

**Research Article**

# KNOWLEDGE, ATTITUDE AND PRACTICES ON ORAL HEALTH AMONG THE PATIENTS ATTENDING THE DENTAL OPD AT UPHC IN THE SOUTH-WEST DISTRICT, DELHI

Umang Shree<sup>1</sup> | Sherin Raj TP<sup>2\*</sup> | Kiran Rangari<sup>3</sup>

<sup>1</sup>PGDPHM Student (2022-2023), The National Institute of Health and Family Welfare, Munirka, New Delhi-110067, India

<sup>2</sup>Assistant Research Officer, Department of Planning and Evaluation, The National Institute of Health and Family Welfare, Munirka, New Delhi-110067, India Email: sraj@nihfw.org

<sup>3</sup>Reader Department of Reproductive Biomedicine, The National Institute of Health and Family Welfare, Munirka, New Delhi-110067, India Email: krangari@nihfw.org

**Correspondence**

Sherin Raj TP

Email: sraj@nihfw.org

**Citation**

Shree U, TP SR, Rangari K, Knowledge, attitude and practices on oral health among the patients attending the dental OPD at UPHC in the South-West District Delhi. Health Sciences Journal, 2024; 2(2): 87-95 This is an open access article distributed under the terms of

[Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/).



The use, reproduction, distributions and use in other forums is permitted provided copyright owner(s) and original author(s) are credited and that the original publication in this journal is cited, no use, distribution or reproduction is permitted which does not comply with these terms.

**ABSTRACT:**

**Background:** Oral health is critical for a person's overall health. Dental caries and periodontitis are frequently linked to a variety of systemic disorders. Good oral health practices are the key to preventing oral cavity diseases. Oral health is still a burden in developing nations such as India, and its prevalence is affected by a variety of factors such as geographical region, availability, and accessibility of oral health treatments. The primary etiological risk factors for oral health include genetic predisposition, developmental issues, inadequate oral hygiene, and traumatic incidents. Poor living conditions, limited education, traditions, beliefs, and practices in helping to maintain oral health include all sociocultural determinants. Lack of knowledge and following incorrect practices related to oral health are very important factors resulting in poor oral hygiene. **Objective:** The objective of the study is to assess the oral health KAPs related to Dental caries of patient attending the Dental OPD at UPHC Munirka. **Material and Method:** A descriptive cross-sectional study was conducted using a questionnaire that assessed KAPs of patient attending dental OPD, aged 18-60 years' during 2023 among 140 patients visiting the outpatient department of dentistry. **Results:** The overall knowledge attitude and practices are good and 9.3% of participants having poor practices. Out of 140 patients, 85.0% were visited the dentist when they have dental pain. Around 69.3% participants were reported practice of brushing their teeth twice in a day and about 46.4% of participants know the exact purpose of brushing. The study also found a correlation between educational status and oral hygiene practices. **Conclusions:** Among the participants 83.6% were aware of the adverse outcomes of fizzy soft drinks and 97 percent had the knowledge on the causes of oral cancer. Those who have good knowledge on oral health were doing good practices for oral hygiene. Therefore, promoting community-based programs at periodic intervals for better oral health and hygiene should be conducted.

**KEYWORDS:**

Oral Health, KAP, Oral Hygiene, Dental Patients, Delhi

## 1 | INTRODUCTION

According to WHO, Dental caries occur when plaque accumulates on the teeth surface and metabolizes free sugar found in foods and beverages (including those added during food preparation or naturally present in honey, syrups, and fruit juices). These sugars are converted into acids that gradually erode the tooth. A continued high intake of free sugars, inadequate exposure to fluoride and a lack of removal of plaque by tooth brushing can lead to caries,

pain and sometimes tooth loss and infection <sup>(1)</sup>. Oral disease as a public health problem poses a serious burden globally. The most common oral disease affecting adults is dental caries followed by periodontal disease leading to tooth loss. Early detection of dental caries can help reduce the severity and prevent further complications. Dental caries is a multifactorial disease caused by both biological and behavioral factors, some of which (e.g., diet) are shared with other non-communicable diseases (diabetes, heart disease, cancer)<sup>(2)</sup>.

Oral health has improved in industrialized countries where prevention programs are in place, and attempts are being made to regulate and adjust sugar consumption, fluoride use, and lifestyle. Oral health is strongly linked to an individual's knowledge, attitude and practice (KAP). Because of lower sugar intake and increased use of oral hygiene aids, the incidence of oral illnesses has declined dramatically in recent years. <sup>(4)</sup> Several studies have investigated KAPs with varying degrees of success. Dental caries develops throughout time and can be triggered by a wide range of factors. According to the Global Burden of Disease, the most frequent condition is untreated dental caries of permanent teeth.<sup>(5)</sup> Oral diseases have several primary etiological risk factors including genetic predisposition, developmental issues, poor oral hygiene and traumatic incidences. Additionally, socio-cultural determinants such as living conditions, education levels, traditions, beliefs, and practices related to oral health significantly contribute to the aetiology of oral diseases. Evaluation of the oral health status in the adult age group is important because it presents important information for planning services in dental care and also generates data on the outcomes of dental care provided to the population during their lifetime <sup>(6)</sup>

## 2 | MATERIAL AND METHODS

It is a descriptive cross-sectional study conducted during May-June 2023. Patients with dental caries aged between 18 to 60 years attending the Dental OPD at the Urban Primary Health Centre (UPHC) at Southwest District in Munirka, New Delhi were included for the present study. According to Bhat et al (2022) the proportion of Dental caries among the population is around 49% (P=0.49) and taking a 95% Confidence level with  $\pm$  precision Using the formula  $n = z^2 pq/d^2$  Sample size for the present study was calculated using the formula Where  $n = 384$ ,  $z = 1.96$ , proportion (p) = 0.49, q = 0.51, Degree of precision (d) = 0.05. Due to shortage of time and lack of availability of patients, 140 patients attending the Dental OPD at the UPHC were covered, during the month of May to June 2023. The patients who were visiting the dental OPD were informed about the study and the written informed consent was taken from all the eligible study participants, maintaining the anonymity and confidentiality of the participants. The patients were selected through a purposive sampling technique to achieve the sample size for the study. The exclusion criteria include those who were mentally or physically challenged and those who could not read and write. A pretested, predesigned, questionnaire containing objective, and multiple-choice questions was prepared in English and a pilot study was conducted on 10 participants to check validity and comprehensibility of the questionnaire. Then, it was translated into Hindi by an expert in that language keeping semantic equivalence. To check the translation, it was back-translated. All the data collected was tabulated in an MS Excel sheet and was analyzed using IBM SPSS ver. 20 Software. The reliability of the questionnaire was carried out and the Cronbach alpha value was 0.705 for the 11 study items.

## 3 | RESULTS

The socio-demographic profile of the study participants is given in table 1. This study population consists of 140 patients, out of which 60% were female and 40% of were male aged between 18 to 60 years.

Table 1 Socio-demographic profile of the study participants

Variables		Number (n=140)	Percent
Gender	Female	85	60.7
	Male	55	39.3
Age	18-30	39	27.9
	31-40	66	47.1
	41-50	27	19.3
	51-60	8	5.7
Marital status	Married	108	77.1

Religion	Unmarried	28	20.0
	Widow	4	2.9
	Hindu	111	79.3
	Muslim	19	13.6
	Christian	4	2.9
	Illiterate	11	7.9
Education status	Primary school	8	5.7
	Middle school	5	3.6
	High school	19	13.6
	Intermediate	16	11.4
	Graduate	64	45.7
	Postgraduates and above	17	12.1
Patient's Occupation	Govt./Pvt job	31	22.2
	Clerical job	21	15.0
	Skilled workers	30	21.4
	Unemployed	58	41.4
	Rs. 2-5 lakh	25	17.9
Annual family income	Rs. 5.1-9 lakh	76	54.3
	AboveRs. 9 lakhs	36	25.7

Nearly half of the patients were in the age group 31-40 years (47.1%), followed by 41–50-year age group (19%) and 51-60year age group (5.7%). More than three-fourths of the respondents were married (77.1%), while 20% were unmarried and 2.9% were widows. The most common religion among the respondents were Hindu (79.3%), followed by Muslim (13.6%) and Christian (2.9%). Nearly half of the respondents (46%) were graduates, followed by high school (13.6%), postgraduates and above (12.1%), intermediate (11.4%) and illiterate (7.9%). The occupational distribution shows that 41.4% were unemployed, 22 percent were working with the Government or private sector and 21 percent were skilled workers like mechanic, driver etc.

### 3.1 | RESULTS KNOWLEDGE AND AWARENESS OF ORAL HYGIENE AND DENTAL HEALTH

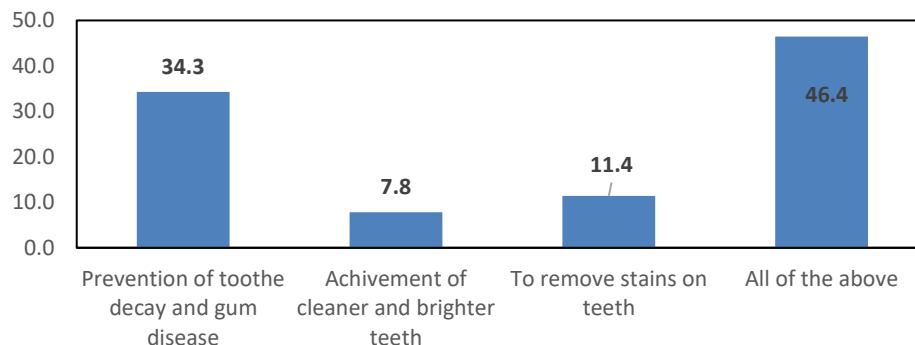


Fig 1 Knowledge regarding purpose of tooth brushing, bleeding of gums

The above figure shows the statement concerning the primary aim of brushing. Among the study participants, 46.4 percent have good knowledge on the purpose of brushing, 34.3 percent believed that brushing is only for prevention of tooth decay and gum disease. (Fig.1)

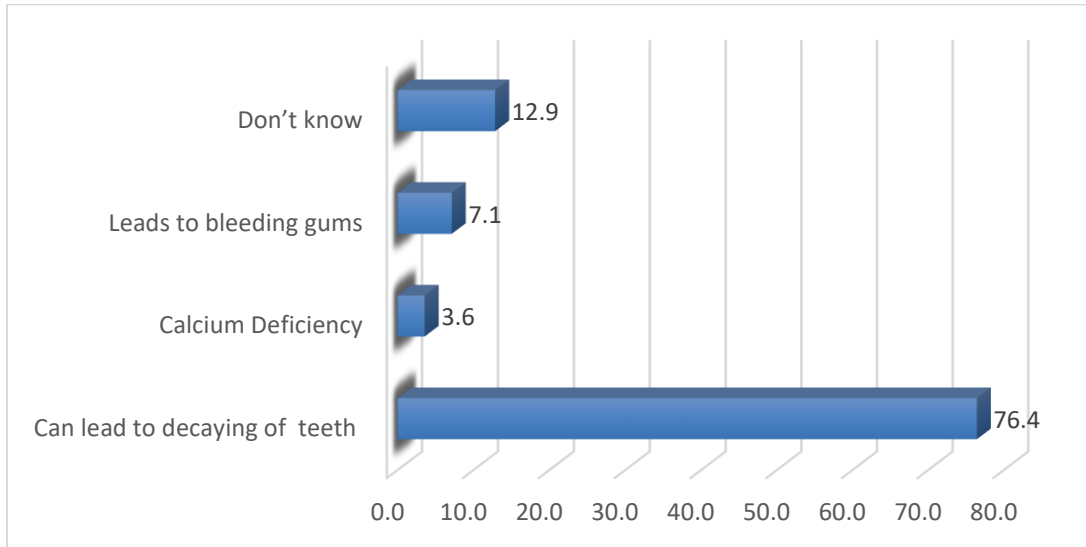


Figure 2 Effect of Retention of the sweet food

In terms of knowledge about dental caries, 76.4 percent of the people were aware of the true effect of sweet food retention on teeth, while about 13 percent were not aware of it. (Fig 2).

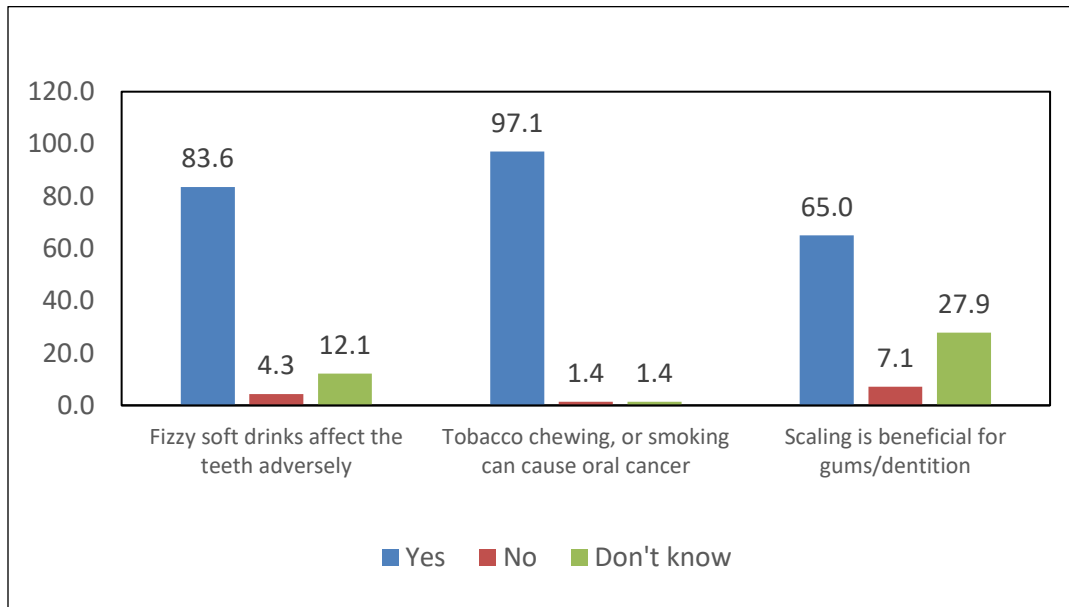


Figure 3 Knowledge regarding the effect of fizzy drinks, habits causes cancer, scaling

The present study found that 83.6% of the participants were aware of the adverse outcomes of fizzy soft drinks, and 97 percent were aware that tobacco chewing or smoking can cause oral cancer (97.1%). For removing plaque, dentists generally do scaling. The analysis indicates that 65 percent agreed that scaling is beneficial for gums/dentition while about 28 percent do not know about scaling (Fig. 3).

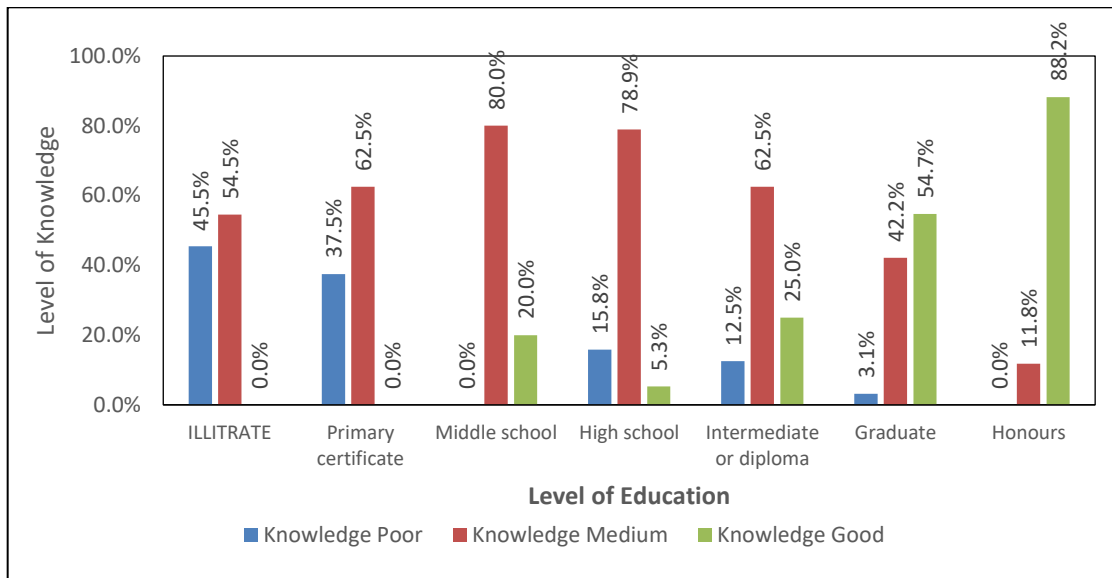


Fig.4: Level of Knowledge towards oral health and Education

In the present study, those who are above graduates, about 90 percent have good knowledge on oral health, while the proportion of good knowledge among graduates and intermediate were 54.7% and 25% respectively. Patients with middle school, high school and intermediate education had medium level knowledge with 80 percent, 79 percent and 63 percent respectively. Among the illiterate and primary educated patients, reported none of them had good knowledge, while 55 percent and 63 percent had medium level knowledge among illiterate and primary educated patients respectively. The statistical analysis indicates that there is a statistically significant association between education and level of knowledge ( $p=0.005$ ). (Fig. 4)

### 3.2 | ATTITUDE TOWARDS ORAL HEALTH AND HYGIENE

Table 2 Attitude of the patients toward the oral health

Characteristics		Number	Percent
Do you think decayed teeth can affect the appearance of a person?	Yes	126	90.0
	No	14	10.0
Do you neglect your oral health only because it isn't evidently visible to other?	Yes	42	30.0
	No	98	70.0
Are you conscious about positing of your teeth?	Yes	123	87.9
	No	17	12.1
Do you follow basic oral hygiene practice under the influence of advertisement?	Yes	53	37.9
	No	87	62.1
Do you believe that vigorous brushing can get you bright and white teeth?	Yes	54	38.6
	No	86	61.4

\*Multiple response

The study results indicate that 90 percent of the people thought that decayed teeth can affect the appearance of a person and 70 percent of subjects agree that they didn't neglect their oral health as it is not visible to others, while 30 percent were neglected their oral health. More than two third of the people around (87.9%) were very much conscious about positing of their teeth. In this study the (38.6%) participants believed that vigorous brushing could get their teeth bright and white on the other hand (61.4%) they don't agree with that statement. For the importance of oral health (80%) of the subjects consider the overall appearance of oral health is important.

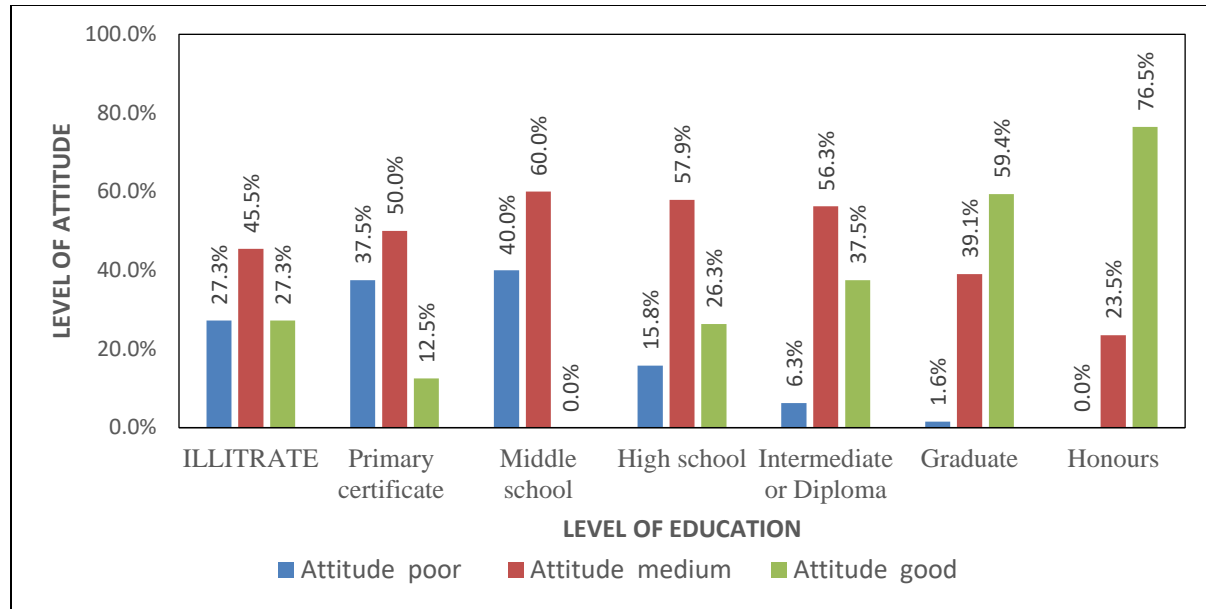


Fig 5 Level of Attitude by Education

From the figure, it is clear that about 77 percent of the individuals' honors have good attitude towards oral health, while it is 59 percent among graduates. The proportion of good attitude among intermediate and high school educated patients were 37.5 and 26 percent respectively. Individuals with Primary, middle school, high school and intermediate education had a high proportion of medium level attitude with 50 percent, 60 percent, 58 percent and 56 percent respectively. Among the illiterate and primary educated patients, the proportion of medium attitude was 46 percent and 50 percent respectively. The statistical analysis indicates that there is a statistically significant association between education and level of attitude on oral health ( $p < 0.005$ ) (fig.5).

Table 3 Oral hygiene Practices among the OPD Patients

When you rinse your mouth*	Number	Percent
In the morning	32	22.9
In the morning and before going to bed	59	42.9
In the morning going to bed and after eating sweet food	46	32.1
Never	3	2.1
<b>Frequency of brushing*</b>		
Once	35	25.0
Twice	97	69.3
Thrice	6	4.3
After every meal	2	1.4
<b>Duration of brushing*</b>		
Less than 1 minute	13	9.3
1 minute	28	20.0
2 minutes	72	51.4
More than 2 minutes	27	19.3

\*multiple response

About 43% of the participants rinsed their mouth in the morning and before going to bed, while 32% rinsed their mouth in the morning, going to bed and after eating sweet food and 2.1% were never rinse their mouth. Regarding frequency of brushing, about 70 percent were brushing twice daily, while one-fourth of the participants were brushing once a day and 4% were brushing thrice a day. Regarding the duration of brushing, it was found that more than half of the participants were brushing for two minutes and only 19 percent were brushing for more than 2 minutes.

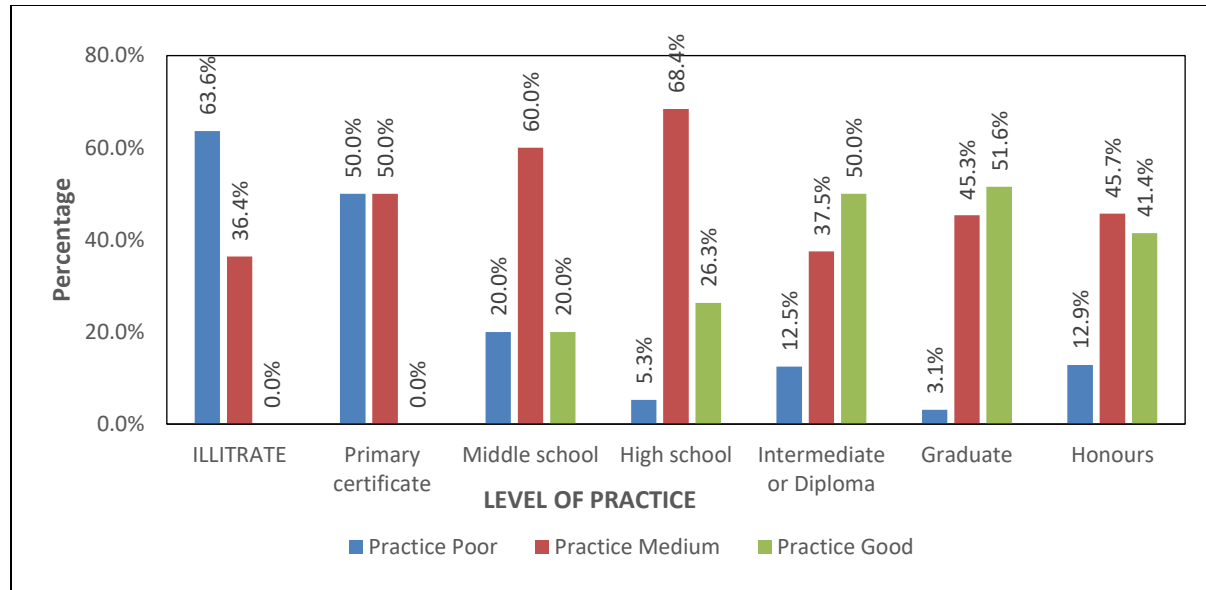


Fig. 6 Level of Brushing Practice with Education

Level of brushing practice with education was given in figure 6. It indicates that the patients with education above intermediate, the level of brushing practice was also high. The proportion of good brushing practice among intermediate, graduate and honors were 50 percent, 51.6 percent and 41 percent respectively. Medium level brushing practice was higher among primary, middle school and high school level educated patients. It was also noticed that poor brushing practice is much higher among illiterate patients (63.6%). This analysis clearly shows that education have a significant role in brushing practice. The chi-square test also indicates that there is a statistically significant association between education and practices ( $p=0.000$ ) (fig.6).

Table 4 Level of Oral hygiene knowledge vs practice

	Level of Practice						P-value
	Poor		Medium		Good		
Level of Knowledge	No.	Percent	No.	Percent	No.	Percent	
Poor Knowledge	6	40.0	7	46.7	2	13.3	0.000
Medium Knowledge	11	15.9	39	56.5	19	27.5	
Good Knowledge	1	12.9	18	45.7	37	41.4	

A statistically significant association was seen between Level of knowledge and practice on oral hygiene with p-value 0.000. The detailed analysis reveals that, the patients with poor knowledge, only 13 percent have good practice on oral health, while the patients with medium knowledge, about 28 percent had practicing good, and 56 percent had medium level practice. The patients with good knowledge, more than 40 percent had good practice and 46 percent had medium level practice (table 4). Which indicates that the level of knowledge has a strong relationship with practice in oral health.

### 3.3 | LEVEL OF KNOWLEDGE AND PRACTICE ON ORLA HEALTH

Table 5 Overall Level of Knowledge Attitude and Practices

	Poor		Medium		Good	
	No.	Percent	No.	Percent	No.	Percent
Knowledge	15	10.7	69	49.3	56	40
Attitude	13	9.3	61	43.6	66	47.1
Practices	18	12.9	64	45.7	58	41.4

Table 4 indicates the level of Knowledge Attitude and Practices regarding oral hygiene among the dental patients. The analysis reveals that about half of the study participants had medium level knowledge on oral hygiene and 40 percent had good knowledge. While about 47 percent had good attitude and 44 percent had medium level attitude towards oral hygiene. Regarding practices, more than 45 percent had medium level practice and 41 percent had practicing good to maintain oral hygiene (table 5).

#### **4 | DISCUSSIONS**

Everyone cherishes their smiles and desire to look beautiful, but some individuals fail to prioritize their oral health. Many individuals may not fully comprehend the repercussions of inadequate health care or may underestimate its importance. This article primarily focuses on knowledge, attitude and practice on oral health among the patients attending dental OPD at UPHC from New Delhi. In the present study 85 females and 55 male OPD patients were interviewed. The study found that 46.4 percent have good knowledge for the purpose of brushing. Our study reported that 76.4 percent of the respondents agreed that retention of sweet food items can lead to decaying of teeth. This study finding agrees with the study conducted in southern Saudi Arabia among school children.<sup>7,8</sup> In the present study about 84 percent of the patients reported that fizzy soft drinks affect the teeth adversely and 97 percent believed that tobacco chewing and smoking can cause oral cancer. Another cross-sectional study by Zaidi et al., identified that 73.7% of study participants were experiencing mild degree of sensitivity since the intake of soft drinks. Also, tooth ache was reported in 49.6% of those who were drinking carbonated (fizzy) drinks.<sup>9</sup> It has been reported that there is a statistically significant association between level of education and knowledge on oral health. Those who were above graduates, about 90 percent have good knowledge on oral health. This finding is supported by the studies carried out by Clifford et al. Chen et al. and Arrico et al.<sup>10,11 & 12</sup>

Our study also noticed that individuals with honors, graduates and above graduates have good attitude towards oral health. It is also found that there is a statistically significant association between education and level of attitude on oral health, which is similar to that reported by Clifford et al.<sup>10</sup> However this result is differ from the those found Arhens et al., who found no association between level of education and attitude, which may be due to the fact that they conducted the study among adolescents from a public institution aged 14 to 16 years and in these institutions the educational level and socioeconomic conditions are less favorable than the conditions provided by private institutions.<sup>13</sup> Regarding practice of oral hygiene, the study reveals that about 70 percent were brushing twice daily, while one-fourth of the participants were brushing once a day and 4% were brushing thrice a day. This finding contradicted the results of Vinodha and Simon<sup>(14)</sup>, as well as Kuppuswamy et al where only 18% and 17% of respondents reported brushing their teeth twice daily respectively.<sup>15</sup> Furthermore, Singh et al<sup>16</sup> found that 40.7% of their respondents brushed their teeth twice daily. In the current study, a statistically significant association was seen between Level of knowledge and practice on oral hygiene. Those who have good knowledge on oral health were doing good practices for oral hygiene. It was observed that a significant number of illiterate individuals relied on self-medication for dental issues, in contrast to those who were literate. This finding aligns with the research conducted by Saha and Mandal, which concluded that individuals with lower socioeconomic and educational statuses tend to experience more dental problems.<sup>17</sup>

#### **5 | CONCLUSION**

In summary, it was observed that out of 140 patients, 69.3% participants were having practice of brushing their teeth twice in a day. Around 46.4% of participants know the exact purpose of brushing., 65% of subjects know the harmful effect of fizzy drinks. The knowledge, attitude and practice about oral health were associated with educational status. The study reported that, those who were above graduates, about 90 percent have good knowledge on oral health. Those who have good knowledge on oral health were doing good practices for oral hygiene. Public awareness programs should be run involving health workers, nurses and medical and para medical students. Documents, posters, and pamphlets can be used to generate awareness among the people. Establish comprehensive oral health programs in schools, including oral health education, tooth brushing programs, and regular dental screenings. These programs can promote good oral hygiene habits and identify children at risk of dental caries for timely intervention. Develop policies to improve access to affordable dental care, particularly for underserved populations. This can include increasing Medicaid coverage for dental services, expanding dental workforce through incentives and loan forgiveness programs, and promoting tele dentistry to reach remote areas. Improve oral health awareness by promoting community-based programs at periodic intervals for better oral health and hygiene.



## 6 | LIMITATIONS OF THE STUDY

- As it was a short-term study with a limited sample size, the present study was limited. A Larger sample size would have helped to extrapolate the data to a bigger population.
- The study is conducted in the UPHC, so the result can be generalized only to those areas with similar set up.
- While acknowledging the limitations of this research, we aspire for its findings to encourage further studies aimed at increasing awareness about the significance of oral health. Additionally, this study provides a baseline for future studies.

**FUNDING:** Nil

**CONFLICT OF INTEREST:** There is no conflicts of interest.

## REFERENCES

1. World Health Organization, 14 March 2023
2. Khapung A, Shrestha S. Dental Caries among Adult Population of a Municipality: A Descriptive Cross-sectional Study. *JNMA J Nepal Med Assoc.* 2022 Oct 1;60(254):870-873
3. Uttarwar et al. Prevalence of Dental Caries in permanent Mandibular First Molars in Adult Patients Visiting OPD of Department of Conservative Dentistry & Endodontics (18 to 44 years) a Cross-Sectional Study, *International Journal of Science and Research (IJSR)* 2017, 6(9): 1934-1937
4. Omitola AO & Arigbede AO, Prevalence of Dental Caries among Adult Patients Attending a Tertiary Dental Institution in South-South Region of Nigeria, 2011,6(1): 52-58
5. Christian et al. An epidemiological study of dental caries and associated factors among children residing in orphanages in Kerala, India: Health in Orphanages Project (HOPE). *Int Dent J.* 2019 Apr;69(2):113-118
6. Blerim Kamberi, Ferit Koçani, Agim Begzati, Jeta Kelmendi, Donika Ilijazi, Nora Berisha, Lumnije Kqiku, "Prevalence of Dental Caries in Kosovar Adult Population", *International Journal of Dentistry*, vol. 2016; Article ID 4290291, 6 pages, 2016.10.1155/20
7. Tagoo RA, Yaseen, SM, Zakirulla M, Nasim VS & Zamzami MA. Oral hygiene knowledge and practices among school children in a rural area of southern Saudi Arabia.. *International Journal of Contemporary Dentistry.*2012; 3. 57-62.
8. BalaK, Gupta R, AraA, Sahni B. A KAP study of oral health status among adults in a rural area of Jammu District. *Int J Community Med Public Health* 2019;6:135-41.
9. Zaidi AB, Karim AA, Mohiuddin S, Khan A, Syed A, Jehangir M et al. Dental sensitivity associated with consumption of fizzy drinks: a cross-sectional study. 2018; 7(4):5-5.
10. Clifford AR, Irene ML, Nancy Edith CL, Gissela BV, Luis Adolfo CG; César CR,. Knowledge, Attitudes, and Practices on Oral Health Prevention Associated with Sociodemographic Factors of Adolescent Students from a Peruvian-Swiss Educational Institution. *Journal of International Oral Health* 2022; 14(5):p 475-486 | DOI: 10.4103/jioh.jioh\_120\_22
11. Chen L, Hong J, Xiong D, Zhang L, Li Y, Huang S, et al. Are parents' education levels associated with either their oral health knowledge or their children's oral health behaviors? A survey of 8446 families in Wuhan. *BMC Oral Health* 2020; 20(1):1-12. doi: 10.1186/S12903-020-01186-4
12. Arrico CF, Almerich-Silla JM, Montiel-Company JM. Oral health knowledge in relation to educational level in an adult population in Spain. *J Clin Exp Dent.* 2019;11(12):e1143-50.
13. Arhens AN, Colman RE, Martínez NE, Morel MI, Osorio M, Paciello MR. Actitud y práctica sobre salud bucal en adolescentes de colegios públicos de Asunción. *Rev Salud Pública Parag* 2015;5:40-7. Available from: <https://docs.bvsalud.org/biblioref/2018/06/905241/40-47.pdf>
14. Vinodha C, Simon AK. Awareness of oral hygiene among patients attending dental outpatient department in a tertiary hospital in Coimbatore: A cross sectional study. *PARIPEX Indian J Res* 2019; 8:36-9.
15. Kuppuswamy VL, Murthy S, Sharma S, Surapaneni KM, Grover A, Joshi A. Oral hygiene status, knowledge, perceptions and practices among school settings in rural South India. *Oral Health Dent Manag* 2014; 13:146-54.
16. Singh D, Tiwari VK, Raj S. Knowledge awareness and practice regarding oral hygiene and its consequences among dental patient attending OPD in tertiary care hospital in Delhi. *IOSR J Dent Med Sci* 2018; 17:7-16.
17. Saha TK, Mandal BC. Knowledge, perceptions and oral health status among general OPD attendees in a tertiary care hospital of Darjeeling district, West Bengal. *IOSR J Dent Med Sci* 2019; 18:60-4.