RESEARCH ARTICLE

AWARENESS OF CHEMICAL PLAQUE CONTROL AMONG DENTAL PATIENTS: QUESTIONNAIRE-BASED STUDY

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Abstract

Introduction:
Dental plaque is an organized microbial biofilm that accumulates on tooth surfaces and oral tissues. While mechanical methods remain the cornerstone of plaque removal, their effectiveness depends largely on patient compliance. Chemical plaque control agents serve as supportive measures to enhance oral hygiene maintenance.

Objective:
To evaluate the level of awareness regarding chemical plaque control among patients attending the outpatient department of Sri Siddhartha Dental College and Hospital, Tumkur.

Methodology:
A questionnaire-based cross-sectional study was conducted among 120 dental outpatients. A pre-validated questionnaire assessing awareness and usage of chemical plaque control agents was administered. Only completely filled questionnaires were included for statistical evaluation.

Results:
The study assessed the usage patterns of chemical plaque control agents, factors influencing their use, and perceived barriers limiting regular incorporation into daily oral hygiene practices.

Conclusion:
The findings indicate insufficient awareness regarding chemical plaque control among the study population. There is a need for structured oral health education programs to improve patient knowledge and practices.

Key words : Chemical plaque control, toothpaste, mouthwash

Introduction

Dental plaque is a major etiological factor in the initiation and progression of dental caries and periodontal diseases. Persistent accumulation of plaque results in inflammatory changes in the gingiva and supporting periodontal structures. Therefore, effective plaque control is essential for

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maintaining oral health and preventing disease progression.[1]

Plaque control strategies involve both mechanical and chemical approaches. Mechanical methods such as toothbrushing and interdental cleaning are fundamental; however, their success depends on individual motivation and manual dexterity. In situations where mechanical plaque removal alone is inadequate, chemical plaque control agents can be used as adjuncts to suppress microbial growth and reduce plaque accumulation.[2]

Materials And Methods

This cross-sectional study was carried out among 120 patients visiting the outpatient department of Sri Siddhartha Dental College and Hospital, Tumkur. Participation was voluntary, and informed consent was obtained through an online platform prior to questionnaire administration. Confidentiality of participant responses was strictly maintained.

A structured, multiple-choice questionnaire was designed to assess oral hygiene practices and awareness regarding chemical plaque control agents. Only fully completed questionnaires were considered for data analysis.

Questionnaire design

Questionnaire

1. How many times do you brush your teeth daily?
a) Once a day
b) Twice a day
c) Thrice a day
d)More than 3 times a day

2. Oral hygiene method used
a) Toothpaste
b) Toothpowder
c) Mouthwash
d) Others

3. Toothpaste used
a) Fluoridated
b) Non fluoridated
c) Herbal
d) Don't know

4. How much toothpaste do you apply to a toothbrush
a) Full length of the bristles
b) Half length of the bristles
c) Pea size
d) Just a speck

5. Do you experience bad breath from your mouth?
a) yes
b) no
c) don't know

6. How do you control your mouth odour?
a) Regular rinse with plain water
b) Rinsing with salty water
c) Using mouthwashes

7. Preference of use
a) Conventional mouthwash
b) Herbal mouthwash
c) others

8. When do use mouthwash?
a) before brushing
b) during brushing
c) after brushing

9. Frequency of using mouthwash?
a) Once a day
b) Twice a day
c) Several times a week
d) Never

10. Do you dilute the mouthwash?
a) yes
b) no

11. How long do you rinse your mouth?
a)30s
b)1 min
c)2 min

12. What is the time interval you keep between brushing teeth and use of mouthwash?
a) No time interval
b) <1 min
c) about 5 min
d) about 1 hour
e) about 2 hr

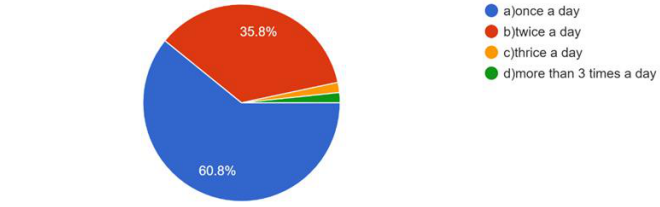
13. Duration of use of mouthwash
a)1 month
b)1 month-3 months
c)3 month-6 months
d) > 6 months

14. Do you think mouth rinsing will help you?
a) yes
b) no
c) sometimes

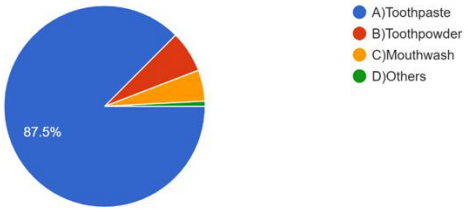
15. What are the discomforts you face during mouth rinsing?
a) change in taste
b) drying of mouth tissue
c) staining of teeth
d) mouth &tongue irritation
e) others

Results

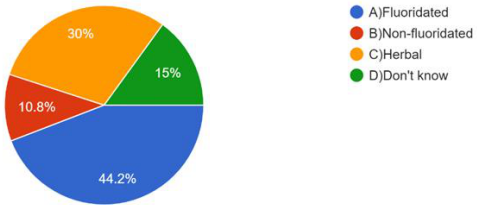
1.How many times do you brush your teeth daily?
120 responses



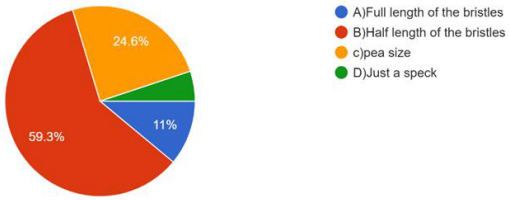
2)Oral hygiene method used
120 responses



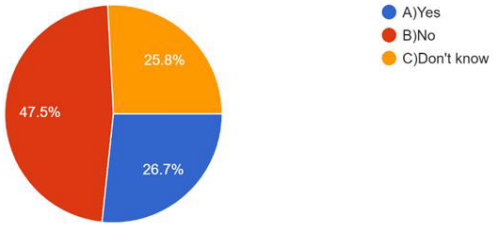
3)Toothpaste used
120 responses



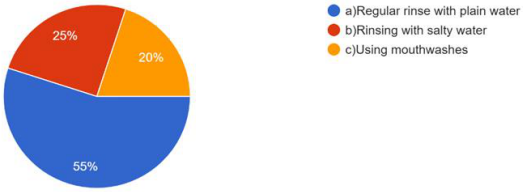
4.How much toothpaste do you apply to a toothbrush
118 responses



5.Do you experience bad breath from your mouth?
120 responses

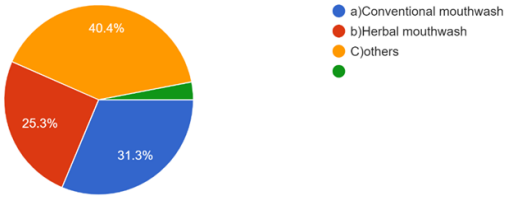


6.How do you control your mouth odour?
120 responses



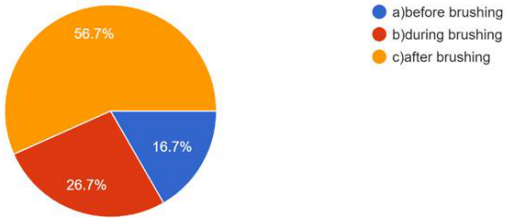
7.Preference of use

99 responses



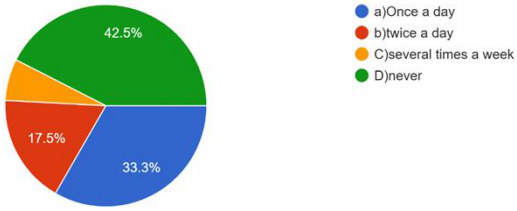
8.When do use mouthwash?

120 responses



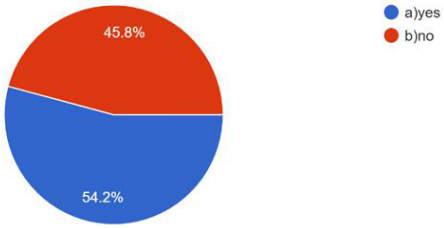
9.Frequency of using mouthwash?

120 responses



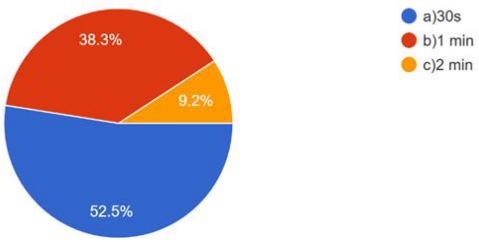
10.Do you dilute the mouthwash?

120 responses



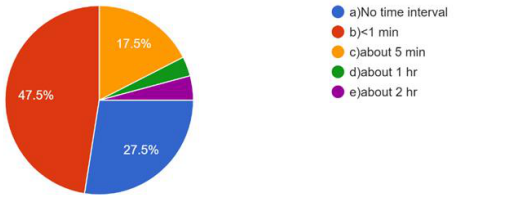
11.How long do you rinse your mouth?

120 responses



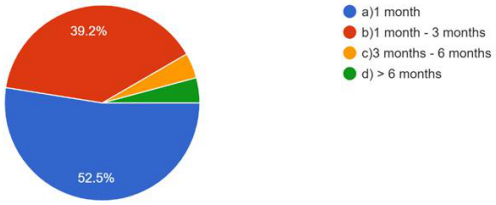
12.What is the time interval you keep between brushing teeth and use of mouthwash?

120 responses



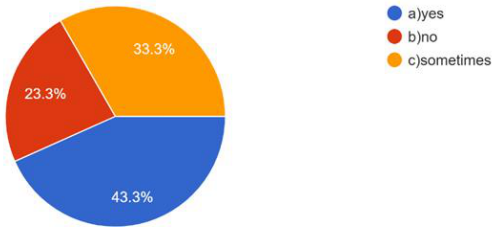
13.Duration of use of mouthwash

120 responses



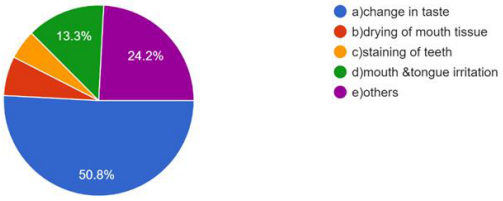
14.Do you think mouth rinsing will help you?

120 responses



15.What are the discomforts you face during mouth rinsing?

120 responses



Analysis of the collected data revealed that 60.8% of participants brushed their teeth once daily, while 35.8% brushed twice daily. Toothpaste was the most commonly used oral hygiene aid (87.5%), whereas only 5.75% reported regular mouthwash use. Fluoridated toothpaste was used by 44.2% of participants, while 10.8% used non-fluoridated variants.

More than half of the participants (59.3%) applied toothpaste to half the length of the bristles, and 24.6% used a pea-sized amount. Nearly half of the respondents (47.5%) reported no experience of halitosis, whereas 26.7% experienced bad breath. Mouth odour was primarily managed by rinsing with plain water (55%), while only 20% used mouthwash. Regarding effectiveness, 43.3% believed mouth rinsing was beneficial, whereas 23.3% felt it was ineffective.

Discussion

Effective oral hygiene practices are essential to limit plaque accumulation and prevent periodontal diseases. Mechanical plaque removal methods such as toothbrushing and interdental cleaning remain the primary means of maintaining oral hygiene.[1] However, chemical plaque control agents, particularly mouthwashes, may provide additional benefits by reducing microbial load and biofilm formation on oral surfaces.

In this study we found that 42.5% never used mouthwash which is in agreement with the study done by Sheik R et al in 2017.The results are also in agreement with study done by Sandhya et al in 2017 who found 37% used mouthwash. In the present study, 31.3% used prescribed mouthwash. The results are in agreement with study by Shrestha et al in 2021.[1]

In the present study,56.7% participants used mouthwash after brushing which are not in agreement with study by Shrestha et al in 2021, who found 95.7% used mouthwash post brushing. In the present study,50.8% participants face discomfort of change of taste which are in agreement in study done by Sandhya et al in 2017.[3] These results indicate that although chemical plaque control agents are readily available, their appropriate use remains limited due to lack of awareness and misconceptions.

Conclusion

The present study demonstrates inadequate knowledge and awareness regarding chemical plaque control among dental patients. There is a clear need for targeted oral health education initiatives to promote correct usage of chemical plaque control agents. Improved communication between dental professionals and patients may help enhance acceptance and effective utilization of these adjunctive oral hygiene measures.

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Conflict of Interest: None declared

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