Ayurvedic approaches for preventive dentistry in public health

Aayush kumar Solanki[1], Deepshikha[2], Priyanka Pandey[3]

1. UG scholar, Ishan Ayurvedic Medical College, Greater Noida, U.P.
2. UG scholar, Ishan Ayurvedic Medical College, Greater Noida, U.P.
3. UG scholar, Ishan Ayurvedic Medical College, Greater Noida, U.P.

Abstract

Introduction: Even though oral health is part of overall health, caries, periodontal diseases, and other conditions specifically related to the mouth, remain widespread and continue to become a public health concern. Preventive dentistry focuses on the most cost-effective, culturally appropriate, and greatest long-term sustainable methods to alleviate the burden of diseases. Considering public health dentistry, Ayurveda has most valuable, time-tested strategies to focus on the prevention of oral diseases. Moreover, *Ahara* (food*), Vihara* (activity), and *Rasayana* (rejuvenating methods) further demonstrates the holistic nature of Ayurveda in the mouth and overall health. **Methodology:** An extensive review was done**. Result:** Ayurvedic dentistry has classical practices for the prevention of oral diseases, practices such as *Dantadhavana* (herbal brushing*), Gandusha* and *Kavala* (oil pulling and mouth rinsing), *Jihva Nirlekhan* (tongue cleaning), and *Pratisarana* (application of herbal powders). These practices help to maintain oral hygiene, controlling the accumulation of plaque, reduction of the inflammation of the gums, and the overall immunity of the mouth and oral cavity. **Discussion:** Offered practices are socially acceptable, cost-effective, and ecofable, making them useful for community oral health programs in resource-limited countries. They do need holistic therapeutic practices of Ayurveda in integration with modern public health to prove scientific reasoning, standardization, and cross disciplinary balance.

Keywords: *Ayurveda*, preventive dentistry, public health dentistry, oil pulling, oral hygiene, *Rasayana.*

Introduction

Recognizing the impact of oral health on various facets of life, such as nutrition, communication, social interaction, and the overall quality of life, it is clear that oral health is one component of a person's overall health and wellness [1]. With modern advances in dentistry, it may be surprising that oral diseases such as dental caries, periodontal disease, halitosis, and oral cancers are still so prevalent [2]. According to the World Health Organization (WHO), oral diseases affect approximately 3.5 billion people, classifying these diseases as some of the most ubiquitous chronic health issues. Health and economic consequences of these conditions are severe and are experienced by the impacted individuals, the health system, and the economy as a whole [3]. Public health dentistry's branch of preventive dentistry, seeks to address these issues through needed community initiatives that focus on disease prevention, risk factor control, and the promotion of oral health [4].

Traditional medicine systems, specifically *Ayurveda*, offer strategies for preventive oral health care. *Ayurveda* is a holistic and life sciences discipline, part of Indian tradition over three millennia, and is health oriented, preventive, and promotive [5]. Health is a dynamic balance of body, mind, and environment, which needs daily *(Dinacharya*) and seasonal *(Ritucharya*) health activities. In Ayurveda, these seasonal and daily activities, in addition to and a part of health promotion and disease prevention, prescribe and advocate preventive oral care and preventive oral health activities, and promote health in a holistic manner. Many of these preventive activities are culturally relevant and are practiced in contemporary India and other nations [6].

Dantadhavana (herbal stick tooth cleaning), *Gandusha* and *Kavala* (oil pulling and gargling*), Jihva Nirlekhan* (tongue scraping), and *Pratisarana* (herbal powder/paste application) are oral cleaning and maintaining activities. These activities aim to not only prevent local oral diseases, but promote holistic health and systemic cleansing by toxin removal, digestion enhancement, and immunity promotion. Ayurveda integrates these elements with the diet (*Ahara*), lifestyle (*Vihara*), and *Rasayana* (rejuvenation with specified herbs and formulations) [7].

Ayurveda models a preventive approach that is congruent with Ayurveda's philosophy.

Compared to modern preventive dentistry that focuses on clinical aspects, Ayurveda provides simple, inexpensive, and environmentally friendly alternatives that can be implemented at the community level, especially in resource-poor situations. Using sesame and coconut oil for oil pulling has also shown to have antimicrobial and anti-inflammatory properties, and in some cases, the efficacy was comparable to that of chlorhexidine mouthwash [8]. Moreover, herbal sticks made of Neem and Khadira provide mechanical cleansing and deliver phytochemical antibacterials, antifungals, and antioxidants, and also have anti-inflammatory properties. Incorporating these simple and cost- effective Ayurvedic practices into community health programs can contribute to the reduction of oral disease burdens, and enhance community engagement and health outcomes [9].

That said, the use of Ayurvedic practices for preventive dentistry needs to be handled with caution. The absence of large-scale, robust clinical evidence, issues pertaining to herbal formulation standardization and the proposed practices' alignment with other existing components of the public health system is not a simple problem to solve. *Ayurveda* practitioners, dentists and researchers working as a unified team would be best poised to achieve the empirical evidence necessary to inform the application of these practices to community settings [10].

This review considers different approaches in *Ayurveda* to preventive dentistry and their possible public health dentistry implications. *Ayurveda* can provide sustainable and culturally appropriate ways to strengthen preventive oral health care and reduce the global burden of oral disease by integrating traditional knowledge with contemporary science.

Aim

To explore and analyse classical *Ayurvedic* preventive practices in dentistry and evaluate their relevance, applicability, and potential integration within modern public health dentistry.

Objectives

1. To review *Ayurvedic* classical texts for references related to oral health maintenance

and prevention of dental diseases.

2. To identify key *Ayurvedic* preventive practices such as *Dantadhavana*, *Gandusha*, *Kavala*, *Jihva-Nirlekhan*, and *Pratisarana*, described for maintaining oral hygiene.

3. To assess the potential role of *Ayurvedic* dietary (*Ahara*), lifestyle (*Vihara*), and *Rasayana* practices in improving oral and general health.

4. To analyse the feasibility, cost-effectiveness, and cultural acceptability of incorporating *Ayurvedic* practices into community oral health programs.

5. To highlight the need for scientific validation and interdisciplinary integration of *Ayurvedic* dentistry with modern public health standards.

Review

Ayurvedic texts recommend cleaning the teeth using fresh twigs from medicinal plants such as *Neem (Azadirachta indica)*, *Khadira (Acacia catechu)*, *Arka (Calotropis gigantea)*, and *Karanja (Pongamia pinnata)*. These twigs provide mechanical cleansing while releasing bioactive compounds with antimicrobial, antifungal, and anti-inflammatory properties. Studies suggest Neem sticks can reduce plaque formation and gingival inflammation, making them a cost-effective alternative to synthetic toothbrushes and toothpaste in underserved communities.

***Gandusha* and *Kavala* (Oil Pulling and Gargling)**

***Gandusha*:** Filling the oral cavity with oil or medicated liquid and holding it for a specific duration.

***Kavala*:** Swishing the liquid vigorously before expelling [11].

Commonly used oils include sesame, coconut, and herbal decoctions. Clinical studies have shown oil pulling reduces *Streptococcus mutans* count, plaque indices, halitosis, and gingival bleeding, with effects comparable to chlorhexidine in some cases. Oil pulling also strengthens oral tissues and is believed to have systemic detoxifying benefits.

***Jihva Nirlekhan* (Tongue Scraping)**

Daily tongue cleaning with a scraper made of gold, silver, copper, or herbal sticks is

emphasized in Ayurveda. It removes accumulated *Ama* (toxins), food debris, and bacteria, improving taste perception and reducing halitosis. Modern studies support that tongue cleaning significantly decreases bacterial load and volatile sulfur compounds, thereby reducing oral malodour[12].

***Pratisarana* (Application of Herbal Powders or Pastes)**

Massage of gums and teeth with herbal powders such as *Triphala*, *Trikatu*, or *Yashtimadhu* paste strengthens periodontal structures, reduces inflammation, and enhances salivary secretion. Such practices resemble modern desensitizing and gum-care agents but with natural herbal compositions [13].

***Ahara* (Dietary Guidelines)**

Ayurveda emphasizes that diet plays a crucial role in oral and systemic health. Excessive intake of sweets, sticky foods, fermented items, and acidic substances is discouraged. Instead, fibrous fruits, vegetables, milk, and wholesome cereals are recommended for natural cleansing and nourishment of teeth and gums [14].

***Vihara* (Lifestyle Practices)**

Lifestyle practices such as avoiding smoking, alcohol, and betel nut chewing are highlighted in *Ayurveda* to prevent oral pathologies. Stress management and maintaining balanced daily routines are also considered essential for preventing oral diseases linked to systemic imbalances [15].

***Rasayana* (Rejuvenative Therapy)**

Certain herbs and formulations are described as *Rasayana*—agents that rejuvenate and strengthen tissues. *Triphala*, *Guduchi (Tinospora cordifolia)*, and *Yashtimadhu (Glycyrrhiza glabra)* are known for immunomodulatory, antioxidant, and antimicrobial properties, offering potential systemic support for oral health [16].

Scope in Public Health Dentistry

1. Community-Level Oral Health Promotion

Ayurvedic practices are simple, inexpensive, and culturally acceptable. Integrating

them into community oral health programs—particularly in rural or resource-limited areas—can help reduce the prevalence of common dental diseases [17].

2. School Dental Health Programs

Teaching children *Ayurvedic* practices like herbal brushing and oil pulling can instill lifelong preventive habits. Since these methods are safe and natural, they can be introduced without risk of adverse effects commonly associated with chemical agents [18].

3. Cost-Effectivenes

Unlike commercial oral hygiene products, many *Ayurvedic* remedies are locally available and inexpensive, making them sustainable options for low-income populations [19].

4. Holistic Approach

Ayurveda links oral health with systemic well-being. This aligns with modern public health dentistry's shift towards integrated care, recognizing oral diseases as part of broader non- communicable disease prevention strategies [20].

Discussion

This review emphasizes Ayurveda's widespread potential for inclusion in modern public health dentistry considering its preventive and holistic nature combined with its vast and varied oral hygiene practices. In addition to herbal tooth cleaning, oil pulling, tongue scraping, and herbal gum massages, other Ayurvedic practices, in tandem with the prescribed diet and lifestyle, promote an integrative approach focused on health promotion rather than simple disease avoidance. Ayurveda's comprehensive preventive model and its tenets in oral hygiene practices promote the approach to complete wellness and health integration[21].

The ecological sustainability of Ayurvedic oral hygiene practices strengthens their public health impact. Oral hygiene practices using herbal twigs, oils, and other implements, common in Ayurveda, are effective yet inexpensive methods for rural and

low-income populations. Inadequacy of modern oral hygiene practices, particularly in low-income settings, contributes to a public health burden of untreated dental caries, gingivitis, and halitosis. These cost-effective and easily integrative public health sustainability practices reinforce global health objectives, curtail the need for expensive curative dental care, and fulfil global health sustainability objectives[22].

The value of some of these time-tested methods has begun to be accepted. Evidence has shown that oil pulling with sesame or coconut oil does results in lower counts of Streptococcus mutans as well as improvement to plaque and gingival indices results. In fact, results are comparable to those obtained with chlorhexidine in some studies. Findings with the herbal Triphala and other herbal powders as well as the antimicrobials and antioxidants of these herbal powders presents potential value in periodontal therapies. With that said, the potential is there. However, it still is not well developed. Clinical studies of Ayurvedic oral practice are for the most part small, underdefined, not longitudinal and lack generalizability. Consequently, there is still a need for large, well designed and executed studies to generate evidence in order to be able to recommend these practices as a routine part of public health activities[22].

The incorporation of Ayurvedic practices into contemporary dentistry also has its own unique obstacles. One such challenge is the need for the standardization of herbal concoctions, their therapeutic dosing, and administration to avoid compromising safety and therapeutic efficacy[9]. Furthermore, the recognition of Ayurveda as a primary and then secondary oral health system for integration will need the cooperation of the dentistry councils, public health bodies, and the Ayurveda governing bodies. Reeducating dental professionals will be another issue as most will not have had the opportunity to learn about the incorporation of Ayurvedic methods and practices.

Helping to solve this issue are interdisciplinary education, as well as training in the incorporation of professional development [23].

Although challenges exist, the integration of Ayurveda and public health dentistry does present possibilities due to the foundational elements shared across both disciplines.

There is a shared focus on prevention, community mobilization, and sustained health benefits. Given the prevalence of oral health issues in contemporary society, Ayurveda and public health dentistry could work together on a feasible solution. Ayurveda is a holistic health system whose treatment methodologies focus on an individual's health in its entirety. Ayurveda's perspective of oral health through the prism of systemic health and its contribution to modern medicine aligns with contemporary biomedical practice. For instance, Ayurveda is understood and practiced in modern medicine with its integration and treatment of periodontal diseases through systemic diabetes, cardiovascular diseases, and other periodontal diseases [24].

Limitations

Despite promising evidence, several challenges limit the widespread adoption of *Ayurvedic* approaches in preventive dentistry:

- **Lack of Large-Scale Clinical Trials:** Most existing studies are small-scale, limiting generalizability.
- **Standardization Issues:** Herbal preparations vary in composition, dosage, and quality, necessitating standardized protocols.
- **Integration into Policy:** Public health systems rarely incorporate traditional practices due to regulatory, educational, and infrastructural gaps.
- **Awareness and Training:** Dental professionals require training in evidence-based Ayurvedic approaches to ensure safe integration.

Conclusion

Considering the focus on prevention and holistic health in *Ayurveda*, we can formulate practices that potentially align with modern preventive dentistry. *Ayurveda* mentions practices for oral health, such as herbal tooth cleansing (*Dantadhavana*), oil pulling (*Gandush* and *Kavala*), tongue scraping (*Jihva Nirlekhan*), gum massage (*Pratisarana*), and dietary (*Ahara*) and lifestyle (*Vihara*) recommendations, along with *Rasayana* therapy. These practices can be used as outdoor and preventive measures for the maintenance of oral hygiene and prevention of diseases. The simplicity, low cost, cultural acceptance, and ecological sustainability of these methods makes and *Ayurveda* practices highly applicable in public health dentistry.

Integrating *Ayurveda's* practices into modern preventive dentistry helps provide holistic care as *Ayurveda* focuses on prevention, and is sustainable and culturally consonant. Evidence-based dentistry and *Ayurveda* will be a powerful force in bolstering public health efforts, enhancing oral health equity, and improving the health of communities.

Acknowledgement - Nil

Funding Source - No financial support was revised.

Conflict of Interest – The author declares no conflict of interest.

References

1. Kaur A, Sood A, Chaudhry S, Khichy A, Arora R. Nutrigenomics: a narrative review of diet's influence on periodontal health. *The Oral Sphere Journal of Dental and Health Sciences*. 2025;*1*(4)*:*259-262. doi: 10.63150/osjdhs.2025.27
2. Kashwani R, Sawhney H. Dentistry and metaverse: A deep dive into potential of blockchain, NFTs, and crypto in healthcare. *International Dental Journal of Student Research.* 2023;*11*(3):94-98. doi: https://doi.org/10.18231/j.idjsr.2023.021
3. Bethesda (2021 Dec). Oral Health in America: Advances and Challenges. Available from: https://www.ncbi.nlm.nih.gov/books/NBK576536
4. Petersen PE, Baez RJ, Ogawa H. Global application of oral disease prevention and health promotion as measured 10 years after the 2007 World Health Assembly statement on oral health. *Community Dentistry and Oral Epidemiology*. 2020 Aug;*48*(4):338-348. doi: 10.1111/cdoe.12538. Epub 2020 May 8. PMID: 32383537; PMCID: PMC7496398.
5. Ahlawat A., Chauhan P.S., Kumar N., Sonali, Gunti R., Makkar T. An Analytical Review of Dental Disorders in Charak Samhita and Their Correlation with Modern Odontology. *International Research Journal of Medicine and Surgery*, 2025; *2*(3): 9-14. doi: https://doi.org/10.47857/irjmeds.2025.v02i03.036
6. Thakkar J, Chaudhari S, Sarkar PK. Ritucharya: Answer to the lifestyle disorders. *Ayu.* 2011 Oct;*32*(4):466-71. doi: 10.4103/0974-8520.96117. PMID:

22661838; PMCID: PMC3361919.

7. Torwane NA, Hongal S, Goel P, Chandrashekar BR. Role of Ayurveda in management of oral health. *Pharmacognosy Review*. 2014 Jan;*8*(15):16-21. doi: 10.4103/0973-7847.125518. PMID: 24600192; PMCID: PMC3931197.
8. Torwane NA, Hongal S, Goel P, Chandrashekar BR. Role of Ayurveda in management of oral health. *Pharmacognosy Review*. 2014 Jan;*8*(15):16-21. doi: 10.4103/0973-7847.125518. PMID: 24600192; PMCID: PMC3931197.
9. Gupta R, Ingle NA, Kaur N, Yadav P, Ingle E, Charania Z. Ayurveda in Dentistry: A Review. *Journal of International Oral Health*. 2015 Aug;*7*(8):141-3. PMID: 26464558; PMCID: PMC4588782.
10. Bommakanti, V.; Puthenparambil Ajikumar, A.et al. An Overview of Herbal Nutraceuticals, Their Extraction, Formulation, Therapeutic Effects and Potential Toxicity. *Separations* 2023, *10*, 177. https://doi.org/10.3390/separations10030177.
11. Biswas T, Dubey P. et al. Concept of mukha swasthya (oral hygiene) with ayurvedic perspective. *International Ayurvedic Medical Journal.* https://doi.org/10.46607/iamj1911122023.
12. Zürcher C, Vukoje K et al. The plaque reducing efficacy of oil pulling with sesame oil: a randomized-controlled clinical study. *Clinical Oral Investigations*. 2025 Jan *9*;29(1):53. doi: 10.1007/s00784-024-06134-y. PMID: 39786483; PMCID: PMC11717832.
13. Pradeep AR, Suke DK et al. Triphala, a new herbal mouthwash for the treatment of gingivitis: a randomized controlled clinical trial. *Journal of Periodontology*. 2016 Nov;*87*(11):1352-1359. doi: 10.1902/jop.2016.130406. Epub 2016 Jul 21. PMID: 27442086.
14. IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. (2004). *Betel-quid and areca-nut chewing and some areca-nut-derived nitrosamines* (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, No. 85). International Agency for Research on Cancer. https://www.ncbi.nlm.nih.gov/books/NBK316574/.
15. Singh R, Goel S, Bourgeade P, Aleya L, Tewari D. Ayurveda Rasayana as

antivirals and immunomodulators: potential applications in COVID-19. *Environmental Science and Pollution Research*. 2021Oct;*28*(40):55925-55951. doi: 10.1007/s11356-021-16280-5. Epub 2021 Sep 7. PMID: 34491498; PMCID: PMC8422837.

16. Guo, J., Low, K.S., Mei, L. *et al.* Use of traditional medicine for dental care by different ethnic groups in New Zealand. *BMC Oral Health* **20**, 280 (2020). https://doi.org/10.1186/s12903-020-01272-7.
17. Naseem M, Khiyani MF et al. Oil pulling and importance of traditional medicine in oral health maintenance. *International Journal of Health Sciences.* 2017 Sep-Oct;*11*(4):65-70. PMID: 29085271; PMCID: PMC5654187.
18. Anwar MA, Sayed GA et al. Herbal remedies for oral and dental health: a comprehensive review of their multifaceted mechanisms including antimicrobial, anti- inflammatory, and antioxidant pathways. *Inflammopharmacology*. 2025 Mar;*33*(3):1085- 1160. doi: 10.1007/s10787-024-01631-8. Epub 2025 Feb 5. PMID: 39907951; PMCID: PMC11914039.
19. Pradeep P, Thomas AR et al. Herbal medicines to prevent dental caries. Cochrane Database Syst Rev. 2024 May 14;5(5):CD015832. doi: 10.1002/14651858.CD015832. PMID: 39908071; PMCID: PMC11091949.
20. Bethesda (2021 Dec). Oral Health in America: Advances and Challenges. https://www.ncbi.nlm.nih.gov/books/NBK576536/.
21. Torwane NA, Hongal S et al. Role of Ayurveda in management of oral health. *Pharmacognosy Review*. 2014 Jan;*8*(15):16-21. doi: 10.4103/0973-7847.125518. PMID: 24600192; PMCID: PMC3931197.
22. Zürcher C, Vukoje K, Kleiner EM, Kuster SM, Jäger-Larcher LK, Heller I, Eick S, Nagl M, Kapferer-Seebacher I. The plaque reducing efficacy of oil pulling with sesame oil: a randomized-controlled clinical study. *Clinical Oral Investigations*. 2025 Jan 9;*29*(1):53. doi: 10.1007/s00784-024-06134-y. PMID: 39786483; PMCID: PMC11717832.
23. Parkarwar PC. Application of Ayurveda in Dentistry. *Journal of Dental Health & Oral Research*. 2025;*6*(1):1-6.
24. Kumar, Sanjay & Mittal, Mamta & Gupta, Rakesh. (2022). Oral-health-care-

through- ayurveda October 2022 2210265647 1000891. *Indian Journal of Applied Research*. *12*. 32-