

Awareness and Practices of Oral Hygiene and its Relation to Sociodemographic Factors among Patients attending the General Outpatient Department in a Tertiary Care Hospital of Kolkata, India

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ABSTRACT

Background: Periodontal diseases, dental caries, malocclusion, and oral cancer are the most prevalent dental diseases affecting people in the Indian community. **Objective:** The study was conducted to assess the awareness and practices on oral hygiene and its association with the sociodemographic factors among patients attending the general Outpatient Department (OPD). **Materials and Methods:** A cross-sectional study was conducted among 224 patients attending the general OPD of the SSKM Hospital, Kolkata, India, from 1 April to 30 April, 2013. The study tool was a pre-designed and pre-tested semi-structured schedule. **Results:** About 69.20% of the participants used a toothbrush with toothpaste as a method of cleaning their teeth; 35.71% brushed twice in a day; 33.03% brushed both in the morning and at bedtime; and 8.93% used mouthwash. About 40.62% visited the dentist during the last six months; among them 61.18% attended because of pain. Almost three-fourth of the participants knew that tooth decay and bad breath were the effects of not cleaning the teeth. It was known to 71.42, 63.39, 70.53, and 73.21% of the respondents, respectively, that excess sweet, cold drink, alcohol, and smoking/pan chewing were bad for dental health. Television was the source of knowledge to 57.14% of the participants and 35.71% acquired their knowledge from a dentist. Females, literates, urban residents, users of mouthwash, and regular visitors to the dentist had good oral hygiene practices. **Conclusion:** Oral health awareness and practices among the study population are poor and need to improve.

Keywords: Awareness, oral hygiene, practices, sociodemographic factors

Introduction

Oral Diseases are a major public health concern owing to their higher prevalence and their effects on the individual's quality of life.^[1] According to the World Health Organization (WHO), "Promotion of oral health is a cost-effective strategy to reduce the burden of oral disease and maintain oral health and quality of life."^[2] Periodontal diseases, dental caries, malocclusion, and oral cancer are among the most prevalent dental diseases affecting people worldwide as well as in the Indian community.^[3] Dental caries, with a prevalence as high as 60-80% in children, is a

major public health problem in India.^[4] Oral cancer has also long been a major problem in this country.^[5] The possible etiological factors leading to these oral diseases are genetic predisposition, developmental problems, poor oral hygiene, and traumatic incidents.^[6]

A large ratio of these diseases can be prevented at individual and community levels by providing oral health-related education; thus, improving the oral health attitude and practices among the general population.^[6] For example; proper brushing is essential for cleaning teeth and gums effectively. Preventive dental care is almost nonexistent in the rural areas and very limited in the urban areas of India.^[7] It is, therefore, essential to

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combat oral diseases as a preventive approach, with the focus on health education and promotion, which should be given prime importance.^[8]

The National Oral Health Survey, conducted in 2005, by the Indian Dental Association (IDA), highlighted that 95% of the population in India suffers from gum disease, only 50% use a toothbrush, and just 2% of the population visit the dentist.^[9] A majority of the Indians are unaware of the fact that good oral health not only ensures freedom from pain and suffering associated with oral health problems, but is also essential for the overall health improvement and elevation of self-esteem, quality of life, and performance at work.^[10]

The National Oral Health Program (NOHP); an initiative of the IDA, affirms that oral health is essential for general health and well-being. This program crystallizes the IDA's aim for optimal oral health by 2020, which addresses the 'silent epidemic of oral diseases'.^[9] The National Oral Health Care Program was launched as a pilot project in 1999, to reduce the increasing morbidity due to oro-dental problems in the country. The main focus of this program is primary prevention through a generation of awareness. The project was reviewed by the National Institute of Health and Family Welfare in 2004.^[11] Apart from these initiatives; the problem of oral cancers are dealt with under the National Cancer Control Program at the national level.^[12] The strategies proposed for the eleventh five-year plan include oral health education, formulation of a Basic Package on Oral Health (BPOC) for the country, and its implementation, manpower and infrastructure development and capacity building, and monitoring of dental public health, as well as research, through the National, State, and District Oral Health Cells.^[11]

Keeping this background in mind, the present study was conducted with the objectives of assessing the awareness and practices with regard to oral hygiene among patients attending the General OPD of the SSKM hospital and to find out any association with the sociodemographic profiles relating to oral hygiene practices.

Materials and Methods

An observational, descriptive, hospital-based epidemiological study was conducted, with a cross-sectional design among patients attending the General Outpatient Department (OPD) of the SSKM Hospital, Kolkata, India. Data were collected for one month (1 April to 30 April, 2013). The study tool was a pre-designed and pre-tested, self-constructed, 16-item semi-structured schedule. The schedule included information related to the patient's sociodemographic profiles like age, gender, residence, education, occupation, socioeconomic classification by Per Capita Monthly Income (PCMI), as per the modified B. G. Prasad Scale,^[13] knowledge (effect of not regularly cleaning the teeth and effect of different food items on dental health), and practices (method, frequency, timing of cleaning teeth, use of mouthwash, frequency, and cause of visit to dentist). Study

technique was by exit interview either with the patient or with the accompanying guardians in case of patients less than or equal to 18 years.

The general OPD of the SSKM Hospital, operated by the Department of Community Medicine runs three days a week (Tuesdays, Thursdays, and Saturdays) for 9 am to 2 pm. On an average, approximately 110 patients are enrolled. For this study, on an average of 17 patients could be interviewed on each day for the available 13 days in that month. Thus, 224 patients were studied. Patient selection was on random basis, one after another.

Inclusion criteria: Patients above 12 years of age, willing to participate, who gave verbal consent, and were able to understand and answer the questions, were included in the study.

Exclusion criteria: Patients suffering from debilitating diseases were excluded from the study.

Procedure of data collection

Before the actual study, the schedule was designed in consultation with three experts on the subject and pre-testing of the same was done to assure its validity. Following that, the necessary correction and modification was incorporated in the schedule. Patients were informed about the purpose of the study, and were assured about the confidentiality. After getting verbal consent, the data were collected by an exit interview method. On an average 15 to 20 minutes was needed to fill up the schedule.

The overall practices concerning oral hygiene were assessed based on their responses to questions pertaining to oral hygiene practice. The correct answers were given a value of one (1) and incorrect answers were given a value of zero (0). It was categorized as 'good' or 'not good' based on the cumulative result and the related mean value of responses. Scores above the mean value were categorized as 'good practice,' while scores below the mean value were considered as 'not good practice'. The scores were then cross-tabulated with the independent variables to look for possible associations.

Operational definitions

Good practices: Mode of cleaning of teeth with toothbrush and toothpaste, cleaning frequency twice or more per day, cleaning time both in the morning and at bedtime, users of mouthwash, and visit to dentist within the last six months.

Not good practices: Mode of cleaning of teeth without toothbrush and toothpaste, cleaning frequency less than twice per day, cleaning time either only in the morning, only at bedtime or anytime; non-users of mouthwash, and not visited the dentist in the last six months.

Ethical clearance: This study was approved by the Institutional Ethical Committee (IEC) of the SSKM Hospital.

Statistical analysis: Data were entered in the Microsoft excel worksheet, compiled, and analyzed by the Epi Info (six version) and SPSS (19 version) software. The association between the categorical variables was tested by the Pearson's Chi-square test statistic. The odds ratio was also calculated. A *p*-value of less than 0.05 was considered to be statistically significant.

Results

The age of the 224 studied subjects ranged from 16 to 67 years, with a mean age of 40.75 years (standard deviation 9.18). The majority of the study population, that is, 51.89%, belonged to the age group of 20 to 40 years. Males formed 74.11% of the population, 77.68% belonged to the rural areas, 25.89% were skilled workers, and 15.18% were illiterate. As per the modified B. G. Prasad Classification of socioeconomic status; 24.18% belonged to the Class II socioeconomic status [Table 1].

Most of the study subjects, that is, 69.20% used both a toothbrush and toothpaste together, followed by the manual use of toothpaste or tooth powder (22.32%) as a method of cleaning their teeth. Approximately one-third of the subjects (35.71%) cleaned their teeth twice daily, while 58.93% cleaned them once daily. More than half of the subjects (55.36%) cleaned their teeth in the morning, followed by 33.03% in both morning and at bedtime. Moreover, 9.82% of the subjects did not have any fixed time for cleaning of their teeth; 91.07% of the subjects did not use any mouthwash, and 59.38% had not visited a dentist in the last six months preceding the study [Table 2].

About three-fourths (74.11%) of the subjects stated tooth decay as a result of not cleaning teeth regularly, followed by bad breath (70.53%) and gum disease (68.75%). Moreover, 73.21% of the subjects blamed smoking/pan chewing/gutkha/other tobacco products for having deleterious effects on dental health. Excessive sweet, alcohol, and cold drinks were also cited as harmful food items by 71.42, 70.53, and 63.39% of the subjects, respectively [Table 3].

A majority of the subjects (57.14%) acquired information on oral health from the television, followed by advice from the dentist (35.71%), magazines (21.97%), and so on [Table 4].

Out of the study subjects, 38.39% (86/224) had 'good oral hygiene practices' and the rest of the 61.61% had 'not so good oral hygiene practices'. Moreover, females, literates, urban residents, and higher socioeconomic status (class I) study subjects had more 'good practices' compared to males, illiterates, rural residents, and lower socioeconomic status (class V), respectively; and the differences appeared to be statistically significant ($P < 0.05$) by the chi-square test. Female, literate, and urban subjects had 22.57, 3.39, and 23.05 times better oral practices than their counterparts, respectively, as revealed by the odds ratio. People from the upper socioeconomic status (Class I) had 2.03 times better

practices than people of other socioeconomic status (Class II, III, IV, and V combined) [Table 5].

Discussion

Defining oral health-related quality of life is difficult because the concept is illusive, abstract, subjective, personal, and multidimensional, without clear demarcations of its different components. In addition, it evolves within and across the population groups, as culture and societal expectations change in varied situations.^[18] The scarce literature on dental health awareness, oral health-related habits, and behaviors among the adult population in the Indian scenario, prompted us to take up this study.

The present study found that brushing with toothbrush and toothpaste was the most commonly used method of teeth cleaning (69.20%). Similar findings were also noted by Jain *et al.* at Jodhpur,^[14] Sharda *et al.* at Udaipur,^[15] Chandra Shekhar *et al.* at Mysore,^[16] Bhat *et al.* at Bangalore,^[17] and Pandya *et al.* at Gujarat.^[18] Similar to the findings of Parveen *et al.*^[3] and Dasgupta

Table 1: Distribution of the study population according to the sociodemographic profiles (n = 224)

Profiles	Number	Percentage (%)
Age (years)		
<20	08	03.57
20-40	116	51.79
40-60	86	38.39
≥60	14	06.25
Gender		
Male	166	74.11
Female	58	25.89
Residence		
Urban	50	22.32
Rural	174	77.68
Occupation		
Unskilled workers	18	08.04
Skilled workers	58	25.89
Service	44	19.64
Business	32	14.29
Unemployed	20	08.93
Others including students, home makers	52	23.21
Education		
Illiterate	34	15.18
Primary	58	25.89
Mid School	34	15.18
Secondary	22	09.82
Higher secondary	24	10.71
Graduate	42	18.76
Postgraduate and above	10	04.46
*Socioeconomic status		
I	42	18.75
II	54	24.11
III	32	14.29
IV	52	23.21
V	44	19.64
Total	224	100.0

*Modified B. G. Prasad Classification 2013

Table 2: Distribution of the study population according to practices with regard to oral hygiene (n = 224)

Practices	Number	Percentage (%)
Method of cleaning of teeth		
Toothbrush + toothpaste	155	69.20
Manually by toothpaste/toothpowder	50	22.32
Salt with finger	05	02.23
Herbal products (Neem stick etc.)	14	06.25
Frequency of cleaning/day		
Less than once	02	00.89
Once	132	58.93
Twice	80	35.71
More than twice	10	04.47
Time of cleaning		
Morning	124	55.36
Bedtime	04	01.79
Morning + Bedtime	74	33.03
Anytime	22	09.82
Use of mouthwash		
Yes	20	08.93
No	204	91.07
Visit to dentist within the last six months		
Yes	91	40.62
No	133	59.38

Table 3: Distribution of the study population with regard to knowledge of oral health

Knowledge about oral health	Number	Percentage (%)
Effect of not cleaning of teeth regularly*		
Tooth decay	166	74.11
Bad breath	158	70.53
Gum disease	154	68.75
Effect of food items on dental health*		
Excess sweet	160	71.42
Cold drinks	142	63.39
Alcohol consumption	158	70.53
Smoking/pan chewing/gutkha/ other tobacco products	164	73.21

*Multiple responses were taken

Table 4: Distribution of the study population according to sources of oral health information

Sources*	Number	Percentage (%)
Television	128	57.14
Dentist	80	35.71
Medical doctor	30	13.39
Magazine	49	21.87
Newspaper	22	09.82
Radio	19	08.48
Friends, relatives	29	12.94
Others (Books, Pamphlets)	11	04.90

*Multiple responses were taken

et al.,^[19] the present study revealed that 35.71% of the subjects used to brush their teeth twice daily. However studies by Jain *et al.*,^[14] Sharda *et al.*,^[15] Chandra Shekhar *et al.*,^[16] Bhat *et al.*,^[17] and Pandya *et al.*,^[18] revealed the findings to be somewhat lower

Table 5: Association of the sociodemographic factors and practices of oral hygiene (n = 224)

Variables	Good practices N (%)	Not Good practices N (%)	Chi-square test	OR	P value
Gender					
Female	50 (86.21)	8 (13.79)	75.65	22.57	<0.05
Male	36 (21.69)	130 (78.31)			
Education					
Literate	80 (42.11)	110 (57.89)	7.29	3.39	<0.05
Illiterate	6 (17.65)	28 (82.35)			
Residence					
Urban	44 (88.00)	6 (12.00)	66.97	23.05	<0.05
Rural	42 (24.14)	132 (75.86)			
Socioeconomic status					
I	22 (52.38)	20 (47.62)	13.02	2.03*	<0.05
II	20 (37.04)	34 (62.96)			
III	18 (56.25)	14 (43.75)			
IV	14 (26.92)	38 (73.08)			
V	12 (27.27)	32 (72.73)			

*Odds ratio (OR) was computed between Class I and rest of the others combined (II + III + IV + V)

compared to the present study, where only 23.0, 15.4, 22.0, 11.6, and 13.96%, respectively, used to brush twice a day. Only 8.93% of the subjects used mouthwash as an oral hygiene aid in the present study; which was in agreement with Jain *et al.*'s study.^[14] However, Sharda *et al.*^[15] found mouthwash users to be 64.10%. Regarding a visit to the dentist, the findings of the present study (40.62%) were consistent with the findings of Parveen *et al.* in Pakistan^[3] and Chandrashekhar *et al.* in Mysore.^[16] Although, it was much lower compared to the findings of Bhat *et al.* in Bangalore,^[17] (80.1%), this finding was quite high compared to the study by Jain *et al.* at Jodhpur^[14] and Pandya *et al.* at Gujarat,^[18] where only 10.0 and 3.65%, respectively, would regularly visit a dentist every six months.

Approximately 70% of the subjects stated that oro-dental diseases were a result of not cleaning teeth regularly, consistent with the finding of Chandrasekhar B R *et al.*^[6] Similar to the findings of Parveen *et al.*,^[3] the present study also revealed that about three-fourth of the subjects were aware of the harmful effects of excess sweet, cold drinks, alcohol consumption, and smoking/pan chewing/gutkha and other tobacco products on oral hygiene. However, Chandrashekhar B R *et al.*^[16] reported awareness among one-third of the participants.

A majority of the subjects (57.14%) acquired information on oral health from television, consistent with the findings of other studies.^[3,15,17] However community-based educational programs by health professionals, in collaboration with print and media would also be effective in spreading the awareness and importance of proper dental care. At the individual and family levels, every opportunity should be utilized by family physicians and primary care physicians for imparting health education for the prevention of common dental diseases.

The present study revealed good oral hygiene practices among 38.39% of the participants, which was much higher compared to

the findings of Bhat *et al.*^[17] (6.2%). Similar to the present study, literate and higher socioeconomic status subjects were found to have significantly good oral hygiene practices in the studies by Chandra Sekhar BR *et al.*,^[16] Al-Wahadni AM *et al.*,^[20] Barrieshi-Nusair K *et al.*,^[21] and Kawamura M *et al.*^[22]

Conclusion and Recommendation

The results of this study suggest that oral health awareness and practices among the study population are poor and need to be improved. The above-mentioned oral hygiene problems can be prevented by simply providing awareness, which is a more cost-effective alternative than expensive dental procedures. Periodic oral health awareness programs at schools, colleges, universities, and community levels should be undertaken, and at each level, the major role and responsibility lies in the hands of the primary care physicians, whose interactions at the individual and family levels make them more accessible and acceptable. Dental professionals, Dental Marketing Agencies, and media too may join hands with the government to help in the prevention of oral health problems by improving knowledge, attitudes, behaviors, and practices toward oral hygiene among the general population.

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