ORIGINAL ARTICLE

Awareness on oral hygiene among Ayurveda practitioners

Rejina Shrestha¹, Sahara Shrestha², Bijendra Shah³, Shaili Pradhan⁴, Amar Bhochhibhoya⁵

¹Lecturer, Dental Department, Periodontology and Oral Implantology Unit, ⁴HOD, Dental Department, Periodontology and Oral Implantology Unit, National Academy of Medical Sciences, ²Assistant Professor, HOD, Department of Rasa Shastra Evam Bhaishajya Kalpana, ³Teaching Assistant, Ayurveda Campus and Teaching Hospital, Kirtipur, Kathmandu, Nepal. National Academy of Medical Sciences, ⁵Lecturer, Prosthodontics Department, T.U. Dental Teaching Hospital, Institute of Medicine, Maharajgunj Medical Campus, Kathmandu, Nepal.

ABSTRACT

Background: Oral health is an integral part of individual health. Maintenance of oral health can be advised by practitioners of different specialties. Ayurveda practitioners can play a pivotal role in this aspect. **Aims and objectives:** The aim of the present study is to find out about the awareness on oral hygiene among Ayurveda practitioners. **Methods:** A cross-sectional observational questionnaire was distributed to 100 Ayurveda practitioners. Ayurveda practitioners having at least an undergraduate degree and voluntary participation were the inclusion criteria to be a part of this convenience sampling. **Results and conclusion:** Among the practitioners approached, 80% agreed that brushing of teeth should be prescribed twice a day. Maximum participants stated that herbal mouthwashes show anti-inflammatory, antibacterial and immunomodulatory effects. Majority of respondents stated that they prescribed brushing, tongue scraping and oil pulling. These methods have been an integral part of daily regimen in Ayurveda. The study shows that Ayurvedic practitioners have substantial amount of knowledge regarding oral hygiene and advised the patients regularly about their oral health. The study can prove as a helpful tool in future works and shows that an integrated approach might be a better method in minimizing oral healthcare problems.

Keywords: Awareness, Ayurveda practitioners, oral health, chew stick, *Danta Dhavana*, tongue scraping

INTRODUCTION

Periodontitis is a chronic multifactorial inflammatory disease associated with dysbiotic plaque biofilms and characterized by progressive destruction of the tooth-supporting apparatus.¹ It is the sixth most prevalent disease worldwide which affects nearly 800 million individuals.² The accumulation of dental plaque on teeth leads to gingivitis,³ which may lead to periodontitis.⁴ The removal of plaque by mechanical and chemical methods can

Access the article online

Quick Response Code

www.thehealerjournal.org

DOI: 10.51649/healer.65

*Corresponding Author:

Dr. Sahara Shrestha

Assistant Professor, HOD, Department of Rasa Shastra Evam Bhaishajya Kalpana, Ayurveda Campus and Teaching Hospital, Kirtipur, Kathmandu, Nepal.

Email: saharestha@yahoo.com

Submitted: 10.06.2021

Revised: 20.06.2021

Received: 12.06.2021

Accepted: 25.06.2021

prevent gingivitis,⁵ thus, ultimately preventing periodontitis.⁶ Proper brushing of teeth and interdental cleaning can reliably control plaque.⁷ These measures all combined may help in enhancing oral hygiene. Oral health can improve overall health of the individual and quality of life as well.⁸

Ayurveda practitioners play a significant role in the delivery of oral hygiene instructions to the general public.⁹ Dentistry was widely practiced and developed in Ayurveda in the ancient times.¹⁰ The practice of *Danta Dhavana* (Brushing of teeth), *Jihva Lekhana* (Tongue scraping), *Gandoosha* (Gargling) or oil pulling had been prevalent in Ayurveda to maintain oral health, increase salivation, bring freshness in mouth, improve digestion, prevent halitosis, strengthen oral muscles and improve circulation. Improper *Dantadhavana*, not practicing *Gandoosha* and *Kavala* are mentioned as causative factor of oral diseases (*MukhaRoga*).¹¹ Details on anatomy and clinical aspect of dentistry had been explained by Acharya Kashyapa which includes dentition, types of teeth, structure of teeth, their significance and non-occurrence of teeth.¹² Dental medicine, oral health come under the umbrella term of *Shalakya Tantra* in Ayurveda. The therapies such as twig chewing, oral cleansing, extractions, flap surgeries, excision, auroplasty, rhinoplasty etc have been described in Ayurveda, Ayurveda practitioners encounter various oral problems in their patients during their practice. They can help in the initial diagnosis and treatment of various conditions that help in decreasing the patient overload and halt the process of further deterioration of oral health. Proper knowledge and proper referral can help to increase the quality of life of the patients.¹³ This study has been conducted to assess the awareness on oral hygiene among Ayurveda practitioners.

MATERIALS AND METHODS

The present study was a cross-sectional observational questionnaire based research. The questionnaire was distributed to 100 Ayurveda practitioners. The method of sampling was convenience sampling. The inclusion criteria was Ayurveda practitioners with at least an undergraduate degree in Ayurveda and who gave consent for participation. Practitioners who had not completed undergraduate degree were excluded from the study. The questionnaire contained ¹³ close-ended questions to assess the awareness on oral

hygiene among Ayurveda practitioners. There were three sections of the questionnaire. The first section contained questions about sociodemographic details which include the age group, gender and years of service. Age was distributed as <30, 30-39, 40-49, 50-59 and ≥60 years. Years of service was grouped as <5 years, 5-10 years and ≥10 years. The second section included the informed consent. The participants who agreed to give consent were directed to the third section and those who disagreed were programmed to exit the study. The third section contained questions on oral hygiene. The questionnaire was distributed through online platform. Data was collected by a single investigator.

Data was entered into the Microsoft Excel sheet 2007. Results were expressed as frequency and percentage of participants for each question.

OBSERVATIONS AND RESULTS

Out of the 100 participants, 52% were males and 48% were females. Most of the participants (52%) were between 30-39 years of age. 42% of the participants were under 30 and 6% were above 40. In terms of work experience, 86% had worked for less than 5 years, 10% had worked for 5-10 years and 4% had worked for more than 10 years.

Among the participants, 80% agreed that brushing of teeth should be prescribed twice a day. 18% of the participants said that brushing should be done once a day and 2% said that it should be done thrice a day. In the context of duration, 52% said that brushing should be prescribed for 3 minutes, 44% said that it should be prescribed for 2 minutes and 4% opted the duration to be 1 minute. Among the participants, 50% agreed that brushing should be done after meals and 50% said that it should be done after waking up. None of them said that it should be advised before meals. With regard to the replacement of toothbrush, 58% stated that the toothbrush should be changed every 3-4 months. 42% stated that the toothbrush should be changed every 1-2 months. None stated that it should be replaced 1-2 year. In context of the prescription for the type of toothbrush, maximum participants (60%) opted for soft toothbrush and 40% opted for medium toothbrush. None of the practitioners agreed on the use of a hard toothbrush. Maximum number of practitioners (72%) agreed that criss-cross toothbrush showed better plaque removal.

26% recommended multilevel toothbrush and 2% recommended flat toothbrush for plaque removal.

With regards to the most effective interdental cleaning aid, 48% opted for dental floss, 40% opted for interproximal brush and 12% opted for toothpick. In respect to the advice on the methods of oral hygiene, where multiple choice of answers had been accepted, 94 stated that they prescribed brushing teeth, tongue scraping and oil pulling (Figure 1). In respect to the effects of herbal mouthwash, maximum participants stated that they show anti-inflammatory, antibacterial and immunomodulatory effects (Figure 2). In response to the question on mouthwash showing more effect on plaque removal, 46% stated that herbal mouthwash shows more plaque removal, 26% relied on chemical mouthwash and 28% said that there was no difference between the two. Among the 100 respondents, 90% stated that chemical mouthwash has more side effects. 6% said that herbal mouthwash has more side effects and 4% said that there was no difference between the two.

92 participants informed the patients about oral hygiene and tobacco related oral diseases. Maximum percentage of participants (90%) stated that they would refer patients to a dentist or a specialist if they have a gum problem.

DISCUSSION

The present study showed that the Ayurveda practitioners had adequate knowledge on oral hygiene. This could be due to the inclusion of basic oral health and dental hygiene in the concept of Ayurveda. Among the participants, 80% agreed that brushing of teeth should be prescribed twice a day. Maximum number of the practitioners stated that the toothbrush should be changed every 3-4 months. Maximum participants (60%) prescribed soft toothbrushes. Brushing twice daily for two minutes with a fluoride containing toothpaste should be recommended. According to the ADA consensus, toothbrushes should be replaced 3-4 months or more often if the bristles are visibly matted or frayed. The soft toothbrushes should be recommended.¹⁴ In the present study, 44% participants said that brushing should be prescribed for 2 minutes. Generally, it is recommended to brush twice daily for the removal of dental plaque. Brushing for 1 minute is less effective than brushing

for two minutes¹⁵ and brushing for 3 minutes does not improve plaque reduction.¹⁶ However, there is no fixed time for brushing and individual difference exists to accommodate the anatomical variations.¹⁷ Among the participants, 50% agreed that brushing should be done after meals. Brushing should be done after 30 minutes of acidic intake.

Maximum number of practitioners (72%) agreed that criss-cross toothbrush showed better plaque removal. Manual toothbrushes reduce plaque score by 42% in average. Flat toothbrushes have a blocking effect during plaque removal, multilevel tuft designs show plaque reduction by 7-9% and criss-cross designs show plaque reduction by 12-15%.¹⁵

With regards to the most effective interdental cleaning aid, 48% opted for dental floss and 40% opted for interproximal brush. The most effective interdental cleaning aid is interdental brush to remove interdental plaque and appreciated best by patients.¹⁹

94 respondents stated that they prescribed brushing, tongue scraping and oil pulling. The brushing of teeth has been documented in Ayurveda since ancient times. The use of chewstick removes plaque and maintains oral hygiene. Chewing on the stems of certain plants is believed to cause attrition and leveling of biting surfaces, facilitate salivary secretion and possibly, help in plaque control while some stems have an antibacterial action.²⁰ Sticks from *Salvadora persica* and *Azadirachta indica* are widely used.²¹ Oil pulling has been used extensively as a traditional Indian folk remedy for many years to prevent decay, oral malodor, bleeding gums, dryness of throat, cracked lips and for strengthening teeth, gums and jaw.^{22,23}

Tongue scraping or *Jivha Lekhana* is used for halitosis. A reduction in plaque formation on teeth when cleaning the tongue has been noted²⁴ and tongue brushing, when supplemented with the most advocated regime of tooth brushing, reduced the initial rate of plaque formation and total plaque accumulation.²⁵ Oil pulling is another naural practice in Ayurveda. It has been described as *Kavalagraha* or *Gandoosha* in Charaka Samhita and Sushruta Samhita. In the oil pulling method, a comfortable quantity of oil is either held in the mouth or swished for 10-20 min and then spit without swallowing. The microbes are drawn out of the mouth and the toxins are detoxified by this method.²⁶

In respect to the effects of herbal mouthwash, maximum percentage of participants stated that they show anti-inflammatory, antibacterial and immunomodulatory effects. Herbal mouthwashes show all of the properties. In a study done by Aspalii et al., the efficacy of herbal plant mouthwash containing *Pilu* (*S. persica*), *Bibhitaka* (*T. bellerica*), *Nagavalli* (*P. betle*), *Gandhapurataila* (Wintergreen oil), *Ela* (*E. cardamomum*), *Peppermint* (*M. piperita*) *Satva*, and *Yavani* (*T. ammi*) *Satva* was used in treatment of gingivitis as an adjunct to scaling.²⁷

The use of herbal mouthwashes has shown a significant reduction in plaque index scores, gingival index scores, and gingival bleeding index scores compared to chlorhexidine.^{28,29,30} The herbal mouthwashes and chemical mouthwashes have been proved to be equally effective in reducing plaque and gingivitis.^{31,32}

In a systematic review done by Jangid et al. in 2014, among 17 articles, 14 showed similar efficacy of the mouthwashes, one study showed better result with *Triphala* mouthwash and two studies showed better result with chlorhexidine. Chlorhexidine is the gold standard mouthwash used in dentistry. On long term use, it causes staining of teeth and restorations. Alteration in taste also occurs.³³ This demands the use of alternative products with no side effects. Thus herbal formulations could be the best option for safe and long-term use³⁴ but, Ayurveda medicine are not devoid of adverse reactions. They may cause adverse reactions if they are of inferior quality, taken inappropriately, taken without appropriate consultation and taken with other incompatible drugs.

The study clearly showed that Ayurvedic practitioners are well aware about the methods of maintaining and flourishing oral hygiene. The Ayurvedic practitioners also seemed to be well updated with the results of current researches. Most of the participants informed the patients about oral hygiene and tobacco related oral diseases and stated that they would refer patients to a dentist or a specialist if they have a gum problem.

Perspectives and future directions

Ayurveda literature has shown different practices aiding in oral health that are included as an integral part of daily regimen. Besides, numerous Ayurvedic drugs used as a single material or their combinations can be

used in the prevention and treatment of oral diseases. Recent researches have shown that these herbs possess anti-inflammatory, antimicrobial, anti-ulcer genic and analgesic effects. The Ayurvedic practitioners have been providing an impeccable service in preventing and curing oral diseases. The ancient knowledge and modern dentistry could be integrated to cater better services to the patients at a much more affordable and accessible rate and improve the quality of life of the patients as a whole which is the supreme goal of both the health systems.

CONCLUSION

The present study showed that Ayurveda practitioners have adequate awareness on oral hygiene. The Ayurvedic practitioners have been lending their shoulders in maintaining, promoting, restoring and flourishing oral health. The study can also be used as a tool for further studies in assessing the role of Ayurvedic practitioners in the field of oral and dental health. Also, oral health promotion should be acknowledged at all levels and sector of health services for the upliftment of oral health and overall health.

Figure 1 Number of responses (accepting multiple answers) showing the methods of oral hygiene advised

Figure 2 Number of responses (accepting multiple answers) showing the effect of mouthwash

ACKNOWLEDGEMENTS: Not Applicable

CONFLICT OF INTEREST: Author declares that there is no conflict of interest.

SOURCE OF SUPPORT: None

REFERENCES

- Papapanou PN, Sanz M, Buduneli N, Dietrich T, Feres M, Fine DH, et al. Periodontitis: Consensus report of workgroup 2 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. *J Periodontol* 2018; 89, S173-82. Doi:10.1111/jcpe.12946.
- Kassebaum N, Smith A, Bernabé E, Fleming T, Reynolds A, Vos T, et al. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the global burden of diseases, injuries, and risk factors. *J Dental Res* 2017;96(4):380-7.
- Löe H, Theilade E, Jensen SB. Experimental gingivitis in man. *J Periodontol* 1965;36:177-87.
- Kinane DF, Attström R. Advances in the pathogenesis of periodontitis. Group B consensus report of the fifth European Workshop in Periodontology. *J Clin Periodontol* 2005;32(Suppl 6):130-1.
- van der Weijden F, Slot DE. Oral hygiene in the prevention of periodontal diseases: the evidence. *Periodontol* 2000 2011;55(1):104-23.
- Chapple IL, van der Weijden F, Dörfer C, et al. Primary prevention of periodontitis: managing gingivitis. *J Clin Periodontol* 2015;42(Suppl 16):S71-6.
- van der Weijden FA, Slot DE. Efficacy of homecare regimens for mechanical plaque removal in managing gingivitis a meta review. *J Clin Periodontol* 2015;42(Suppl 16):S77-91.
- Sidhu P, Shankargouda S, Rath A, Ramamurthy PH, Fernandes B, Singh AK. Therapeutic benefits of liquorice in dentistry. *J Ayurveda Integr Med* 2020 Jan 1;11(1):82-8.
- Rajmohan M, Madankumar PD, Shivakumar M. Awareness on Oral Health among Ayurvedha and Siddha Practitioners in Chennai, Tamil Nadu: A Questionnaire Study. *Med J Islamic World Acad Sci* 2012 Apr;109(426):1-6.
- Lone S, Saragade A, Tiwari A, Mahajani M, Patil K, Rathod M, et al. Ayurvedic dentistry: a doctrine concept. *Int J Curr Res* 2018; 10(12):76025-7. Doi: <https://doi.org/10.24941/ijcr.33222.12.2018>
- Dr. Brahmanand Tripathi, Nirmala Hindi Vyakhya, Chaukhamba Sanskrit pratishthan, reprint edition 2017, AstangaHridayamuttarastahan 21/2, page 1022.
- Madhukar LS, et al. 2018. A Momentous Review Study on Concept of Dentistry in Ayurveda in the Purview of Rachana Sharir (Human Anatomy). *J Human Anat.*, 2(1): 000119.
- Kharbanda OP, Priya H, Bhadauria US, Khurana C, Das D, Dev M, Ravi P, Ivaturi A. Empowering AYUSH health professionals on oral health promotion in a tertiary care dental hospital in India: An interventional study. *J Ayurveda Integr Med* 2021 Jan 1;12(1):75-9.
- ADA. Toothbrushes. 2010; <https://www.ada.org/en/member-center/oral-health-topics/toothbrushes>
- Slot DE, Wiggelinkhuizen L, Rosema NA, van der Weijden GA. The efficacy of manual toothbrushes following a brushing exercise: a systematic review. *Int J Dent Hyg* 2012;10(3):187-97.
- Van der Weijden GA, Timmerman MF, Nijboer A, Lie MA, Van der Velden U. A comparative study of electric toothbrushes for the effectiveness of plaque removal in relation to toothbrushing duration. *Timerstudy. J Clin Periodontol* 1993;20(7):476-81
- Sälzer S, Graetz C, Dörfer CE, Slot DE, Van der Weijden FA. Contemporary practices for mechanical oral hygiene to prevent periodontal disease. *Periodontol* 2000 2020 Oct;84(1):35-44.
- Sälzer S, Slot DE, van der Weijden FA, Dörfer CE. Efficacy of inter- dental mechanical plaque control in managing gingivitis -meta-re- view. *J Clin Periodontol* 2015;42(Suppl 16):S92-105.
- Kotsakis GA, Lian Q, Ioannou AL, Michalowicz BS, John MT, Chu H. A network meta-analysis of interproximal oral hygiene methods in the reduction of clinical indices of inflammation. *J Periodontol* 2018;89(5):558-70.
- Naik GH, Priyadarsini KI, Satav JG, Banavalikar MM, Sohoni DP, Biyani MK, et al. Comparative antioxidant activity of individual herbal components used in Ayurvedic medicine. *Phytochemistry* 2003;63:97-104.
- Hooda A, Rathee M, Singh J. Chewing sticks in the

- era of toothbrush: A review. Internet J Fam Pract 2010;9(2):12-8.
- 22 Bethesda M. A closer look at Ayurvedic medicine. Focus on complementary and alternative medicine. National Center for Complementary and Alternative Medicine (NCCAM). US National Institutes of Health (NIH) 2006;12:123-39.
 - 23 Hebbar A, Keuskar V, Shetti A. Oil pulling: Unraveling the path to mystic cure. J Int Oral Health 2010;2:11-4.
 - 24 Gross A, Barnes GP, Lyon TC. Effects of tongue brushing on tongue coating and dental plaque scores. J Dent Res. 1975;54(6):1236. [PubMed] [Google Scholar]
 - 25 Gulati MS, Gupta L. Clinical evaluation of supplementary tongue brushing to the most advocated regime of tooth brushing. J Ind Soc PedodPrev Dent. 1998;16:12–16. [PubMed] [Google Scholar]
 - 26 Kaliamoorthy S, Pazhani A, Nagarajan M, Meyyappan A, Rayar S, Mathivanan S. Comparing the effect of coconut oil pulling practice with oil pulling using sesame oil in plaque-induced gingivitis: A prospective comparative interventional study. J Nat Sc Biol Med. 2018 Jul 1;9(2):165-8.
 - 27 Aspalli S, Shetty VS, Devarathnamma MV, Nagappa G, Archana D, Parab P. Evaluation of antiplaque and antigingivitis effect of herbal mouthwash in treatment of plaque induced gingivitis: A randomized, clinical trial. J Indian Soc Periodontol 2014 Jan;18(1):48.
 - 28 Anupama D, Anil M, Surangama D. A clinical trial to evaluate the effect of triphala as a mouthwash in comparison with chlorhexidine in chronic generalized periodontitis patient. Indian J Dent Adv 2010;2:243-7.
 - 29 Waghmare PF, Chaudhari AU, Karhadkar VM, Jamkhande AS. Comparative evaluation of turmeric and chlorhexidine gluconate mouthwash in prevention of plaque formation and gingivitis: A clinical and microbiological study. J Contemp Dent Pract 2011;12:221-4.
 - 30 Chatterjee A, Saluja M, Singh N, Kandwal A. To evaluate the antigingivitis and antiplaque effect of an Azadirachta indica (neem) mouth rinse on plaque induced gingivitis: A double-blind, randomized, controlled trial. J Indian Soc Periodontol 2011;15:398-401
 - 31 Gupta D, Bhaskar DJ, Gupta RK, Karim B, Jain A, Singh R, Karim W. A randomized controlled clinical trial of Ocimum sanctum and chlorhexidine mouthwash on dental plaque and gingival inflammation. J Ayurveda Integr Med 2014 Apr;5(2):109-16. doi: 10.4103/0975-9476.131727. PMID: 24948862; PMCID: PMC4061585.
 - 32 Cai H, Chen J, Panagodage Perera NK, Liang X. Effects of herbal mouthwashes on plaque and inflammation control for patients with gingivitis: A systematic review and meta-analysis of randomised controlled trials. Evid Based Complement Alternat Med 2020 Jan 20;2020. Doi: <https://doi.org/10.1155/2020/2829854>
 - 33 Jangid K, Doraiswamy JN, Saji VS, Malaiappan S. Efficacy of herbal mouthwashes compared to chlorhexidine in gingivitis—A systematic review. Int J Ethnobiol Ethnomed 2014;1(1):1-2.
 - 34 Takahashi K, Fukazawa M, Motohira H, Ochiai K, Nishikawa H, Miyata T. A pilot study on antiplaque effects of mastic chewing gum in oral cavity. J Periodontol 2003;74:501-5.

How to cite this article:

Shrestha R, Shrestha S, Shah B, Pradhan S, Bhochhibhoya A, Awareness on oral hygiene among Ayurveda practitioners, The Healer Journal, 2021;2(2):9-14.