DMFT	308	49.6

d/D=Decayed, e/E=missing teeth, f/F=filled, def/DMFT=decayed, missing, filled teeth

Table 3: Def/DMFT among the study subjects

It was observed that the good oral hygiene was present in 206 study subjects, average oral hygiene was present in 246 study subjects, poor oral hygiene was present in 168 study subjects and mean OHI-S was 1.52 ± 0.87 .

Oral hygiene	N	%
Good	206	33.2
Average	246	39.67
Poor	168	27.09
Mean	1.52	
SD	0.87	

Table 4: OHI-S among the study subjects

DISCUSSION:

The attainment of oral health which is an essential component of general health and well-being is impeded by multiplicity of barriers which include the cost, poor access due to workforce shortages, and inequitable distribution of the dental workforce, undue fear, anxiety and self-blaming, low oral health literacy and differing oral health beliefs, negative oral health attitudes, and poor oral health behaviors. Variations exist in oral health practices and the prevalence of oral diseases (periodontal diseases, treatment needs, and dental caries) in urban and rural areas.⁶⁻⁸

The results of the study showed that there were 59.03% males and 40.96% were females. It was observed that 297 participants belonged to age group of 5-10 years and 323 belonged to age group >10 years. Mean age of the participants was 10.52±2.37. It was observed that the decayed teeth (d/D) were present in 258 study subjects, missing teeth (e/M) were present in 36 study subjects, filled teeth (f/F) were present in 14 study subjects and deft/DMFT was 308. It was observed that the good oral hygiene was present in 206 study subjects, average oral hygiene was present in 246 study subjects, poor oral hygiene was present in 168 study subjects and mean OHI-S was 1.52±0.87.

Lo EC *et al* have reported high prevalence of caries in urban children (30%), followed by peri-urban children (21%), and the lowest in rural children (13%).⁹

Oral hygiene status was poor in rural children. Poor oral hygiene in rural children reflects low awareness level and less use of oral hygiene aids in rural children.¹⁰

Jürgensen and Petersen reported high risk for caries among males, children residing in semi-urban area, children with low and moderate socioeconomic standing, dental visits in the last 12 months.¹¹

David et al. reported high prevalence of dental caries with high utilization of dental services.¹²

The level of caries was higher in children attending an urban school shown in the findings of Almeida *et al*.¹³

This is probably due to more cariogenic diet and easier access to refined sugars and sugar products among the urban school children.¹³

CONCLUSION:

The prevalence of dental caries is less than half. This suggested a need of dental health education program including proper oral hygiene instruction which helps children to improve positive dental attitude and behavior.

REFERENCES:

1. http://www.who.int/governance/eb/who_constitution_en.pdf
2. Chesters RK, Ellwood RP, Biesbrock AR, Smith SR. Potential Modern Alternative Designs for Caries Clinical Trials (CCTs) and How These can be Validated against the Conventional Model. *J Dent Res* 2004;83:122-4.
3. National Oral Health Survey and Fluoride Mapping. India: Dental Council of India Publication; 2002-2003.
4. Zhu L, Petersen PE, Wang HY, Bian JY, Zhang BX. Oral health knowledge, attitudes and behaviour of adults in China. *Int Dent J* 2005;55:231-41.
5. World Health Organization. Oral health surveys-basic methods 4th edition, Geneva, 1997.
6. Adegbenbo AO, el-Nadeef MA. National survey of periodontal status and treatment need among Nigerians. *Int Dent J* 1995;45:197-203.
7. el-Nadeef MA, Adegbenbo AO, Honkala E. The association of urbanisation with the prevalence of dental caries among schoolchildren in Nigeria new capital territory. *Int Dent J* 1998;48:44-9.
8. Akhionbare O, Ojehanon PI, Ufomata DO, Jeboda SO. Periodontal treatment needs of urban and rural populations in Edo State, Nigeria. *Nig Dent J* 2007;15:13-7.
9. Lo EC, Holmgren CJ, Hu DY, Wan HC. Dental caries status and treatment needs of 12-13-year-old children in Sichuan Province, Southwestern China. *Community Dent Health* 1999;16:114-6.
10. Shailee F, Girish MS, Kapil RS, Nidhi P. Oral health status and treatment needs among 12- and 15-year-old government and private school children in Shimla city, Himachal Pradesh, India. *J Int Soc Prev Community Dent* 2013;3:44-50.
11. Jürgensen N, Petersen PE. Oral health and the impact of socio-behavioural factors in a cross sectional survey of 12-year old school children in Laos. *BMC Oral Health* 2009;9:29.
12. David J, Wang NJ, Astrøm AN, Kuriakose S. Dental caries and associated factors in 12-year-old schoolchildren in Thiruvananthapuram, Kerala, India. *Int J Paediatr Dent* 2005;15:420-8.
13. de Almeida CM, Petersen PE, André SJ, Toscano A. Changing oral health status of 6- and 12-year-old schoolchildren in Portugal. *Community Dent Health* 2003;20:211-6.