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# **Original Research Article**

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# Comparative study of oral hygienic practices and oral health status among people residing in urban and urban slum of Ahmedabad municipal corporation

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## **ABSTRACT**

**Background:** Oral hygiene should be educated and practiced at early age as it is one of the determinants of the health state later in one's life. Dental problems are very much prevalent not only in urban slum owing to poor oral hygiene but also in well-developed urban area due to pursuing bad food habit. The present study was undertaken to compare the oral hygienic practices among people in both areas.

**Methods:** A cross sectional study carried out in 300 people (>10 years) residing in urban and urban slum of Vejalpur (150 from each area). A p-value of <0.05 was considered statistically significant for applied statistical tests.

**Results:** The present study showed that only 26.7% and 17.2% people in urban and urban slum respectively had habit of brushing both time morning and at night before going to bed. Only 25.7% and 11.8% of people used correct brushing technique. Regarding oral health status 47.4% of people in urban area and 61.1% in urban slum had dental caries

**Conclusions:** Oral hygienic practices were poor needs educational motivation regarding duration of brushing, appropriate way to brush the teeth, and use of mouthwash.

**Keywords:** Oral hygiene, Dental caries, Urban, Urban slum, Comparative study

### INTRODUCTION

Oral hygiene is the science and practice of the recognition, treatment, and prevention of oral diseases. Good oral hygiene is the foundation for a healthy mouth and prevents 80% of all dental problems. Delying the rules of proper oral hygiene is of primary importance in the prevention of dental caries and periodontal diseases. Unfortunately, developing country like India, dental hygiene is poor with inadequate and improper brushing of teeth, no washing of mouth after intake of sweets, increased consumption of refined sugar and sweetened foods. 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.<sup>2</sup>

A survey in India suggested that there was an insufficient degree of education about oral health. In a country like India, the awareness about the dental disease and their impact on general health and the need to safeguard oral health and hygiene should be given utmost importance because of the increased use of tobacco, improper eating habits and inefficient maintenance of oral hygiene.<sup>3</sup>

# **METHODS**

A cross-sectional study was conducted to assess the oral hygienic practices and oral health status among people

residing in urban and urban slum area of Vejalpur ward of Ahmedabad Municipal Corporation (AMC). These two areas were purposely selected. An informed consent for the participation in study was obtained from each participant. People >10 years of age, so that they can easily understand and answer the questionnaire were included in study. The purpose of the survey was informed and explained to the participants and those who voluntarily agreed to participate in the survey were asked the questionnaire and also the oral

Health examination was carried out. Total 300 people, 150 people from both areas fulfilling the above mentioned criteria, were selected for study. Study was carried in year 2016 in 6 month duration from 1st March to 31st August 2016. A pretested semi structured questionnaire on oral hygiene practices including regularity of cleaning the teeth, frequency of brushing, aids and agents was used for this purpose. The second part consisted of clinical examination for dental caries and treatment needs as described by WHO (1997) for oral

health surveys.<sup>4</sup> Caries was examined under natural day light using mouth mirrors.

## Statistical analysis

All the analysis was done using Epi Info 3.5.3 version. A p value of <0.05 was considered statistically significant. Chi-square test was used to compare the proportions between the groups.

#### RESULTS

Out of 300 study population 146 (48.8%) were male [Urban 77 (51.3%), Urban slum 69 (46%)] and 154 (51.2%) were female [Urban 73 (48.7%), Urban slum 81 (54%)]. Majority of participant in our study were of lower 53.6% followed by lower middle class 30.4% and only 16% were from middle class according to Modified Prasad Classification. Majority 64% [Urban 68%, Urban slum 60%] belonged to age group of 20 to 60 years.

Table 1: Oral hygienic practices among study population.

	Urban Area (n=150)	%	Urban Slum (n=150)	%
Brushing Material				
Tooth paste and brush	123	82.0	102	68.2
Tooth powder and brush	8	5.3	13	8.5
Tooth paste and finger	6	4.0	11	7.3
Tooth powder and finger	5	3.3	8	5.3
Other (Neem, coal, twang etc.)	6	4.0	10	6.7
Both indigenous material and tooth paste	2	1.3	6	4.0
Frequency of Brushing				
Morning	110	73.3	124	82.8
Morning and Night	40	26.7	26	17.2
Pattern of Brushing				
Only Horizontal	111	74.3	132	88.2
Horizontal and Vertical	39	25.7	18	11.8
Habit of Mouth Gargling after meal				
No	78	52.1	90	59.8
Occasionally	48	32.2	40	26.4
Regularly	24	15.7	21	13.8
Change of Brush at regular interval				
Yes	64	42.4	43	28.7
No	86	57.6	107	71.3

Various questions regarding the oral hygienic practices and oral health were asked. Result showed that proportion of toothpaste and brush for brushing was more 123 (82%) in urban area as compared to urban slum 102 (68.2). Merely 40 (26.7%) and 26 (17.2%) people in both the areas respectively do brushing both time morning and at night before going to bed. Only 25.7% of participants use correct brushing technique in urban area as compared to 11.8% in urban slum. More than half of study participant had no habit of Mouth Gargling after meal. Nearly 43% and 30% study participant replace brush regularly in urban and urban slum respectively (Table 1).

Regarding oral health status of study population dental caries was more 61.1% in urban slum as compared to 47.4% in urban area. It is followed by dental cavities, sensitivity, pain while chewing and staining etc. were most common problem found in different proportion in both the areas. Addiction to smoking and tobacco chewing was more 28% in urban slum as compared to 16% in urban area (Table 2).

When association of dental caries and oral hygienic practices was studied in both urban and urban slum, Dental caries was found significantly associated with

frequency of brushing (p value 0.001) and habit of mouth gargling was found to be significantly associated with dental caries (p value 0.011 and 0.0001) Incorrect pattern of brushing was also significantly associated with dental

caries (p value 0.0001 and 0.004). Brushing material and addiction to smoking and tobacco chewing significantly associated with development of dental caries (Table 3).

Table 2: Oral health problems among study population.

	Urban Area (n=150)	%	Urban Slum (n=150)	%		
Oral Health Problems*						
Dental caries	71	47.4	92	61.1		
Cavity	32	21.3	58	38.7		
Staining	18	12	42	28		
Abscess formation	5	3.6	7	4.8		
Mouth Ulcers	19	12.6	39	26.2		
Bad breath	17	11.3	23	15.3		
Gingivitis	20	13.3	10	6.7		
Sensitivity	54	36	40	26.7		
Pain while chewing	32	21.1	49	32.7		
Malollusion	26	17.4	43	28.4		
Tonsilitis	8	5.3	13	8.8		
Bleeding gums	12	8	12	8		
Addiction (Smoking and Tobacco chewing)						
Yes	24	16	42	28		
No	126	84	108	72		

<sup>\*</sup> Multiple responses

Table 3: Association of dental caries with hygienic practices.

	Urban Area (n=150)			Urban Slum (n=150)		
Oral hygienic Habits	Dental Caries			Dental Caries		
Orar nygicine Habits	Present (%)	Absent (%)	p-value	Present (%)	Absent (%)	p-value
Brushing Material						
Tooth paste and brush	45 (30.0)	78 (52.0)		49 (32.7)	53 (35.3)	)  -
Tooth powder and brush	7 (4.7)	01 (0.7)		10 (6.7)	3 (2.0)	
Tooth paste and finger	6 (4.0)	0 (0.0)		11 (7.3)	0 (0.0)	
Tooth powder and finger	5 (3.3)	0 (0.0)	_	8 (5.3)	0 (0.0)	
Both indigenous material and tooth paste /Other (Neem, coal, twang etc.)	8 (5.3)	0 (0.0)		14 (9.3)	2 (1.3)	
Frequency of Brushing						
Morning	64 (42.7)	46 (30.7)	0.0001*	87 (58.0)	37 (24.7)	0.0001*
Morning and Night	7 (4.6)	33 (22.0)	0.0001**	5 (3.3)	21 (14.0)	
Pattern of Brushing						
Only Horizontal	65 (43.3)	46 (30.7)	0.0001*	87 (58.0)	45 (30.0)	0.004*
Horizontal and Vertical	6 (4.0)	33 (22.0)	0.0001	5 (3.3)	13 (8.7)	
Habit of Mouth Gargling after meal						
No	46 (30.7)	32 (21.3)		72 (48.0)	18 (12.0)	0.0001*
Occasionally	17 (11.3)	31 (20.7)	0.011*	14 (9.0)	26 (17.0)	
Regularly	8 (5.3)	16 (10.7)		6 (4.0)	15 (10.0)	
Change of Brush at regular interval						
Yes	29 (19.3)	35 (23.3)	0.793	24 (16.0)	19 (12.7)	0.487
No	42 (28.0)	44 (29.4)		68 (45.3)	39 (26.0)	
Addiction (Smoking and Tobacco chev	wing)					
Yes	24 (16.0)	0 (0.0)	_	42 (28.0)	0 (0.0)	•
No	47 (31.3)	79 (52.7)	-	50 (33.3)	58 (38.7)	

<sup>\*</sup> Statistically significant result.

#### **DISCUSSION**

This cross-sectional study was conducted to determine the association between oral hygienic practices and oral health status. Frequency of morning brushing was found more than 70% in both areas which is higher than study conducted in Nepal by Barat et al reported it being 60%.<sup>5</sup> In terms of brushing, only 33% in urban area and 13% in urban slum study participants reported correct brushing pattern, which is similar to the studies conducted across the globe. Mehta et al showed only 11% of the participants practiced the correct method of brushing.6 Another study by Tomar et at in Madhya Pradesh reported 22% correct brushing technique among study participants. Studies have reported that the concept of correct method of brushing develops over the years in an individual.<sup>7</sup> The observed rate is lower than with the studies conducted by Dakhili et al who reported it being 90%. These differences in observation could be due to the research methodological differences in the studies and also the socio-cultural and demographic variations within and between countries. According to our research 35% change the brush in correct frequency in urban area whereas a study conducted in Pakistan reported similar percentage.9 In urban slum showed lower percentage (19%) with regard to correct frequency of changing brush. This difference in practice may be a result of poor knowledge in oral hygiene. That means those who have inadequate knowledge on the importance of brushing, don't change their brush at the appropriate time. More than half of the study participants practiced brushing with tooth brush and tooth paste similarly observed by Suprabha, Rao. 10 47.4% of people in urban area and 61.1% in urban slum had dental caries in our study, in a study by Amin et al found it 68.9% among school going children. 11 In our study oral hygienic practices like frequency of brushing, habit of gargling, and pattern of brushing was found significantly associated with dental carries similar observation were made by Amin and Al-Abad et al found that poor oral hygiene practices. 11

# CONCLUSION

Oral hygienic practices regarding importance of brushing, frequency of brushing, frequency of changing the brush, were poor needs educational motivation regarding duration of brushing, appropriate way to brush the teeth, and use of mouthwash. Comprehensive community-focused oral health care intervention that includes oral health education in community to increase general oral health awareness is strongly recommended.

#### Limitation

The results of this study must be interpreted in the context of potential methodological limitations. Since this survey was self-reported data, there exists a tendency of respondents to provide socially acceptable answers.

However, such surveys maybe helpful in planning oral health education programs for the community

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