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To Compare and Evaluate the Knowledge and Awareness of Periodontal Health Among Smokers: A Cross-Sectional Questionnaire Based Study

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Abstract

Aim and Objectives: This questionnaire-based study aims to examine smokers' knowledge and awareness of periodontal health.

Materials and Methods: A total of 15 self-created closed-ended questions were utilized. A cross-sectional investigation was undertaken with 500 smoking patients. The questionnaire measured knowledge and awareness about the impact of smoking on periodontal health.

Results: The study found that around 69% of participants had poor knowledge of the consequences of smoking on oral health, and approximately 89% had poor awareness of the influence of smoking on periodontal health.

Conclusion: The findings indicate that smoker patients demonstrate slightly higher awareness of the harmful effects of smoking on oral tissues; however, their detailed knowledge regarding periodontal health remains significantly low.

Keywords: Awareness, Knowledge, Periodontal health, Smoking, Patients that smoke

INTRODUCTION

Gingivitis and periodontitis are two of the most frequent chronic dental illnesses. Periodontal disease affects the vast majority of the Indian population, accounting for roughly 90% of all cases. It is a primary cause of tooth loss and is closely associated with systemic health conditions. Smoking is a major risk factor for periodontal disease, influencing both its prevalence and severity.[2]

Smokers are also at a higher risk for several systemic and oral health problems. Smokers account for around 80% of all myocardial infarctions, 70% of chronic lung diseases and malignancies, and 90% of periodontal disease and preterm births.[3] Tooth staining and discoloration, tooth movement, periodontal pockets, alveolar bone loss, and oral mucosal diseases like leukoplakia are some of the most common oral symptoms. Other potential risks include acute necrotizing ulcerative gingivitis; precancerous lesions such as oral submucous fibrosis and smoker's palate, delayed wound healing, and dental implant failure. In severe cases, smokers are at increased risk of oral cancer.[4,7]

Further, compared to nonsmokers, smokers have higher dental calculus, which is highly correlated with the frequency and duration of their smoking habit.[12, 13] In contrast, However, by slowing down the rate of periodontal breakdown and perhaps encouraging some degree of periodontal tissue repair and regeneration, quitting smoking may potentially improve periodontal health and promote oral microbial healing [14, 15].Although numerous

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epidemiological studies have established the harmful effects of smoking, research on smokers' knowledge and awareness of oral health remains poor. As a result, the current study sought to assess and evaluate smokers' knowledge and awareness of periodontal health.

MATERIALS AND METHODS

Study Design

This cross-sectional survey examined smoker patients' knowledge and awareness of the impact of smoking on periodontal health.

Sample Selection

A total of **500 smokers** were enrolled from hospital. Patients who were unwilling to participate were excluded. Participation was entirely voluntary, and informed consent was obtained from all participants.

Questionnaire Design

A **self-administered questionnaire** consisting of **15 close-ended questions** was specially formulated for this study. The questionnaire was divided into two domains:

1. Sociodemographic Variables: Gender, age, marital status, and educational level.
2. Knowledge and Awareness of Smoking Effects: Questions assessing awareness of the impact of smoking on periodontal health.

Questionnaire: Knowledge and Awareness of Smoking Effects (15 items)

Domain 1: Sociodemographic Variables

1. Gender: ☐ Male ☐ Female
2. Age: ☐ <25 ☐ 25–50 ☐ >50
3. Marital Status: ☐ Married ☐ Unmarried
4. Educational Level: ☐ Illiterate ☐ High School ☐ Higher Secondary ☐ Graduation

Domain 2: Knowledge and Awareness of Smoking Effects

Section A: Awareness of Broader Implications

5. Smoking can cause gum disease. ☐ Yes ☐ No ☐ Don't Know
6. Smoking increases the risk of oral ulcers. ☐ Yes ☐ No ☐ Don't Know
7. Smoking can cause tooth discoloration. ☐ Yes ☐ No ☐ Don't Know
8. Smoking contributes to bad breath. ☐ Yes ☐ No ☐ Don't Know
9. Smoking increases the risk of oral cancer. ☐ Yes ☐ No ☐ Don't Know
10. Nicotine in cigarettes reduces blood flow to the gums. ☐ Yes ☐ No ☐ Don't Know

Section B: Knowledge of Direct Smoking Effects

11. Smoking delays wound healing after dental procedures. ☐ Yes ☐ No ☐ Don't Know
12. Smoking affects the success of dental implants. ☐ Yes ☐ No ☐ Don't Know
13. Long-term smoking worsens periodontal disease severity. ☐ Yes ☐ No ☐ Don't Know
14. Smoking cessation can improve oral health. ☐ Yes ☐ No ☐ Don't Know
15. Smoking increases the risk of systemic diseases such as heart disease and lung disease. ☐ Yes ☐ No ☐ Don't Know

RESULTS

Table 1: Demographic Characteristics of Study Participants (n = 500)

Variable	Category	Percentage	Number of Patients
Gender	Male	78%	390
	Female	22%	110
Marital Status	Married	47%	235
	Unmarried	53%	265
Age Group	<25 years	14%	70
	25–50 years	50%	250
	>50 years	36%	180
Literacy	Illiterate	28%	140
	High School	12%	60
Gender	Higher Secondary	34%	170
	Graduation	26%	130

A total of 500 patients participated in the study. The majority were male (78%), with females representing 22% of the population. Marital status was almost evenly split, with 47% married and 53% unmarried.Age distribution showed that 14% of participants were under 25, 50% were between 25 and 50 years old, and 36% were over 50.

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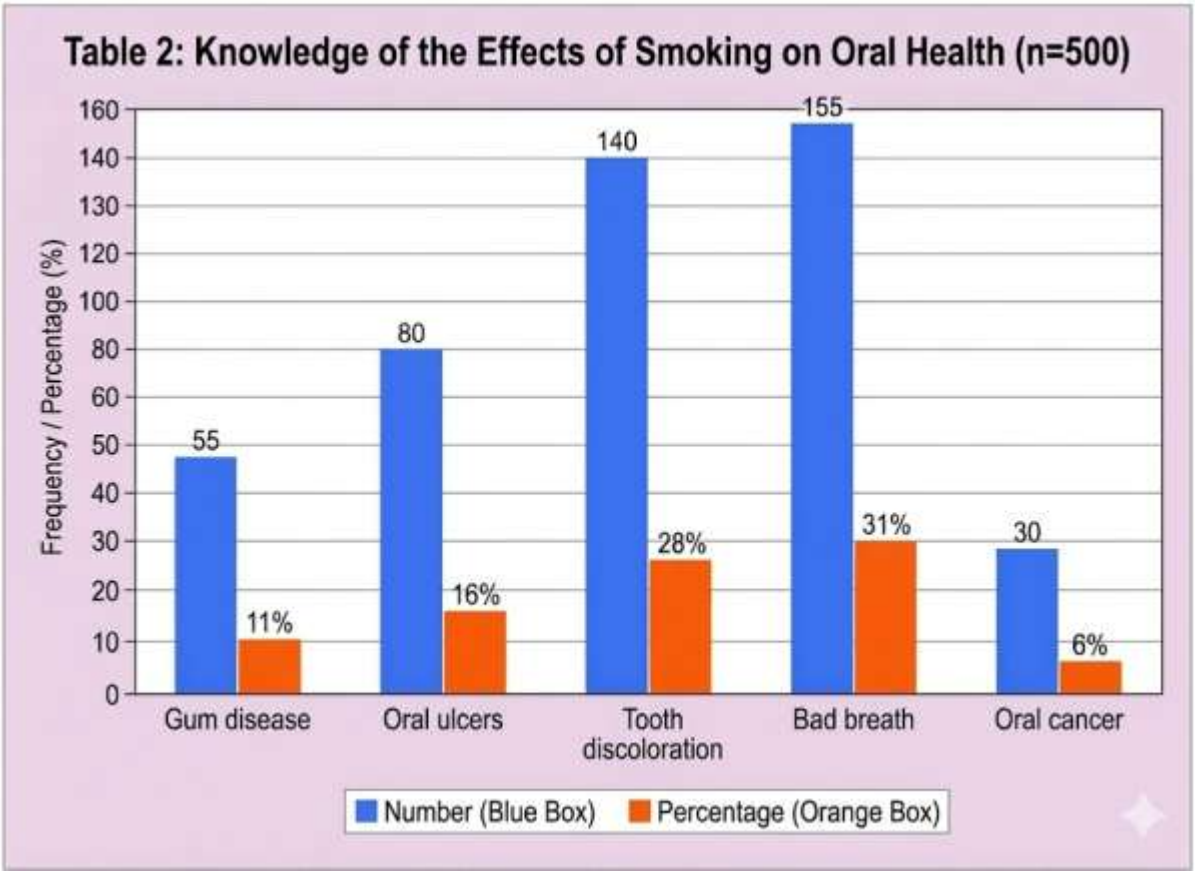
In terms of education, 28% of participants were illiterate, 12% had completed high school, 34% had advanced secondary education, and 26% had graduated.Overall the study population was predominantly male reflecting a diverse demographic profile.and middle-aged, with a slightly higher proportion of unmarried individuals and a broad range of educational levels**,**

Table 2: Knowledge of the Effects of Smoking on Oral Health (n = 500)

Effect of Smoking	Percentage with Knowledge (%)	Number of Patients
Gum disease	11	55
Oral ulcers	16	80
Tooth discoloration	28	140
Bad breath	31	155
Oral cancer	6	30

Among the 500 participants, knowledge regarding the harmful effects of smoking on oral health was generally low. Specifically, only 55 participants (11%) were aware that smoking can cause gum disease, while 80 participants (16%) knew about oral ulcers. Knowledge regarding tooth discoloration was slightly higher, with 140 participants (28%) aware of this effect, and 155 participants (31%) recognized bad breath as a consequence of smoking. Awareness of oral cancer was the lowest, with only 30 participants (6%) demonstrating knowledge of this serious condition.

Overall, the findings highlight significant gaps in awareness, especially regarding bad breath and tooth discoloration**,** underscoring the need for targeted oral health education among smokers.



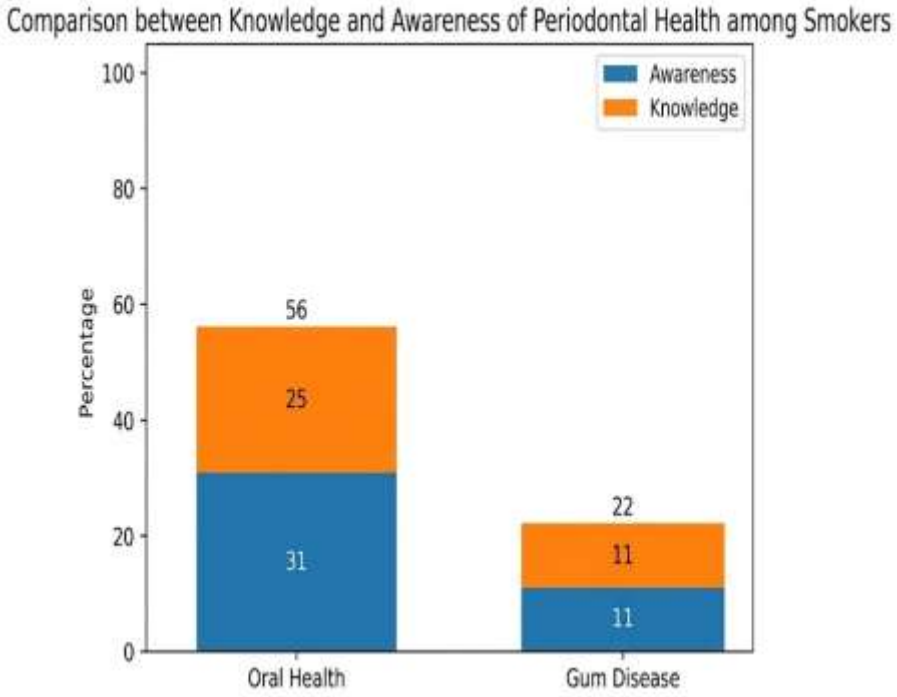
Knowledge of the Effects of Smoking On Oral Health

Comparison between Knowledge and Awareness of Periodontal Health among Smokers

A Comparative Evaluation of Knowledge and Awareness Regarding Periodontal Health Among Smokers

Table 2 compares smokers' understanding and awareness of the consequences of smoking on periodontal health. While the majority of smokers were aware of the negative effects of smoking on oral tissues, their understanding of the precise impact on periodontal health was limited. In this updated dataset, 31% of smokers were aware of the link between smoking and oral health only 11% recognized smoking as a risk factor for gum disease. These findings highlight a persistent gap between oral health awareness and specific knowledge of periodontal disease among smokers, despite an overall increase in patient awareness.

Health parameter	Awareness (%)	Knowledge(%)
Oral health	31	25
Gum disease	11	11



DISCUSSION

In this study, we observed that smoking was more prevalent among illiterate individuals, graduates, and males aged 25–50 years. This pattern may be linked to socioeconomic factors, as literacy often influences economic status. Interestingly, cigarette smoking was also higher among graduates, which could be attributed to their greater financial ability to afford cigarettes due to higher education and better socioeconomic standing.[9]

Poor oral health is intimately related to overall health. Periodontal disorders including dental bone loss, pocket formation, and tooth movement may go unrecognized until they have caused severe damage. As a result, raising knowledge and awareness of periodontal diseases is critical for good dental health.

According to our findings, around 69% of participants knew little about the negative effects of smoking on oral health, and 89% were unaware of the link between smoking and gum disease. These findings emphasize the urgent need for mass awareness campaigns. Such efforts should educate the public on the dangers of smoking for oral and periodontal health, and they should be held on a regular basis in numerous locations to optimize reach, support better behaviors, and push people to quit smoking.

CONCLUSION

Within the limits of this study, which had a sample size of only 500 participants, the findings show that smokers are much less aware of the detrimental effects of smoking on oral and periodontal health. These findings indicate that much more work is needed to increase understanding and awareness about the dangers of smoking. Proper education and training are required, not only for smokers but for the general public, to ensure people are informed about the risks, encourage others to avoid addiction, and motivate current smokers to quit. However, further research with larger sample sizes and in diverse locations is needed to gain a more comprehensive understanding of this issue.

Dental and healthcare professionals play a crucial role in this effort. They are responsible for educating patients about the adverse effects of smoking, providing guidance, and motivating them to quit. Dental professionals, in particular, can offer counseling and support to help smokers adopt healthier habits and maintain better oral and overall health.

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