Dental Research Presentation Content

# Title Slide

Title: Evaluation of the Antibacterial Effect of Herbal Mouthwashes on Dental Plaque
Name: [Your Full Name]
Institution: Faculty of Dental Sciences, University of Peradeniya
Supervisor: Dr. [Supervisor's Name]
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# Introduction

- Dental plaque is a major contributor to gingivitis and periodontal disease.
- Chemical mouthwashes like chlorhexidine are effective but may cause side effects.
- Herbal alternatives offer potential with fewer adverse effects.

**Objectives:**
1. To assess the antibacterial activity of selected herbal mouthwashes.
2. To compare their effectiveness with a commercial mouthwash.

**Significance:**
Supports the development of safe, cost-effective oral hygiene products.

# Literature Review

- Jayasinghe et al. (2020): Neem extract reduces plaque index in 2 weeks.
- Silva et al. (2019): Green tea shows significant antibacterial activity against S. mutans.
- Limitations: Small sample sizes and lack of clinical trials in Sri Lanka.

Research Gap:
Need for localized, controlled clinical comparisons of herbal and chemical rinses.

# Methodology

Participants: 60 healthy dental students, aged 18–25

**Groups:**
- Group A: Neem-based rinse
- Group B: Clove-based rinse
- Group C: 0.12% chlorhexidine
- Group D: Placebo

**Procedure:**
- Baseline and post-rinse plaque scores recorded using Silness-Löe index
- 14-day intervention, twice-daily rinsing
 **Study Flow Diagram**

Participant Recruitment

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Informed Consent & Screening

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Baseline Plaque Score Recording

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Random Allocation to Groups (A, B, C, D)

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14-Day Mouthwash Intervention (Twice Daily)

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Post-intervention Plaque Score Recording

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Data Analysis (Statistical Tests)

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Interpretation & Reporting of Results

# Results

|  |  |
| --- | --- |
| Group | reduction in plaque |
| Group A (Neem): |  28%  | reduction |
| Group B (Clove): |  22%  | reduction |
| Group C (Chlorhexidine): |  35%  | reduction |
| Group D (Placebo): |  5%  | reduction |

[Insert bar chart comparing plaque score reductions]

Statistical significance observed in Groups A, B, and C (p < 0.05)

# Discussion

- Herbal rinses showed promising antibacterial effects, though slightly lower than chlorhexidine.
- Neem rinse performed closest to the standard mouthwash.
- Results support herbal alternatives for daily oral care with fewer side effects.

**Limitation:**
Short duration and limited population.

# For more information, visit the World Health Organization Oral Health Page.

Link to https://www.who.int/news-room/fact-sheets/detail/oral-health

# Conclusion and Future Work

Conclusion:
Herbal mouthwashes like neem and clove are effective in reducing dental plaque.

Future Work:
- Conduct longer-term studies
- Include diverse age groups and clinical patients
- Investigate formulation stability and user acceptability

# References

1. Jayasinghe, A., et al. (2020). "Effectiveness of Neem Mouthwash..." Journal of Dental Research.
2. Silva, R., et al. (2019). "Green Tea Extract in Oral Health..." International Journal of Dentistry.

# Acknowledgments

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