

Evaluation of caries experience with oral health practices in Lucknow children

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ABSTRACT

The aim of this study was to investigate the relationship of oral health practices with dental caries in 6-12 age group of children in Lucknow city, India. 100 cases in 6-12 year old age group (DMFT/deft >0) and equal number of controls i.e. 100 (DMFT/deft =0). Cases matched with the control on age, sex and religion. Clinical examination (DMFT/deft index) was done in accordance with W.H.O. criteria for epidemiological studies. Respondents were interviewed in depth on a meticulously self prepared questionnaire. Starting the teeth cleaning at late age, frequency of brushing twice a day, day and night brushing and parent's perception of their own as well as their children's oral health status were significant risk factors for dental caries. Based on the findings of the result of our study we would like to conclude with the need and importance of a national dental health programme which would be able to bring out substantial and qualitative change in the present oral health practices.

Key words: Dental caries, DMFT, Oral health practices

INTRODUCTION

The world is going through an epidemiological transition. Despite great improvements in the oral health of populations in several countries global oral health problem still persists as revealed by the WHO data¹ on selected countries like

America where the DMFT score was 3 and European region 2.6 which was higher as compared to the African countries where the DMFT score was 1.7 and India where DMFT score recorded was 1.2-2.6. The challenges of improving oral health are urgently needed in developing countries like India to reduce the burden but for that a systematic approach of various risk factor assessment is needed which would be instrumental in planning and implementing oral health programmes.²

Hence the present study was undertaken with the aim to study the relationship of oral health practices in 6-12 year old children through a case-control approach. This age group was taken as it is the transitional period from the primary dentition to the permanent, which will have bearing on the adulthood.

Methodology and Study population

A total of 200 respondents in 6-12 age group of children (equally divided between cases and controls) were selected on certain pre-set criteria i.e. cases included the patients of dental caries (DMFT / deft > 0) consulting the Out Patient Department of Pedodontics and Preventive Dentistry at Saraswati Dental College and Hospital and controls were subjects devoid of dental caries (DMFT / deft = 0). Cases and controls were matched on three confounding factors namely age, sex and religion.

Tool for data collection

Clearance of Ethical committee of Saraswati Dental College and Hospital, Lucknow was obtained. Informed consent was taken from both the cases and the controls and they were informed about the confidentiality of the procedure. Patients and their parents were interviewed in depth and the data was recorded on a self prepared questionnaire. The first part of it dealt with the personal details. The second part of the questionnaire dealt with the clinical examination of the cases and the controls. DMFT / deft index was recorded in accordance with WHO criteria for epidemiological studies^[3] using sterilized mouth mirror and CPI probe by one investigator to remove intra-observer bias. The third part had questions on risk factors dealing with oral health practices. Data analysis was done by employing SPSS (Statistical

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Package for Social Sciences) version 15 statistical analysis software.

RESULTS

In significantly higher proportion of subjects amongst cases teeth cleaning was started late ($p=0.042$), frequency of tooth brushing twice a day was significantly higher amongst cases as compared to controls ($p<0.001$). Similarly practice of tooth brushing both day and night was significantly higher amongst cases as compared to controls ($p<0.001$). The proportion of

respondents considering teeth cleaning essential for a single reason was higher in cases, though not statistically significant, as compared to controls and likewise higher proportions of respondents in control made visit to a dentist at shorter duration also not statistically significant. Significantly higher proportion of parent's in cases ($p<0.001$) rated their oral health status and their children's ($p=0.006$) to be neither good nor bad and bad as compared to control group (Table 1). In clinical examination of the present study mean DMFT score recorded was 2.77 (Fig. 1).

Table 1. Oral Health Practices

SN	Oral Health Practices	Control Group (n=100)		Study Group (n=100)		OR	95% CI	Statistical significance	
		No.	%	No.	%			χ^2	P
1.	Age at which teeth cleaning was started								
	By 6 months	0	0	0	0	-	-		
	12 to 24 months	35	35	22	22	1.91	1.020-3.573		
	24 months or more	65	65	78	78	0.52	0.280-0.980	4.147	0.042
2.	Age at introduction of toothpaste								
	<12 months	0	0	0	0	-	-		
	12 to 24 months	21	21	18	18	1.21	0.601-2.442		
	>24 months	79	79	82	82	0.83	0.410-1.665	0.287	0.592
3.	Method of cleaning teeth								
	With brush	96	96	96	96	-	-		
	With finger	4	4	3	3	1.35	0.294-6.180		
	Other aid	0	0	0	0	-	-		
	No brushing	0	0.0	1	1	-	-	1.143	0.565
4.	Use of toothpaste	98	98	99	99	0.49	0.044-5.548	0.338	0.561
5.	Self tooth brushing	87	87	89	89	0.83	0.352-1.946	0.189	0.663
6.	Frequency of brushing twice a day	25	25	65	65	0.18	0.097-0.331	32.323	<0.001
7.	Both day-night brushing	27	27	65	65	0.20	0.109-0.364	29.066	<0.001
8.	Time spent on brushing								
	< 2 min	17	17	19	19	0.87	0.424-1.798		
	2-5 minutes	81	81	78	78	1.20	0.604-2.393		
	> 5 minutes	2	2	3	3	0.66	0.108-4.036	0.368	0.832
9.	Reasons for brushing teeth								
	Clean bright teeth	20	20	23	23	0.84	0.426-1.645		
	Prevention of caries	11	11	8	8	1.42	0.546-3.698		
	To get rid of foul breath	37	37	49	49	0.61	0.348-1.075		
	All of the above	32	32	20	20	1.88	0.987-3.589	5.127	0.163
10.	Child's dental health								
	Very good	7	7	2	2	3.69	0.747-18.211		
	Good	75	75	62	62	1.84	1.002-3.372		
	Neither good nor bad	15	15	22	22	0.63	0.303-1.291		
	Bad	3	3	14	14	0.19	0.053-0.0684	12.453	0.006
11.	Parents self rated oral health								
	Very good	12	12	5	5	2.59	0.877-7.651		
	Good	76	76	71	71	1.29	0.689-2.429		
	Neither good nor bad	10	10	20	20	0.44	0.196-1.006		
	Bad	2	2	4	4	0.49	0.088-2.737	36.421	<0.001
12.	Visit to a dentist								
	Every 3 months	5	5	2	2	2.58	0.488-13.617		
	Every 6 months	94	94	98	98	0.32	0.063-1.624		
	Only when a need arises	1	1	0	0	-	-	2.369	0.306

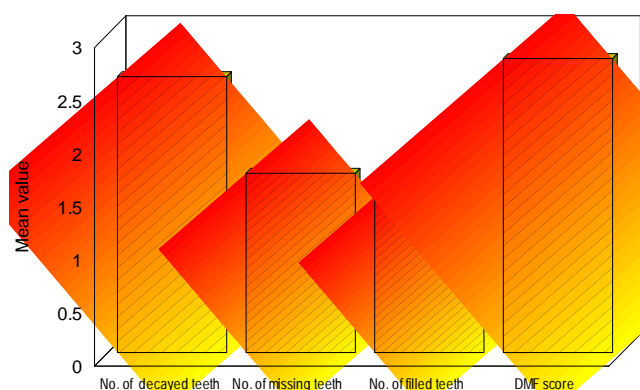


Fig no. 1 Clinical examination of the cases (DMFT score)

DISCUSSION

In oral health practices for the present study significantly higher proportion of cases started teeth cleaning late ($p=0.042$), had higher frequency of tooth brushing twice a day ($p<0.001$), used to brush both day and night ($p<0.001$) as compared to controls. Significantly higher proportion of parent's ($p<0.001$) in cases rated their oral health and their children's oral health ($p=0.006$) to be neither good nor bad and bad as compared to controls.

Studies in agreement to our present study pertaining to the late age of teeth cleaning associated with high caries experience were those of Tyagi,⁴ Lulic - Dukic *et al.*⁵. This could be attributed to the fact that late starters had no means of mechanical removal of plaque and food debris and hence had dental caries as its sequel. Similar views were also expressed by Al Ghanim *et al.*⁶

The higher brushing frequency found in cases in our study was primarily motivated to overcome foul breath rather than dental caries itself as is evident from the results with higher proportion of cases sole aim of brushing was to get rid of foul breath. This was well supported by Hunter *et al.*⁷ who suggested that tooth brushing is regarded as socially acceptable behavior which is seemingly unrelated to preventive care.

Considering brushing essential to get rid of foul breath in our study as a single reason has been supported by Zhu *et al.*⁸, Macgregor *et al.*⁹ emphasized that tooth brushing was clearly an integral part of life pattern and different people performed their dental hygiene for quite different reasons.

Parent's self rated oral health as neither good nor bad and bad was in conformity with Slade *et al.*¹⁰ and Omiri *et al.*¹¹ who found it to be significantly associated with caries prevalence. Parent's rating of their own oral health as a marker for their children's decay may be due to the parental transmission of cariogenic bacteria, general attitudes and behaviors regarding oral health within the family or both.¹⁰

Parent's rating of their children's oral health is a significant risk indicator for caries experience as observed in our study which has also been supported by Okada *et al.*¹² and Sohn *et al.*¹³ as the relationship between parent's perception of his or her child's oral health may have implications for early dental visits for prevention and early intervention rather than restorative and surgical care. Regarding visit to a dentist at shorter duration of time was higher in controls in our study attributed to the positive attitude they possessed for prevention of dental caries, similar views were expressed by Qin *et al.*¹⁴ case-control study.

CONCLUSION

Based on the findings of the result of our study we would like to conclude with the need and importance of a national dental health programme which would be able to bring out substantial and qualitative change in the present oral health practices and further would like to recommend the need of such similar case-control studies to bring out the total picture from early childhood till adolescent which will definitely be instrumental in achieving the W.H.O / F.D.I global oral health goal of DMFT < 3 in 12 year old by the year 2015 – a great step towards "Health for all."

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