

Dental Practices in Adult Population of Uttarakhand, India. A Cross Sectional Study; Oral Hygiene Project Part -II

Abhishek Kandwal¹, Saba Jamil², Sanjeeva Kumar³, Shaika Negi⁴, Nidhi Kundra⁵

¹Associate Professor, Department of Dental Surgery, Cancer Research Institute, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand, India.

²Assistant Professor, Department of Dental Surgery, Cancer Research Institute, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand, India.

³Senior Resident, Department of Dental Surgery, Cancer Research Institute, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand, India.

⁴Dental Consultant, District Hospital New Tehri, Swami Rama Himalayan University, Uttarakhand, India.

⁵Dental Consultant, Community Health Center Doiwala, Swami Rama Himalayan University, Uttarakhand, India.

Received: September 2020

Accepted: September 2020

ABSTRACT

Background: Dental practices form the basis of care in oral health. These practices are very essential to understand in need to modify behavior of the population. Good oral and dental practices results in good oral health and faulty practices results in poor oral health. The aim is to access dental practices of the three health centers as per income status and education level. **Methods:** 600 individuals were enrolled in the study and were subjected to oral health questionnaire. **Results:** Only 25 % of the population had appropriate practices overall population, while center 1 had 14.5%, center 2 had 28% and center 3 had 32.5 % respectively. The Mean± Standard deviation was 0.25±0.43 for overall population while for center 1, center 2 and center 3 were 0.15±0.35, 0.28±0.45, 0.33±0.47 respectively. **Conclusion:** Good dental practices prevalence in the population was very poor. This would reflect in a higher rate of dental disease burden in the population. Identification of good and bad dental practices helps in formulation of efficient oral health care policies to improve oral health of the population.

Keywords: Dental practices, oral health, oral hygiene.

INTRODUCTION

Dental disease is one of the most prevalent diseases in the world, in India it is largely undocumented and poorly understood.^[1] World health organization reports that Oral disease have a high incidence and prevalence in low income countries and is considered a major public health care problem.^[2-4] Poor dental practices results in high incidence of dental caries and periodontal disease. This increases dental disease burden which results in higher financial load in the population. Poor oral hygiene also results in increased risk of systemic diseases like diabetes, stroke, cardiovascular diseases and preterm delivery. Hence adequate dental practices are essential not only to maintain good oral health but also good systemic health.^[5-8]

MATERIALS AND METHODS

Present study is a part of oral hygiene project of cross sectional survey, to assess and dental

practices in our population at three centers. A total of 600 individuals were enrolled in the study 200 from each center. The study was approved by the institutional ethical committee vide letter no SRHU/HIMS/ETHICS/2020/66.

Patient who were 18 year and above were enrolled in the study, condition that can alter dental practices such as recent trauma within six months, diminished mental or physical activity were excluded from the study. Written consent was taken from all the participants. A detailed questionnaire from the 'oral hygiene project' was utilized to access dental practices. For good dental Practice the oral hygiene project questionnaire had nine questions, the most desirable or appropriate response was given score of '1' and other options were scored as '0'. Individuals who scored 4 or more cumulative score were classified as having appropriate practice for oral health. Each dental practice parameter was analyzed for education and income category. P value of 0.05 was considered significant, with 95% confidence interval and 90% power.

RESULTS

The mean ± s.d scores for the adequate dental practice for the total population were 0.25±0.43. The adequate practices amongst the three centers

Name & Address of Corresponding Author

Dr. Abhishek Kandwal
Associate Professor & Head,
Department of Dental surgery
Cancer Research Institute
Himalayan Institute of Medical Sciences
Swami Rama Himalayan University, India

were highest for center 3 (0.33±0.47) followed by center 2(0.28±0.45) and center 1(0.15±0.35). Only 25 % of the population had appropriate practices overall population, while center 1 had 14.5%, center 2 had 28% and center 3 had 32.5 % respectively.

Practice that was statistically significant included dental visit frequency, brushing frequency, type of dentifrice used, when to replace missing teeth were statistically significant for income criteria (p= 0.004 to 0.000) and education criteria (p =.001 to 0.000). 72.8 % of population had unplanned dental visit, 62.5 % brushed once a day, 54.7% use herbal /over counter toothpaste and 41.8% plan to get teeth replaced within six month after extraction. [Table 1].

Regular use of sensitivity paste; child first dental visit and child brushing initiation time were statistically significant for both income criteria (p= 0.000-0.01) and education criteria (p=0.000-0.01). 42.2 % changes brush in 3 months, 31.3 % use random brushing technique, 44.7 % did not used sensitivity paste as regular paste, 54.6% did not knew time of child first dental visit and 43.3%

belief to start child brushing at age of three. [Table 2].

On doing intergroup comparison, Center 1 had four parameter statistically significant for income criteria which included brushing frequency, regular use of sensitivity paste, child first dental visit and child brushing start age. While five parameters were statistically significant for education criteria, these were brushing frequency, type of dentifrice use, regular use of sensitivity paste, child first dental visit and child brushing start age. (p<0.05) [Table 1,2]

Center 2 had 2 parameter statistically significant for income criteria which included dental visit frequency and regular use of sensitivity paste. For education criteria four parameter were statistically significant including time to replace teeth, brushing strokes, use of sensitivity paste and starting age of child brushing. P<0.05. [Table 1,2]. For center 3 only two parameter were statistically significant for education criteria which included brushing strokes and starting age of child brushing. P<0.05. [Table 1,2]

Table 1: Table depicts health center wise and total population data for various practices domain responses in percentages. {*p-value denotes statistical significant in relation to income; † p-value denotes statistical significant in relation to education; significant set at <0.05.}

Parameter Practices	Center 1 (n=200)		Center 2 (n=200)		Center 3 (n=200)		Total population n=600	
	%	P */†	%	P */†	%	P */†	%	P */†
Dental visit frequency	-	0.42/0.3	-	0.01/0.18	-	0.02/ 0.17	-	0.004/0.001
a) six month	1		5.5		11		5.8	
b)Annual	2.5		6.5		21		10	
c)Unplanned	85		75		58.5		72.8	
d) First visit	11.5		13		9.5		11.3	
Brushing frequency	-	0.009/0.000		0.22/0.06		0.8/0.11		0.001/0.000
a) once	55		57.5		75		62.5	
b) twice	32		41		24.5		32.5	
c) unplanned	13		1.5		0.5		5	
Type of Dentifrice used	-	0.1/0.000		0.7/0.63		0.9/0.13		0.000/0.000
a) over the counter /herbal	7.5		76		80.5		54.7	
b)fluorinated /medicated	68		20		15		34.3	
c)Tobacco containing paste	13.5		0.5		0		4.6	
d) homemade mix	11		1.5		4.5		5.6	
e) tooth powder	0		2		0		0.6	
When do you replace teeth	-	0.3/0.13		0.2/0.000		0.5/0.14		0.01/0.000
a) as soon as possible	2.5		25.5		11		13	
b) within 6 months	30.5		22		73		41.8	
c)plan before extraction	54.5		29		2.5		28.7	
d) no need to replace	12.5		23.5		13.5		16.5	

Table 2: Continue for Table 1: Depicts health center wise and total population data for various practices domain responses in percentages. {*p-value denotes statistical significant in relation to income; † p-value denotes statistical significant in relation to education; significant set at <0.05.}

Parameter Practices	Center 1 (n=200)		Center 2 (n=200)		Center 3 (n=200)		Total population n=600	
	%	P */†	%	P */†	%	P */†	%	P */†
Brush change	-	0.5/0.33		0.16/0.000		0.8/0.05		0.13/0.000
a) 3months	10.5		64		52		42.2	
b) when bristle frays	32		22		31		28.3	
c) one year	35.5		3		4		14.1	
d) when old	22		11		13		15.3	
Brush strokes		0.06/0.45		0.2/0.02		0.5/0.01		0.09/0.000
a) Up & down	4		30.5		29		21.2	
b)circular	20		23		26		23	
c)back and forth	39.5		16		18		24.5	
d) random	36.5		30.5		27		31.3	

Regular use of sensitivity paste		0.03/0.000		0.02/0.000		0.6/0.15		0.000/0.000
a) yes	27		28		29		28	
b) no	40.5		38.5		55		44.7	
c) donot know	32.5		33.5		16		27.3	
Child first dental visit		0.02/0.02		0.2/0.1		0.1/0.5		0.01/0.01
a)First tooth erupts	2.5		15.5		49		22.3	
b) after 3 years	30		17		22		23	
c) do not know	67.5		67.5		29		54.6	
Child brushing initiation		0.004/0.001		0.5/0.03		0.6/0.02		0.002/0.000
a)First tooth erupts	1.5		23		45.5		23.3	
b) After 3 years	64.5		32		33		43.2	

DISCUSSION

In present study Majority of the population visited unplanned or when in pain, these findings are similar to Gómez et al.^[9] On the contrary reddy et al and Kikwilu et al reported more frequent dental visits.^[10,11] Various reason for not visiting dentist frequently ranges from fear of dentist, do not require checkup and oral health is not important, similar reasons were provided by our study population.^[12-14]

It was observed that a despite having higher education and good income, the practice of visiting dentist was majorly unplanned followed by current visit being the first dental visit. Regarding visit of child to dentist and starting of brushing majority of the population either did not know or was following wrong practices. Population with higher education and income a structured systematic program of education and awareness is essential to modify their practices and beliefs.

When compared between the three centers it was observed that urban and rural center both had similar level of dental practices. All the center despite their education had poor dental practices this could be attributed to age old traditions and practices passed from one generation to other. Majority of the population did not considered oral health as important enough to spend on preventive dentistry procedures. There is also lack of accessible oral health services and non-inclusive primary education for oral health in our elementary schools.^[15]

Majority of our population did not know about starting age of child brushing and child first dental visit. Our population also belied that saving deciduous tooth is not necessary and is wastage of economic resources as they are going to be replaced by the permanent dentition. These findings were similar to that of Mounissamy et al.^[16]

Majority of the population amongst the three health centers did not used sensitivity paste for long term and used random brushing technique. For replacement of extracted majority of the total population replaced their missing teeth within in 6 month. While in Center 1 majority planned for prosthesis before replacement of teeth. Also for

center 1 majority of population used fluorinated toothpaste while center 2 and center 3 used herbal toothpaste. This could be because center 1 was a tertiary level referral center and center 2 and center 3 were district level health care center.

Frequency of brushing and brush change was similar for center 2 and center 3, both the health center had similar kind of healthcare facilities. On the contrary for center 1 had more patients who did not change brush for more than a year and would brush in unplanned as compared to center 2 and center 3. This all could be attributed to the fact that patients reporting to center 1 were with more complex dental diseases and burden as it provided as a referral center for all nearby health centers.

CONCLUSION

Present study shows that adequate dental practices are very low in our population despite higher education status and income. Thus a comprehensive oral awareness and education policy is the need of the hour to address this problem.

By modifying and inculcating correct dental care practices disease burden can be reduced significantly.

REFERENCES

- Balaji S M. Oral health, universal health coverage, and dental research. *Indian J Dent Res* 2019;30:486
- World Health Organization. *The World Health Report 2002. Reducing Risks, Promoting Healthy Life.* Geneva: World Health Organization, 2002.
- Gambhir RS, Gupta T. Need for oral health policy in India. *Ann Med Health Sci Res* 2016;6:50-5.
- Kothia NR, Bommireddy VS, Devaki T, Vinnakota NR, Ravoori S, Sanikommu S, et al. Assessment of the status of national oral health policy in India. *Int J Health Policy Manag* 2015;4:575-81
- Fowler EB, Breault LG, Cuenin MF. Periodontal disease and its association with systemic disease. *Mil Med.* 2001;166:85-9.
- DeBowes LJ. The effects of dental disease on systemic disease. *Vet Clin North Am Small Anim Pract.* 1998;28:1057-62.
- Ohyama H, Nakasho K, Yamanegi K, Noiri Y, Kuhara A, Kato-Kogoe N, et al. An unusual autopsy case of pyogenic

- liver abscess caused by periodontal bacteria. *Jpn Infect Dis.* 2009;62:381–3.
8. Taylor GW. Bidirectional interrelationships between diabetes and periodontal diseases: An epidemiologic perspective. *Ann Periodontol.* 2001;6:99–12.
 9. Gómez I, Warnakulasuriya S, Varela-Centelles PI, López-Jornet P, Suárez-Cunqueiro M, Diz-Dios P, et al. Is early diagnosis of oral cancer a feasible objective? Who is to blame for diagnostic delay? *Oral Dis.* 2010;16:333–42.
 10. Reddy V, Bennadi D, Gaduputi S, Kshetrimayum N, Siluvai S, Reddy CV. Oral health related knowledge, attitude, and practice among the pre-university students of Mysore city. *J Int Soc Prev Community Dent.* 2014 Sep;4(3):154-8.
 11. Kikwilu EN, Masalu JR, Kahabuka FK, Senkoro AR. Prevalence of oral pain and barriers to use of emergency oral care facilities among adult Tanzanians. *BMC Oral Health.* 2008;8:28.
 12. Poudyal S, Rao A, Shenoy R, Priya H. Utilization of dental services in a field practice area in Mangalore, Karnataka. *Indian J Community Med.* 2010;35:424-5
 13. Gambhir RS, Brar P, Singh G, Sofat A, Kakar H. Utilization of dental care: An Indian outlook. *J Nat Sci Biol Med.* 2013;4:292-7
 14. Devraj CG, Eshwar P. Reasons for use and non-use of dental services among people visiting a dental college hospital in India: A descriptive cross sectional study. *Eur J Dent.* 2016;6:422-7
 15. Grewal N, Kaur M. Status of oral health awareness in Indian children as compared to Western children: A thought provoking situation (a pilot study) *J Indian Soc Pedod Prev Dent.* 2007;25:15–9.
 16. Mounissamy A, Moses J, Ganesh J, Arulpari M. Evaluation of parental attitude and practice on the primary teeth of their children in Chennai: An hospital survey. *Int J Pedod Rehabil* 2016;1:10-4

Copyright: © the author(s), 2020. It is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits authors to retain ownership of the copyright for their content, and allow anyone to download, reuse, reprint, modify, distribute and/or copy the content as long as the original authors and source are cited.

How to cite this article: Kandwal A, Jamil S, Kumar S, Negi S, Kundra N. Dental Practices in Adult Population of Uttarakhand, India. A Cross Sectional Study; Oral Hygiene Project Part -II. *Ann. Int. Med. Den. Res.* 2020; 6(6):DE07-DE10.

Source of Support: Nil, **Conflict of Interest:** None declared