

Traditional use of medicinal plants and its biodiversity in India

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Abstract

Population explosion in certain parts of the world, especially in the developing countries like India, has led to a continuous effort towards development. In India, the dominant health care system is based on allopathic medicine and Traditional medicine is often termed 'complementary' or 'alternative' or 'non-conventional' medicine. The concept of 'Medicinal Plants, Health and Environment' considers the dynamic interaction between humans and ecosystems for the health and well-being of human populations. Ethnobotanical studies focusing on folk medicine and medicinal plants can contribute to the field of eco-cultural health if they incorporate the perspective and local knowledge of communities. The links between Traditional medicine and biodiversity are exemplified by a long tradition of healing powers associated with the earth's natural systems, whether this entails medicinal plants and animal species, the ambient salubrious air, spring water or the natural scenery. The inter-connections between folk medicine and the biotic environments may be seen in the health benefits derived from the existence of a full complement of species, intact watersheds, climate regulation and genetic diversity, as well as through our fundamental needs for food, water, clean air, shelter and relative climatic constancy. This review summarizes scientific findings and suggests areas where further research is needed.

Key words: Biodiversity, conservation, folk medicine, traditional medicine.

Introduction

Medicinal plants have been used for centuries in traditional health care systems and numerous cultures around the world still rely on plants for their primary health care. With the recent advancements in plant sciences, there has been

a tremendous increase in the use of plant based health products in developing as well as developed countries. About 70-80% people around the globe rely on medicinal plants for primary health care (Singh, 2002 ; WHO, 2002). India has a rich culture of medicinal herbs and

spices, which includes about more than 2000 species and has a vast geographical area with high potential abilities for Ayurvedic, Unani, Siddha traditional medicines but only very few have been studied chemically and pharmacologically for their potential medicinal value (Prakash & Gupta, 2005).

The Nature of Medicinal Plants

The medicinal value of drug plants is due to presence of some chemical substances in the plants tissue which produce a definite physiological action on the human body. The most important chemical substances are alkaloids, essential oils, fatty oil, resins, mucilage, tannin and gum etc. The human nutrition is based on the primary product of photosynthesis the carbohydrate, protein triglycerides (fats and oils) but in case of drugs herbs, ethno medicines, essential oils and cosmetics are derived from the secondary products of plant metabolism such as the alkaloids terpenoids such as the alkaloids terpanoids and flavonoids. These substances have evolved as responses of plants to stress predation and completion constituting to what is regarded as the vast chemical library of biological systems. Thus, it is usually 'extracts' not the plants themselves or their parts such as fruits, seeds leaves etc; that are used for medicinal effects. However, medicinal plants Possess what is referred to as pathological niche and they assume pathogenomic structure. This means that medicinal herbs can be used for different ailments with respect to its on human physiology (Verma et al., 2015).

Classification of herbal products

Generally, herbal products are classified as medicinal products if they claim therapeutic or prophylactic indication, and are not considered

as medicinal products when they do not make these claims. Products not classified as medicinal in most cases belong to the food or cosmetic areas, although they sometimes contain plants which have pharmacological properties. For example, senna pods (from Cassia plants, used as laxatives) (see General Remarks and monograph on *Rubia tinctorum*, *Morinda officinalis* and anthraquinones in this volume) can be marketed as food in Belgium. Specific categories of non-medicinal products exist in some Member States, such as the so-called 'therapeutic supplement products' in Austria. In Ireland, Spain and the United Kingdom, there exist preparations defined as medicinal products, which are under specific conditions exempt from licensing requirements (Schulz et al., 2001).

Combination products

Herbal ingredients used in combination are widely used in Europe, and their assessment is often performed according to specific guidelines. Combinations of herbal and homeopathic ingredients exist in a few countries. Their assessment follows rather strict criteria, usually those of a 'full' application procedure. Combinations of herbal ingredients and vitamins are available in many countries (Schulz et al., 2001).

The role of herbal medicines in traditional healing

The pharmacological treatment of disease began long ago with the use of herbs (Schulz et al., 2001). Methods of folk healing throughout the world commonly used herbs as part of their tradition. Some of these traditions are briefly described below, providing some examples of the array of important healing practices around the world that used herbs for this purpose.

Table 1. List of plants used as ethnomedicine in India.

SI No	Taxon Name	Ethnomedicinal uses
1	<i>Atropa acuminata</i>	Cough and antispasmodic
2	<i>Berginia ligulata</i>	Intestine complaints and stomach ulcers
3	<i>Viola odorata</i>	Respiratory problems
4	<i>Nasturtium officinale</i>	Stomachic
5	<i>Salix wallichiana</i>	Fever, Head ache, General body pain
6	<i>Artemesia absinthium</i>	Obesity, Diabetes, liver infection
7	<i>Cotula anthemoids</i>	Constipation
8	<i>Taraxacum officinale</i>	Back pain, common cold, Chest infection
9	<i>Trigonella foenum-graecum</i>	Back Pain
10	<i>Arisaema jacquemontiana</i>	Muscular strength and Skin infections
11	<i>Cannabis sativa</i>	Ear-ache, blood purifier, scabies and piles
12	<i>Cascuta reflexa</i>	Joint pains, wound healing and falling of Hairs
13	<i>Berberis lyceum</i>	Indigestion, Constipation.
14	<i>Euphorbia helioscopia</i>	Abdominal cramps, cholera and eruptions
15	<i>Saussurea costus</i>	Joint pain, back pain, sole ulcers, dysentery, fever, urinary problems
16	<i>Stellaria media</i>	Skin infection, allergy
17	<i>Glinus lotoides</i>	Urinary troubles
18	<i>Corallocarpus epigaeus</i> (Root)	For swellings
19	<i>Neurada procumbens,</i> <i>Colchium luteum</i>	As tonics
20	<i>Achyranthus aspera</i>	Pneumonia
21	<i>Podophyllum hexandrum;</i> <i>Salvia aegyptiaca</i>	Diarrhoea
22	<i>Thalictum minus</i>	Conjunctivitis
23	<i>Ranunculus hirtellus</i>	Skin diseases
24	<i>Nepeta lingibracteata</i>	Hyperacidity
25	<i>Vitis vinifera</i>	Skin rashes, sores, eruptions
26	<i>Zizyphus mauritiana</i>	Skin rashes
27	<i>Cynodon dactylon</i>	Common cold
28	<i>Corydalis govianiana</i>	Respiratory disorders, chest infections, asthma
29	<i>Arctium lappa</i>	Skin disease, Boils , Body pain
30	<i>Artocarpus hirsutus Lam.</i>	Burn the leaves of <i>Artocarpus hirsutus</i> , the ash is taken internally to treat abdominal problems
31	<i>Calophyllum apetalum Willd.</i>	Seed powder is taken internally to cure menstrual disorders. The flower paste is applied on the body to get relief from itching.
32	<i>Cinnamomum macrocarpum</i>	The oil extracted from the root, bark and leaf is used to pre pare massaging oil for rheumatism. The powdered bark is taken internally with honey to treat cough
33	<i>Cinnamomum sulphuratum Nees</i>	The leaf and bark paste is taken internally to treat cough and head ache.
Rather and Ahmad Baba, 2015; Sharma and Ashwani, 2011; Shyma Devi, 2012		

Conclusion

People living in rural areas from their personal experience know that these traditional remedies are valuable source of natural products to maintain human health, but they may not understand the science behind these medicines, but knew that some medicinal plants are highly effective only when used at therapeutic doses. Traditional use of medicine is recognized as a way to learn about potential future medicines. Researchers have identified number of compounds used in mainstream medicine which were derived from ethnomedical plant sources. Plants are used medicinally in different countries and are a source of many potent and powerful drugs.

But over the last three decades, forest degradation in the India has diminished the availability of some widely used medicinal plant species. Degradation of various forests may signify not only the loss of potential pharmaceutical drugs for the developed world but also the erosion of the sole health care option for many of India's rural and urban poor. In this context, it is quite clear that the practice of Traditional medicinal knowledge is rapidly disappearing, owing to cultural change and declining access in both urban and rural areas. Most villages in the India are no longer surrounded by the natural habitat that formerly served as a medicine cupboard, and bodies of folk knowledge that have accumulated and been honed for thousands of years are disappearing at an alarming rate. The current spasm of plant and animal species extinction, as remarked by the practitioners of Ethnomedicine appear to be at a greater risk of extinction than even forests and other biomes. Ingredients sourced from wild plants and animals are not only widely used in traditional medicines, but are also increasingly valued as raw materials in the preparation of modern medicines and

herbal preparations. So, the importance of biodiversity and traditional medicine for global and human health may need co-operation, collaborative conservation and management sharing of the benefits arising from the utilization of traditional knowledge, innovations and practices.

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