

Research Article



Traditional Ethnomedicinal Plants Used for Oral Health Care by Tribals of Melghat Region, Dist. Amravati (M.S.), India

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ABSTRACT

Oral diseases are major health problems with dental caries and periodontal diseases among the most important preventable global infectious diseases. Oral health influences the general quality of life and poor oral health is linked to chronic conditions and systemic diseases. Lack of oral hygiene, an excess of fleshy food and sweets harm our teeth by causing pyorrhea, toothache, bleeding gums and dental caries. The use of medicinal plants to treat dental problems has been discussed from time to time by many researchers. Hence present investigation aimed to record medicinal folklore for oral health care by conducting survey of tribal area of Melghat region. Ethno botanical survey with respect to use of local medicinal plants for curing oral problems was carried out during the period July 2010- July 2011. Present investigation reveals that 24 Ethnomedicinal important plant species belonging to 20 families are being commonly used for oral health care. The present study is an attempt to generate interest among the society regarding the potential of natural alternatives in preventing oral disorders. This study will help in development of potential bio-product such as herbal toothpaste and toothpowder in treatment of oral disorders which will be cheaper and with fewer side effects.

Keywords: Oral care, Toothache, Melghat, Ethnomedicinal plants.

INTRODUCTION

Ethno botanical and ubiquitous plants serve as a rich source of natural drug for research and development. Medicinal plant based drug owe the advantage of being simple, effective and exhibit broad spectrum activity. Medicinal plant products when compare to their synthetic counterparts minimize the adverse side effects. A lot of research has been carried out on the utilization of medicinal plants in the treatment of a variety of ailments.¹⁻⁶ In past few decades' pioneer work in identification, documentation and recognition of traditional medicine has been done in India. Ethnobotanical studies are often significant in revealing locally important plant species especially for the discovery of crude drugs⁷. According to WHO report, over 80% of the world population relies on traditional medicine for their primary health care.⁸

Oral diseases are major health problems with dental caries and periodontal diseases among the most important preventable global infectious diseases. Oral health influences the general quality of life and poor oral health is linked to chronic conditions and systemic diseases. Lack of oral hygiene, an excess of fleshy food and sweets harm our teeth by causing pyorrhea, toothache, bleeding gums and dental caries. The use of medicinal plants to treat dental problems has been discussed from time to time by many researchers. Kanwar have reported the use of *Achyranthes aspera*, *Aegle marmelos* and *Vitex negundo* in dental care by the locals of Kangra district¹ and Tomar has reported the use of six species of plants by the local people of Meerut district (India) to treat dental caries⁹.

Sharma and Joshi have reported the use of 30 species of medicinal plants in Almora district, with 5 of these plant species being used by the local people for dental health care³. An ethnobotanical survey of Nandurbar district for oral health care has been done¹⁰.

However there are no reports on utility of medicinal plants used by the tribal community on treatment of oral disorders from Melghat region of Amravati dist., Maharashtra. Hence present investigation aimed to record medicinal folklore for oral health care by conducting survey of tribal area of Melghat region.

MATERIALS AND METHODS

Location and study area

Geographically Maharashtra is located in the center of North and South side of India and is the 3rd largest state with a geographical area 307690 sq.kms. And lies between 16° 40' to 22° 10'N latitude and 72° 56' to 80° 09' E longitude. Melghat sub-division of Amravati district (Maharashtra, India) comes under tribal sub-plan area. Entire area comes under category – I. i. e. where tribal population is over 50% Tribal sub-plan area extends over an area of 4212 sq.km out of which 77% area is under forest. There are 314 villages having about 80% population of tribes.¹¹ Tribal population mainly includes Korkus, Gond and Nihals. Particularly; Study area is East Melghat Forest Division which is situated in the North East of Amravati district of Maharashtra State and administratively it is under Amravati Forest Circle. Geographical coordinates are Latitude 21° 13' 14" to 21° 46' 6" North & longitude 77° 10' 39" to 77° 36' East.



Methods

Ethnobotanical survey with respect to use of local medicinal plants for curing oral problems was carried out during the period July 2010- July 2011. The region was frequently visited and the information was collected from traditional healers and adult people (aboriginal) they were interviewed for plants and their part used for curing oral disorder and there local names were also recorded. Collected plant species were identified by using relevant

scientific literature¹²⁻¹⁴ and from experts. The collected specimens were made into herbarium and deposited at department of botany, Govt. Vidarbha Institute of Science and humanities, Amravati.

RESULTS

Present investigation reveals that 24 Ethnomedicinal important plant species belonging to 20 families are being commonly used for oral health care. Their scientific name, family, local name has been compiled in table no.1.

Table 1: Traditional Ethnomedicinal Plants Used for Oral Health Care by Tribes of Melghat Region, Dist.Amravati (M.S.), India.

S.No.	Binominal	Family	Local name	Part used
1	<i>Abrus precatorius</i> L.	Fabaceae	Gunj	Leaves ¹⁵
2	<i>Acacia nilotica</i> (L.) Willd	Mimosaceae	Babhul	Stem bark ^{15,16}
3	<i>Achyranthus aspera</i> L.	Amaranthaceae	Aghada	Roots ¹⁵
4	<i>Alstonia scholaris</i> (L)	Apocynaceae	Saptaparni	Stick
5	<i>Azadiracta indica</i> A.Juss.	Meliaceae	Neem	Young branches ¹⁷⁻²⁰
6	<i>Barleria prionitis</i> L.	Acanthaceae	Barli/karonti	Leaves ^{15,21}
7	<i>Careya arborea</i> Roxb	Lecythidaceae	Kumbh/Kumbhi	Bark
8	<i>Cordia dichotoma</i> Forst	Boraginaceae	Bhokar/selu	Bark
9	<i>Erythrina suberosa</i> Roxb	Fabaceae	Pangara	Leaves
10	<i>Ficus beghalensis</i> L.	Moraceae	Wada	Young aerial roots ^{15,19}
11	<i>Jatropha curcas</i> L.	Euphorbiaceae	Danti/Ratan	Latex ^{15,16,22}
12	<i>Luffa acutangula</i> (L.) Roxb.	Cucurbitaceae	Kadudodka	Leaves
13	<i>Mangifera indica</i> L.	Anacardiceae	Amba	Leaves ^{15,22,18}
14	<i>Merremia emarginata</i> (L) Cufod	Convolvulaceae	Undirmani	Leaves
15	<i>Mitragyna parviflora</i> (Roxb) Korth	Rubiaceae	Kalamb	Bark
16	<i>Ocimum basilicum</i> L.	Lamiaceae	Vantulsi	Leaves ¹⁷
17	<i>Oxalis corniculata</i> L.	Oxalidaceae	Ambushi	Leaves
18	<i>Psidium guajava</i> L.	Myrtaceae	Peru/Jam	Leaves ^{15,17}
19	<i>Pterocarpus marsupiu</i> (Roxb.)	Fabaceae	Bija	Gum ¹⁵
20	<i>Solanum indicum</i> L.	Solanaceae	Dorli	Fruit
21	<i>Syzygium cumini</i> L.	Myrtaceae	Jambhul	Bark
22	<i>Tamarindus indica</i> L.	Fabaceae	Imali/Chinch	Bark ¹⁵
23	<i>Terminalia chebula</i> Retz.	Combretaceae	Hirada	Seeds
24	<i>Xanthium indicum</i> Koen	Asteraceae	Bhuiringani	Seeds ¹⁵

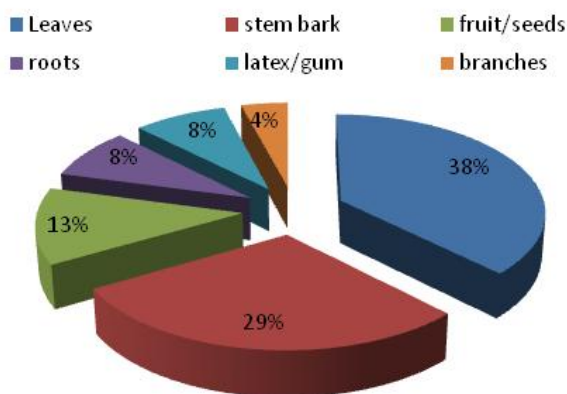
DISCUSSION

During the survey it was observed that tribal people use traditional medicines which are prepared by the local herbal healers to treat their dental problems and also observed that elder people have more knowledge about traditional herbal therapies than that of younger people. Among the reported plant species, leaves were dominant part for oral health care (37.5%) followed by stem bark (29.17%); fruit/seeds (12.5%); roots (8.33); latex/gum (8.33%) and branches (4.16%). Similar type of

Ethnomedicinal survey was carried out by Badgujar for oral health care in Nandurbar district of Maharashtra¹⁰. Similarity occurred in 5-6 species of plants used by tribal communities of both Nandurbar and Melghat and the method used was also found to be similar. Generally traditional methods of dental and oral care are being used by orthodox adult people and their children follow the way of their parents and transfer it from one generation to another generation. Out of 24 reviewed plant species, 13 plant species namely *Abrus precatorius*,



Acacia nilotica, *Achyranthus aspera*, *Azadiracta indica*, *Barleria prionitis*, *Jatropha curcas*, *Mangifera indica*, *Ocimum basilicum*, *Psidium guajava*, *Xanthium indicum*, *Tamarindus indica*, *Pterocarpus marsupium* are previously recorded as used for oral care by various communities all over India as well as over the world¹⁵⁻²². While remaining 11 investigated plant species are found to specifically used by tribal communities of Melghat region, therefore there is an urgent need of proper documentation of traditional knowledge from various communities.



Percentage of plant parts used for oral health care

In India plant wealth is greatly exploited for its therapeutic potential and medicinal efficacy to cure dental carries. Hebber surveyed Western Ghats of Dharwad district of Karnataka and reported the use of some plants such as *Calatropis gigantea*, *Cassia tora*, *Cassia hirsuta*, *Leucas aspera* to cure dental carries²³. Ganesan reported 114 plants species as traditional oral care medicinal plants from Tamil Nadu¹⁵. Some species are similar to present revivied plant from Melghat region such as *Abrus precatorius*, *Achyranthus aspera*, *Tamarindus indica*, *Psidium guajava* etc. Bhasin studied oral health behaviour amongst the Bhills of Rajasthan and observed that *Jatropha curcas* is more predominantly used for oral health care¹⁶. Similar results obtained Gadhikar and Diwan who evaluated the *in-vitro* antibacterial activity of traditional plants like *J. curcas* and *F. benghalensis* against oral microorganisms and found that latex of *J. curcus* and aqueous arial root extract of *F. benghalensis* shows more inhibitory action against six oral bacterial species²⁴. Phytochemical composition and antibacterial activity of two plants from the present investigation i.e. *Merremia emerginata*, *Barleria prionities* against oral microflora and reported that acetone and chloroform extracts were found to be more effective against test microorganism^{25, 26}.

CONCLUSION

Healthy teeth are fundamental for the proper function of human body. Proper and regular hygiene is required to prevent dental problems. In allopathic, the treatment of dental problem is highly expensive and cannot be offered by poor people. Hence they use natural alternative methods since their so many generations for their oral hygiene. The present study is an attempt to generate

interest among the society regarding the potential of natural alternatives in preventing oral disorders. This study will help in development of potential bio-product such as herbal toothpaste and toothpowder in treatment of oral cavity disorders which will be cheaper and with fewer side effects. Further there is a need of proper phytochemical analysis as well as to study level of toxicity along with some clinical trials. This will help in creating awareness of conservation of such important medicinal plant species to promote ethno-medico-botany knowledge within the region, besides contributing to preservation of such important medicinal plant species before they get extinct.

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