

## AYUSH medicines in oral health care: A Narrative review

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### ABSTRACT

**Introduction:** Dental caries and periodontal diseases are among the most important global oral health problems, although other conditions like oral and pharyngeal cancers and oral tissue lesions are also of significant concern. The exploration of botanicals used in traditional medicine, may lead to the development of novel preventive or therapeutic strategies for oral health. **Material and method:** The databases searched for the current review were Medline, Natural Products Alert Database, and related databases, such as AYUSH Research Portal, Medicine, Systematic Reviews in Ayurveda, Systematic Reviews in Siddha, Systematic Reviews in Unani, NAPRALERT, National Library of Ayurveda Medicine, Siddha Database, Indus Medicus, Web of Science, and Google Scholar, etc. **Result:** Ayurveda advocates some daily use therapeutic procedures for the prevention of and maintenance of oral health like *Dant Dhavani* (Brushing), *Jivha Lekhana* (Tongue scrapping) and *Gandoosha* (gargling) or oil pulling and tissue regeneration therapies. There are various plants with oral health related indication described in classics. By reducing inflammation and helping prevent dry mouth, yoga can help fight gum disease and keep teeth healthy. Similar to Ayurvedic medicine, Unani medicine also recommends daily use of therapeutic procedures like chewing sticks for brushing of teeth in the morning as well as after every meal for the prevention and maintenance of oral health. In Siddha system of medicine, a total of 108 herbs, collectively

known as *Karpa Mooligaigal* are dominantly used for the human ailments including management of oral disorders. Homeopathy medicines include regulation thermography, nosode therapy, acupuncture, magnetic field therapy, ozone therapy, mora therapy, and lymph drainage in dentistry. **Conclusion:** The traditional knowledge should be integrated with the modern dentistry. For this, the active principles of plants should be incorporated into modern oral health-care practices and dentists should be encouraged to use natural remedies in various oral health treatments. This will make dentistry much safer, affordable and more accessible for the lower socio-economic groups in society.

**Keywords:** Oral health, dentistry, traditional medicine, AYUSH

## INTRODUCTION

Oral diseases continue to be a major health problem world-wide.<sup>1</sup> Dental caries and periodontal diseases are among the most important global oral health problems, although other conditions like oral and pharyngeal cancers and oral tissue lesions are also of significant concern.<sup>2</sup> Oral health is integral to general well-being and relates to the quality-of-life that extends beyond the functions of the craniofacial complex. The link between oral diseases and the activities of microbial species that form part of the micro biota of the oral cavity is well-established.<sup>3</sup> The global need for alternative prevention and treatment options and products for oral diseases that are safe, effective and economical comes from the rise in disease incidence (particularly in developing countries), increased resistance by pathogenic bacteria to currently used antibiotics and chemotherapeutics, opportunistic infections in immunocompromised individuals and financial considerations in developing countries.<sup>4 5</sup> Despite several chemical agents being commercially available, these can alter oral micro biota and have undesirable side-effects such as vomiting, diarrhoea and tooth staining.<sup>6 7</sup> Furthermore, the standard Western medicine has had only limited success in the prevention of periodontal disease and in the treatment of a variety of oral diseases. Hence, the search for alternative products continues and natural phytochemicals isolated from plants used in traditional medicine are considered as good alternatives to synthetic chemicals.<sup>8</sup>

Traditional medicine is the sum total of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures that are used to maintain health, as well as to prevent, diagnose, improve or treat physical and mental illnesses. Traditional medicine includes AYUSH system of health care i.e. Ayurveda, Yoga, Unani, Siddha and

homeopathy system of medicines which is practiced predominantly in southeast asia. The dentist needs to be more informed regarding the use, safety and effectiveness of the various traditional medicines and over-the-counter products. As this is hardly explored part for the field of dentistry, there is a need for integration of professional dental treatment modalities and complementary alternative medical (CAM) systems to provide the best and unique from each system to patients as a complementary therapy and an alternative choice of treatment.<sup>9</sup> Considering the importance of various traditional or CAM systems, the present scientific evidence based review of literature is focused on the possible role of AYUSH in the management of various orofacial disorders.

## **MATERIALS AND METHODS**

For this review of the literature, the databases searched for the current review were Medline, Natural Products Alert Database, and related databases, such as AYUSH Research Portal, Medicine, Systematic Reviews in Ayurveda, Systematic Reviews in Siddha, Systematic Reviews in Unani, Systematic Reviews in Homeopathy, NAPRALERT, National Library of Ayurveda Medicine, Siddha Database, Indus Medicus, Web of Science, and Google Scholar, etc. by consulting existing bibliographies; by using both forward and backward reference chaining techniques; and by tracking recent activities in the field of AYUSH, which is primarily concerned with prevention and management of orofacial disorders.

## **AYURVEDA AND OROFACIAL DISEASES**

According to the *Shalyatantra* and *Shalakyatantra* (one of the branches of Ayurveda), 65 varieties of oral diseases can arise in seven anatomic locations-eight on the lips (*Ostha*), 15 on the alveolar margin (*Dantamoola*), eight in connection with the teeth (*Danta*), five on the tongue (*Jihva*), nine on the palate (*Taalu*), 17 in the oropharynx (*Kantha*) and three in a generalized form(*Sarva Mukha*).<sup>10</sup>

For the treatment of these diseases Ayurveda advocates procedures such as oral cleansing, extractions, excisions, flap surgeries etc., Along with the treatment of orofacial diseases, Ayurveda recommends some daily use therapeutic procedures for the prevention of and maintenance of oral health. These include: *Dant Dhavani* (Brushing), *Jivha Lekhana* (Tongue scrapping) and *Gandoosha* (gargling) or oil pulling and tissue regeneration therapies. Some of the scientifically proven beneficial effects of these procedures are described below:

**Dant Dhavani (brushing):** Ayurveda recommends chewing sticks in the morning as well as after every meal to prevent diseases. Ayurveda insists on the use of herbal brushes, approximately nine inches long and the thickness of one's little finger. These herb sticks should be either “kashaya” (astringent), “katu” (acidic) or “tikta” (bitter) in taste. The method of use is to crush one end, chew it and eat it slowly.<sup>11</sup> The neem (margosa or *Azadirachta indica*) is a famous herbal chewing stick. Fresh stems of liquorice (*Glycyrrhiza glabra*), black catechu or the cutch tree (*Acacia Catechu* Linn.), Arjuna tree (*Terminalia arjuna*), fever nut (*Caesalipinia bouduc*) and milkweed plant (*Calotropis procera*)<sup>12</sup> can also be used for brushing. Chewing on these stems is believed to cause attrition and levelling of biting surfaces, facilitate salivary secretion and possibly, help in plaque control while some stems have an anti-bacterial action.<sup>13</sup> Present-day research has shown that all the chewing sticks described in ancient Ayurveda texts (Circa 200 BC) have medicinal and anti-cariogenic properties.<sup>14</sup>

**Jivha Lekhana (tongue scrapping):** It is ideal to use gold, silver, copper, stainless steel for the scrapping of the tongue. Tongue scrapping stimulates the reflex points of the tongue. Removes bad odor (halitosis). Improves the sense of taste, stimulate the secretion of digestive enzymes. Removes millions of bacteria growth (approximately 500 varieties) Clinical evidence also shows that use of tongue scrapers on a regular basis, has a significant Improvement on eliminating anaerobic bacteria and decreases bad odor.<sup>15</sup>

**Gandusha (gargling) or oil pulling:** Oil pulling is an ancient Ayurveda procedure that involves swishing oil in the mouth for oral and systemic health benefits. It is mentioned in the Ayurvedic text Charaka Samhita where it is called Kavala or *Gandusha* and is claimed to cure about 30 systemic diseases ranging from headache, migraine to diabetes and asthma. Oil pulling has been used extensively as a traditional Indian folk remedy for many years to prevent decay, oral malodour, bleeding gums, dryness of throat, cracked lips and for strengthening teeth, gums and the jaw. Oil pulling therapy can be done using oils like sunflower oil or sesame oil. Oil pulling therapy is very effective against plaque induced gingivitis both in the clinical and microbiological assessment.<sup>16</sup>

**Tissue regeneration therapies:** In Ayurveda, the well-known herb, *Amla* (*Phyllanthus emblica*) is considered a general builder of oral health. Amla works well as a mouth rinse as a decoction. One to two grams per day can be taken orally in capsules for the long-term benefit to the teeth and gums. Amla supports the healing and development of connective

tissue when taken internally.<sup>17</sup> *Yashtimadhu* (Liquorice root) promotes anti-cavity action, reduces plaque and has an anti-bacterial effect. Herbs such as *Aragvadha*(yellow dock root), *Ashvabala* (alfalfa leaf), *Tvak* (cinnamon bark) and *Haridra* (turmeric root) are taken internally to strengthen *Astidhatu*, for example, the skeleton and the joints, have proven to be good for long term health of teeth.

**Table 1: Herbal Plants with oral health related indication is as follows:**

| Drug name                          | Latin name                  | Property   |
|------------------------------------|-----------------------------|--|
| <i>Amalaki</i> <sup>18</sup>       | <i>Emblica officinalis</i>  | Antioxidant as well as astringent property, to be effective in toothache and gingival inflammations, ophous stomatitis and other types of mouth ulcers.          |
| <i>Dalima</i> <sup>19</sup>        | <i>Punica granatum</i>      | Antibacterial activity due to ellagitannin, punicalagin. Useful in oral inflammation, fungal count in periodontal diseases and candida associated stomatitis     |
| <i>Launga/ Clove</i> <sup>20</sup> | <i>Syzygium aromaticum</i>  | Eugenol is active component used widely in conjunction with root canal therapy, temporary filings and general gum pain, dental abscesses and other gum diseases. |
| <i>Datiwan</i> <sup>21</sup>       | <i>Alucita bidentata</i>    | Datiwan’s stem, roots and leaves useful in toothache and pyorrhea  |
| <i>Gotu kola</i> <sup>22</sup>     | <i>Centella asiatica</i>    | Useful in mouth ulcers. Heal wounds and promotes connective tissue growth. It reduces plaque, periodontal pocket depth and attachment levels.                    |
| <i>Ghrita kumari</i> <sup>23</sup> | <i>Aloe vera</i>            | Promotes dentin formation by stimulating PDPC’s proliferation, differentiation, extracellular matrix formation and mineralization.                               |
| <i>Guduchi</i> <sup>24</sup>       | <i>Tinospora cordifolia</i> | Anti-inflammatory, antioxidant, immune-modulator properties. Marked imporvemnt in salivary flow and reduction in severity of mucositis in radiotherapy patients. |

|                                   |   |  |
|-----------------------------------|---|--|
| <b>Jasmine</b> <sup>25</sup>      | <i>Jasminum grandiflorum</i>  | Useful in odontalgia, fixing loose tooth, ulcerative stomatitis, oral wounds. Potent antiulcer property and antioxidant  |
| <b>Kantakari</b> <sup>26</sup>    | <i>Solanum xanthocarpin</i>   | Dhoopana with its seeds useful for dental caries due to solanocarpine, carpestrol, solanocarpidine, solasodine, etc.   |
| <b>Nimbu</b> <sup>27</sup>        | <i>Citrus medica</i>  | Antibacterial efficiency recommended for root canal therapy  |
| <b>Neem</b> <sup>28</sup>         | <i>Azadirachta indica</i>   | Anti-bacterial, antifungal, antiviral, antioxidant, anti-inflammatory, analgesic, immunostimulant properties. Due to anti plaque activity, useful in periodontitis.  |
| <b>Nilgiri</b> <sup>29</sup>      | <i>Eucalyptus globulus</i>  | Positive effect on plaque accumulation, gingival index, bleeding on probing and periodontal depth probing.   |
| <b>Tila/ Sesame</b> <sup>30</sup> | <i>Sesamum indicum</i>  | Oil pulling by sesame oil significantly reduces the plaque index, modifies gingival scores, and total colony of aerobic microorganism in the plaques.  |
| <b>Triphala</b> <sup>31</sup>     | <i>Terminalia chebula,</i><br><i>Terminalia bellerica,</i><br><i>Phyllanthus embelica</i> | Poses anti caries and anti-plaque properties. Useful in strengthening the gums as root canal irrigant  |
| <b>Tulsi</b> <sup>32</sup>        | <i>Ocimum sanctum</i>   | Antibacterial activity due to the presence of flavonoids, tannins, and Eugenol.  |
| <b>Haridra</b> <sup>33</sup>      | <i>Curcuma longa</i>  | Useful in pain, gingivitis, periodontitis, colorant in pit and fissure sealant. Its extracts useful in malignant lesions of oral cavity. It inhibits metastasis of melanoma cells and useful in deactivating the carcinogens in cigarette , smoke and chewing tobacco. |

## **YOGA AND OROFACIAL DISEASES:**

By reducing inflammation and helping prevent dry mouth, yoga can help fight gum disease and keep teeth healthy. Of course brushing and flossing, having good dental insurance, and practicing good oral hygiene are important, but establishing a regular yoga practice could also have a big impact on your oral health. Yoga's benefits go far beyond just looking better and increasing flexibility. Yoga can play a big role in fighting gum disease and keeping teeth healthy. Yoga lowers stress- Numerous studies have been done linking stress to physical ailments and conditions. The more stress you have the more you will experience things like tight muscles, neck pain, and headaches. Stress can also cause dental and jaw problems clenched jaw and bruxism, or teeth grinding. A regular yoga practice designed to incorporate stress-relieving poses and medication can significantly reduce stress and help eliminate bruxism and clenched jaw problems.<sup>2</sup> Taking just 20 minutes a day to do some stretching and relaxing yoga problems could give you better oral health and better health in general.<sup>34</sup>

Yoga lowers inflammation- Inflammation is responsible for a wide range of health problems, including inflammation of the gums which can cause pain and oral problems like gum disease and tooth decay.

Yoga promotes better posture- When a person don't stand up straight, or when one sits hunched over with neck pushed forward, there is an inordinate amounts of pressure on jaw, causing misalignment of jaw and teeth. Practicing yoga can help counter the impact of this daily bad posture. Yoga poses and stretches can realign head and neck as well as strengthen back and core so that one can sit up straight and keep body in good alignment even when one is sitting all day.

Yoga causes the body to make saliva- Saliva is critically important for good oral health. Saliva keeps mouth from drying out and it washes away the food debris and particles that can lead to tooth decay and gum inflammation. It's very common for people to have bouts of dry mouth because their body isn't making enough saliva. Yoga can help stimulate the body's salivary glands to naturally produce more saliva. Certain types of yoga poses, like forward bends, naturally encourage the body to make more saliva that will keep mouth healthy. There are even entire yoga sequences designed to help eliminate dry mouth.



**UNANI MEDICINE AND OROFACIAL DISEASES:**

Similar to Ayurvedic medicine, Unani medicine also recommends daily use of therapeutic procedures like chewing sticks for brushing of teeth in the morning as well as after every meal for the prevention and maintenance of oral health.<sup>35</sup>

Many Unani physicians advocate use of herbal formulations in their Usool-e-Ilaj (Unani principles for treatment) for the prevention and management of dental health. Herbs which are advocated in Unani system like *Miswak (Salvadora Persica)*, *Haldi (Curcuma longa)*, *Anar (Punicagranatum)*, *Aqarqarha (Anacyclus pyrethrum)*, *Suddab (Rutagraveolens)*, *Amla (Emblica Officinalis)*, *Aqaqia (Acacia nilotica)*, *Shahad (Honey)*, *Lehsun (allium sativum)*, *Aspaghhol (Plantagoovata Forsk)*, *Babuna (Matricariachamomilla Linn.)*, *Clove (syzygiumaromaticum)* etc. are found to be useful in treatment of orofacial diseases<sup>36</sup>. Similarly, Unani formulations like *Sunune Zard*, *Sunune Mulook*, *Sunune Mujalli*, *Buzidan*, *Majoon Suranjan*, *Majoon Azaraqi*, *Habbe Gule Aak* etc. have been shown effective anti-bacterial, anti-inflammatory and analgesic effect and are used in the treatment of orofacial diseases.<sup>37</sup>

**SIDDHA MEDICINE AND OROFACIAL DISEASES**

In Siddha system of medicine, a total of 108 herbs, collectively known as *Karpa Mooligaigal* are dominantly used for the human ailments including management of oral disorders. The *Karpa Mooligaigal* plants are believed to revolutionize health and consciousness to prevent and give relieves even from chronic diseases. Most of the herbs prescribed in Siddha, possess anti plaque, cariogenic, antibacterial, antiinflammatory, analgesic, antitumor, anti-stress, anti-fungal, rapid healing properties. Clinical implications of most of the commonly used Siddha plants in the management of orofacial diseases have been summarized in Table 2.

**Table 2: Commonly used Siddha plants in the management of orofacial diseases.**

|   |   |
|---|---|
| <b><i>Manjal Poo chedi</i><br/>(<i>Spilanthes acmella</i><br/><i>Murr.</i>)</b> | Traditionally; it's flowers are crushed and applied on the site of toothache. Furthermore; when evaluated scientifically, <i>S. acmella</i> showed a significant local anesthetic and antipyretic activities in a study conducted by Chakraborty et al. <sup>38</sup> |
|---|---|



|   |   |
|---|---|
| <b><i>Thotta sinungi (Mimosa pudica Linn)</i></b>         | It's root and leaf infusion is applied on the oral wounds including mouth ulcers. The pharmacological activities of the shoot and root extracts of <i>Mimosa pudica</i> Linn were identified by Kannan et al who showed a promising wound healing capacity compared to Gentamicin. <sup>39</sup> Similarly, it has shown a promising antimicrobial property mainly against gram-positive bacteria. Flavonoids are believed to be responsible for this property. <sup>40</sup>   |
| <b><i>Chukuti chedi (Solanum nigrum Linn.)</i></b>        | Its leaves and fruits are chewed and swallowed to cure mouth ulcer. Histological studies revealed a reduction of ulcer size by <i>Solanum nigrum</i> Linn. <sup>[22]</sup> Enzymatic studies on H <sup>+</sup> K <sup>+</sup> ATPase activity to ascertain the anti-secretory action showed that SNE significantly inhibits H <sup>+</sup> K <sup>+</sup> ATPase activity and reduces the gastrin secretion in EtOH-induced ulcer model. <sup>41</sup>  |
| <b><i>Vata or Vada tree (Ficus Bengalensis Linn.)</i></b> | Traditionally, paste of leaf along with their fruit combined with cumin is taken orally to cure swellings, and applied topically over the fractured bones. Phytochemical analysis showed that <i>Ficus Bengalensis</i> Linn. has a good anti-inflammatory property. This may be due to presence of active flavonoids, sterols, triterpene, tannins and saponins compounds. <sup>42</sup> According to Mousa et al (1994), fruit extracts of <i>Ficus</i> species exhibited significant anti-tumor, antibacterial activity but no antifungal activity. <sup>43</sup> |
| <b><i>Kundumani (Abrus precatorius Linn.)</i></b>         | Leaves are used for Dentifrice, strengthening the gum and teeth. A study conducted by Arora et al showed that ethanolic extract of <i>Abrus precatorius</i> Linn. had potent antioxidant, anti-inflammatory and analgesic potential. The study concluded that seeds of <i>Abrus precatorius</i> Linn. can be used as good natural antioxidant to treat free radical induced diseases like gingivitis and periodontitis. <sup>44</sup>   |
| <b><i>Semparuthi (Hibiscus rosa sinensis Linn.)</i></b>   | Its young stem is used for toothbrush. This plant <i>Hibiscus rosa sinensis</i> Linn.; belongs to –Malvacecaell family. It has various medicinal properties. The bud has a sweet odour,   |

|   |   |
|---|---|
|   | bitter taste. It's cooling and astringent effect sub-sides burning sensations of mouth and relieves pain. A study conducted by Sawarkar et al showed that alcoholic preparations of dried leaves of <i>Hibiscus rosa sinensis</i> had significantly higher analgesic activities. <sup>45</sup>  |
| <b>Karunelii</b> ( <i>Kirganelia reticulate baill</i> ) | Leaves and stems are used for bleeding gums and as a toothbrush. In an in vitro investigation carried out by Shruthi et al; the antibacterial activity of crude methanolic, chloroform and hexane extracts of the leaves of <i>Kirganelia reticulate</i> showed a very high bactericidal activities. <sup>46</sup>  |
| <b>Mahila</b> ( <i>Mimusops elengi Linn.</i> )          | Its parts can be used in various inflammatory conditions of oral cavity such as inflammatory swellings, traumatic ulcerations, gingival abscess and periodontal infections. As it has been shown promising anti-inflammatory activities. <sup>47</sup>  |
| <b>Thandrikai</b> ( <i>Terminalia Bellirica roxb.</i> ) | Many studies have shown various antioxidant, antibacterial activity, free radical, scavenging <sup>48</sup> analgesic anti-microbial <sup>49</sup> activities of <i>Terminalia Bellirica roxb.</i> Because of these, it may help in the management of various periodontal and pulpal infections.  |
| <b>Nuna</b> ( <i>Morinda citrifolia/Noni</i> )          | It is generally used in many conditions like arthritis (including TMJ Ankylosis), toothache, muscle ache, oral cancer, aphthous ulcer, recurrent stomatitis, depression, blood vessel problems, and drug addiction etc. This may be due to its antibacterial, antiviral, antitumor activity, and analgesic, <sup>50</sup> properties.   |
| <b>Karu oomathai</b> ( <i>Datura metel Linn.</i> )      | The fresh leaves are boiled with gingelly oil and applied topically on Temporomandibular joint to cure swellings. Sakthi et al performed various phytochemical tests which showed that the antibacterial activity of <i>Datura metel</i> plant leaves was effective against nine pathogenic bacteria isolates viz., <i>Bacillus subtilis</i> , <i>Staphylococcus aureus</i> , <i>Escherichiacoli</i> , <i>Bacillus cereus</i> , <i>Shigella flexneri</i> , <i>Salmonella typhi</i> , <i>Vibrio cholerae</i> , <i>Pseudomonas aeruginosa</i> , and <i>Klebsiella</i> |

|  |  |
|--|--|
|  | <i>pneumoniae</i> . This is because of presence of phytochemical compounds like flavonoid, alkaloids, steroids, terpenoid, triterpenes, tannins, and phenolic compounds. <sup>51</sup> According to Britto et al, the fruits and stem extracts did not show significant antibacterial activity |
| <b>Sitaphalam</b> ( <i>Annona squamosa</i> ) | It has shown a very high anti-bacterial, anti- microbial, and anti-tumour activities. <sup>52</sup> This may help in management of various oral conditions like periodontal abscess, dry socket, gum bleeding, wound healing, squamous cell carcinoma, and malignant tumors etc.               |

Some of the other Siddha Plants which are often used to treat various oro-facial problems are: *Kundumani* (*Abrus precatorious* Linn.), *Peekaruvell* (*Acacia farnesiana* Linn. willd.), *Thuvarai* (*Cajanus cajan* Linn. Millsp.), *Velaippapolam* (*Commiphora Myrrha*), *Alamarum* (*Ficus benghalensis* Linn.), *Shemmuli* (*Barleria prionitis* Linn.), *Mozhukupirkankai* (*Luffa cylindrical* M. Roem.), *Palvalipoondu* (*Spilanthes calva* DC.) and *Vaagai* (*Albizia lebbek* Benth.).<sup>53</sup>

## HOMEOPATHY MEDICINE AND OROFACIAL DISEASES

A number of unconventional medical methods are being used in dentistry in homeopathy. These include regulation thermography, homeopathy, nosode therapy, acupuncture, magnetic field therapy, ozone therapy, Mora therapy, and lymph drainage.

It is an emerging field of oral health care that is useful in management of conditions affecting orofacial structures. Belladonna is useful for toothache, early dental abscess, and bruxism as well as in cases of postextraction, for example, dry socket. Natrum muriaticum drug is used in cases which occur due to cold sores and fever blisters, lips and corners of mouth dry and cracked lips. *Antimonium crudum*, *Aconitum napellus*, *Aranea diadema*, *Calcarea carbonica*, and *Chamomilla* are useful for a toothache. *Arsenicum album* is useful for unhealthy, bleeding gums, for diseases involving pulp and periapical region. Aconite can be used for panic, fright, and general mental and physical restlessness or sudden violent attacks, trigeminal neuralgia. *Calcarea phosphorica* is useful when mouth cannot be opened without pain. Phosphorous is the drug of choice for conditions related to salivation as well as to control the postsurgical bleeding. For aphthous ulcers, candidiasis, and oral lichen planus,

borax can be given. *Calcarea carbonica* is used for a delayed eruption. *Kreosotum* is used for the decay of milk teeth.<sup>54</sup>

## CONCLUSION

In this study, an attempt has been made to review various herbal plants mentioned in AYUSH systems that can be used as an adjunct for the maintenance of oral health. The literature showed that there are numerous herbal rugs, which can be used in prevention as well as management of oral diseases. Many herbal plants, which are reviewed, possess antimicrobial, anti-inflammatory, analgesic, antiulcer genic activities when screened according to the modern parameters. However, among them only few numbers of herbal extracts are used in clinical practice and the rest of others are not practiced because of their unknown side effects. The clinical studies should be encouraged to assess the efficacy as well as toxicity of herbal drugs.

Contemporary medical science is recommending organic brushes these days. For this purpose, medicinal plants indicated in ayurvedic science may play vital role and sticks mentioned for Dant dhawan can be used. The traditional knowledge of AYUSH systems should be integrated with the modern dentistry. For this, the detailed implementation of ayurvedic principle can be adopted for the prevention of diseases of oral cavity. the active principles of plants should be incorporated into modern oral health-care practices and dentists should be encouraged to use natural remedies in various oral health treatments. This will make dentistry much safer, affordable and more accessible for every socio-economic groups in society.

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