

Full Length Research Paper

Indigenous medicinal knowledge of common plants used by local people of Hattian Bala District, Azad Jammu and Kashmir (AJK), Pakistan

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The mainstream of people residing in Hattian Bala District, Azad Jammu and Kashmir (AJK), Pakistan are dependent on medicinal plants for their healthcares. The indigenous medicinal knowledge is in serious danger, as this knowledge is being shifted from generation to generation. Now, modern generation is not paying much attention to save this treasure due to western medicines. This study's aim is to report the use of medicinal plants by traditional healers and local people to treat various human diseases in the rural and sub urban areas of the study area, which is yet to be reported from an ethno medicinal aspect. Research was conducted by means of open ended and semi-structured questionnaire based interviews. A total of 12 local healers and 91 local people were interviewed, and a total of 24 plant species belonging to 16 families were recorded. Most of these plants were herbs and their leaves were the frequently used part. Our survey brought out a list on the indigenous plants used in Hattian Bala District. These data will help to preserve the traditional knowledge on the use of medicinal plants in black and white.

Key words: Ethno medicines, Hattian Bala, herbal plants, indigenous knowledge.

INTRODUCTION

Man has cultivated the habit of observing plants for thousands of years and had used them for different purposes. The Science of Botany today is the result of many years of progress and development in plants for their curative virtues. Botany, in turn, originated in part from an interest in finding plants to help fight illness. In fact, Medicine and Botany have always had close ties.

From ancient times, plants are being used in various diseases. Many of today's drugs have been derived from plant sources. Pharmacognosy is the study of medicinal and toxic products from natural plant sources. More than six thousand species are used as medicines. Elisabeth (1990) reported that annual world market value for

medicine drives from medicinal plants is \$43 billions. More than 75% of Pakistani population depends on traditional medicines for all or most of its medicinal needs. Ethnopharmacological study not only envisage the possibility of identifying new herbal drug, but also brings on record the hidden knowledge confined to traditional society all over the world (Cunningham, 2001; Babos and Cumana, 1992; Davis, 1991; Hof et al., 1991).

Plants have traditionally served as man's most important weapon against pathogens. Medicinal plants are widely used by all sections of community, whether directly as folk remedies or the medicaments of the different indigenous systems as well as in modern medicine system (Wezel and Lykke, 2006; Tabsoba and Deschamps, 2006). Economically, weaker section of the community collects medicinal plants for commercial use as livelihood option (Bartram, 1995 and Shinwari and Khan, 2000). Medicine, the oldest art in the world exist in

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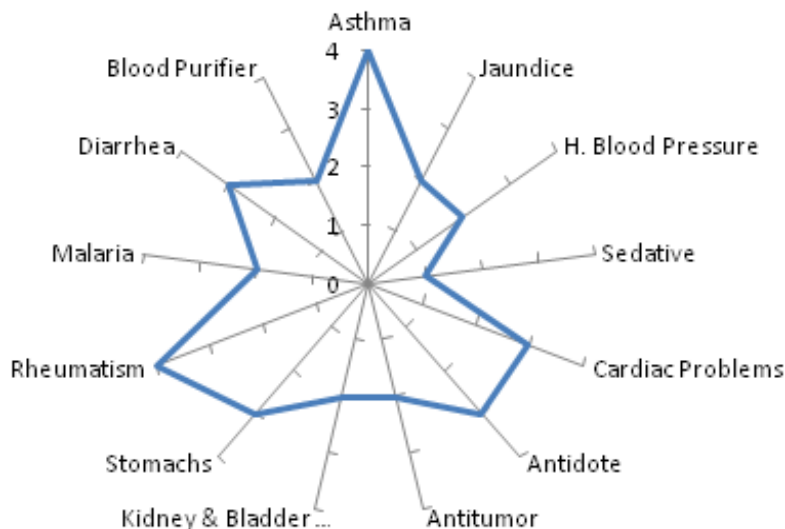


Figure 1. Proportion of plants used to cure specific human disease.

every society because no society exists without its own art of healing. Medicine, therefore, began as a social art and continued so until the advent of great bacteriologists of the past centuries (Wondimu et al., 2007). A rational explanation is sought in scientific medicine in terms of cause and effect; phenomenon are observed, described and classified (Ajibade et al., 2005).

People of Pakistan have understanding of various medicinal plants of their respective areas. This information is being transferred from generation to generation. Due to modernization people are getting far from this treasure and this home grown treasure is in danger. It is deadly need to preserve this valuable indigenous knowledge (Mahmood et al., 2011; Shinwari et al., 2002).

Present research was conducted in district Hattian Bala, AJK, Pakistan considering the foregoing scenario, as to get record the important medicinal plants resources and the mode of their conception by local people.

MATERIALS AND METHODS

The research work was conducted during two periods of 6 months each (April to October) in 2009 and 2010 rural and urban areas of Hattian Bala District AJK, Pakistan. Open-ended and semi-structured questionnaire based interviews (Bruni et al., 1997) were conducted in the survey. These interviews were conducted in the local language (PAHAARI) of study area. A total of 38 local healer and 91 local old people were interviewed along with the eight group meetings were organized with families, who had sufficient knowledge in indigenous medicine without being healers.

Information was composed relating to vernacular names of plants, plant parts used, plant habit, therapeutic use and any further information about the drug. Plant specimen was collected, identified by Prof. Dr. Rizwana Aleem Qureshi, Professor, Department of

Plant sciences, Quaid-I- Azam University Islamabad, Pakistan and voucher specimens were submitted in the herbarium of the Quaid-I- Azam University Islamabad, Pakistan.

RESULTS AND DISCUSSION

Results are presented in Table 1. The data presented in the Table 1 showed that most of the plants were reported, to be used for the treatment of many diseases. *Vitis vinifera* L. is used for the treatment of cardiac diseases as well as against tumor in human beings. Similarly, *Allium cepa* s effective against heart problems and asthma. Every plant is used against more than one diseases. A relative percentage of medicinal plants used against asthma, cardiac problems, cancer and jaundice is 25, 12, 12 and 08%, respectively (Table 1). These diseases are main cause of death, among these heart problems and asthma is more common in study area and through out the world (Nadembega et al., 2011). Some plants that have been used against cardiac problems are *A. cepa*, *V. vinifera* L. and *Echinops echinatus* Roxb. is commonly used to treat jaundice while *Periploca aphylla* Dcne. and *V. vinifera* L. are used to cure tumor. *Achyranthes aspera* L., *Calatropis procera* (Willd.) R. Br., while *Periploca aphylla* Dcne. and *Echinops echinatus* Roxb and many other medicinal plants are also reported in ethnomedicinal survey conducted in the other regions of Azad Jammu and Kashmir, Pakistan (Mahmood et al., 2011). Number of plants used against a single disease are presented in Figure 1.

Medicinal plants are still vital source of medicines for indigenous people residing in Hattian Bala District, AJK, Pakistan. Western healthcare system is very expensive

Table 1. Medicinal plants and of District Hattian, AJK, Pakistan and drugs to cure ailments based on the information gathered from the locals by using the semi- structured and close ended questionnaires.

Family	Species name accession and voucher No.	Vernacular name	Plant part used (drug)	Therapeutic uses	Status and habitat	Flowering period
Acanthaceae	<i>Adhatoda vasica</i> Nees 125356	Bekar	Leaves, flowers	Tonic, asthma, bronchitis, malaria, common fever, cold and flu.	Wild; Shrub	April - September
Aizoaceae	<i>Trianthema portulacastrum</i> L. 125112	Bishapra	Whole Plant	Anthelmintic, cathartic irritant abortifacient, liver infection, asthma, fever, constipation and jaundice.	Wild; Succulent prostate herb	June-November
Alliaceae	<i>Allium sativum</i> L. 125390	Lehsan/Thoom	Bulb	High blood pressure, mental problems, sedative.	Wild; Herb	May-July
Alliaceae	<i>Allium cepa</i> L. 125391	Piaz	Bulb	Asthma and cardiac troubles, high blood pressure, cough, colic, constipation, flatulence, treatment for flatulence and hypertension.	Cultivate; Herb	April-August
Alliaceae	<i>Asphodeclum fistulosus</i> L. 125408	Dkndra	Tuber	Spermatogogue	Wild; Herb	August- March
Amaranthaceae	<i>Achyranthes aspera</i> L. 125119	Puthkanda	Leaves and roots	Dropsy, piles, skin eruptions and coli, emetic, impotency, ulcer, leprosy, Toothache, and antidote.	Wild; Herb	July-November
Asclepiadaceae	<i>Calatropis procera</i> (Willd.) R. Br. 85299	Ak	Leaves, fruit, flowers and roots	Joint pain, cholera, dysentery, paralyzes, diarrhea, skin diseases especially malaria, cholera, and cough, backache, cough lung diseases, piles rheumatism, skin infection (chambel), and snake-bites.	Wild; Shrub	July-September
Asclepiadaceae	<i>Periploca aphylla</i> Dcne. 125087	Barri	Whole plant	Diaphoretic stimulant, emmogogue and tumor	Wild; Shrub	March-July
Asteraceae	<i>Echinops echinatus</i> Roxb. 125122	Lay	Roots	Sexual debility, delivery, stomach diseases, jaundice, diuretic aphrodisiac, antipyretic, and analgesic.	Wild; An annual herb	April-July
Asteraceae	<i>Xanthium strumarium</i> L. 125124	Kndara	Leaves and fruits	Eczema, small pox and dysentery in urinary diseases.	Wild; Herb	June-July

Table 1. Contd.

Boraginaceae	<i>Trichodesma indicum</i> (L.) R. Br. 125127	Kulfa	Whole plant	Fever, blood purifier, diarrhea, dysentery and urinary problems, antidote, diuretic, rheumatic swelling of joints, painful urination.	Wild; Herb	August-October
Brassicaceae	<i>Sisymbrium irio</i> L. ex Steud. 125102	Khoob, Kalan	Seeds and fruits	Typhoid, small pox (cheechak and khasra), chest debility cholera, cough, fever, harasses and vocal organ debility and vomiting.	Wild; Herb	March
Chenopodiaceae	<i>Haloxylon recurvum</i> Bunge ex Boiss. 125143	Kher	Whole plant	Poisonous.	Wild; Herb	November- December
Crassulaceae	<i>Bryophyllum pinnatum</i> (Lam.) Oken 125390	Pathar chat	Leaves	Hypertension, gastro-intestinal trouble, depression, renal calculi (Kidney's stone) and skin diseases.	Cultivated; Herb	November- December
Euphorbiaceae	<i>Euphorbia hirta</i> L. 125131	Dodhi	Leaves and milky latex	Asthma, cough sores dysentery, diarrhea, wounds and lip cracks.	Wild; Herb	May-July
Euphorbiaceae	<i>E. dracunculoides</i> . Lam. 125114	Kengi	Fruit	Remove warts.	Wild; Herb	March-July
Papilionaceae	<i>Cymopsis tetragonoloba</i> (L.) Taub. 125467	Gvara	Fruit	Laxative, biliousness, night blindness and vegetable	Cultivated; Herb	April-May
Papilionaceae	<i>Indigofera linifolia</i> (L.f.) Retz. 125345	Torki	Whole plant	Febrile eruptions and amenorrhoea	Wild; Herb	April-June
Poaceae	<i>Bumusa arundinacea</i> (L.) Voss ex Villas 125140	Bans	Leaves and young shoots	Fever, gonorrhoea, bronchial diseases, antiseptic to treat wounds, diabetes, emmenagogue, anthelmintic, astringent, febrifuge, ringworm and rheumatic swelling	Wild; Shrub	June-July
Poaceae	<i>Saccharum bengalense</i> Retz. 125133	Kana	Stem	Cough and chicken pox.	Wild; Herb	May- September
Poaceae	<i>S. spontaneum</i> L. 125134	Khi	Whole plant	Stomachache	Wild; Herb	June-October
Vitaceae	<i>Vitis vinifera</i> L. 125418	Angoor	Fruit	Blood purifier, tonic for heart patients and cancer patient, typhoid and dyspepsia.	Cultivate; Herb	May -July

Table 1. Contd.

Zygophyllaceae	<i>Peganum harmala</i> L. 125100	Hrmel	Seeds	Abdominal and colic pain, allergy treatment, antiseptic, narcotic, antispasmodic, lypnotic, anodyne, nausea, emetic and emagogue.	Cultivated and wild herb	April
Zygophyllaceae	<i>Tribulus terrestris</i> L. 125094	Pakhra	Seeds	Gall bladder illness and kidney allergy and remove stones from gall bladder, kidney and bladder, heart diseases	Wild; Herb	May-August

and most of the people are not well economically (Abo et al., 2008). They have no potential to buy the allopathic medicines, so, they rely on the cheap source to treat themselves that is traditional medicinal plants and this is the main reason the indigenous medicinal plants remains valuable in solving healthcare troubles of local community.

This survey have introduced new less common medicinal plants to the local healer to treat their patients against numerous disorders. This survey has created a link between scientific institutes and local inhabitants, valueable not only in view of new drug discovery findings, but also for sending back indigenous healers to the scientific findings. The data collected from this survey will provide baseline for the further screening of drugs. Plants with high medicinal properties will be preferred to evaluate for their biological activities and valueable pharmacological products can be achieved.

REFERENCES

- Abo KA, Fred-Jaiyesimi AA, Jaiyesimi AEA (2008). Ethnobotanical studies of medicinal plants used in the management of diabetes mellitus in Southern Nigeria. *J. Ethnopharmacol.*, 115: 67-71.
- Ajibade LT, Fatoba PO, Raheem UA, Obdirgu BA (2005). Ethnomedicine and Primary Health Care in Ilorin, Nigeria. *Indian J. Trad. Knowl.*, 4(2): 150-158.
- Babos K, Cumana LJC (1992). Xylotomical Study of Some Venezuelan Tree Species (Mimosaceae I-IV). *Acta Bot. Hungarica*, 37(1-4): 183-238.
- Bartram T (1995). *Encyclopedia of herbal Medicine*. Grace: Dorset. *Crude Drug Res.*, 28: 309-320.
- Elisabetsky E (1990). Plants used as analgesics by Amazonian Capibocals. *Int. J. Crude Drug Res.*, 28: 309-320.
- Cunningham AB (2001). *Applied ethnobotany: people, wild plant use and conservation*. People and Plants Conservation Series, Earth-scan, London.
- Davis W (1991). Towards a new synthesis in ethnobotany. In: Rios, M. and Pedersen, H.B. (eds), *Las plantas y el hombre - Proceedings of the First Symposium Ethnobotanica Ecuadorian and Economic Botany*, Ediciones a and b-Yala, Quito, Ecuador, pp. 339-357.
- Hof M, Barik SK, Lykke AM (1991). Quantitative ethnobotany. Application of multivariate and statistical analysis in ethnobotany. People and Plants working paper 6. UNESCO Paris.
- Mahmood A, Mahmood A, Tabassum A (2011). Ethnomedicinal survey of plants from District Sialkot, Pakistan. *J. Appl. Pharm.*, 02(03): 212-220.
- Mahmood A, Mahmood A, Shaheen H, Qureshi RA, Sangi Y, Gilani SA (2011). Ethno medicinal survey of plants from district Bhimber Azad Jammu and Kashmir, Pakistan. *J. Med. Plants Res.*, 5(11): 2348-2360.
- Nadembega P, Boussim JL, Nikiema JB, Poli F, Antognoni F (2011). Medicinal plants in Baskoure, Kourittenga Province, Burkina Faso: An ethnobotanical study. *J. Ethnopharmacol.*, 133: 378-395.
- Shinwari MI, Khan MA (2000). Folk use of medicinal herbs of Margalla Hills National Park, Islamabad. *J. Ethno pharmacol.*, 69: 45-56.
- Shinwari ZK, Gilani SS, Akhlas M (2002). Sustainable Harvest of Medicinal Plants at Bar and Shinaki Valleys, Gilgit (Northern Pakistan). Consultancy Report: WWF-P, Gilgit.
- Tabsoba H, Deschamps JP (2006). Use of medicinal plants for the treatment of oral diseases in Burkina Faso. *J. Ethnopharmacol.*, 104: 68-78.
- Wezel A, Lykke AM (2006). Woody vegetation change in Sahelian West Africa: evidence from local knowledge. *Environ. Dev. Sus.*, 8: 553-567.
- Wondimu T, Asfaw Z, Kelbessa E (2007). Ethnobotanical study of medicinal plants around "Dheeraa" town, Arsi Zone, Ethiopia. *J. Ethnopharmacol.*, 112: 152-161.