



# Awareness And Motivation Regarding Periodontal Health Among Educated Population Not Belonging To Medical Profession

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**Abstract:** One of the most significant dental conditions that adds to the worldwide burden of chronic illness is periodontal disease. This study aimed at finding the awareness and motivation surrounding periodontal health among an educated demographic class not affiliated with the medical profession. Through an online survey, responses from individuals outside the medical field, aged between 20 and 60, were collected to gauge their understanding of periodontal health. Initial findings suggested a nuanced panorama of awareness among this cohort. A questionnaire set of 20 was created on Google forms and forwarded with link on social media. 500 people of various professions including teachers, engineers, data scientist, pilot etc. were included in survey and result were collected in the digital pie diagram. It was a 6 month survey during June to December 2023. The result were in percentage which revealed that the respondents' knowledge of the value of dental care, particularly periodontal health care, is only minimal.

**KEYWORDS-** Survey, Periodontal health, Awareness, Motivation, Oral health perspectives, Preventive measures.

**Introduction** - Periodontal diseases, encompassing gingivitis and periodontitis, stand among the most prevalent conditions affecting humanity. Chronic periodontitis, a multifactorial ailment, exhibits a notably high prevalence rate in India, contributing significantly to the global burden of oral health issues. The escalating prevalence of periodontal diseases can be attributed, in part, to inadequate oral health awareness. Recognizing the vital role of oral health in maintaining overall well-being is paramount [1]. Efficient prevention of oral diseases hinges upon adopting fundamental practices such as proper tooth brushing, the use of interdental aids, flossing, adherence to a healthy diet, and regular visits to dental professionals. Motivating individuals afflicted by periodontitis emerges as a crucial element in influencing and maintaining optimal periodontal health.[2] The literature claims that up to now, no online survey has been conducted to evaluate periodontal awareness among India's educated populace. Thus, the primary goal of this survey's inception was to ascertain people's awareness of periodontal health.

A systematic review by Kassebaum et al. (2014) revealed that severe periodontitis affected 11.2% of the global population in 1990-2010, indicating a substantial and persistent burden [3]. Chronic periodontitis is a multifactorial disease, influenced by a combination of microbial, genetic, environmental, and host factors. Kinane, Stathopoulou, and Papapanou (2017) discussed the complex pathogenesis of periodontal diseases, noting that the interplay of these factors contributes to the onset and progression of periodontitis [4].

Numerous studies have elucidated the bidirectional relationship between periodontal disease and systemic ailments such as diabetes, cardiovascular diseases, respiratory infections, adverse pregnancy outcomes, and rheumatoid arthritis. The mechanisms underlying these associations are multifaceted. For instance, periodontal pathogens and inflammatory mediators can enter the bloodstream, potentially contributing to systemic inflammation and exacerbating pre-existing conditions. Taylor GW (2001) highlighted epidemiological evidence supporting this association, indicating that individuals with diabetes are at a higher risk of developing periodontal disease, and conversely, periodontal disease may adversely affect glycemic control in diabetic patients [5]. Lockhart et al. (2012) presented a scientific statement from the American Heart Association, discussing the evidence supporting an independent association between periodontal disease and atherosclerotic vascular disease. This suggests that periodontal health may influence cardiovascular health and vice versa, emphasizing the importance of oral health in cardiovascular disease management [6]. Understanding the periodontal-systemic correlation has profound implications for healthcare. Integrated approaches that address both oral and systemic health are becoming increasingly emphasized in clinical practice. Dentists, physicians, and other healthcare providers are encouraged to adopt a collaborative approach to patient care, recognizing the intricate interplay between oral and systemic health.

Promoting awareness about the periodontal-systemic connection is paramount for public health initiatives. Encouraging regular dental check-ups, adopting good oral hygiene practices, and managing systemic conditions effectively are crucial steps toward maintaining overall health and well-being.

#### **Aims and Objectives:**

- This study's main goal was to assess the educated population's motivation and awareness of periodontal health among those who are not in the medical field.
- To assess the level of periodontal awareness among the educated population and the significance of self-care in preventing and controlling periodontal disease.
- To evaluate the motivation of individuals with an educational background, outside the medical profession, in adopting and maintaining effective oral health practices.
- To investigate the commitment of educated individuals in disseminating information and providing guidance to their peers, family members, and community regarding periodontal health.
- To examine the knowledge and awareness of the educated population regarding the interrelation between periodontal health and systemic well-being.
- To identify any existing misconceptions or gaps in knowledge among the educated population regarding periodontal health and its impact on overall health.
- To explore the factors influencing the motivation of educated individuals towards incorporating oral health practices into their daily routines.

- To analyze the potential barriers hindering individuals from adopting recommended periodontal care practices despite possessing knowledge about their importance.
- To propose targeted strategies for improving awareness and motivation among the educated population regarding periodontal health, based on the findings of the study.
- To contribute to the existing body of knowledge by comparing the awareness and motivation levels of the educated population with those of health professionals, as studied in the reference.
- To provide recommendations for public health campaigns and educational initiatives aimed at enhancing periodontal health awareness among the educated population not belonging to the medical profession.
- To create awareness about the detrimental habits like tobacco affecting the periodontal health.

These aims and objectives will guide the research towards a comprehensive understanding of the awareness and motivation levels related to periodontal health in the specified demographic category, facilitating the development of targeted interventions for improved oral health outcomes.

### **Materials & Method:**

There were five hundred participants in the research, ages twenty to sixty.

There were twenty questions on this survey. The language used for this survey was English. It was created, prepared, and completed using an internet portal called Google Forms—which just required a mail ID log-in—this survey was affordable and easy to complete. On WhatsApp, the link was shared.

Multiple-choice questions from a questionnaire were used as the assessment tool. The questionnaire assessed the participant's profile, knowledge of periodontal disease, oral hygiene practices, and belief in the significance of self-care for disease control. With each question in the set option were given to choose. Response for each question was recorded separately. Response of people participating in the survey was recorded and seen in two different data format that is one in pie-diagram and table format.

Questionnaire

Participant's demographic status: Age: Sex: Label: -

1. How frequently do you brush your teeth?

- a) Once; b) Twice c) Following each meal

2. What do you use for cleaning teeth?

- a) Toothbrush and toothpaste b) Toothbrush and tooth powder c) Finger and toothpaste/toothpowder d) Neem stick

3. How are your teeth brushed?

- a) Movement in a horizontal plane b) Circular motion; vertical motion c) At Random

4. How long does it take you to brush your teeth?

- a)1–2 minutes b) 3–5 minutes. c) More than five minutes.

5. How often do you change your tooth brush?

- a) Once every month  
b) Once in 3 months  
c) Once in 6 months  
d) Once every year

6. What kind of brush do you use for teeth?

- a) Hard, b)soft, and c)ultra-soft

7. What other cleaning products do you use?

- a)Mouthwash b)Floss c) Interdental Brush d) Tongue Cleaner; e) No

8. Is brushing your teeth enough to avoid gum disease?

- a)Yes,b) no, c) don't know

9. In the previous 12 months, how many times did you visit the dentist?

- a) Once,b) twice,c) three times, d) more than three times e) No in-person meeting

10.What prompted your most recent dental appointment?

- a) Dental pain or issues b) Gum pain or issues c) Follow-up d) Routine examination e) No visit

11. Do you schedule regular dental appointments to maintain your oral hygiene?  
a) One time a year, b) twice a year, c) only in the event of an issue, c) never

12. Do you perceive yourself as having halitosis (bad breath)?  
a) Yes  
b) No  
c) I'm not sure

13. Do you think gum disease or poor oral hygiene can contribute to bad breath?  
a) Yes, b) no, c) don't know

14. Gum bleeding is associated with gum issues  
a) Yes, b) no, c) don't know

15. Do you believe that disorders of the gums and bone that surround teeth may be avoided?  
a) Yes b) No c) Maybe

16. How did you learn that periodontal disease is caused by dental plaque and tartar accumulation on the tooth surface?

- a) My dentist explained this to me.
- b) I don't know anything about this.
- c) I learned about it from magazines, the internet, and TV.

17. Which of The following factors can lead to periodontal disease:  
a) Plaque b) Hereditary c) Vitamin C deficiency d) Unknown

18. How did you learn that untreated gum disease can gradually lead to tooth loss?  
a) I have no knowledge about this.

b) My dentist explained this to me.

c) I acquired this knowledge via television, magazines, and the internet.

19. Does smoking have an impact on periodontal tissue healing?

a) Yes, b) no, c) don't know

20. Are you aware that there is a connection between periodontal disease and:

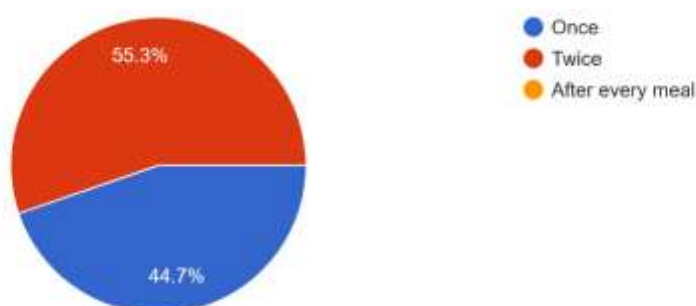
a) Hormonal changes such as puberty or pregnancy; b) preterm low weight; c) diabetes mellitus; d) cardiovascular disease; e) all of the above; f) ignorance of the issue

RESULT- This survey was completed successfully as forwarded to the 500 people working in India. The survey was completed in the allotted duration of 6 months. The surveys were received through the online filling into Google forms. Recorded response was in the percentage shown in pie chart.

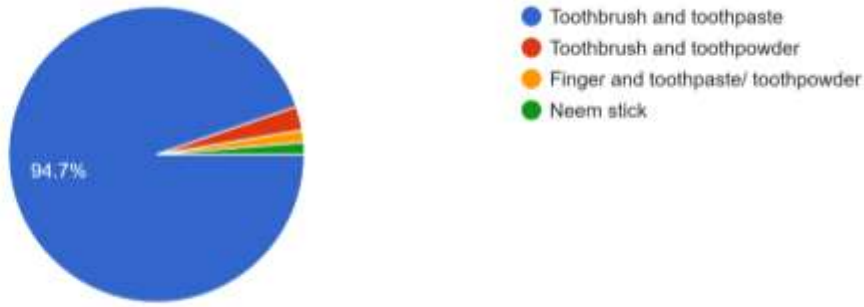
It's a widely held belief that society's better educated classes are more conscious of illnesses and overall health include oral, however there wasn't much evidence to support this opinion in the literature. Thus, the purpose of this study was to gather data on the degree of knowledge regarding periodontal health and disease. The survey's findings indicated that respondents' understanding of the value of dental care, particularly periodontal health care, was only modest.

Zhan, J., Zhang, Y., Wang, X. et al. (2021) explored the potential risk factors influencing the periodontal health of Chinese middle school students. Employing a multi-stage stratified sampling approach, participants aged 12–15 were selected from the chosen middle school for examination. The investigation comprised two components: an oral examination involving assessments for gingival bleeding and calculus, and a questionnaire survey covering sociodemographic details, oral health knowledge, attitudes, and behaviors. The research utilized logistic regression and generalized linear mixed models to scrutinize the risk factors associated with gingival bleeding and calculus. The findings indicated a high prevalence of gingival bleeding and calculus among adolescents aged 12–15 in China. The study identified various contributing factors, including gender, age, ethnicity, father's education level, oral health knowledge, and behaviors, through multifactorial models.

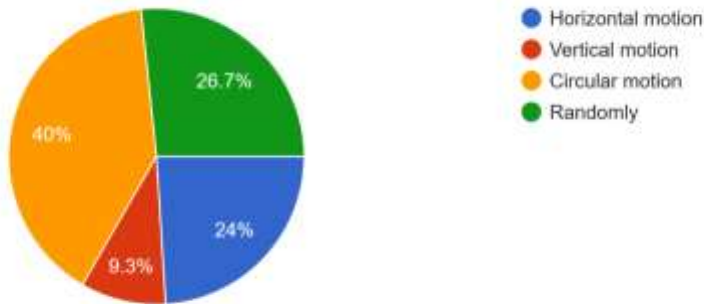
Results of our study showed that 55.3% of the people cleaned their teeth twice a day.



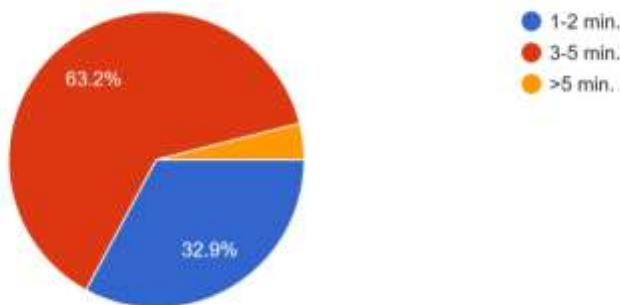
94.7% people used tooth brush & tooth paste as their cleaning aid. 26.7% people brushed their teeth randomly.



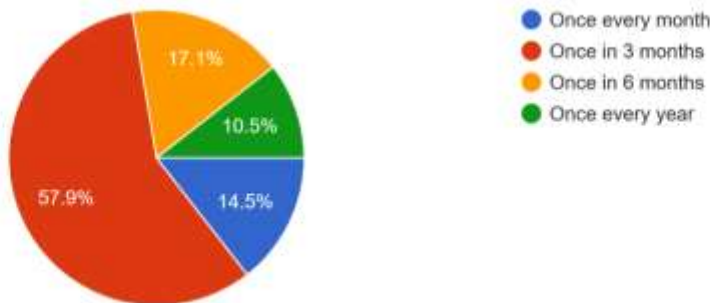
40% people used circular motion while brushing their teeth



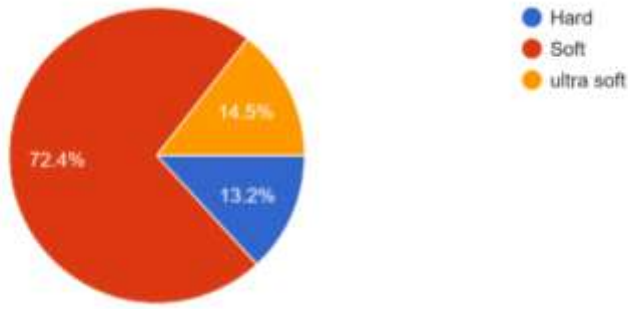
63.2% people clean their teeth for 3 to 5 min-



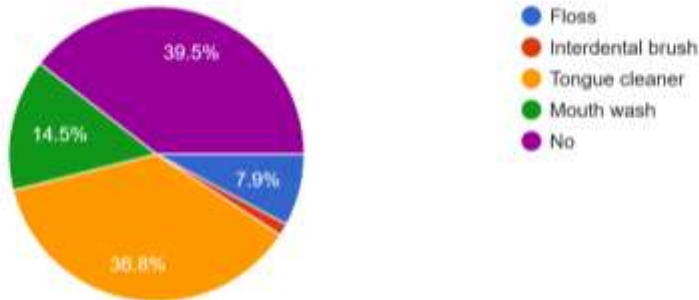
57.9% people change toothbrush every 3 months.



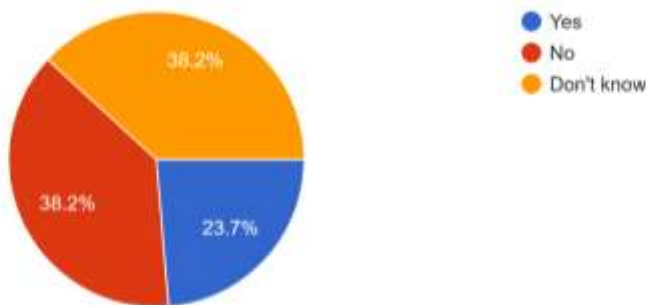
72.4% people use soft tooth brush.



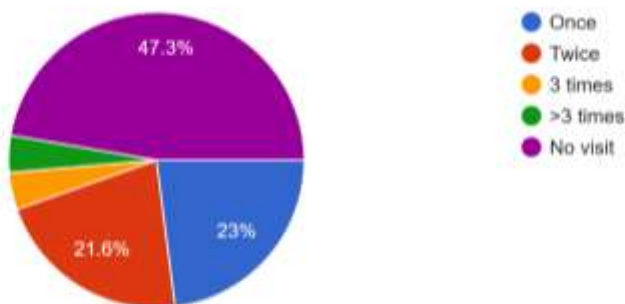
Tongue cleaner was the most commonly used interdental cleaning aid. 39.5% people didn't use any other cleaning aid besides brush.



38.2% people didn't know that it was possible to prevent gum diseases with tooth brushing.

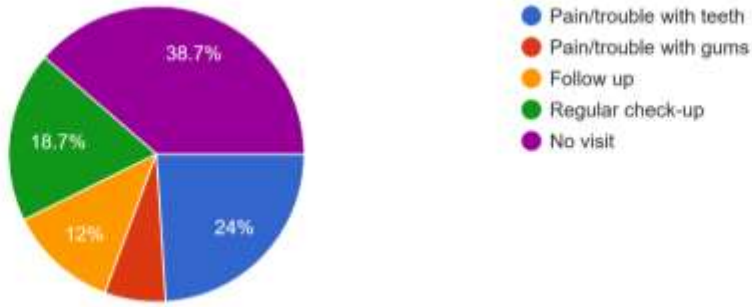


When people were asked about their no. of visit to dental clinic in past 12 months, 47.3 % people did not visit any dental clinic.

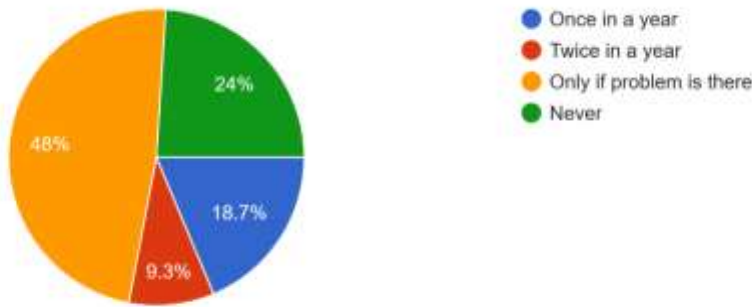


Reason of visiting dental clinic was mainly for pain trouble with teeth.

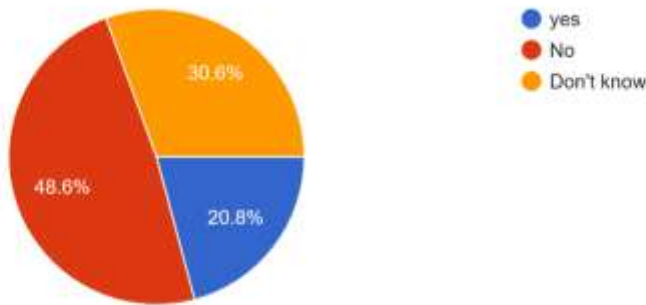




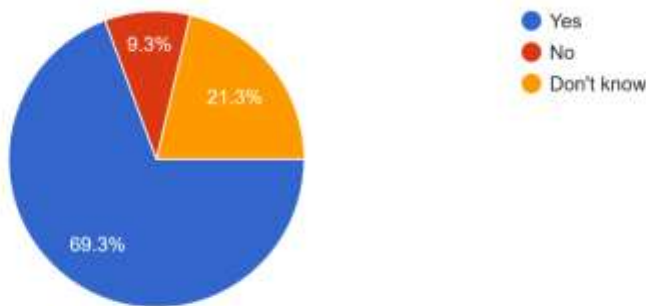
Only 18.7% people did routine check ups for oral hygiene maintenance



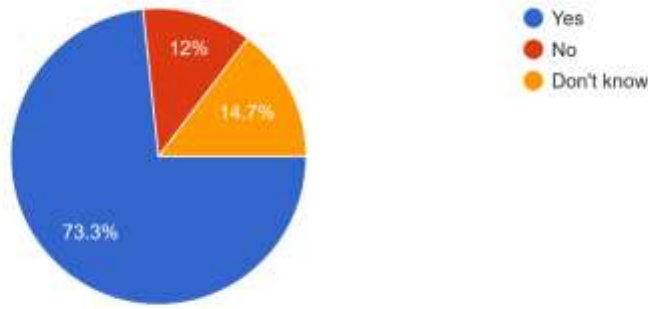
Nearly half of the individuals surveyed, specifically 48.6%, lacked awareness about halitosis, which refers to bad breath. This means that a significant portion of the respondents didn't recognize or acknowledge bad breath when asked about their self-perception of halitosis.



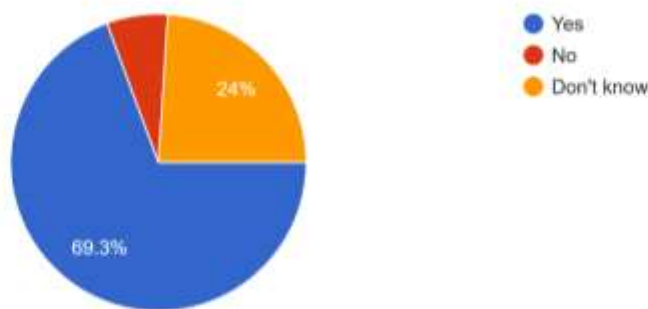
A majority of people surveyed, approximately 69.3%, believed that bad breath could stem from factors such as gum disease or inadequate oral hygiene. This indicates that a significant portion of the respondents attributed bad breath to issues related to gum health or insufficient care of their teeth and mouth.



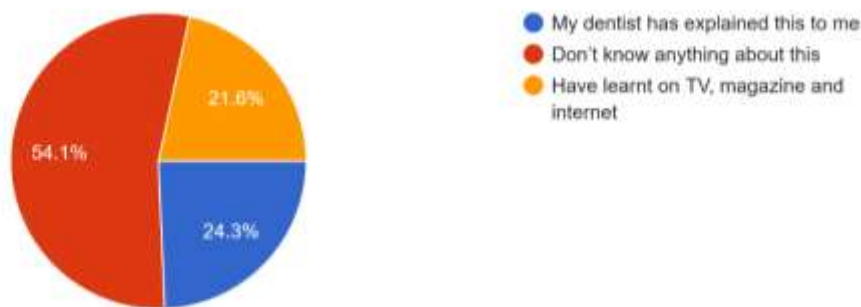
A significant majority of individuals, approximately 73.3%, were aware that bleeding gums are indicative of gum problems. This suggests that a large portion of the surveyed population recognized the connection between bleeding gums and potential issues with gum health, such as gum disease or inflammation.



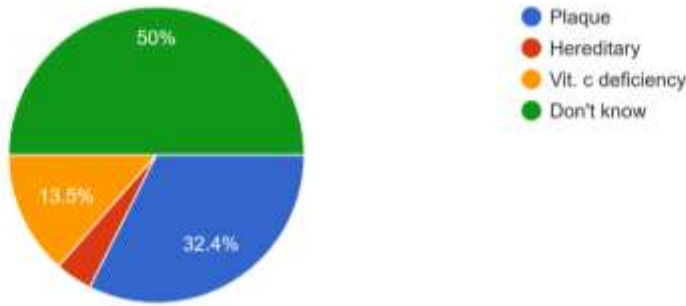
Nearly 69.3% of the respondents were aware that periodontal diseases, which affect the gums and the bone surrounding the tooth socket, are preventable. This indicates that a significant portion of the surveyed individuals understood that proper dental care and preventive measures can help avoid the development of periodontal diseases.



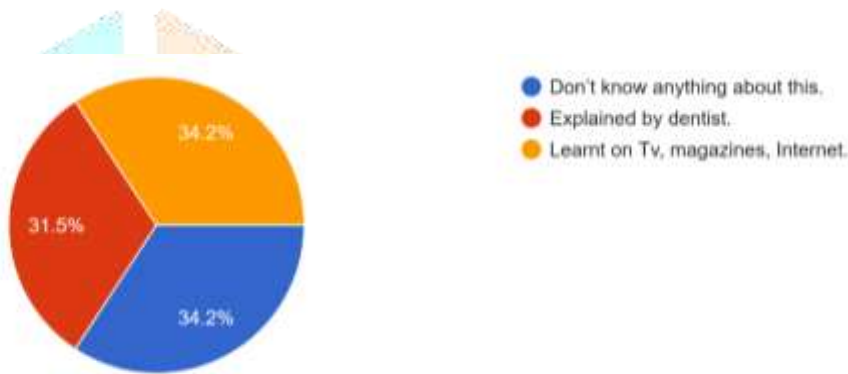
When questioned about whether dental plaque/tartar buildup on the tooth surface causes periodontal disease, 54.1% of individuals indicated a lack of knowledge on the topic. This suggests that more than half of the respondents were unaware of the relationship between dental plaque/tartar accumulation and the development of periodontal disease.



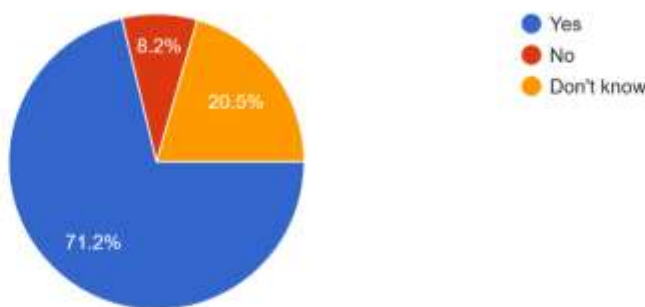
Half of the surveyed population, specifically 50%, lacked awareness of the causes of periodontal disease. This indicates that a significant portion of the respondents were uncertain or uninformed about what leads to the development of periodontal disease, which affects the gums and bone supporting the teeth.



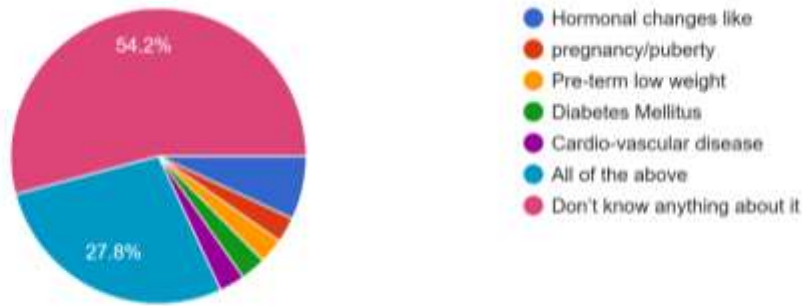
When asked about the potential consequences of untreated gum disease, the responses varied: 34.2% of individuals learned about it through TV, magazines, or the Internet; 34.2% stated they were unaware of this information; and 31.5% were informed about it by their dentist. This indicates that while a significant portion of the population received education about the link between untreated gum disease and tooth loss through media sources or dental professionals, there remains a notable percentage who lack awareness on the topic.



A majority, specifically 71.2%, of individuals were aware that smoking affects gum health. This indicates that a significant portion of the surveyed population recognized the adverse impact of smoking on the health of their gums.



Of those asked if they knew of any connection between periodontal disease and hormonal changes like puberty or pregnancy, preterm low weight, diabetes mellitus, or cardiovascular disease, 54.2% said they didn't.



## **Discussion:**

The most crucial factor in both periodontal disease prevention and excellent treatment outcomes is motivated patient behaviour. It is well known that, periodontal disease is very common among Indians. Of all the preventative strategies, the most successful one takes into account the patients' proactive self-care to control their own health and encourage behaviour modification. For this reason, a questionnaire was used to assess how responsive the patient's dental hygiene and self-care instruction were. A survey was done by Pralhad S. and Thomas B. (2011), [7] to evaluate medical professionals' knowledge of oral hygiene, periodontal disease, and the availability of treatment modalities. A questionnaire was used to conduct interviews with 135 medical experts. Among those questioned were an equivalent numbers of consultants, postgraduates, and medical interns. Among those surveyed, there was a good attitude about dental and periodontal exams as well as the necessary treatments.

There was a statistically significant difference between the groups.

In order to gauge the level of awareness regarding oral health and the information that students in medical, Ayurvedic, and engineering colleges have concerning periodontal disorders, Dayakar Munderoor Manjunath, Jitendra Kumar, Gurbur Prakash Pai, Hiranya Shivananda, and Ramapatali Rekha (2016), [8] performed a survey. The findings demonstrated that even among health professionals and engineering students, there was a significant lack of understanding and information regarding oral hygiene habits. Teja RG, Penmetsa GS, Singh S, Gadde P, Bhaskar UR (2017), [9] conducted a study to ascertain the levels of awareness regarding periodontal health as well as the self-perception of halitosis among engineering, pharmacy, and medical students in the West Godavari district of Andhra Pradesh. Penmetsa et al. came to the conclusion that while professional students do possess an acceptable level of knowledge regarding oral health, there is a deficiency in their awareness of periodontal health in particular. Priyanka Gangadhar Kapse, Ramreddy K Yeltiwar, Pallavi K Patil, Kaustubh S Thakare (2018), [10] conducted a study in the state of Maharashtra to assess periodontal disease awareness, behavior, and motivation in the general public and among health professionals (dental and medical). The study's findings demonstrated that educated people had a basic understanding of dental hygiene, but the general public had both a severe lack of awareness and a poor understanding of periodontal disease.

In a study published in 2019, [11], Yao K, Yao Y, Shen X, Lu C, and Guo Q evaluated the undergraduate dental and medical students in their first (fresh) and third (prior to specialized courses) years of study in terms of their oral health knowledge, behavior, and status. Compared to their peers, the junior dental students demonstrated a highly significant improvement in the areas of frequency of brushing, vertical scrub or Bass technique brushing methods (66.3%), use of floss or mouthwash (49.7%).

Encourage them to modify their behavior in order to prevent and maintain periodontal disease. Additionally, it's important for medical professionals in giving their patients the right information and encouragement on the most common diseases, such as periodontitis and recommend periodontists to treat patients in need.

## **Conclusion:**

Based on the findings, we concluded that public health awareness campaigns on TV, radio, and other media are necessary. Press, the Internet, and other social media platforms, such as inspiring educators to share information with their pupils and, eventually, their parents.

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