

Medicinal plants used in traditional folk recipes by the local communities of Kaghan valley, Mansehra, Pakistan

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Present investigation confined to document traditional folk recipes by using medicinal plants among the inhabitant of Kaghan valley, Northern Pakistan. In this survey 30 different folk recipes were documented in order of recipe preparation, dosage and parts used along with their botanical, local and family name of the plant species. A total of 30 plant species belonging to 19 Angiospermic, 2 Gymnospermic and 1 Pteridophytic family have been reported in this study. Among the angiospermic families, Asteraceae is the dominant one with 5 species followed by Lamiaceae with 4 species and Liliaceae with 2 species. This study can provide some novel recipes commonly practiced among the inhabitants of this region which need systematic and phytochemical proof of these medicinal plants for drug discovery at global perspectives.

Keywords: Medicinal plants, Traditional folk recipes, Kaghan valley, Mansehra Pakistan

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Kaghan valley is located in the Northern Pakistan. The Kunhar river catchments area is commonly known as Kaghan valley. It is 161 km long scenic wonderland with its towering Himalayan peaks, peaceful lakes, majestic glaciers and splashing water falls. It is situated between 34°-17' to 35°-10' North latitude and 73°-28' to 74°-7' East longitude (Fig. 1). Total area of the valley is about 1627 km.

All the accessible areas within the valley are exploited for various recreational uses and / or to meet the daily needs of an increasing nomadic (*Gujars*) population and visits from tourists and guests. Communities use different plants for protecting their houses, cultivated land and other plants to feed their roaming goats and sheep in the pastures and to protect some grass land in the valley basin. Many plants are uprooted and many are heavily collected due to their medicinal uses at a local and national level. Land ownership conflicts are one of the reasons for the non-existence of positive developmental work in the area. This issue has contributed to natural resource exploitation. Due to many geographical and financial difficulties the local taxonomists have not fully exploited the flora of Northern Pakistan and some species are difficult for them to identify as well¹.

The pattern of the livelihood of tribal communities has not changed since time immemorial. The reason for this lies in the availability of uncultivated food. In the dense forest areas, nature is so kind that for thousands of years it has been possible for these tribal to live in comparative ease by hunting and food gathering^{2,3}. The tribal have discovered a variety of uses of plants by the trial and error method. These include fruits, nuts, berries, leafy vegetables, tubers, mushrooms, materials for shelter, fabrics, medicines and other necessities for survival that are found in the surrounding nature⁴.

It is however, surprising that in Pakistan though numerous floristic surveys of local flora have been conducted, very little attention has been paid to the ethnobotanical aspect of the study. The *pansaris* (herb sellers) and *hakims* (herbalists), on the other hand are mainly concerned with the supply of the floral and vegetative parts of the medicinal plants and they are least bothered about the botanical characteristics, especially of their occurrence, sustainable use and distribution in the various regions or ecological zones of Pakistan.

It has been estimated by the World Health Organization that 80% of the world's population relies on traditional medicines (which are mainly plant based) to meet their daily health requirements.

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Fig. 1- Map of Kaghan valley

Interest in herbal medicines has increased enormously over the last few decades. Now medicinal plants have become a target for the search by multinational drug companies and research institutes for new drugs⁵. All such activities are contributing to the loss of plant species and therefore protection in terms of sustainable utilization for conservation is the dire need of the time.

Medicinal plants have a rich resource base which is spread over a wide range of ecological zones in Pakistan. About 40 % of flowering plants are confined to the arid and semiarid regions, 35 % in arid to moist regions and 26 % in sub humid to moist regions⁶. Out of about 5691 known species of the flowering plants in Pakistan⁷ approximately 1010 can be classified as medicinal⁸. In Pakistan reliance on herbal medicine in partly is owing to the high cost of conventional allopathic medicine and inaccessibility of modern healthcare facilities especially in remote areas. Moreover, traditional medicine is often deemed as a more appropriate method of treatment especially in rural areas. The study area is confined to the local inhabitants of Kaghan valley which is never explored in previous studies with particular emphasis on documentation of folk recipe by using indigenous medicinal plants. The aim of this investigation is to

document traditional recipes, preparation and dosage for cure of various diseases.

Materials and methods

A total of 15 villages were visited. About 250 people were consulted for documentation of traditional knowledge. Out of which 180 were men and 70 were women. During this period the research area was eight times visited for the collection of data pertinent to traditional folk recipes. Field work was carried out in order to investigate floristic diversity and existing ethnobotanical practices. The field work included interviews, observations, guided field walks / transects walks and plant collection. These general observations confined to document their socio-economic conditions, culture, problems, life style and behavior of nomads. The methodology adopted during surveys was of previous studies conduction by various workers in Pakistan^{9,10}. By adopting this practice, local methods of medicinal plant collection, storage, drying, harvesting time, processing and utilization were observed and noted. During field work, interviews were conducted with the local inhabitants, the herbalists (*hakims*), *pansaries* (herb sellers). The method of questionnaire was adopted during the surveys in order to get qualitative and participatory rural appraisal (PRA) approach about the plant recourses among the local inhabitants.

Results

A survey was conducted in the project area for documentation of traditional knowledge and folk recipes. It was found that aged people (above 50 yrs, both men and women) have maximum traditional knowledge, i.e. 80%, the people (from 20–49 yrs, both men and women) have limited (15%) traditional knowledge and the children (up to 19 yrs, both boys and girls) have only 5% of traditional knowledge. But 100% of the people are familiar with the fact that plants are very important for their life and herbs have the healing power. They consider plants as natural remedies for good health. In total of 30 indigenous herbal recipes were reported during the surveys among the local communities. A total of 30 plant species belonging to 19 Angiospermic, 2 Gymnospermic and 1 Pteridophytic family have documented. These recipes were presented through their botanical name, family, local name and indigenous preparation and dosage.

Achillea millefolium L., Asteraceae, *Gandana*

Folklore: An infusion is made by steeping ½ cup of the aerial parts of plant for every 2 cup of water for 20-30 minutes. Then, this 1 cup is taken 2 or 3 times daily. It is used for easing mucus congestion, inflammation and fever of colds, flu and other upper respiratory infections.

Aesculus indica Hook., Hippocastanaceae, *Bankhor*, Horse chestnut

Folklore: Five to twenty drops of tincture are taken 3 times daily. This is used for treating haemorrhoids.

Allium sativum L., Liliaceae, *Lasan*, Garlic

Folklore: Two to three cloves are taken daily with meals either cooked or raw. This is used as an important antibiotic and antiviral remedy for colds, flu, bronchitis, pneumonia and other infections. The same remedy is used for controlling blood pressure and reducing high cholesterol.

Aloe barbadensis Mill, Liliaceae, *Kuargandal*, Indian Aloe

Folklore: One to five teaspoons per day of the resin, before bed is taken. Sometimes fennel seeds are added to reduce cramping. It relieves constipation and sluggish or dry bowel movements. Aloe gel is used for burns.

Artemisia absinthium L., Asteraceae, *Vilayathi ajsanthin*, Wormwood

Folklore: An infusion is made by steeping one teaspoon to 1 tablespoon of the dried herb for every cup of water for 20 minutes. Then ½ to 1 cup is taken daily before meals. This is used for poor appetite, sweet cravings, stomach weakness, painful digestion, or worms.

Carum carvi L., Umbelliferae, *Kalizeeri*, Caraway

Folklore: An infusion is made by soaking a heaping teaspoon of seeds for 15 – 20 minutes in a freshly boiled up of water. This is practiced 1, 2 or 3 times daily. It relieves colic, painful digestion, bloating and a feeling of uncomfortable fullness after eating, flatulence, diarrhea and to increase lactation.

Dioscorea bulbifera L., Dioscoreaceae, *Ratalu*, Wild Yam

Folklore: A tea is made by boiling 1 teaspoon of the herb for every cup of water for 40 minutes. Then this cup is taken 2 or 3 times daily. It is used for cramping of colic, intestinal and uterine spasms and gall bladder pain.

Ephedra gerardiana Wall. ex Stapf, 1.C., Ephedraceae, *Someni*, Ma Huang

Folklore: Decoction is made by using 1 tablespoon of the herb for each cup of water and ½ to 1 cup is taken 2 to 3 times daily. It is used for relieving temporary symptoms of asthma, colds with no fever or sweating, hay fever with nasal congestion and coughs.

Equisetum debile Roxb. ex Vaucher., Equisetaceae, *Jortar*, Horsetail

Folklore: One cup decoction is taken several times daily which is made by simmering 1 or 2 tablespoons of the cut and sifted herb for each cup of water for 8 hrs. This is used internally for cystitis and prostatitis. This remedy is also useful for strengthening bones, hairs and nails.

Galium aparine L., Rubiaceae, *Mandakha/Khanmirch*, Cleavers

Folklore: One cup of infusion or one teaspoonful of tincture in a little water is taken 2 – 3 times daily. This is useful for cleansing the lymphatic system and shrinking swollen lymph glands. It is also used in tonsillitis, psoriasis, or other skin diseases.

Hypericum perforatum L., Hypericaceae, *Kasni*, St. John's Wort

Folklore: About four tablespoons of decoction made from aerial parts are taken in the morning and 3 in evening in a little water. This remedy is recommended for relieving chronic nerve pains like peripheral neuropathy and for trauma and injuries involving nerve damage.

Juniperus communis L., Pinaceae, *Bhentri*, Common Juniper

Folklore: A tea is made by infusing 1 teaspoon of the berries with 6 cups of freshly boiled water for 20 minutes. Half cup of this tea is taken several times daily. This is a remedy for urinary tract infections.

Mentha spicata L., Labitae, *Pudina*, Peppermint

Folklore: An infusion is made by steeping a small handful of the fresh herb or 1 tablespoon for every cup of water which is used 2-3 times daily. This is an effective remedy for easing nausea, vomiting, heartburn, morning sickness, irritable bowel syndrome and colitis.

Nepeta cataria L., Labiatae, *Cataria*, Catnip

Folklore: A cup of strong infusion is made with 1 tablespoon of dried or fresh herb and is taken 2 to 3

times daily. It is used for colds, flu, fever and fussiness in children. The herb has mild calming, sweat releasing and digestion promoting effects.

Olea ferruginea Royle., Oleaceae, *Kahu*, Olive

Folklore: One to two teaspoons of oil is used daily. This is considered a good remedy for arthritis and skin problems like eczema and psoriasis.

Plantago ovata Forsk., Plantaginaceae, *Isabgol*, *Psyllium* husk

Folklore: A decoction is made by simmering ½ cup of the fresh or dried leaves in 2 or 3 cups of water for 30 or 40 minutes. 1 or 2 cups of tea are used several times daily. This tea is used for relieving coughs, ulcers, irritable bowel, colitis, cystitis and painful urination.

Ricinus communis L., Euphorbiaceae, *Arund*, Castor oil

Folklore: One to two tablespoons of oil are taken before bed time, depending on age and weight. Castor oil is a favorite old time remedy for constipation. It is also used externally for tumors of all kinds.

Rubus niveus L., Rosaceae, *Ghuracha/ Kala hinsalu*, Raspberry

Folklore: A light decoction is made by simmering a small handful of the dried or fresh herb in 2 cups of water for a few minutes and steeping the herb for 15 minutes or so. Then a cup from this decoction is used 2 or 3 times daily. This remedy is used during pregnancy.

Rumex hastatus D.Don., Polygonaceae, *Hullah*, Golden dock

Folklore: A tea is made by simmering 1 teaspoon of the cut and sifted herb for every cup of water for 20 minutes. This 1 cup is taken 2 or 3 times daily. This is a good remedy for constipation or sluggish bowels or loose stools. The same is given to pregnant women also.

Salix lindleyana Wall., Salicaceae, *Majnun*, Willow

Folklore: A decoction is made by simmering 1 tablespoon of the cut and sifted bark for every cup of water for 10 minutes. One cup is taken 2 or 3 times daily. This is an effective remedy for headache, fever, pain and rheumatism.

Salvia officinalis L., Labiatae, *Phulgari*, Sage

Folklore: An infusion is made by steeping 1 teaspoon of the herb for every cup of boiled water for 15 minutes. Then this 1 cup of tea is taken several times daily. This is used in cold, especially with a sore throat or excessive perspiration.

Scutellaria teucrifolia Dunn, Kew Bull., Labiatae, *Dolaba*, Skull cap

Folklore: Three to five tablespoons of the liquid tincture is added in little water or tea and is taken several times daily. This is used for insomnia, headache, nervous exhaustion, muscle spasms and irritability associated with premenstrual syndrome.

Silybum marianum (L.) Gaertner, Asteraceae, *Kandiari*, Milk Thistle

Folklore: Two to four tablespoons of tincture is taken 2 to 3 times daily. This is a remedy for cirrhosis, hepatitis and jaundice.

Tanacetum perthenium L., Asteraceae, *Daudi*, Fever few

Folklore: One to three tablespoons of the tincture are taken 1 to 2 times daily. This is a remedy for flu and other respiratory infections that are accompanied by fever.

Taraxacum officinale Weber., Asteraceae, *Hund*, Dandelion

Folklore: A decoction is made by simmering 1 tablespoon of leaf or root for every cup of water which is used 2 or 3 times daily, or 2 to 4 tablespoons of tincture is taken 1 to 3 times daily. This is administered for liver cooling and other liver related problems like hepatitis, poor appetite and constipation.

Ulmus wallichiana Planch., Ulmaceae, *Kain*, Elm

Folklore: Decoction of the bark is made by simmering 1 tablespoon for every cup of water and is taken 2 or 3 times daily. This remedy is recommended for soothing ulcers, gastritis, colitis, coughs and easing diarrhoea.

Urtica dioica L., Urticaceae, *Bichu buti*, Nettle

Folklore: A decoction is made with 1 tablespoon of herb or rhizome for every cup of water by simmering for 20 to 30 minutes. Then 1 or 2 cups are used 2 or 3 times daily. It is used for hay fever, arthritis, rheumatism, anemia, cystitis and gout. The rhizomes are used to reduce prostate inflammation.

Valeriana wallichii DC., Valerianaceae, *Mushkbala*, Great Wild Valerian

Folklore: An infusion is made with 1 tablespoon of cut and sifted herb for every cup of water. Steeped for 30 minutes in a closed pot and then 1 cup is taken several times daily. It is used for calming the nervous system and to promote healthy sleep.

Verbascum thapsus L., Scrophulariaceae, *Janglia Tambaku*, Mullein

Folklore: A light decoction is made by simmering 1 tablespoon of the herb for every cup of water for

15 minutes. Then this cup is used up to several times daily. Along with this 2 to 4 drops of oil extracted from flowers are used in the ears, twice a day. It is used for lungs and other respiratory tract infections. This is also used for easing the symptoms of asthma, chronic bronchitis, dry coughs, and laryngitis.

Viburnum cotinifolium D. Don., Caprifoliaceae, *Kasar buti/ Guch*, True Cramp Bark

Folklore: A decoction is made with 1 teaspoon of the chopped herb per cup of water and is taken 2 or 3 times daily. This is a remedy for easing menstrual cramps and intestinal cramps.

Discussion

Traditional folk recipes of Kaghan Valley were also documented during the present study. The results have shown that there are 30 different folk recipes which are used by the people of the valley. Preparation, dosage, uses and part used were also recorded along with local name, common name, family and Botanical name of the plant species. It is exciting to mention that sometimes the same plants are used for different ailments but preparation and dosage differ from one another. 30 plant species belonging to 19 Angiospermic families, 2 Gymnospermic families and 1 Pteridophytic family were documented. Among the angiospermic families, Asteraceae is the dominant one with 5 plant species followed by Labiatae with 4 plant species and Liliaceae with 2 plant species. The rest of the families were represented only once. Similar studies were conducted in Siran Valley, Mansehra, Pakistan¹¹.

Herbal drugs have always fascinated the majority of population. According to WHO, the global market of the medicinal herbs and herbs products is about US\$ 62 billion and had been enhanced by the Year 2005 at the level of US\$ 5 trillion. Pakistan has got more than 4000 different plant species and out of them 1100 has been pointed out to be medicinal in nature but only 350 – 456 plant species have entered into bulk herbal manufacturing and raw material market¹². In Pakistan, the cultivation and collection of medicinal plants have been as indigenous and export is individual businessman – consumer activity. Only some limited information published by PFI on the regeneration, market survey of medicinal plants, from different regions of Pakistan is available. Controversy still exists in many cases regarding correct identification of medicinal plants, source of procurement, common adulterants and substitutes of

crude drugs etc. This is mostly because of the drug trade that has slipped into the hands of people not scientifically trained¹³. Pakistan is amongst the eight leading countries, which exports medicinal plants. According to the Export Promotion Bureau, there was an export of over 8,500 tones of medicinal herbs in 1999, which fetched a petty amount of US\$ 6 million as compared to US\$ 31 million spent on the import of herbal products¹⁴. The collector receives a nominal amount for all his hard work and the purchaser enjoys all the profit and benefits by deceiving simple illiterate people. There is an urgent need to educate the collector about the collection, drying, curing, storing, preservation, packing, transportation and marketing etc. of these plants because the people are ignorant and they are unaware about the importance of these factors.

Conclusion

In this investigation 30 different traditional recipes by using medicinal plant for cure of various diseases have been reported among the local communities of Kaghan Valley. It is stated from this study that the herbal therapies are commonly practiced among the communities of Kaghan Valley since long, but still this valley need scientific proof through phytochemical screening and clinical trials for drug discovery at global perspective. There is a need to conserve this wealth of nature with respect of local people socio-economic conditions through sustainable uses and conservation strategies.

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