

A Review on Traditional Health Care System of Uttarakhand

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Abstract The present review is focused on study of traditional medical practices used by the local people of Uttarakhand. This study is completely based on the field survey and information given by the local people of different regions of Uttarakhand. The forest and forest products have historically played a significant role in the economy as well as culture and religion of this region since ancient times. All of these factors affected the distribution of mankind over the Earth's surface and significantly influenced the life of ancient people. The Himalaya possesses great wealth of medicinal plants as well as traditional and local knowledge. The Uttarakhand State falls in the Central Himalaya region and comprised of 2 major divisions i.e. Garhwal and Kumaon. Uttarakhand has played a significant role in the historical processes of Northern India and provides a mini model to understand the traditional Indian medical system. The mythological history is another important feature of Himalaya. It is very interesting to note that the local gods and goddesses of Uttarakhand which belongs to prehistoric times are more powerful than the Brahmanical gods. The Himalayan concept of diseases suggests that diseases are caused by local Gods and their supernatural powers and old people of Uttarakhand trust this concept. The present review article depicts the picture of traditional health care

system of Uttarakhand which is based on the uses of medicinal plants.

Keywords Antimicrobial activity, Ayurveda, Medicinal plants, Phytoconstituents, Traditional knowledge system.

Introduction

Human societies throughout the world have accumulated a vast knowledge over centuries on medicinal uses of plants and related uses which included poison for fish and hunting, purifying water and controlling pests and diseases of crops and livestock. About 80% of the population of most developing countries still use traditional medicines derived from plants for treatment of human diseases (Samant et al. 1998). China, Cuba, India, Sri Lanka, Thailand and some other countries have endorsed the official use of traditional system of medicines in their health care program. For example, the India medicine system comprising of Ayurveda, Sindhya, Unani and to some extent homeopathy depend on plant materials or their derivatives for treatment of human ailments. It has been estimated that there are between 35,000 to 70,000 plant species that have been used at one time or the other in one culture or another for medicinal purposes in the world. Medicinal plants have traditionally occupied an important position in the socio-cultural, spiritual and health pitch of rural and tribal lives of India. India possesses one of the oldest, richest and most diverse cultural traditions associated with the use of medicinal plants in the form of traditional systems of medicine (Garcen-Rodriguez

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et al. 2003). The use of plants to cure diseases is an age-old practice. The preparation of locally available medicinal plants remains an important part of health care for humans, especially for people living in rural areas and who largely depend on nature, who lack access to modern medicine facilities or unable to afford synthetic medicines due to their high prices and health side effects. The forests have been the source of invaluable medicinal plants since the time man realized the preventive and curative properties of plants and started using them for human health care system. The old traditional Indian Systems of Medicine (ISM), is one of the most ancient medicine practices know to the world and derives maximum formulations from plants and plant extracts that exist in the forests (Mukherjee et al. 2010). About 400 plants are used in regular production of Ayurvedic, Unani, Siddha and tribal medicine. About 75% are from tropical and 25% from temperate forests; 30% of preparations are derived from roots, 14% bark, 16% whole plants, 5% flowers, 10% fruits, 6% leaves, 7% seeds, 3% wood, 4% rhizomes 6% stems and only less than 20% of the species used are cultivated (Anonmous 1997).

Origin of medicines

The origin of Indian medical system may be traced to pre-historical time. In Rigveda, this is the oldest storehouse of human knowledge. Ayurveda is one of the Upaveda of Atharveda and Rigveda or subsidiaries to the Vedas. Therefore, all topics including Rasa Sashtra or alchemy described in Ayurveda are considered to be derived from the Vedas. The Rigveda described iron in the context of the preparation of an artificial leg. The Yajurveda in the form of a prayer invokes the blessing of metals like iron, lead, tin and gold, among others to bestow good health and longevity (Daniels et al. 2007). In Ayurveda, Sage Bharadwaj could be considered as the first historical personality who systematized the scientific thought in ayurvedic medicine. He was later followed by Agnivesh and Divodas. They were succeeded by Charaka, Sushruta, Nagarjuna, Vagbhat and others, except Nagarjun and Vagbhat, all these great expounders of the Ayurvedic medicine were of the Pre-Buddhist period that is before the 6th century B. C.

In Indian mythology, Lord Brahma is said to have composed Ayurveda, even before he created the universe. When illness, disease became rampant on earth, Sages learnt the science of healing from Lord Indra and recorded them in the scriptures. The Rigveda mentions 67 plants, having therapeutic effects. Yajurveda lists 82 plants and Atharveda is the ancient literature of medicinal plants, there are 288 plants described in it (Kambu et al. 1983). In Atharveda, there are 114 formulations for treatment of various diseases. Medicinal plants have made a good contribution to the development of ancient Indian literature. The most ancient book Charaka Samhita contains several therapeutic or internal medicines, about 600 plants used in the formulation of drugs are described in it. It also deals with other branches of Ayurveda like anatomy, physiology, pathology and treatment. Surgery has been described in Susruta Samhita. It deals primarily with various fundamental principles and theory of surgery, more than 100 kinds of surgical instruments and 650 drugs with their uses have been described in it (Silva 1997).

Indian system of medicine

All the health care systems are arranged under the 6 Indian Systems of Medicine namely Ayurveda, Siddha, Unani, Homeopathy, Sowa-Rigpa and Folk. Ayurveda is a system of traditional medicine native to the Indian subcontinent and practiced in other parts of the world as a form of alternative medicine. In India, medicinal plants are used by all the sections of people. These medicinal plants synthesize substances that are useful to the maintenance of health in humans. These include aromatic substances, most of which are phenols or oxygen-substituted derivatives such as tannins. Many are secondary metabolites e.g., alkaloids, flavonoids, tannin, saponins serve as plant defense mechanisms against microorganisms.

Traditional knowledge and health care system of Uttarakhand

Medicinal plants play an important role in the lives of people in Uttarakhand by providing basic health care and employment to the farmers. The Himalayas have a great wealth of medicinal plants and traditional medicinal knowledge. The Central Himalayan region

covers the new State of India, provides excellent opportunities for studying the traditional knowledge systems. The Indian Himalayan region alone supports about 18,440 species of plants (Angiosperms: 8000 spp., Gymnosperm : 44 spp., Pteridophytes : 600 spp., Bryophytes : 1736 spp., Lichens: 1159 spp. and Fungi: 6900 spp.) of which about 45% are having medicinal properties Rios and Recio (2005) reported that out of the total species of vascular plants, 1748 species possess medicinal properties. Uttarakhand is a store house of a rich variety of herbs and medicinal and aromatic plant species. However, the ethnobotanical study in Himalayan region is limited to traditional knowledge and therefore there is a need to document the information on only medicinal drugs prepared by old people and traditional Vaidyas (one who have knowledge of herbal medicine) of the State. The Vaidyas of Uttarakhand have developed the medical system of therapy based on the available bio-resources including wild and cultivated plant species growing in the State. The intensive studies on extracts and biologically-active compounds isolated from medicinal plants have played an essential role in drug discovery in last decade. Various parts of medicinal plants like root, bark, flowers, leaves and seeds are used for medicinal purposes and many of these plants have been known to synthesize active secondary metabolites such as phenolic compound found in essential oils with established potent insecticidal (Jain 1968, Agarwal and Singh 1999) and antimicrobial activities, which indeed has formed the basis for their applications in some pharmaceuticals, alternative medicines and natural therapies (Prakash 2006, Kong et al. 2003, Reynolds 1996). Medicinal plants are also used at the family or household level by women taking care of their families at the village level or tribal community.

Concept of traditional health care system of Uttarakhand

Diseases are the bane of human race ever since its advent on this planet. Humans have been fighting against a variety of diseases since prehistoric periods. Eventually, he developed an indigenous pattern of medicines, which tries to resist the effects of the diseases. Primal human societies have been depending on plants and plants products for various remedies.

In certain areas, these folk medical prescriptions are endemic and have survived through ages from one generation to next through the word of mouth. They do not exist as written knowledge. Generally, these systems of medicines depend on old peoples experiences. The person, prescribing these medicines has no so-called methodical knowledge about the disease. Indigenous systems of medicine are specially conditioned by cultural heritage and mythology. The Himalayas have a wide range of herbal products as this region supports approximately 18,440 species of plants. Just like the ancient people, the people of Uttarakhand have close relationship with nature for their basic needs like food, fuel, fodder, medicine. In health care of Uttarakhand, people use their own medicine system which is based on the ancient cultural and traditional knowledge.

Himalayan health care therapies

It is very interesting to note that Uttarakhand has local gods like Gollu Devata, Lakiya Bhut, Nanda Devi, Bhola Nath who were originally noble human beings. The local people deified them. These local gods are more powerful than Brahmanical gods. The Himalayan people believe that unhappiness of such local gods is the root cause of all diseases and due to this reason the traditional medical system of this State uses magico-religious therapies and natural therapies against diseases.

In magico-religious therapies they practice *Jagar*, *Thau-dham*, *Bhbhuti*, *Tantra-mantra* to placate the local gods and supernatural powers and in natural therapies, like Ayurveda they use herbal products. According to mode of application, the natural therapies have 3 categories (a) Herbal products used in systematized system of medicine like Ayurveda, Siddha, (b) Herbal products used in ethno-medicine or indigenous medicine like HMS based on oral tradition, (c) Herbal products used in modern medicine, based on active chemical principles of the herbal products.

Magico-religious therapies for health care system of Uttarakhand

The native population of Himalaya is simple, superstitious and god-fearing with their own customs,

traditions and folklore. They believe that diseases are caused by unhappiness of local gods. Thus, they treat diseases through some magico-therapies. Mostly the magico-religious physicians are Poochari, who are the mystic-priest of village. Firstly, Himalayan people use some folklore medicine but if person does not recover from folklore medicines, then relatives approach the mystic-priest (Poochari). The Poochari tells them whether the patient is under the spell of an evil spirit or under the anger of the local god, or whether he is suffering from some sort of illness. In the latter case, the patient is taken to a village herbal physician for treatment. If the Poochari decides that the patient is under the spell of an evil spirit, he recommends some other mystic-priest who, with the help of hymns, drives the spirit away. The spirit, before leaving, may ask for some rice and pulse or for the sacrifice of a cock, pig, goat, or may desire some colored cloth. The rice and pulse are left on road crossings. It is believed that the spirit will leave the patient after getting the articles demanded and at the end, Poochari put some ash marks on patients forehead which is locally, called as *Bhabhuti*. If the Poochari says the patient is under the anger of the local god, he recommends a magico-religious ceremony known as *Jagar* to placate the god. *Jagar* is always held at night. A large room in the patients house is cleaned and fitted with articles worship such as fruit, cereals, milk, curd, ghee, sweet. It is decorated with various flowers and branches of some especial trees. The *Jagari* who is the hymn chanter and conductor of the ceremony, the *Dangaria* (the dancer who acts as a medium for the appearance of the god), and the relatives and friends are seated in ceremonial room. A crude drum (*nagara*) and a metallic plate (*thali*) are played, the *Jagari* chants hymns, and the *Dangaria* begins to dance. When the dance and the music reach their climax, the patients household god speaks through the medium of the *Dangaria*. The relatives ask the god-in-medium the cause of his anger. He tells the cause, which may be among other reasons, that the patient did not worship him properly or that he did not give him a sufficient share from his earnings. As a penalty, the god may demand simple *Khichari* (a mixture of uncooked rice, pulses, chillies and salt), a sacrifice of a goat, pig, cock, or coconut, a continuous *Jagar* for 20 days or so, or simple worship at home or in a particular temple. The native people fulfill the demands of the

god because failure to do so may result in serious consequences not only to the patient but also to his family. One may witness such a magico-religious ceremony in any village of Himalaya, even among the learned classes and about 50% of the patients are cured by it.

Natural therapies

India is a country rich in indigenous herbal resources and traditionally the vast population is accustomed to the use of several herbal folk medicines. The use of plants for treatment in India dates back to prehistoric times. This indigenous knowledge about medicinal plants and therapies was composed verbally and passed orally from generation to generation. Much later, some of this information was composed into treatise from like *Rigveda*, *Yajurveda*, *Charak Samhita*, *Sushrut Samhita*. These systematized systems of knowledge about medicinal plants and therapies are included under Ayurveda – the Indian traditional medicine system. Despite significant development of rural health services, village people still use herbal folkmedicines to a good extent for treatment of common ailments like cough, cold and fever, headache and body-ache, constipation and dysentery, burns, cuts and scalds, boils and ulcers, skin diseases and respiratory troubles and others. The Himalayas have a wide range of herbal products as this region supports approximately 18,440 species of plants. Just like the ancient people, the Himalayan people have close relationship with nature for their basic needs like food fuel, fodder, medicine in healthcare, they use their own medicine system, which is based on the ancient cultural traditions. The herbal medicines are prescribed by the following modes.

Health care therapies by household ladies

The Indian household ladies use herbal drugs for most of the ordinary ailments of infants and children. The herbal drugs are mostly available to them from their kitchen stock, kitchen garden or village fields and from the village bazaar. The use of rhizome of *Curcuma domestica* (Haldi) for cuts, bums and scalds, the fruits of *Piper nigrum* (Black pepper, Kali-mirch or Gol-mirch) for coughs and colds, the fruits of *Trachysper mumammi* (Ajawain) and resin of *Ferula* spp.

(Heeng) for stomach troubles and whooping cough, the seeds of *Sesamum indicum* (Til) for ulcers and boils are well known to Indian house ladies. The use of infusions of the leaves of *Ocimum sanctum* (Tulsi) for coughs and colds and mild fever, fomentation with the hot leaves of *Ricinus communis* (Erand) and *Aloe barbadensis* (Geekuar) for relieving inflammations, swellings of joints and sprains, and many other home remedies are learnt traditionally in the home.

Health care therapies by old persons

In the villages the elderly persons, poochari, ojhas, and priests, know quite a few herbal drugs, which grow near at hand and try them without any hesitation against several common ailments and diseases. Their services are entirely philanthropic.

Health care therapies traditional herbalists

Traditional herbalists are professionals. They are mostly illiterate but have considerable knowledge of the herbal drugs and their uses. They keep stocks of crude drugs for sale and prescribe these for common ailments. The traditional herbalists maintain a small shop. There is another kind of herbalist, who is roamers. Among these there are 2 categories : Those who administer a pounded mixture of herbal drugs, and those who prescribe and also supply the herbal drugs as such. The first category of herbalists keeps their crude drugs in glass jars and often displays them at the roadside. Mostly they procure their drugs from established crude drug markets of Northern India. They administer drugs mainly for venereal ailments and as tonics and aphrodisiacs. The most common herbal drugs seen with them are the tuberous roots of *Orchis* spp. (Salam panja or Salam gatta), the roots

of *Asparagus* spp. (Salam panja or Salam gatta), the roots of *Asparagus* spp. (Satawar), *Withania somnifera* (Ashwagandha), the fruits of *Tribulus terrestris* (Chotagokhru) and *Pedaliium murex* (Bara gokhru), seeds of *Mucuna pruriens* (Kiwanch), *Entada pursaetha* (Chian, gila), stems of *Tinospora cordifolia* (Giloya), the tubers of *Pueraria tuberosa* (Vidari-kanda) and others (Pittillo and Hunt 1967).

The second category of herbalists administers the herbal drugs directly without pounding; they keep only a limited number of crude drugs for day-to-day maladies. The drugs, which they commonly keep, are fruits of *Terminalia chebula* (Harra), *T. belerica* (Bahera), *Emblica officinalis* (Awanla), *Helictere sisora* (Marorphali), bark of *Symplocos* sp. (Pathanilodhra), roots of *Withania somnifera* (Aswagandhanagori), and seeds and oleoresins of various plants. In the hills, the herbalists are often seen also with crude drugs procured from the alpine regions, like *Rheum* spp. (Dolu), *Aconitum heterophyllum* (Atis), *Picrorhiza kurooa* (Karu), *Angelica glauca* (Chora or gandrayan), *Nardosta chysjatamansi* (Jatamansi) and the flavorings leaves of *Allium govanianum* and other *Allium* spp. (Uambu) and many others.

Materia Medica of Himalayan medicine system

The materia medica of Himalayan medicines is very vast compared to that of other indigenous systems of medicine. In the usage of generally herbal products, like plant bark, stem, flower, fruit, resin, bulb, leave, root, rhizome and also usage some minerals and chemicals in the natural form like red soil, black soil. The important medicinal plants used in traditional health care system of Uttarakhand are enlisted in Table 1.

Table 1. Some important medicinal plants traditionally used for health care system of Uttarakhand.

Local name	Botanical name	Part used	Used to cure
Jhilla, Rai, Rei	<i>Abiespindrow</i>	Leaf, Rasin, Bark	Cough, cold, rheumatism, ulcer
Bhindi	<i>Abelmoschus esculentus</i>	Root	Venereal diseases
Khair	<i>Acacia catechu</i>	Bark	Diarrhoea
Pyaz	<i>Allium cepa</i>	Bulb, Leaf	Ear trouble, earache, vomiting, piles, jaundice, anthelmintic, asthma, nose-bleeding, blisters, boils, bronchitis, diuretic, expectorant, eyc trouble, giddiness, insect bites, itching, skin diseases, wounds

Table 1. Continued.

Local name	Botanical name	Part used	Used to cure
Meetha Aties, Bhuaa	<i>Aconitum voilaceum</i>	Tuber, Tuber	Stomachache, fever, abdominalpain, bronchitis, cough, epilepsy, headache, inflammation, neck pain, snake-bite, lice killer, gastrointestinal troubles, renal pain, rheumatism
Atees	<i>Aconitum heterophyllum</i>	Root, Tuber	Diarrhoea, fever, vomiting, cough, chills, stomach ache, gastrointestinal disorders, digestive disorders, fever, colic pain, wormicide headache, dyspepsia, piles, gastric, dysentery
Kala Bansaha, Bansa, Adosa, Banfasha	<i>Adhatoda vasica</i>	Leaf, Root, Whole plant	Fever, cough, eye diseases, blood diseases
Chukalai	<i>Alysicarpus vaginalis</i>	Root	Cough, asthma, bronchitis, skin problem
Kumari, Ghirita, Gawarpaltra	<i>Aloe vera</i>	Pulp	Inflammation of the body
Choru	<i>Angelica glauca</i>	Root, Stem, Fruit	Flatulence, colic, constipation, digestive disorder, stomachache, constipation, dyspepsia, cough, indigestion, vomiting, eye diseases, power tonic, dysentery, gastric troubles, menorrhoea
Babool	<i>Acacia nilotica</i>	Flower	Urinary trouble
Lahsun (Garlic)	<i>Allium sativum</i>	Bulb	Cholera, treat abscesses, rheumatic pain, gout, scorpion, bruises
Dhatura	<i>Dhatura stramonium</i>	Leaves and Fruits	Asthma, cardiac pains
Amla	<i>Emblica officinalis</i>	Fruit	As Purgative, diuretic, digestive trouble, hair problems
Peepal	<i>Ficus religiosa</i>	Bark, Leaves, Fruit, Seeds, Latex	Skin diseases, neuralgia, constipation and gynecological diseases
Gurhal	<i>Hibiscus rosa-sinensis</i>	Flower	Delivery
Lantana	<i>Lantana indica</i>	Leaf	Chicken pox, cuts, wounds
Pudina	<i>Mentha longifolia</i>	Leaf	Cholera, dysentery
Jatamansi, Muskroot	<i>Nardostachys jatamansi</i>	Root	Epilepsy, hysteria, skin diseases, throat trouble, lumbago, ulcers, rheumatism, paralysis, cough, diuretic, snake-bite
Kalonji	<i>Nigella sativa</i>	Seeds	Diarrhoea, dysentery
Tulsi	<i>Ocimum sanctum</i>	Leaves	Antiallergic, antidiabetic
Kaknada	<i>Peristrophe bicalyculata</i>	Leaf	Skin disorder, anti cancerous, asthma, antidote, bronchitis, cough
Paiya	<i>Prunus cerasoides</i>	Bark, Fruit	Antipyretic, leprosy
Anar	<i>Punica granatum</i>	Seeds, Flowers	Syphilis, bronchitis, stomachic
Chir	<i>Pinus roxburghii</i>	Resin	Swelling, sprains, boils, bone fractures, urine trouble, concussions, heel cracks, eye, bone fracture
Chilla, Pine, Kail	<i>Pinus wallichiana</i>	Resin, Bark, Leaf	Hurt, bone fracture, headache, waist pains, internal injury, heel crack, skin diseases abscess, ulcers
Burans, Bras	<i>Rhododendron arboreum</i>	Flower	Mental retardation, dysentery, headache, eye cataract, wounds, rheumatism
Brahma kamal	<i>Saussurea obvallata</i>	Root	Leucoderma, cuts, bruises, urinary trouble, hurt, bone fracture, Wounds, burns
Thuner, Talispatta, Talispatr	<i>Taxus baccata</i>	Leaf	Asthma, bronchitis, lumbago, indigestion, cancer
Methi	<i>Trigonella foenum</i>	Seeds	Constipation, diabetes
Ajwain	<i>Thymus vulgaris</i>	Seeds	Antiseptic, antispasmodic

Conclusion

In the present scenario, maintaining a balance between environment conservation and sustainability has become a major challenge. The native population of Himalayan has close association with nature and they believe that normally diseases are caused by unhappiness of gods and nature. Thus, health care system of Uttarakhand is specially conditioned by cultural heritage and myths. In Uttarakhand, the belief that diseases are caused by the supernatural powers leads to the treatment of diseases through natural products like plants, herbs, trees, soils. However, the health care system of Uttarakhand is totally non-systematized and the person, prescribing these medicines has no so-called scientific knowledge about the diseases. For example, people using a mixture of different leaves in treatment possess no knowledge about the disease curing properties of specific leaf. The medical system of Uttarakhand has very old roots and in ancient time these Himalayan medicinal plants were not only traded internally but also exported. Thus, since ancient times, Uttarakhand possesses an interesting medicine system which needs an extensive study as it is ultimately connected with Ayurveda and other medicine system.

Medicinal plants are the important source of potentially useful structures for the development of novel chemotherapeutic agents. Historically, plants have provided a source of the development for novel drugs and plant derived drugs have made large contributions to human health and well-being. It has been observed that till date, a very few plants have been explored for medicinal properties while therapeutic ability of large number of plants is still not known and because of this reason an extensive research on medicinal potential of such plants is thus strongly recommended. It is very interesting to note that now-a-days studies are carried out on antimicrobial activities of different extracts of certain plants and such work should be brought in the knowledge of every concern man in the society.

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