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ASSESSMENT OF AWARENESS AND ATTITUDE TOWARD ORAL HYGIENE PRACTICES AMONG ADULTS VISITING A DENTAL COLLEGE IN LUCKNOW CITY

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ABSTRACT
Oral health is an essential component of general health and well-being. Good oral hygiene practices form the foundation of oral health, enabling individuals to maintain a clean and disease-free mouth. However, in many developing countries, including India, oral hygiene practices remain inadequate, contributing significantly to the high burden of oral diseases.[1] Many people practice traditional methods of cleaning teeth, delay dental consultations until severe pain occurs, or hold misconceptions about dental treatment procedures such as scaling and polishing. [2,3]

INTRODUCTION
Awareness regarding oral hygiene includes knowledge of proper brushing frequency, correct brushing technique, use of dental floss or mouthwash, replacement of toothbrushes, and recognition of the relationship between oral health and general health.[4] Attitude, on the other hand, reflects an individual's beliefs, perceptions, willingness to learn, and readiness to adopt healthier practices. A positive attitude toward oral health can significantly influence one's daily habits and preventive behavior. Therefore, both awareness and attitude are crucial determinants of good oral hygiene practices.[5]
Public Health Dentistry emphasizes disease prevention, health promotion, and community-based approaches to improving oral health. Dental colleges act as referral centers where people from various social, economic, and educational backgrounds seek treatment. Studying this diverse population allows researchers to identify gaps in knowledge, misconceptions, and barriers to maintaining oral hygiene.[6] Adults play a crucial role in establishing health-related behaviors not only for themselves but also for their families and children. Improving adult awareness can positively impact the oral health of future generations by fostering healthy habits within households.[7]
This study aims to evaluate the awareness and attitudes of adults visiting a dental college in Lucknow city regarding oral hygiene practices. By exploring their knowledge, beliefs, and behaviors, the study seeks to identify the areas where awareness is lacking and attitudes need modification. The objectives of the study are to evaluate the frequency of oral hygiene measures practiced and to determine the association between sociodemographic factors and oral hygiene practices.

METHODOLOGY
A Descriptive cross sectional study was conducted for the assessment of awareness and attitude toward oral hygiene practices among adults visiting a dental college in Lucknow city. For the study purpose outpatients in the Department of Public Health Dentistry of Career P.G. Institute of Dental Sciences and Hospital, Lucknow were selected. Based on sample size calculation, the representative sample size required for the study was 372. With the expectation of 10% attrition rate and incomplete information, the sample size was increased to 410. The adults were selected by simple random sampling method. Ethical clearance was obtained from the Institutional ethical clearance committee of Career Post Graduate Institute of Dental Sciences and Hospital, Lucknow. A written informed consent was taken prior to the commencement of the study in order to prevent any inconvenience and ensure full cooperation. Adults aged ≥18 years were included in the study. Patients with systemic conditions affecting oral hygiene practices, and patients undergoing orthodontic treatment were excluded.
A structured, pre-tested, close-ended, self-administered questionnaire was used to obtain data on the assessment of awareness and attitude toward oral hygiene practices among adults. The investigator himself handed the

questionnaire right after attending the patient to achieve maximum participation. The questionnaire was distributed and collected on the same day. The Questionnaire consists of 3 sections as:

- **Section 1**: Sociodemographic details such as age, gender, academic year level of education, income, educational qualification.
- **Section 2:**Awareness questions (brushing method, toothpaste use, dental visit frequency, role of dentist)
- **Section 3:**Attitude questions (importance of oral hygiene, willingness to learn, value of professional cleaning)

Analysis was performed by using SPSS (Statistical Package for Social Science) Software version 24. Data was presented in percentage for categorical data. The Chi-square test was used to compare the results. The responses obtained were tabulated and expressed as frequency distributions and then computed in percentages.

RESULTS

In the present study, a total of 410 adults participated. The majority of the respondents were in the 31–45 years age group (37.1%), followed by those aged 18–30 years (33.7%). Among the 410 participants, male respondents constituted 50.5% (n = 207), while females accounted for 49.5% (n = 203) of the study population.

Gender Wise Distribution of Awareness of Oral Hygiene Practices (Table 1)

Among male respondents, 82(39.9%) people brush once a day, 103(49.7%) people brush twice a day and 22(10.6%) people brush more than twice a day. Among female respondents, 48(23.6%) brush once a day, 134(66%) brush twice a day and 21(10.3%) brush more than twice a day. Only a small proportion in both groups brushed more than twice. This difference was statistically significant ($\chi^2 = 17.54$, $p < 0.001$).

Most participants used toothpaste as the primary cleaning material. Females reported higher toothpaste use, while males showed relatively higher usage of toothpowder and neem stick/miswak. This difference was statistically significant ($\chi^2 = 9.92$, $p = 0.007$).

The amount of toothpaste applied did not vary significantly by gender. A noticeable minority still use toothpaste along then full length of the bristles 10(33.8%) men and 52(25.6%) women which is more than advised and may be due to misunderstanding or the influence of advertising. Knowledge regarding the correct brushing technique was higher among females compared to males. This association was statistically significant ($\chi^2 = 1$, $p = 0.030$). Regular preventive visits were much less common; only 22 men (10.6%) and 35 female (17.2%) participants, respectively, reported visiting the dentist every six months. Annual dental visits were reported by 30 (14.77%) individuals in the male group and 52 (25.6%) in the female group. Notably, 40 (19.3%) respondents in the male group and 30 (14.7%) in the female group had never visited a dentist, indicating a substantial gap in routine dental care and preventive oral health practices among the study population.

Most participants demonstrated awareness that poor oral hygiene can lead to gum disease, with females showing slightly higher awareness than males. Overall, the findings indicate good general awareness across both genders, though there remains a notable minority who are still unaware of this important oral health issue. Among males, 140 (67.6%) recognized the connection between oral hygiene and systemic health, while 67 (33%) were not aware of this association. In comparison, awareness among females was notably higher, with 162 (82.2%) reporting knowledge of this link and only 41 (20.1%) indicating they were unaware. This association was statistically significant ($\chi^2 = 1$, $p = 0.013$). Among male respondents, 98 (47.3%) reported knowing that dental scaling is safe and helps maintain oral hygiene, while 61 (30%) believed it is not safe, and 48 (23.1%) were unsure. In contrast, female participants demonstrated greater awareness, with 123 (60.5%) acknowledging the safety and effectiveness of scaling, 45 (22.1%) expressing disbelief, and 35 (17.2%) reporting uncertainty.

Question	**Gender** **Female**	**Male**	**Chi-square value**	**p-value**
How many times do you brush your teeth per day? Once Twice More than twice	 82(39.6%) 103(49.7%) 22(10.6%)	 48(23.6%) 134(66%) 21(10.3%)	 17.54	 p < 0.001 (significant)
What material do you use for cleaning teeth? Toothpaste Toothpowder Neem stick / Miswak	 150(72.4%) 32(15.4%) 25(12%)	 175(86.2%) 15(7.38%) 13(6.43)	 9.92	 p = 0.007 (significant)
How much toothpaste do you apply? Full length of brush Pea-sized amount Don’t know	 70(33.8%) 108(52.1%) 29(14%)	 52(25.6%) 12159.6%) 30(14.7%)	 2	 0.061

Do you know the correct brushing technique? Yes No	 118(57%) 89(43.8%)	 146(70%) 57(28%)	 1	 0.030
How often do you visit a dentist? Every 6 months Annually Only when in pain Never visited	 22(10.6%) 30(14.77%) 115(55.5%) 40(19.3%)	 35(17.2%) 52(25.6%) 86(42.3%) 30(14.7%)	 3	 0.093
Are you aware that poor oral hygiene can lead to gum disease? Yes No	 158(76.3%) 49(23.6%)	 169(83.2%) 34(16.7%)	 1	 0.196
Are you aware that poor oral hygiene can affect general health (e.g., heart disease, diabetes)? Yes No	 140(67.6%) 67(33%)	 162(83.2%) 41(20.1)	 1	 0.013
Do you know that dental scaling is safe and helps maintain oral hygiene? Yes No Not sure	 98(47.3%) 61(30.0%) 48(23.1%)	 123(60.5%) 45(22.1%) 35(17.2%)	 2	 0.129

Table -1 Gender Wise Distribution of Awareness of Oral Hygiene Practices

Attitude Toward Oral Hygiene according to Gender wise (Table 2)

The gender-wise comparison of attitudes toward oral hygiene practices among the 410 participants (207 males and 203 females) revealed meaningful trends, although not all differences were statistically significant.

For the first question, among males, 112 (54.1%) strongly agreed and 70 (33.8%) agreed, with only a small proportion 17(8.2%) disagreeing or 8(3.8%) strongly disagreeing. A significant difference emerged for the second question regarding willingness to learn correct brushing and oral hygiene techniques. A larger proportion of females expressed willingness compared to males while more males responded “maybe” or “no.” This difference was statistically significant ($\chi^2 = 7.42$, $p = 0.024$), indicating that females were more willing to learn correct oral hygiene techniques.

A majority of participants believed that brushing twice daily is necessary, with females showing a higher level of agreement compared to males. Among male respondents, 152 (73.4%) agreed that brushing twice a day is important, while 30 (14.7%) did not believe it was necessary and 25 (12%) were unsure. In comparison, an even larger proportion of female participants, 178 (85.9%), reported that twice-daily brushing is essential, whereas 15 (7.3%) disagreed and 10 (4.9%) were uncertain. The chi-square value ($\chi^2 = 6.31$, $p = 0.042$) confirmed a significant association, showing stronger acceptance among females.

Misconceptions about professional dental cleaning (scaling) were noticeably more common among males than females. This difference was statistically significant ($\chi^2 = 13.35$, $p = 0.001$), indicating that females had better knowledge regarding the safety of scaling. Overall, while more than half of the participants recognized the usefulness of mouthwash, a considerable proportion in both groups expressed doubts or lack of knowledge, indicating the need for better education on adjunctive oral hygiene practices. The majority of participants believed that oral health education programs are useful, with females showing a stronger positive response than males. Overall, the findings indicate a high level of appreciation for oral health education among genders, highlighting its perceived importance in improving awareness and promoting better oral hygiene practices. However, this difference was not statistically significant ($\chi^2 = 3.72$, $p = 0.156$)

Question	**Gender**		**Chi-square value**	**p-value**
	Male	**Female**		

Do you feel maintaining oral hygiene is important? Strongly agree Agree Disagree Strongly disagree	 112(54.1%) 70(33.8%) 17(8.2%) 8(3.8%)	 118(58.1%) 60(29.5%) 15(7.3%) 10(4.9%)	1.21	0.548
Are you willing to learn correct brushing and oral hygiene techniques? Yes Maybe No	 145(70%) 40(19.3%) 22(10.6%)	 168(82.7%) 25(12.3%) 10(4.9%)	7.42	**0.024**
Do you believe brushing twice daily is necessary? Yes No Not sure	 152(73.4%) 30(14.7%) 25(12%)	 178(85.9%) 15(73.8%) 10(4.9%)	6.31	**0.042**
Do you think regular dental check-ups are important even without pain? Yes No Not sure	 118(57%) 50(24.1%) 39(18.8%)	 130(64%) 38(18.7%) 35(17.2%)	3.25	.197
Do you feel professional dental cleaning (scaling) weakens teeth? Yes No Not sure	 85(41%) 92(44.4%) 30(14.4%)	 48(23.6%) 132(65%) 23(11.3%)	13.35	**0.001**
Do you think using mouthwash helps maintain oral hygiene? Yes No Not sure	 120(57.9%) 55(26%) 32(15.4%)	 126(62%) 40(19.7%) 37(18.2%)	2.11	0.348
Are you willing to adopt better oral hygiene habits if guided by a dentist? Yes Maybe No	 140(67.6%) 45(21.7%) 22(10.6%)	 150(73.8%) 38(18.7%) 15(7.3%)	1.89	0.388

Do you think oral health education programs are useful? Yes No Not sure	 150(72.4%) 32(15.4%) 25(12%)	 165(81.2%) 18(8.8%) 20(9.8%)	3.72	0.156

Table 2:-Table regarding Gender wise Distribution of Attitude Toward Oral Hygiene

DISCUSSION

A total of 410 participants were included in the present study, comprising 207 males and 203 females. The findings related to oral-hygiene practices and awareness were analysed gender-wise for all questions, revealing important patterns in knowledge, behaviour, and attitudes toward oral health. Overall, both males and females demonstrated a generally positive attitude toward maintaining oral hygiene; however, several gender-based differences were identified, some of which were statistically significant.

The majority of the respondents were in the 31–45 years age group (37.1%), followed by those aged 18–30 years (33.7%). The obtained results were in contrast to the study conducted by Marneedi PN et al (2006) where 59.7% belong to the age group 12-30years, 31.5% belong to age group 31-50years and 8.8% belong to age group 51-80 years. Regarding occupational status, the largest proportion of participants were employed in government or private sectors (32.2%), followed by homemakers (22.9%). Students constituted 21.5% of the study population, while 13.7% were self-employed. A smaller proportion, 9.8%, reported being unemployed at the time of the survey.[8]

In the current study, a higher proportion of males brushed once daily, whereas females predominantly brushed twice daily. The obtained results were similar to the study conducted by P K Sreenivasan et al (2016) where 53% reported brushing once daily, while only 29% claimed to brush twice or more every day.[9] In the present study, most participants reported using toothpaste as their primary cleaning material, with females showing a higher preference for toothpaste compared to males. In contrast, males demonstrated comparatively higher use of toothpowder and traditional cleaning aids such as neem stick/miswak. Studies conducted by Bali et al(2004) and Sood et al(2011) reported that toothpaste use exceeded 85% among study participants, reflecting a strong reliance on commercially available dentifrices.[10,11]

In the current study, the amount of toothpaste used did not differ significantly between males and females. Similarly, Kumar et al (2014) noted that although many participants were aware of the recommended pea-sized amount, a considerable number tended to over-apply toothpaste, often due to the belief that "more foam equals better cleaning," but no significant gender-wise difference was found.[12]

In the present study, knowledge regarding the correct brushing technique was higher among females than males, indicating better awareness and willingness to adopt proper oral-hygiene methods among women. Similar results were found in a study which was conducted by Berkowitz et al (2014) where authors reported that women generally demonstrate better oral-health knowledge and behaviour, including brushing technique, frequency, and duration. [13]

In the present study, both males and females exhibited similar dental-visiting patterns, with the majority reporting that they visit a dentist only in the presence of pain or discomfort. Regular dental check-ups—whether every six months or annually—were reported far less frequently. This pattern reflects a predominantly symptom-driven approach to dental care, rather than preventive utilisation. These findings are consistent with several studies conducted in India and other countries. Pakpour et al (2011)reported that most adults seek dental care only when symptomatic, with preventive visits being uncommon due to lack of awareness and perceived cost.[14]

In the present study, females demonstrated higher awareness than males regarding the impact of poor oral hygiene on general health, including systemic conditions such as cardiovascular disease and diabetes. This finding suggests that women may be more attentive to health information and preventive behaviors, a trend reported in multiple studies. [15]

In the present study, a majority of both male and female participants believed that dental scaling is safe and beneficial for maintaining oral hygiene, although a noticeable proportion in both groups expressed uncertainty. Similarly, Panchmal and Shenoy (2012) found that while a majority of respondents had undergone scaling and believed it was beneficial, over one-third falsely believed that scaling causes tooth mobility, demonstrating widespread misinformation.[16]

In the concurrent study, a substantial proportion of participants expressed willingness to learn correct brushing and oral hygiene techniques, These findings are consistent with observations in earlier studies. Paul and Singh reported that women tend to be more proactive in seeking oral-health information and exhibit stronger willingness to adopt recommended practice.[17]

CONCLUSION AND RECOMMENDATIONS

The findings of present study indicate that while general awareness of oral hygiene was satisfactory in the sample population, several gaps persists in specific practices, understanding and health related beliefs. Most participants recognized the importance of maintaining oral hygiene and were aware of its role in preventing gum diseases.

Overall, the study underscores the necessity of continuous, structured oral-health education programs aimed at improving both awareness and behaviors across different demographic groups. Strengthening patient education at dental institutions, community outreach programs, and integrating preventive dental care into routine health services can help bridge the identified gaps and promote better oral-hygiene practices among the adult population of Lucknow City.

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