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ETHNOMEDICINAL PLANTS USED FOR DENTAL HEALTH CARE IN RUPANDEHI DISTRICT, NEPAL

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ABSTRACT:

Traditionally the plant based drugs have been used by all the people of Nepal. These drugs are now getting importance all over the world. An ethnomedicinal survey was carried out among the people of different village development committees of Rupandehi district, Nepal about their usage of plants against dental disorders. Totally 15 plants belonging to 15 families were documented from study areas. These plant species are mostly used by the people of Rupandehi district on daily basis. The fresh plant species are mostly used for curing dental problems, when these fresh plants are not available dried one's are used. The study thus underscores the potentials of the medicinal plants in the field of ethnobotany and the need for the documentation of indigenous healthcare knowledge of the people.

KEY WORD: *Rupandehi, Ethnomedicinal plants, Indigenous knowledge, Dental caries, Ethnobotany.*

INTRODUCTION:

Medicinal plants play an essential role in primary healthcare as they are used to treat wide varieties of oral diseases because they possess antibiotic and anti-inflammatory properties (Agbor and Naidoo, 2015). Plants are the source of many valuable medicines consisting of complex or simple compounds which sometimes cannot be replaced with synthetic chemotherapeutic agents.

Oral health is an integral part of the general health. Oral health, when neglected results in different type of oral ailments like dental carries and

periodontitis. Dental treatment is usually a high expense remedy it mainly utilizes some antiseptic as well as antibacterial agents which are chemicals. These products possess significant toxicity that show major drawback. These chemical products can also alter oral micro biota and have undesirable side effect like vomiting, diarrhea, burning sensation and tooth staining. Therefore, a good alternative to commercially available agents are the natural phytochemicals which are isolated from plants are utilized for oral hygiene. Herbal medicine is a popular form of complementary and alternative medicine. Alternative medicine therapies have become increasingly popular and it has been estimated that one third of all Americans use herbal products for different ailments. Nearly 80% of the world's population in developing countries relies on plant products for different ailments due to poverty and lack of access to modern medicine.

The rural people of Nepal rely on plant resources for their domestic and primary healthcare needs. They collect the useful plants and their parts from various habitats and use those following traditional practices (Joshi and Joshi, 2006).

STUDY AREA:

The study area is Rupandehi district (Fig 1). It is situated in the Terai region of West Nepal and lies between 83°27'.955" to 83°28'.255" E and 27°40'.016" to 27°40'.252" N geographical limits in 1360 Km^2 area at altitudinal variation from 105 to 258 meters above the sea level. It has tropical climate with maximum temperature 40 ℃ during summer and below 10 ℃ during winter and annual rainfall is about 1255 mm. Geographically it is divided into Chure region, Bhabar region and Terai region. The famous river and rivulets of this district are Tinau, Rohini, Danaw, Pahela, Kanchan, Kothi, Danda, Koili etc.

MATERIALS AND METHODS:

The field work was conducted from March 2015 to May 2016. Methods of collection of data and voucher specimens during the field study followed Martin's (1995) methods. The interviews and field observations were carried out by described methods and also with the help of questionnaires and direct oral interviews. The questionnaires consisted of two parts, the first part dealt about the profile of informant and the second part dealt with the knowledge on medicinal plants in their local language (Nepali). All the interviews were carried out in according to the Martin's guidelines for ethnobiological research. All the collected plants were identified using regional floras. The collected voucher specimens were deposited in the herbarium of Department of Botany, Butwal Multiple Campus, Butwal for future references.

The indigenous plants, which were collected during the field trips, were identified with the help of available floras and pertinent literatures (Hara et al., 1978, 1979, and 1982; Ross, 1999; Press et al., 2000; Rajbhandari, 2001; Manandhar, 2002; Rao, 2004 & Singh, 2015). Plant names were checked according to International Plant Names Index (2008).

RESULTS AND DISCUSSION:

During the field study, ethnomedicinal data of 15 plant species belonging to 15 families were collected from various habitats of study areas. These plant species were used to treat various dental problems. The collected plants are arranged alphabetically in table 1. Botanical name of collected plant species is followed by family, local name and plant part used are presented below in table form. The collected medicinal plants and their parts were compared with those obtained from the other ethnobotanical studies in the northern part of Rupandehi district.

CONCLUSION:

The present study revealed that the ethnic communities have great faith in their traditional system of medicine and still depend upon natural plant resources to cure their various ailments. Simultaneous it is observed that new generation is almost ignorant or least interested in ancient traditional method of healing. Therefore, it is felt that documentation of plant related indigenous knowledge throughout the study area needs to be completed along with creation of awareness among the youngsters so that rapid loss of the valuable knowledge about plant resources can be checked to a certain extent. The study also provides comprehensive information on therapeutic methods employed by traditional healers for the treatment of oral diseases. The identification of active ingredients of the plants used by these traditional healers and assessment of their efficacy in the treatment may provide some useful knowledge for the development of new effective drugs in dental disease treatment.

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REFERENCES:

Agbor, M.A. and Naidoo, S. 2015. Ethnomedicinal Plants used by traditional healers to treat Oral health problems in Cameroon. Hindawi Publishing Corporation doi.org/10.1155/2015/649832.

Hara, H. Stearn, W.T. and Williams, L.H.J. (1978). An Enumeration of Flowering Plants of Nepal, Volume I, British Museum of Natural History, London.

Hara, H. and Williams, L.H.J. (1979). An Enumeration of Flowering Plants of Nepal, Volume II, British Museum of Natural History, London.

Hara, H. Charter, A.O. and Williams, L.H.J. (1982). An Enumeration of Flowering Plants of Nepal, Volume III, British Museum of Natural History, London.

Joshi, K and Joshi, A. R. 2006. Ethnobotanical Plants used for Dental and Oral Healthcare in the KaliGandaki and Bagmati Watersheds, Nepal, *Ethnobotanical Leaflets*, **10**:174-178.

Manandhar, N.P. (2002). Plants and People of Nepal. Oregon, USA, Timber Press, Portland.

Martin, G.J. (1995). Ethnobotany: A Methods manual, Chapman and Hall, London.

Press, J.R., Shrestha, K.K. and Sutton, D.A. (2000) Annotated Checklist of the Flowering Plants of Nepal. The Natural History of Museum, London.

Rajbhandari, K.R. (2001). Ethnobotany of Nepal: Ethnobotanical Society of Nepal.

Rao, C.K. (2004). Flora: A Gardener's Encyclopedia, Om Book Service, India.

Ross, I.A. (1999). Medicinal Plants of the World. Human Press, USA.

Singh, A.G. (2015). Studies on ethnomedicinal flora from Tinau corridor's of Rupandehi and Palpa districts, Nepal: Dr. Ram Manohar Lohia, Avadh University, Unpublished Ph.D. Thesis.

The International Plant Names Index (2008). http://www.ipni.org.

TABLE 1

Plant's Name with family	English Name	Local Name	Part's used	Ethnomedicinal Importance
Acacia nilotica (L) Willd. ex Del. Mimosaceae	Arabic tree	Babool	Bark & Tender stem	Oral ulcer, odontopathy
Achyranthes aspera L., Amaranthaceae,	Prickly chaf flower	Apamarga/ Datiwan	Tender shoot	Toothache
Acmella calva (DC.) Jansen. Asteraceae.	Toothache plant	Marethi	Floral head	Tooth decay and tooth-ache
Allium cepa L., Amaryllidaceae.	Onion	Pyaz	Bulb	Sore throat, toothache, dental abscess
Aloe vera (L) Burm. F. Liliaceae	Indian aloe	Ghiukunwari	Leaf gel	Gingivitis
Azadirachta indica A. Juss. Meliaceae	Neem/ Margosa tree	Neem	Twig	Toothache, pyorrhea
Carica papaya L., Caricaceae	Papaya	Mewa/ Papita	Latex	Toothache, mouth sores, sore throat
Chenopodium ambrosiodes L., Chenopodiaceae,	Worm seed	PasaareBethe	Whole plant	Toothache
Curcuma longa L., Zingiberaceae.	Turmeric	Beshar/ Haldi	Rhizome	Gingivitis, Periodontics
Ficus benghalensis L. Moraceae	Banyan tree	Bar	Leaf	Gum swelling
Jatropha curcas L. Euphorbiaceae	Physic nut	Sajiwan	Young twig	Dental caries
Moringa oleifera Lam. Moringaceae	Drum stick tree	Shijan/ shital chini	Root	Toothache
Myrica esculenta Buch-Ham. ex D. Don. Myricaceae	Bay berry	Kaafal	Bark	Toothache
Nicotiana tobacum L. Solanaceae	Tobacco	Surti/ Tamakhu	Leaf	Toothache, tooth bleaching
Piper nigrum L., Piperaceae.	Black pepper	Marich	Seed	Toothache

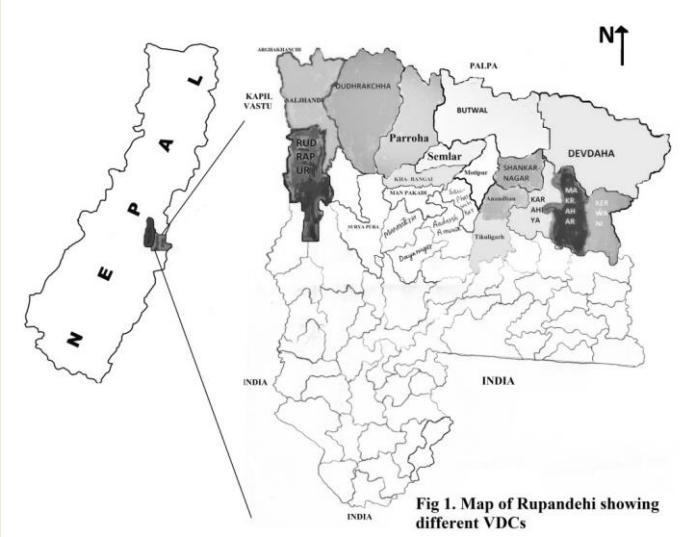

Fig 1. Map of Rupandehi showing different VDCs

Fig.1: Study area