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Worth of Traditional Herbal System of Medicine for Curing Ailments Prevalent Across the Mountain Region of Uttarakhand, India

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ABSTRACT

The present study deals with 40 medicinal plant species used to cure a variety of ailments through traditional health care system by the local healers (*Vaidyas*). These plants were checked and verified from the available literature which revealed that the uses of these plants were newly recorded. Depth studies of 40 new recorded medicinal plants were documented with their different parts being used in herbal medicines. It was also found that one species or some times more species were used for curing one or many diseases together. The nature and type of symptoms of diseases reported of human beings were found varying across the region. All these different kinds of diseases were grouped in to three categories i.e. serious, moderate and common based on the risk factor and seriousness of disease in consultation with doctors practicing different streams of treatment i.e. *Vaidyas*, Ayurvedic and Allopathic. About more than 40% of local inhabitants were consulted, so as to reveals their perceptions on ranking of 10 common ailments prioritized by the local people based on their preference for opting herbal system of treatments. The traditional herbal system of medicine is one of the most important prevailing systems in the area where modern health care centre are rare or in very poor conditions.

Keywords: Ethnomedicinal uses, Medicinal plants, Ailments, Traditional herbal healers, Medical doctors.

INTRODUCTION

The mountain region of Uttarakhand Himalayan is a well known treasure of medicinal plants diversity, since antiquity as many plant species of this area have medicinal value and are being used by local people for curing a variety of ailments (Phondani et al., 2010). According to a recent estimate by the World Health Organization (WHO), more than 3.5 billion people in the developing world still rely on plants as a major component of their health care systems particularly those inhabiting the rural and far-flung areas. The traditional societies possess a rich knowledge of plants having various medicinal uses. The medicinal properties of plant species have played an important role in the origin and evolution of many traditional herbal therapies in the developing countries particularly in India. The plants have been used as sources of medicine ever since the beginning of human civilizations in the treatment of various ailments (Hill, 1952; Gaur, 1999). The uses of plants as sources of herbal medicine are very much prevalent in the traditional health care systems as a part of the cultural landscape of many developing countries (Kloucek et al., 2005; Duraipandiyani et al., 2006). The traditional systems of medicine like Chinese, Ayurvedic, Unani and Biomedicine are very effective particularly in rural areas for the treatment of various ailments. Nearly 80% of the total human population still depends upon traditional remedies

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together with folklore system based mainly on phytotherapy (Azaizeh et al., 2003). Herbal medicines even today play an important role in rural areas with various locally produced drugs still being used as home remedies for various diseases (Qureshi et al., 2005). This traditional knowledge of health care systems has started disappearing with the passage of time due to scarcity of written documents and relatively low income or no income to the traditional herbal practitioners (*Vaidyas*). In the recent past, however, the medicinal plants have regained a fair degree of recognition due to a growing faith in herbal medicines in view of their few or no side effects as compared to allopathic system of medicine which is readily available promising quick relief to the patient (Hussain et al., 1996). The traditional communities of mountain region of Uttarakhand are still dependent upon wild plants for their primary health care system and treatment a variety of diseases. These useful plants collected from various habitats such as forests, grasslands, cultivated fields for using them as raw components in drugs. These communities have acquired fairly good knowledge of both the useful and harmful properties of plant resources due to their constant and close association with forest and agro-ecosystems. However, at present, this vast knowledge based information available on these precious plants is getting eroded due to changing socio-economic and cultural values and illegal collections from the wild. The loss of traditional knowledge within cultures, in view of the rapid changes undergoing is just as irreversible as the loss of species (Joshi et al., 2005). Hence, sincere efforts are to be made to document the various uses of plants before some of them disappear from the areas, or before these inhabitants shift over to modern system of remedies. Therefore, an attempt has been made to: (i) to document those medicinal plants whose use are not available in Ayurveda literature, but largely used in traditional health care system (ii) identify, categorization and ranking the prominent ailments based on preference of local people through traditional health care system practiced by traditional *Vaidyas*.

STUDY AREA AND SOCIO-ECONOMIC PROFILE OF THE PEOPLE

Uttarakhand state is known as the origin of sacred rivers like the Ganga, Bhagirathi and Alaknanda. The river Alaknanda has its source in the Satopanth and Bhagirath kharak glaciers, which rise from the eastern slope of Chaukhamba peak (7138m.) of Rudraprayag district of Uttarakhand state in India. In its course of 141.5 km it drains approximately 11000 km² area. The catchment of Alaknanda river extends between 29° 58' 34" to 31° 04' 20" N and 78° 34' 31" to 80° 17' 54" E. It narrows down towards west and tapers off at Devprayag making confluence with the river Bhagirathi and forms the holy Ganga. It covers a wide range of climatic conditions under altitudinal variation of 642-7817 amsl. The Alaknanda catchment stretches in four districts of Garhwal region of Uttarakhand viz., Chamoli, Rudraprayag, Pauri and Tehri. The present study was carried out in total one hundred seven (107) villages of eight (8) valleys (Niti, Urgam, Berahi, Nandakini, Pindar, Mandakini, Bhilangana/Gangi and Binsar) are located in

high altitude areas of Uttarakhand inhabited by tribal and non-tribal communities (Fig. 1). They mainly occupy the forested regions and have a total population of 17,295 with 3149 households and have average family size of 5-6 persons. The rural settlements are located in the altitudinal limit of 1400 to 3500 masl. These communities have their own culture, tradition and religious beliefs. The major occupations of these communities have been sheep and goat rearing and agriculture.

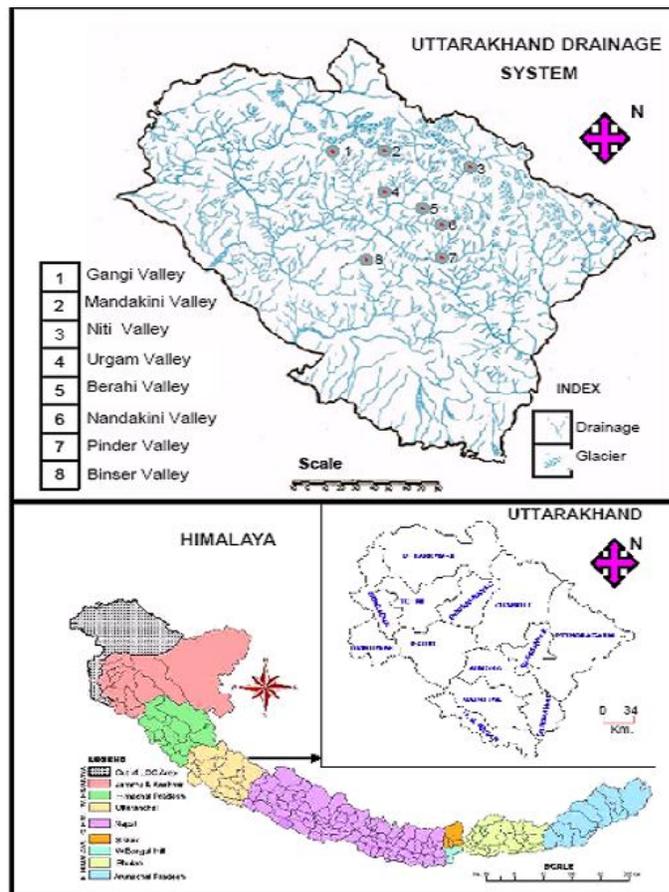


Fig. 1 The location of the study area in Uttarakhand, India.

METHODOLOGY

A pilot survey was carried out together information of the medicinal plants used to cure a variety of ailments through traditional health care system. Different types of questionnaires were developed to obtain information on the indigenous uses of medicinal plants, collection, mode of uses and composition of medicinal plants used by the local communities. Data was collected from the selected villages related to ethnomedicinal practices and quantities of plant products consumed. The study employed included the survey method involving collection of data through questionnaire interviews of local people, traditional herbal healers, medical doctors, scientists, school teachers and social workers. Over 40% local people in all eight valleys, ranging in different age groups were interviewed independently, using structured questionnaires, open-ended interviews and guided-dialogue techniques. In this study I visited localities of the local rural people

who were interviewed about their knowledge of diseases, their methods of diagnosis, types of treatments etc. I also asked about the local names of diseases and patient conditions, and the local names of plants and other components used for treating particular ailments. Systematic efforts were made to list and identify the local herbal practitioners' diagnostic knowledge and techniques of each disease on the basis of symptoms.

The treatment procedures adopted were both curative and prophylactic well known to traditional *Vaidyas*. The whole system of treatment was discussed carefully and documented. Since the information given by the *Vaidyas* was oral, it was expected that some issues might get inadvertently forgotten, while other points might need to be clarified and refined. Workshops were therefore, held involving the knowledgeable *Vaidyas* during which the diagnostic information given by them on each disease was carefully discussed. *Vaidyas* debated, clarified and refined the information, while 'expert consultation' workshops were also held for the most experienced *Vaidyas*, during which conventional medical doctors clarified the information on diagnosis and treatment procedures. The identified ailments categorized in three categories such as serious, moderate and common based on healing practices of different streams of doctors. The medical doctors used the diagnostic information on each disease or condition to match the scientific (modern) name to each problem. The information provided by *Vaidyas* was exhaustive and valuable, due to their in-depth knowledge and also their role as medical doctors.

RESULTS AND DISCUSSION

Findings of the study reveal that a total of 400 medicinal plants used to cure 135 human diseases treated by the traditional herbal healers (*Vaidyas*). However, the uses of 400 plants were checked and verified from the available literature which revealed that the use of 360 plants has been listed in Ayurveda, whereas the uses of 40 plants were newly recorded (Table 1). A depth study of 40 new recorded medicinal plants were documented with their different parts being used in a variety of medicines such as leaves (28.9%), roots (26.2%), bark (6.4%), whole plant (8.7%), seeds (8.1%), Fruits (9.6%), Flowers (5.6%), and others (6.5%) (Fig. 2).

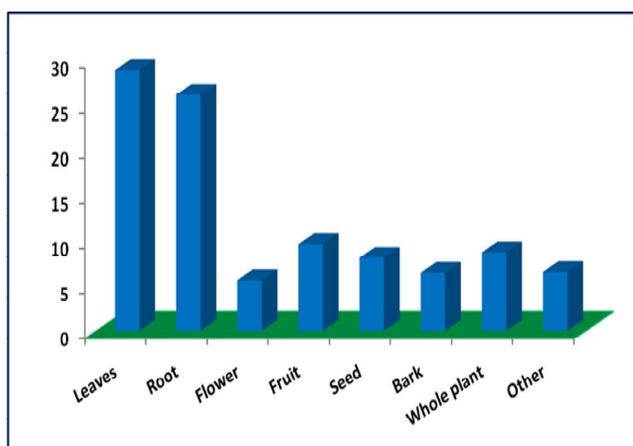


Fig. 2 Proportion of different medicinal plant parts (%) used for curing of ailments.

It was also found that one species or some times more species were used for curing one or many diseases together. The list of various diseases found either specific to a particular valley or common to all valleys was prepared while working with *Vaidyas*. The nature and type of symptoms of diseases reported of human beings were found varying across the regions. All these different diseases were grouped in to three categories i.e. serious, moderate and common based on the risk factor and seriousness of disease in consultation with doctors practicing different streams of treatment i.e. *Vaidyas*, Ayurvedic and Allopathic in eight different valleys (Table 2). About more than 40% of local inhabitants were consulted, so as to reveals their perceptions on ranking of some common ailments prioritized by the local people based on their preference for opting *Vaidyas* system of treatment. A total of 10 ailments were identified by them revealing that a majority of the people preferred herbal system of treatments for curing fever followed by jaundice, leucorrhoea etc. while serious ailments like tuberculosis, cancer etc. were mostly treated through allopathic treatment. Based on the ranking analysis it was observed that fever had ranked first while tuberculosis last in terms of treatment through *Vaidyas* system of medicine in different valleys of the study area (Table 3). Most of the treatments recorded here have a natural component in the form of a plant parts. Plants form the main ingredient in traditional medicines not only because they often possess biologically active chemicals, but also are believed to provide vital energy, and are a participatory rather than a lifeless entity in healing (Iwu, 1993). In this study, a selection of ethnomedicinal natural healing practices is made in an effort to document them and provide some insights into the ways they are used. However, this is made more difficult by the fact that direct cause and effect analyses are often lacking. A vast majority of natural healing methods and other ethnomedicinal practices depend on medicinal plants. Plants are known to be natural chemical factories and some of the chemicals produced by them may have medicinal properties. The actual healing may be due to the use of medicinal plants in combination with natural and natural healing practices, which make the specific treatments popular within the community. Our purpose was to document these hitherto orally preserved indigenous knowledge systems. Even though the issue related to the validation of the effectiveness of natural healing has long been seen as a waste of time and resources by most researchers, at present, there are a number of scientists and spiritual healing enthusiasts who are keen to determine the role of alternative medicine in healing (Brown, 2000; Abbot, 2000).

In India more than 70% of the population used herbal medicines for health care. There is a vast experience based evidence for many of these drugs. There are also a number of Institutes/Universities in India carrying out research on herbal drugs and medicinal plants (Phondani, 2010). Using 'reverse pharmacological' approach, several institutes have been working on basic and clinical research on the potential health benefits of herbal drugs and infect have come out with many successful examples in this respect. These herbal drugs prepared of medicinal plants are a rich source of beneficial compounds including

Table 1: List of new recorded medicinal plants as their uses are not available in Ayurveda but used in traditional health care system.

S. No.	Name of plants	Vernacular name	Family	Habit	Part used	Disease treated
1.	<i>Actaea acuminata</i> Wallich ex Royle	Maneeru	Ranunculaceae	Herb	Leaves	Sciatica
2.	<i>Aerides multiflorum</i> Roxb.	Maana	Orchidaceae	Herb	Leaves	Cuts and Wounds
3.	<i>Ainsliaea latifolia</i> D. Don	Kauru	Asteraceae	Herb	Root	Colic
4.	<i>Anemone obtusiloba</i> D. Don	Kanchphool	Ranunculaceae	Herb	Root	Diarrhoea
5.	<i>Asphodelus tenuifolius</i> Cav.	Piazi	Liliaceae	Herb	Seed	Diuretic, Ulcer
6.	<i>Aster peduncularis</i> Wallich ex Nees	Phulyan	Asteraceae	Herb	Root	Stomachache
7.	<i>Benthamidia capitata</i> Wallich ex Roxb. Hara.	Bhamora	Cornaceae	Tree	Fruit	Provide strength
8.	<i>Bistorta macrophylla</i> D. Don	Kukhri	Polygonaceae	Herb	Leaves	Wounds
9.	<i>Boenninghausenia albiflora</i> Hook. Reichb. Ex Meisn.	Upniyaghas	Rutaceae	Herb	Leaves, Root	Wounds, Vomiting, Dysentery
10.	<i>Borreria articularis</i> L.f. F.N. Williams	Guthari	Rubiaceae	Herb	Seed, Leaves	Diarrhoea, Haemorrhoids
11.	<i>Calanthe tricarinata</i> Lindley	Syuru	Orchidaceae	Herb	Leaves	Eczema
12.	<i>Carpesium abrotanoides</i> L.	Kuleo	Asteraceae	Herb	Root, Leaves, Seed	Laxative, Anthelmintic, Diuretic, Skin disease
13.	<i>Cayratia trifolia</i> L. Domin	Amalbel	Vitaceae	Climber	Leaves	Boils
14.	<i>Coelogyne cristata</i> Lindley	Gondya	Orchidaceae	Herb	Bulbs	Constipation, Aphrodisiac
15.	<i>Commelina benghalensis</i> L.	Kansura	Commelinaceae	Herb	Whole plant	Dysentery, Swelling and Pain
16.	<i>Cotinus coggygria</i> Scopoli	Kalmina	Anacardiaceae	Shrub	Bark, Leaves	Tanning
17.	<i>Cyathula capitata</i> Moq.	Hadsilla	Amaranthaceae	Herb	Leaves	Emetic
18.	<i>Daphne papyracea</i> Wallich ex Steudel	Satpura	Thymelaeaceae	Shrub	Leaves	Eczema
19.	<i>Epipactis helleborine</i> L. Crantz	Trindrya	Orchidaceae	Herb	Leaves	Fever
20.	<i>Gagea reticulata</i> Palla Schultes f.	Lasnya	Liliaceae	Herb	Leaves, Root	Indigestion, Burns
21.	<i>Goodyera repens</i> L. R.Br.	Girwara	Orchidaceae	Herb	Leaves	Syphilis, Blood purifier
22.	<i>Lonicera angustifolia</i> Wallich ex DC.	Gulnar	Caprifoliaceae	Shrub	Fruit	Gastric
23.	<i>Monochoria vaginalis</i> Burm.f. C.B. Prest	Nanka	Pontederiaceae	Herb	Rhizome	Asthma, Liver disease
24.	<i>Paspalum scrobiculatum</i> L.	Paplya	Poaceae	Herb	Root	Urinary disorder, Eye infection
25.	<i>Phacelurus speciosus</i> Steudel C.E. Hubbard	Ainma	Poaceae	Herb	Whole plant	Intestinal worms
26.	<i>Phoebe lanceolata</i> Nees Nees	Kaula	Lauraceae	Tree	Berries	Wounds, Sores
27.	<i>Physalis divaricata</i> D. Don	Damphu	Solanaceae	Herb	Leaves	Urination, Earache
28.	<i>Pilea umbrosa</i> Wedd.	Chailu	Urticaceae	Herb	Leaves	Skin disease
29.	<i>Ranunculus arvensis</i> L.	Chambul	Ranunculaceae	Herb	Whole plant	Fever, Asthma, Skin disease
30.	<i>Rhamnus virgatus</i> Roxb.	Chadolu	Rhamnaceae	Tree	Bark	Eczema, Ringworm
31.	<i>Rhus javanica</i> L.	Deshmeel	Anacardiaceae	Tree	Fruit	Colic, Cholera
32.	<i>Sarcococca saligna</i> D. Don Muell. Arg	Geru	Euphorbiaceae	Shrub	Leaves	Joint pain
33.	<i>Sauromatum pedatum</i> Willd. Schott	Neen kerowly	Araceae	Herb	Tuber	Poultice
34.	<i>Solidago virgaurea</i> L.	Pinja-phool	Asteraceae	Herb	Whole plant	Kidney stone, Asthma
35.	<i>Sphaeranthus senegalensis</i> DC.	Gorkhmundi	Asteraceae	Herb	Whole plant	Diuretic, Tonic
36.	<i>Spiranthes sinensis</i> Persoon Ames	Phirlya	Orchidaceae	Herb	Whole plant	Fever, Tonic
37.	<i>Sporobolus diander</i> Retz. P. Beauv.	Sitya	Poaceae	Herb	Leaves	Burns, Wounds
38.	<i>Tragopogon gracilis</i> D. Don	Gualsi	Asteraceae	Herb	Latex	Wounds, Blister
39.	<i>Vanda testacea</i> Lindley Reichb.f.	Harjonar	Orchidaceae	Herb	Leaves	Bone fracture
40.	<i>Vincetoxicum hirsutinaria</i> Medikus	Bagmirchi	Asclepiadaceae	Shrub	Root	Snake bite, Emetic

antioxidants and other useful components that can be used in functional foods. Consultation or establishing personal rapport with patients is considered one of the foundational skills followed by traditional *Vaidyas*. Most traditional practitioners, either through planned or informal meetings or during conversations at village gatherings or on the farms or in forest, develop personal relationships with patients. The consultations also involve a set of repeat instructions, which are often prescribed during the second visit by the patients for change of dose, change of treatments and referral to another healers. Patients suffering from serious illnesses such as cancer or infectious diseases are separately handled and given priority. The traditional *Vaidyas* ask symptom specific questions to check how the behaviour and well-being of patients are affected by existing ailments. These disease specific questions are sometimes supplemented by additional physical examination such as **Nadi Parikshan** (checking pulse rate) for diagnosis. Practical demonstration with interaction and guided observations are the two most commonly used practices for learning

consultation skills. The effects of treatment are often assessed by traditional herbal practitioners, mostly through verbal feedback from patients. The traditional *Vaidyas* maintain regular contacts either through informal or planned visits. During such visits, these healers either seek verification of their treatment or discuss the effectiveness of the same or related treatment for similar ailments.

CONCLUSION

The focus group discussions held with old and young healers partly explain the knowledge they possess and subsequently old healers transform the full knowledge to young one. Young healers also find the critical traditional medical knowledge (TMK) skills of identification, harvesting, processing, and administering of plant based herbal medicines relatively difficult and time consuming. Many young healers strongly feel most of the older generation healers do not pass on all the skills and knowledge to the young aspirants the partial sharing of information is deliberately practiced by a few healers as a strategy

Table 2 Categorization of various ailments based on consultation with doctors practicing different streams of medicine.

Traditional herbal healers (<i>Vaidyas</i>)			Ayurvedic doctors			Allopathic doctors		
Serious	Moderate	Common	Serious	Moderate	Common	Serious	Moderate	Common
Cancer	Leucorrhoea	Stomach ache	Cancer	Carbuncle	Stomach ache	Cancer	Pneumonia	Stomach ache
Kidney stone	Leucoderma	Head ache	Kidney stone	Wormosis	Head ache	Kidney stone	Typhoid	Head ache
Tuberculosis	Insect bite	Fever	Tuberculosis	Scurvy	Goiter	Tuberculosis	Diabetes	Fever
Jaundice	Diabetes	Tooth ache	Jaundice	Pneumonia	Fever	Jaundice	Baldness	Tooth ache
Leprosy	Baldness	Eye disease	Leprosy	Typhoid	Tooth ache	Leprosy	Menstrual disorder	Goiter
Snake bite	Debility	Ear disease	Snake bite	Leucorrhoea	Eye disease	Snake bite	Piles	Sprains
Rabies	Piles	Ring worm	Rabies	Leucoderma	Ear disease	Rabies	Diarrhoea	Ring worm
Paralysis	Diarrhoea	Wounds	Paralysis	Insect bite	Ring worm	Paralysis	Measles	Wounds
Cholera	Measles	Cuts	Anaemia	Diabetes	Wounds	Urinary disorder	Gout	Cuts
Anaemia	Gout	Itching	Urinary disorder	Baldness	Cuts	Epilepsy	Arthritis	Itching
Urinary disorder	Debility	Dermatitis	Epilepsy	Debility	Itching	Cardiac disorder	Mental disorders	Dermatitis
Epilepsy	Arthritis	Cough	Cardiac disorder	Piles	Dermatitis	Bronchitis	Eye disease	Cough
Cardiac disorder	Carbuncle	Common cold	Bronchitis	Diarrhoea	Cough	Asthma	Ear disease	Common cold
Bronchitis	Scurvy	Mumps	Abortion	Measles	Common cold	Mental disorder	Gastric/Acidity	Mumps
Wormosis	Pyorrhoea	Gastric/Acidity	Cholera	Gout	Mumps	Bone fracture	Internal wounds	Flatulence
Typhoid	Inflammations	Burns	Asthma	Debility	Gastric/Acidity	Internal disorder	Syphilis	Burns
Abortion	Dyspepsia	Joint pain	Bone fracture	Arthritis	Burns	Rheumatism	Galactorrhoea	Joint pain
Asthma	Constipation	Goiter	Rheumatism	Dyspepsia	Joint pain	Blood pressure	-	Goiter
Mental disorder	Allergy	Back ache	Blood pressure	Menstrual disorder	Indigestion	Neurasthenia	-	Scurvy
Bone fracture	Boils	Chest pain	Mental disorder	Internal wounds	Back ache	-	-	Indigestion
Internal wounds	Pimples	Goiter	Neurasthenia	Pyorrhoea	Chest pain	-	-	Blisters
Rheumatism	Polydipsia	Sprains	Syphilis	Inflammations	Goiter	-	-	Pyorrhoea
Blood pressure	Vomiting	Blisters	-	Freckles	Sprains	-	-	Inflammations
Impotency	Freckles	Flatulence	-	Galactorrhoea	Blisters	-	-	Back ache
Pneumonia	Scalds	Menstrual disorder	-	Scalds	Flatulence	-	-	Chest pain
Neurasthenia	Galactorrhoea	-	-	-	-	-	Scalds	Freckles

Table 3 Ranking of common ailments on which people prefer Vaidyas form of treatments in different valleys of Alaknanda catchment.

S. No.	Ailments	People prefer <i>Vaidyas</i> Valleys								Total	Ranking
		Niti	Mandakini	Nandakini	Bhilangna	Pindar	Urgam	Berahi	Binsar		
1.	Fever	3	2	1	1	1	1	1	1	11	I
2.	Jaundice	2	1	3	2	2	2	2	2	16	II
3.	Leucorrhoea	1	3	2	3	4	3	3	3	22	III
4.	Rheumatism	5	4	5	5	6	5	5	4	39	IV
5.	Diabetics	4	7	7	7	3	6	4	5	43	V
6.	Asthma	6	6	6	6	7	4	6	7	48	VI
7.	Leprosy	7	5	4	4	8	8	7	6	49	VII
8.	Kidney stone	8	8	8	8	5	7	8	8	60	VIII
9.	Cancer	9	10	9	9	9	10	9	9	74	IX
10.	Tuberculosis	10	9	10	10	10	9	10	10	78	X

No. of respondents- 960 (120 respondents in each valley).

to plan themselves as spiritual gurus who know all about plants and, therefore, should be respected and consulted in future. Lack of scientific validation is the major reason for non-adoption of herbal medicine by young healers and trained main power. Experiences indicate that some of the practices are good while many of them are much effective. Scientific evolution, besides understanding the technology of the clientele helps ascertain the degree and direction of change through formal research and will be rewarding in

adoption by the young generations. It must be born in mind that validation of ethnomedicinal practices will require flexibility, creativity and dedication in research application. There is an urgent need of a comprehensive analysis and documentation of indigenous knowledge of curing ailments in the mountain region of Uttarakhand. The revitalization of these indigenous systems can provide self-reliance in primary health care and can even contribute to the frontiers of herbal system of medicine.

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