



## Traditional Ethnobotanical Knowledge of People of Jaunsar Bawar Region of Garhwal, Uttarakhand

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### ABSTRACT

*The Jaunsar Bawar is a hilly region in Garhwal division of Uttarakhand in northern India located in the north-western part of Dehradun district. Ethnobotanical resources are the indigenous knowledge of people about plants and medicine. Ethnography is the study of human society while botany refers to the study of flora or plants. The study area which is the Jaunsar Bawar region, houses two primitive groups of people – the Garhwalis and the Jaunsaries who still follow their traditional system of medicine extracted from plants. The methods used in this ethnobotanical research work are pre-structured interview schedule of the local healers and elderly people who has a better knowledge and experience about herbal medicines for the treatment of various illnesses. This research work took approximately five months of field work. It is known from the societies living in surrounding that the indigenous people majorly use the ethnobotanical species such as *Anogeissus latifolia*, *Terminilia species*, *Lannea coromandelica*, *Anogeissus latifolia* and *Adina cordifolia* that surrounds the Jaunsar Bawar region. Local healers their wisdom of traditional knowledge on medicine have been classified in two parts i.e. Ethno medicine for communicable diseases and ethno medicine for none communicable diseases. A few samples of these plant species were also sent for scientific examination. The traditional knowledge of herbal medicine of these primitive groups of people may be scientifically validated with Ayurveda through phytochemical analysis.*

**Keywords:** Ethnobotany, Jaunsar Bawar, Dehradun, Herbal Medicine, Garhwalis, Jaunsaries.

Received 25.01.2023

Revised 15.02.2023

Accepted 19.03.2023

### INTRODUCTION

India is known for its rich heritage of the knowledge of natural products, particularly of its herbal medicine. Indian people are using medicinal plants from prehistoric period [17]. Tribal, living mostly in the remote forest areas, still depend to a great extent on the indigenous system of medicine [11]. Indigenous healing practices have been culturally accepted during all phases of human culture and environmental evolution. About 85% of traditional medicines are plant derived [7]. Medicinal plants have a long-standing history in many indigenous communities, and are an integral part for treating various diseases, particularly to cure daily ailments, and this practice of traditional medicine is based on hundreds of years of belief and observations [8]. With enormously diversified ethnic groups and rich biological resources, India represents one of the great emporia of ethno-botanical wealth [5, 11]. Nothing is more fundamental to human life than health (Strange), good physical and mental health helps a man go to the top or his or her destination very easily [6]. But if any problem arises, physically or mentally then survive within the environment become effected. 'Health is the level of functional and metabolic efficiency of a living organism'. The WHO defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [10-13].

Different types of tree or plant parts like bark, leaves, roots etc. as well as shrub also they have been used to made their herbal remedies for their treatment. Even now days some tribal groups are using ethno-medicinal practices for their treatment [3]. As we all know that tribes are mainly depending on their natural resources and they also worship nature. Now days they always try not to use modern medicine for their minor ailments [2]. The present study 'Ethno-medicinal practices among people of Jaunsar Bawar Region of Dehradun district of UttaraKhand. The livelihood of people in area is mainly depends

upon forest collection and trading [1]. They are very hard working and as a result mostly of the adult family members have been suffering from different types of fever and body pain. The most interesting thing is that; to heal this problem they do not go to hospital or any modern health care practitioners. When they cannot tolerate the pain then few of them take ethno-medicines to cure the problem and others go to near modern medicinal practitioners. However, when serious problems like breathiness, chest pain etc has been appeared then they must go to hospitals to getting the health facilities [4].

The primary objective of the present study is to find out the use of ethno-medicinal practices among people of the Jaunsar Bawar Region of Dehradun district of Uttarakhand. Apart from this the present study also try to find out different types ethno-medicinal herbs and systems among the studied people and area.

## MATERIAL AND METHODS

The present study have been carried out in tribal area. And the study has been done among people of Jaunsar-Bawar Region of the Dehradun district of Uttarakhand. Field work have been carried out in the area for around six months in three phases in different seasons to encounter different medicines for different health problems. Pre-structured interview schedule has been used to collect the primary data. Face to face interview of local healers, patients and senior members of society have been carried out. To verify the data some, focus group discussions also made of local healers, older male and older women groups. The primary data have been classified and systematised with their botanical name with consultation of Botanists. Further data is classified as medicines using for communicable and non-communicable diseases. Total head 250 families interviewed and 40 local healers and their medicinal practices have been documented. Some important ethno medicines using for treatment of health specific problems by local societies are presented in result and discussion.

## RESULTS AND DISCUSSION

Data is classified as medicines using for communicable and non-communicable diseases.

**Table- 1. Ethno medicine using for Communicable Diseases**

SN	Botanical Name	Family	Habit	Local Name	Diseases	Plant part
1.	Acacia catechu	Fabaceae	Tree	Khair	Diarrhoea, Cough ,Fever	LF BK
2.	Cedrus deodara	Pinaceae	Tree	Deodar	"Scabies, boils, blisters, itching, worm killer, fever, dysentery, urinary disorders, skin diseases, ulcer, diarrhoea"	WD,RE, ST, BK
3.	Ephedra gerardiana	Ephedraceae	Small Shrub	Somlata	"Eye trouble, bronchial disorders, syphilis, "	LF, FR, RT, ST
4.	Cassia tora	Fabaceae	Under Shrub-pulp	Panwar	"Cold, malarial, skin diseases, itching, fever, ring worm killer, wounds, leukoderma, Gonorrhoea leprosy, vermicide, "	SD, WP, RT, LF
5.	Podophyllum hexandrum	Podophyllaceae	Herb	Bankakri	Hoof diseases	RT
6.	Holarrhenapubescens	Apocynaceae	Tree	Kura	"Dysentery, dropsy, astringent, fever, diarrhoea, intestinal worm"	SD, LF, FR, BK, RT
7.	Heracleum candicans	Apiaceae	Herb	Gandhrajana, Padra	"Leucoderma, eczema, skin diseases, gonorrhoea"	RT, FR, SD
8.	Hellenia speciosa	Costaceae	Herb	Keol, Belori	"sexually transmitted diseases i.e Gonorrhoea, syphilis, leucorrhoea"	RH
9.	Callicarpa macrophylla	Lamiaceae	Shrub	Daia, Dai,	" skin diseases, tuberculosis "	"LF, FR, ST, BK, RT, WD"
10.	Jasminum humile	Oleaceae	Shrub	Sungli, Shanjo	"Skin diseases, ring worm, Sexually transmitted diseases, fistulas"	BK, RT, FL, LT

Different type of Communicable morbidity and it's healing process are presented in Table -1. Discussion is as below.

### Viral disease

For cough and cold, symptoms of the disease were watering from nose and cough. Causes of the disease were weather change and cold. Treatment was as follows- (a) traditional treatment-leaf, root and bark of *Abiespindrow Royale*, *Abrus precatorius* L., and *Acacia catechu* Willd. bark of the Totla tree. They used the

bark of this tree by boiling with water, and eat biscuits; (b) modern treatment was using antibiotic, antacid, syrup, and antihistamine [5].

### Fever

Local name was Bukhar. Symptoms of the disease were high temperature, headache, and body ache. Causes of the disease were weather change, cold, and hard working. Treatment of the disease was as follows: (a) traditional treatment was they used the leaf, root, flower of the *Justicia adhatoda* L. and leaf and stem of *Nermerisasiatica* Roxb. Ex DC.Extract of neem leaves, and use the bark of deshim tree, and chewed the root of ultekhara tree, eat honey, use a piece of wet clothes on the forehead, and use jadibuti; (b) modern treatment was using antibiotic (tablets- Amoxyclav, Lifflaxi, PPI, paracetamol, vitamins, ORS, azithromycene) [6].

### Rashes , Itching

Local name of the disease was khujali . Symptom of the disease was rashes on skin. Causes of the disease were water pollution, weather change and uncleaning. Treatment of the disease was- (a) traditional treatment- use the leaf, bark, seed, flower and fruit of the herb, *Cannabis sativa* L. extract of neem, ambashi, toltla, dunche, vutta tree; (b) modern treatment was using B-tex, lifeboy, amoxyclave, Amaxycol, Azythromycal, flouconazole, antihistamine, BB lotion and Detol [15].

### Reproductive Tract infections and Sexually Transmitted Diseases (RTI/STI)

It can be seen from table-1. *Ephedra gerardiana*(Local name-Somlata) leaf and root are useful for treatment of syphilis. *Cassia tora* ( Local name- Panwar) and *Helenia speciose* (local name- KeolBelori) respectively utilizing for treatments of Syphilis, Gonorrhoea and leucorrhoea.*Jasminumhumile* (Local name- Sungli or sanjoi) is also empirically using by local healers to cure many sexually transmitted health problems.

**Table- 2. Ethno medicine using for None- Communicable Diseases**

SN	Botanical Name	Family	Habit	Local Name	Diseases	Plant part
1.	<i>Abrusprecatorius</i>	Fabaceae	Climber	Gunja	Nerve disorders, bone fracture, Intestinal ulcer	LF, SD, RT
2.	<i>Acacia catechu</i>	Fabaceae	Tree	Khair	Liver and spleen problems, anaemia, Arthritis.	BK, RT
3.	<i>Polygonatumverticillatum</i>	Asparagaceae	Herb	Mahameda	Bone fracture, Piles, Arthritis, Tumours	BB
4.	<i>Justiciaadhatoda</i>	Acanthaceae	Shrub	Vasa, Bansu	Blood disorders, ophthalmic problems	LF, WO, RT, FL
5.	<i>Cedrusdeodara</i>	Pinaceae	Tree	Deodar	Pulmonary problems, Snake bite, Urinary disorders, Piles ,Ulcer	WD, RE, ST, BK
6.	<i>Pinuswallichiana</i>	Panaceas	Tree	Kail, blue pine	Bone fracture, pain in vertebral,column, osteoporosis, Rheumatic arthritis.	RE, BK, WD
7.	<i>Ephedra gerardiana</i>	Ephedraceae	Small Shrub	Somlata	Heart Diseases,Blood pressure, diabetes, eye problems	LF, FR, RT, ST
8.	<i>Phyllanthusemblica</i>	Phyllanthaceae	Tree	Awala	Liver problems, diabetes, Eye problem, bleeding gums, haemorrhagic problems.	FR, LF, BK, FL
9.	<i>Terminalia bellirica</i>	Combretaceae	Tree	Bahera	Heart Diseases, Liver problem, Piles, Urinary disorders	BK, FR, SD
10	<i>Glycosmispentaphylla</i>	Rutaceae	Shrub	Ban Nimbu	Kideny stone, Snake bite, Scorpion sting	FR, LF, RT, WO

**Table-02** Reveals data on uses of ethno medicine for none-communicable diseases. *Abrus precatorius* (local name- Gunja) is on use for nerve disorders, bone fracture and intestinal ulcer.*Acacia catechu* (local name- Khair) is commonly utilizing for treatment of Liver and spleen problems, anaemia, Arthritis. *Cedrusdeodara* (local name –Deodar) is using for treatments of Pulmonary problems, Snake bite, Urinary disorders, Piles ,Ulcer. *Pinus wallichiana* ( local name- Kail or blue pine) is very effectively using for bone fracture, pain in vertebral,column, osteoporosis, rheumatic arthritis. *Ephedra gerardiana* ( Local name-Somlata) is widely utilizing for Heart Diseases,Blood pressure, diabetes, eye problems. *Phyllanthus emblica*

(local name- Awala) is using for Liver problems, diabetes, Eye problem, bleeding gums, haemorrhagic problems.

### **Pain in abdomen**

Local name was pet dard. Symptoms of the disease was heavy pain in abdomen. Causes of the disease were polluted water, unhygienic conditions and bad food habit. Total individuals who were suffering from this disease were 14. Treatment followed was- (a) traditional treatment was chewing peyarapata (leaves of guava tree), using mantra andingboiled water; (b) modern treatment was using pain killer (Decolic, Cyclopam), ORS, antacid (Rantac, Pandid, Aciloc).

### **Headache**

Local Name wasmathadard. Symptoms of the disease was headache and feeling irritated. Causes of the disease was high blood pressure, hard work and cold. (a) Traditional treatment was the leaf, root, stem of *Vitex negundo* L.consuming cooked sojinaand consume it, use to eat the bark of the lagakomache and arjun tree; (b) modern treatment was using painkiller such as Parasafe, disprins, crocin.

### **Acidity**

Local name was gas. Symptoms of the disease were pain in abdomen and vomiting. Cause of the disease was wrong food habit. Treatment followed was- (a) traditional treatment was the leaf, stem, fruit, bark and root of *Callicarpa Vahl* utilising extracts of tree sugarcane, use branches of sandhi tree, extracts of guava leaves, bark of chatuhal tree, mantra, the root of gurjer tree; (b) modern treatment- antacid (PPI, Aciloc 300, Rantac).

### **Chest Pain**

Local name was chhatidard. Symptom of the disease was pain in chest. Causes of the disease were hard work, acidity, cough, and heart disease. Treatment followed was (a) traditional treatment was chewing brikhma and punga flowers; (b) modern treatment was using pain killer, antacid and use few other medicines after pathological test.

### **Foot pain**

Local name was pair dard. Symptoms of the diseases were pain in foot, and swelling in pain. Cause of the disease was hard work. Treatment followed was- (a) traditional treatment was oiling on foot, one type of jadibuti (Cinnabar, china rose, incense, clove, oil, half boiled rice binding with white string); (b) modern treatment was using Moov, pain killer.

### **Pulmonary obstructive disease**

Local name was sans samasya. Symptoms of the disease was shortness of breath. Causes of the disease were cold, dust and weather change. Treatment followed was- (a) traditional treatment was chewing the roots of ultekhara tree, the bark of gamari tree, using the root of beetle nut tree; (b) modern treatment was using Vetolin HFA, ProAir HFA.

### **Pain in back**

Local name was pith dard. Symptoms of the disease were pain in mid-section, problem in up down movements. Cause of the disease was hard work. Treatment followed was- (a) traditional treatment was giving massage with oil, and mantra, one type of jadibuti (Cinnabar, china rose, incense, clove, oil, half boiled rice binding with white string); (b) modern treatment was using Moov and pain killer (Jain et al, 1976).

### **Pain in waist**

Local name was kamardard. Symptoms of the disease was pain in mid-section and problem in up down movements. Cause of the disease was hard work. Treatment of the disease followed was- (a) traditional treatment was giving massage with oil, and mantra, one type of jadibuti (Cinnabar, china rose, incense, clove, oil, half boiled rice binding with white string); (b) modern treatment followed was using Moov and pain killer.

### **Eye Problem**

Local name was najarkisamasya. Symptoms of the disease were pain in eye and vision problem. Cause of the disease was aging. Treatment given was- (a) traditional treatment- they do not use any traditional healing process; (b) modern treatment was using various eye drop.

### **Decrease of blood cells**

Local name was khunki kami. Symptoms of the disease were fading skin color, weakness, white eye colour and migraine. Cause of the disease was improper food habits. Treatment was- (a) traditional treatment used was marusai and rai leaves as a vegetable, and use to eat fishes, and meat; (b) modern treatment followed was using iron tablet and folic acid tablet.

### **Liver problem**

Local name was libharkisamasya. Symptoms of the disease were loss of appetite, weakness, reddish eye and stool problem. Cause of the disease was bad food habit, hard work and using polluted water.

Treatment followed was- (a) traditional treatment was using- extracts of lauribedh tree, root of beetle nut tree, extract of sugarcane, branch of sandhi tree, boiled papaya, use tika (give them one type of chemical, which can make a mark on their forehead) on their forehead; (b) modern treatment was using poyratynimide and injection of streptomycine [14].

#### **Tumor**

Local name was massa. Symptoms of the disease were lump on body parts pain. Cause of the disease was nil. Treatment was as followed: (a) traditional treatment was using jarivuti and mantras; (b) modern treatment was operation.

#### **Tooth pain**

Local name was dathdard. Symptoms of the disease were pain in teeth, sometime blood appear from tooth. Cause of the disease was over pressure on teeth and something enter into teeth (meat). Treatment was (a) traditional treatment was utilising bark of satankadana and neem trees with honey; (b) modern treatment was using pain killer, antibiotics, and antacid.

#### **Neck Pain**

Local name was gale me dard. Symptom of the disease was pain in neck. Cause of the disease was hard work and bad life style. Treatment used was- (a) traditional treatment was massaging oil on neck; (b) modern treatment was nil.

Rural and tribal people residing in area are having trust on ethno-medicine and sometimes on magico-religious practices. But at present with the pace of civilization these people of the state is continuously face the westernization and as result a huge acculturation in their daily behavioural life takes place. At present most of t people give up their traditional dress and start to wear western dress and blindly follow the western culture to fulfil every need of their life, they also give up their age old traditional medicinal practices which are entirely based on the natural resources. Instead of that they are now mostly depends on the western medicine to treat their ailments. From the present study it has been observed that only 15 % families still believe on ethno-medicine. And these families practice ethno-medicinal system due to trust on nature. They think nature has all healing power of human's problem. Now the present situation has changed. More than sixty-five percent (65.5%) of families now practice both ethno-medicinal and modern medicinal system. The individuals of these families choose ethno medicine first. After that when ethno-medicine fails to heal the problem then they go for getting treatment from modern medical system. Beside this rest 34.5% families totally depend upon on modern medicinal system. They do not believe in any traditional health care system. Various types of tree barks, roots and leaves has been used to treat the alignment. The traditional medicine practitioners known as Ojha always extend their helping hand to sort out the health problem of the villagers. And the bonding between traditional local healers and villagers is very strong and healers are from the same society [16].

#### **CONCLUSION**

Jaunsar-Bawar region is mostly dominated by tribal and rural families. They occupied the region from ancient time and live in symbiosis with nature. Impact of Education in general and medical education in particular is below then the state and national average. Present study reveals this is the basic reason of their belief on traditional medicine. Ethnobotanical medicine using by people in this region needs phytochemical analysis and validity. Further the rich natural resources and their traditional knowledge on herbal medicine may be an asset to the Government of Uttarakhand and AYUSH Department, Ministry of Health and Family Welfare ,Government of India if it will be taken up for scientific and medicinal uses for the region and country.

#### **ACKNOWLEDGEMENTS**

We would like to express our gratitude to the people of Jaunsar Bawar region. I am thankful to my Ph.D. Guide Dr Saurabh Guleri and Co-Guide Dr. S.K Singh (BSI, NRC) and Dr. Harashwaradhana(An.SI, NWRC) for their valuable guidance and supports.

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#### CITATION OF THIS ARTICLE

Shalini Singh, Saurabh Guleri, Harashwaradhana and S.K Singh. Traditional Ethnobotanical Knowledge of People of Jaunsar Bawar Region of Garhwal, Uttarakhand. *Bull. Env. Pharmacol. Life Sci.*, Vol 12 [4] March 2023: 155-160