

Oral Hygiene Awareness and Practices among Patients Attending the General OPD of MKCG Medical College and Hospital, Berhampur, Odisha

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ABSTRACT

Background: Oral diseases pose a significant global health challenge, affecting individuals' quality of life. Leading health organizations emphasize preventive strategies for oral care to reduce disease burden and enhance community well-being. Effective oral health education can prevent many of these diseases by fostering positive attitudes and practices.

Methods: A cross-sectional, observational study was conducted among patients attending the General OPD of MKCG Medical College and Hospital, Berhampur, Odisha, from November to December 2022. Data collection involved a self-administered, semi-structured questionnaire addressing sociodemographic characteristics, oral health knowledge, and practices.

Results: The study included 448 participants aged 19-72 years. Poor oral hygiene habits were prevalent, contributing to tooth decay. Most participants (310) cleaned their teeth using toothpaste and a brush, while 100 used toothpaste or toothpowder manually. A significant number of participants (264) cleaned their teeth once daily, and 182 had visited a dentist in the last six months. Awareness of the effects of not cleaning teeth regularly and the negative impact of certain food items on dental health was generally good. Statistically significant associations were found between oral hygiene practices and factors such as gender, education, area of residence, and income.

Conclusion: The study provides valuable insights into oral hygiene practices and knowledge among a diverse population. Addressing the identified gaps through targeted interventions, educational campaigns, and improved accessibility to dental care can significantly enhance oral health outcomes.

Key-words: Oral Hygiene, Oral diseases, Oral Hygiene Awareness, Dental Health, Public Health

INTRODUCTION

Oral diseases constitute a significant global health challenge, marked by high prevalence and detrimental impacts on individuals' quality of life ^[1]. Leading health organizations worldwide emphasize the cost-effective

ness of oral health by advocating for preventive strategies. These strategies will help reduce the disease burden and enhance the health and social well-being of communities ^[2]. Common oral health conditions such as periodontal diseases, dental caries, malocclusion, and oral cancer affect populations worldwide, including India ^[3].

Within India, dental caries is a prevalent public health issue, particularly among children, with reported rates as high as to average of 75% ^[4]. Oral cancer represents another critical health concern ^[5]. A combination of genetic factors, developmental issues, poor oral hygiene, and traumatic experiences contribute to the development of these oral diseases ^[6].

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Effective oral health education can prevent many of these diseases by fostering positive attitudes and practices among the public [6]. Essential practices like regular brushing are crucial for maintaining oral health. However, preventive dental care remains largely inaccessible in rural India and limited in urban areas [7]. Consequently, a robust approach emphasizing health education and promotion is imperative to address the oral health crisis [8].

The National Surveys conducted by the leading Dental institutes in India in 2000 have shown a high prevalence of oral health diseases including gum issues which is because of not visiting the dentist or the doctor [9]. Many Indians are unaware of the connection between oral health and overall well-being, including self-esteem, quality of life, and work performance [10].

The national programs on health also identified oral health as an important component highlighting the significance of oral health for general health and well-being. To achieve good dental health by 2020, the program aims to address the epidemic nature of oral diseases in India [9]. The National programs are launched in India which are focussed on preventive strategy and it is also used to increase awareness and also to reduce any morbidity related to teeth or oral health [11]. Oral cancer prevention is also integrated into the programs approved in India [12,13]. Key strategies for the eleventh five-year plan include oral health education, implementation of the approved packages for improving oral health, infrastructure development, human resource capacity building, and surveillance through oral health cells at various levels [11].

Given this context, the present study aimed to assess oral hygiene awareness and practices among patients visiting the General OPD of MKCG Medical College and Hospital, Berhampur, Odisha, and to explore associations with sociodemographic factors.

MATERIALS AND METHODS

Place of study- A cross-sectional, observational, hospital-based epidemiological study was conducted among patients attending the General Outpatient Department (OPD) of MKCG Medical College and Hospital, Berhampur, Odisha, from November to December 2022. Data collection involved a self-administered, pre-tested, semi-structured questionnaire addressing sociodemographic characteristics (age, gender,

residence, education, occupation, socioeconomic status, oral health knowledge (effects of poor oral hygiene, dietary impact on dental health), and practices (toothbrushing method, frequency, timing, mouthwash use, dental visit history). Data was collected through exit interviews with patients or their guardians. Approximately 448 patients were randomly selected.

Inclusion criteria- Inclusion criteria encompassed individuals aged 19 years and above who provided verbal consent and could comprehend the questionnaire.

Exclusion criteria- Patients with debilitating diseases were excluded. Oral hygiene practices were categorized as 'good' or 'not good' based on a scoring system (1 for correct, 0 for incorrect responses). Scores above the mean indicated 'good practices' and 'not good practices'.

Data collection- The questionnaires were handed to the patients while they were seated in the waiting area of the Department. At all times, one of the investigators was present with the respondent while the questionnaires were being filled to ensure that the concerned respondent did not discuss the questions or the answers with any other patients sitting in the waiting area and to make sure that the concerned respondent fully understood the questions as well as the probable answers completely. After the distribution of the questionnaire, 10 minutes were allotted for completing the questionnaire. Results were subjected to statistical analysis.

Methodology- A self-made closed-ended questionnaire written in English/Punjabi language was given to each one of them. The patients were selected both from rural as well as urban populations and included both educated and illiterate groups between 18 to 75 years of age. All the patients were assisted by one dental hygienist so that even illiterate patients were able to fill out the form or get it filled with ease. The questionnaire included information related to the patient's name, age, sex, education, occupation, and residence. The questionnaire was further categorized to evaluate the knowledge and practice related to their oral hygiene.

Statistical Analysis- Data was entered and analyzed using R software, and associations between categorical variables were assessed using Pearson's Chi-square test

with odds ratio calculation. Statistical significance was set at $p < 0.05$.

Ethical Approval- Ethical approval was obtained from the Institutional Ethical Committee of MKCG Medical College and Hospital.

RESULTS

The study included 448 participants aged between 19 and 72 years. The findings highlighted poor oral hygiene habits as the most prevalent cause of tooth decay among the participants. Below is a detailed description of the socio-demographic characteristics of the participants (Table 1).

Most of the participants were within the 21-39 age group, comprising over half of the total sample. Males constituted a significant portion of the sample, with nearly three times as many males as females. A substantial majority of the participants resided in rural areas, reflecting the demographics of the region studied. The participants had diverse employment backgrounds, with a notable number being skilled workers and those categorized under "other" occupations. The literacy levels varied, with the largest group having completed higher secondary education, followed by those with primary education. Participants from low-income backgrounds formed the largest group, followed by those from medium-income and high-income backgrounds.

Table 1: Sociodemographic characteristics of study participants

Socio-demographic	N
Age (years)	
Up to 20	16
21-39	232
40-59	172
Above 60	28
Gender	
Male	332
Female	116
Area	
Urban	100
Rural	348
Work profile	
Unskilled	36

Skilled	116
Government	
	88
Private	
	64
Not employed	
	40
Other	
	104
Literacy	
	0
Illiterate	
	68
Primary	
	116
Higher Secondary	
	160
Graduate and above	
	104
Wealth status	
Low Income	
	192
Medium Income	
	168
High Income	
	88

Overall, Table 2 provides a comprehensive overview of the diverse socio-demographic characteristics of the study participants, offering insights into their age, gender, area of residence, employment status, literacy levels, and wealth status.

Table 2: Practices Among Study Participants

Practices	Frequency
Method of cleaning	
Using both toothpaste and a brush	310
Manually using Toothpaste or	100
With finger using salt	10
Any herbal products like neem	
	28
Frequency per Day	
<1	4
1	264
2	160
>3	20
Cleaning time	
	0
After waking	
	248
Before sleeping	
	8
Both time	
	148
Anytime	
	44
Using Mouthwash	
	0
Yes	
	40
No	
	408

Dentist visit (last 6 months)	0
Yes	182
No	266

Most of the participants (310) cleaned their teeth using both toothpaste and a brush, while 100 individuals used toothpaste or toothpowder manually. A small number of participants (10) used salt with their fingers, and 28 used herbal products like neem. When examining the frequency of cleaning per day, the majority (264) reported cleaning their teeth once daily, followed by 160 who cleaned twice daily. A minority cleaned less than once daily (4) or more than three times daily (20). Regarding the timing of cleaning, 248 participants cleaned their teeth after waking up, 8 cleaned before sleeping, 148 cleaned both after waking up and before sleeping, and 44 cleaned at any time during the day. The use of mouthwash was less common, with only 40 participants using it, while 408 did not use mouthwash. Dental visits in the last six months were recorded, with 182 participants having visited a dentist, and 266 not having done so.

The study also assessed the participant's knowledge regarding the effects of not cleaning their teeth regularly (Fig. 1). A total of 332 participants were aware that not cleaning teeth regularly can lead to tooth decay. Additionally, 316 participants recognized that poor oral hygiene can result in bad breath, and 308 participants were knowledgeable about the risk of gum disease due to inadequate teeth cleaning.

(n=284) as detrimental to dental health. Alcohol consumption was recognized by (n=316) of participants as hurting dental health. Additionally, (n=328) of participants acknowledged the harmful impact of smoking, pan chewing, gutkha, and other tobacco products on dental health.

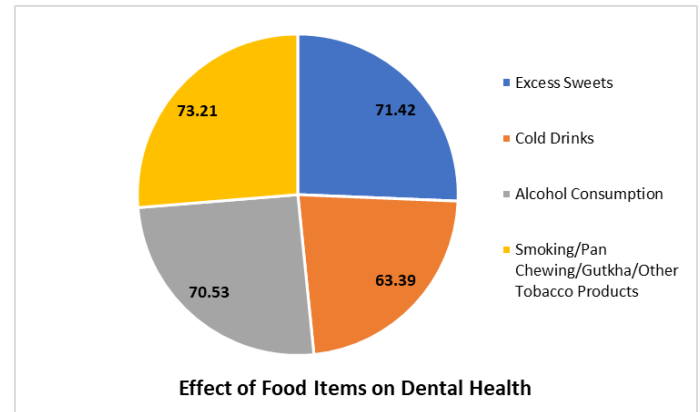


Fig. 2: Effect of Food Items on Dental Health

Television was the most common source, with 256 participants citing it. Dentists were the second most frequent source, mentioned by 160 participants (Fig. 3). Medical doctors were identified by 60 participants, while magazines were a source for 98 participants. Newspapers and radio were mentioned by 44 and 38 participants, respectively. Friends and relatives were cited by 58 participants, and other sources, such as books and pamphlets, were mentioned by 22 participants.

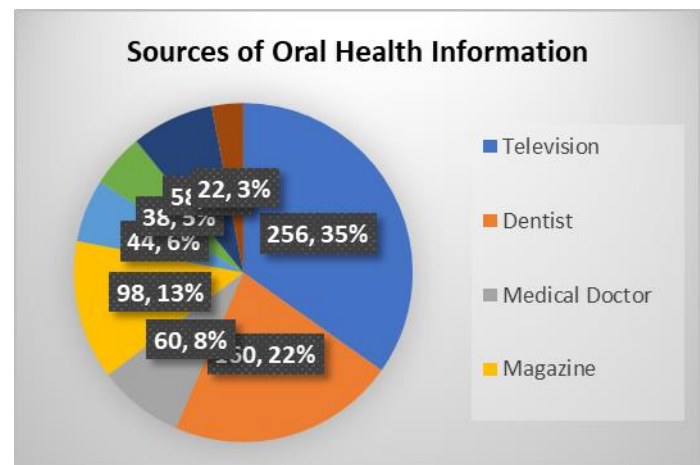


Fig. 3: Sources of oral health information

The differences were statistically significant ($p < 0.05$) by the chi-square test. In gender women, educated, and those living in urban areas had 22.16, 3.41, and 21.53 times better oral practices than their counterparts,

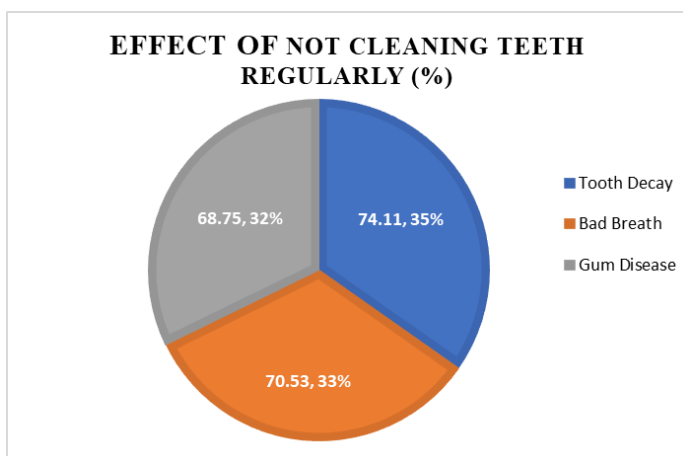


Fig. 1: Knowledge about Oral Health

A significant proportion (n=320) of participants were aware that consuming excess sweets negatively impacts dental health (Fig. 2). Cold drinks were identified by

respectively, as revealed by the odds ratio. People from the high-income wealth status had 2.01 times better practices than those from other socioeconomic statuses combined (Table 3).

Table 3: Association of Sociodemographic Factors and Practices

Variables	Good Practices N (%)	Not Good Practices N (%)	Chi-square Test	OR
Gender				
Female	100	16	74.49	21.53*
Male	72	260		
Education				
Educated	160	220	7.11	3.41*
No educated	12	56		
Area				
Urban	88	12	75.88	22.16*
Rural	84	264		
Wealth status				
Low Income	84	108	12.03	2.01*
Medium Income	64	104		
High Income	24	64		

DISCUSSION

The study highlights several important aspects of oral hygiene practices and knowledge among a diverse population. The findings underscore the prevalence of poor oral hygiene habits, contributing significantly to tooth decay and other dental health issues. Most participants were aged between 21 and 39 years, with a substantial portion of the sample being male. This demographic distribution is reflective of the region and provides a comprehensive understanding of the target population's characteristics [15-18]. The predominance of rural residents (348 out of 448) further emphasizes the need to address oral health disparities in these areas [14-18]. Employment status and literacy levels varied, with a notable number of participants being skilled workers and those having completed higher secondary education. The

largest income group comprised low-income individuals, indicating a potential link between economic status and oral health practices. This socio-demographic diversity provides a foundation for targeted interventions to improve oral hygiene practices across different population segments.

The study revealed that most participants used both toothpaste and a brush for cleaning their teeth, highlighting a basic level of oral hygiene awareness. However, a significant number still relied on manual methods with toothpaste or toothpowder, salt, or herbal products like neem. This variation in cleaning methods indicates the need for promoting more effective and standardized oral hygiene practices [19-21].

The frequency of tooth cleaning showed that most participants cleaned their teeth once or twice daily, with only a small fraction cleaning less frequently or more than three times daily. The timing of cleaning was predominantly after waking up, with fewer participants cleaning before sleeping or at both times. The low usage of mouthwash and infrequent dental visits point to gaps in comprehensive oral care routines and professional dental check-ups [20-22].

The participants' knowledge about the effects of not cleaning teeth regularly was generally good, with a majority recognizing the risks of tooth decay, bad breath, and gum disease. This awareness is crucial for motivating better oral hygiene practices and preventing dental health issues. Participants demonstrated awareness of the negative impact of certain food items on dental health. Excess sweets, cold drinks, alcohol, and tobacco products were identified as harmful by a significant portion of the sample. This knowledge can inform educational campaigns to reduce the consumption of these items and promote healthier dietary habits [14-17]. Television emerged as the most common source of information about oral health, followed by dentists, medical doctors, and magazines. This reliance on media and healthcare professionals highlights the importance of these channels in disseminating oral health education. However, the relatively low influence of newspapers, radio, friends, relatives, and other sources suggests the need for a more diversified approach to health communication [18-21].

The study found significant associations between socio-demographic factors and oral hygiene practices. Women, educated individuals, and urban residents were more

likely to have better oral hygiene practices. These findings suggest that targeted interventions should focus on increasing education and accessibility to oral health resources, particularly in rural areas and among less educated populations. Moreover, individuals from high-income backgrounds demonstrated better oral hygiene practices, indicating economic status as a determinant of oral health behaviour. Efforts to improve oral hygiene should therefore consider economic barriers and aim to make dental care more affordable and accessible.

CONCLUSIONS

The study provides valuable insights into the oral hygiene practices, knowledge, and influencing factors among a diverse population. Addressing the identified gaps through targeted interventions, educational campaigns, and improved accessibility to dental care can significantly enhance oral health outcomes. The findings emphasize the need for a multi-faceted approach that considers socio-demographic disparities and leverages various information sources to promote better oral hygiene practices.

CONTRIBUTION OF AUTHORS

Research concept- Dr Sudhansu Sekhar Lenka

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Final approval- Dr Laxmi Narayan Dash

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